Draft Environmental Impact Report

for the

Central Lathrop Specific Plan

SCH# 2003072132

Volume I: Draft EIR Text

Prepared for

City of Lathrop

Prepared by

EDAW

July 2004

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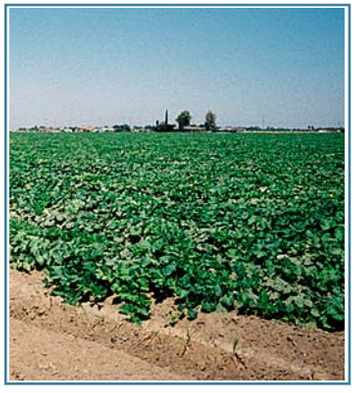

SCH# 2003072132

Volume I: Draft EIR Text

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1 Introduction

1 INTRODUCTION

This draft environmental impact report (DEIR) evaluates the environmental impacts of the proposed Central Lathrop Specific Plan (CLSP) project. The proposed project includes adoption of the specific plan itself and implementation of the associated development proposal. This DEIR has been prepared under the direction of the City of Lathrop (City) in accordance with the requirements of the California Environmental Quality Act (CEQA) (Pub. Res. Code §21000 et seq.) and the State CEQA Guidelines. This chapter of the DEIR provides information on the following:

- proposed project requiring environmental analysis (synopsis);
- type, purpose, and intended uses of the DEIR;
- scope of the DEIR;
- agency roles and responsibilities;
- standard terminology/acronyms; and
- previous documents incorporated by reference.

1.1 PROPOSED PROJECT REQUIRING ENVIRONMENTAL ANALYSIS

The project applicant, Richland Planned Communities (Richland), is requesting approval of various discretionary entitlements in support of a mixed-use residential/commercial development on approximately 1,521 acres immediately west and north of the existing corporate limits of the City of Lathrop in San Joaquin County, California. The CLSP area is bounded by Interstate 5 (I-5) on the east, the San Joaquin River on the west, the West Lathrop Specific Plan (WLSP) area and the current city limit line on the south, and the point where Squires Road would continue westward if it crossed I-5 on the north. The CLSP area is within the planning sphere of influence of the City of Lathrop but not within the existing city limits, and project approval would require the San Joaquin County Local Agency Formation Commission (San Joaquin LAFCO) to approve annexation of the specific plan area into the City in order for the project to be implemented.

The proposed project includes 6,790 residential units at various densities, up to approximately 5 million square feet of office/commercial uses, a Main Street District, neighborhood and community parks, schools, and open space areas. Several offsite project elements could be located on land north or south of the 1,521-acre CLSP area. These offsite elements relate to possible construction of a second City of Lathrop water recycling plant (WRP) (i.e., wastewater treatment plant) and identification of land to be used for storage and disposal (via agricultural irrigation) of treated recycled water and to the siting of various utility lines. The project is divided into two phases: Phase 1, which encompasses approximately the southern two-thirds of the CLSP area, is estimated to be completed in 2010, and Phase 2, covering approximately the northern one-third of the plan area, is anticipated to reach buildout in 2020.

The CLSP area was originally planned for urban development in 1991 with the adoption of the City of Lathrop General Plan (City General Plan). The CLSP area is identified as part of Sub-Plan Area #2 in the City General Plan and is designated as being within the City's sphere of influence but outside the city limits. The City General Plan provides the vision, or blueprint, for development of the City; all subsequent land use approvals are required to be consistent with the goals, objectives, and policies embodied in the City General Plan. Although the CLSP is consistent with the goals, objectives, and policies in the City General Plan, the proposed land uses in the specific plan do differ somewhat from those identified in the land use diagram portion of the City General Plan. Therefore, amendments to the City General Plan to accommodate the CLSP development proposal are included as part of the proposed action.

1.2 PURPOSE AND INTENDED USES OF THIS DEIR

According to CEQA, preparation of an EIR is required whenever it can be fairly argued, based on substantial evidence, that a proposed project may result in a significant environmental impact. An EIR is an informational document used to inform public agency decision makers and the general public of the significant environmental impacts of a project, identify possible ways to minimize the significant impacts, and describe reasonable alternatives to the project that could feasibly attain most of the basic objectives of the project while substantially lessening or avoiding any of the significant environmental impacts of the project. Public agencies are required to consider the information presented in the EIR when determining whether to approve a project.

Implementation of the CLSP is considered a development project for CEQA purposes. For this reason, this DEIR has been prepared to meet the requirements of a project EIR as defined by §15161 of the State CEQA Guidelines. This type of EIR focuses primarily on the changes in the physical environment that would result from the development of a project, including its planning, construction, and operation. The City's intention in preparing a project EIR is that no further environmental analysis will be required for additional regulatory approvals following adoption of the specific plan absent grounds for a subsequent EIR, a supplement to the EIR, or an addendum. (See State CEQA Guidelines §§15162–15164.)

The CLSP DEIR relies on other pertinent EIRs where appropriate. Information from the City General Plan EIR that is applicable to the CLSP project is incorporated into this DEIR. Certain aspects of the water and wastewater systems proposed to serve the proposed project have been evaluated at a programmatic level in the EIR for the City's Water, Wastewater, and Recycled Water Master Plan (Water Master Plan). Therefore, this DEIR relies on the analysis of the Water Master Plan EIR, where appropriate.

1.3 SCOPE OF THIS DEIR

This DEIR includes an evaluation of 16 environmental issue areas and other CEQA-mandated issues (e.g., cumulative impacts, growth-inducing impacts, significant unavoidable adverse impacts, alternatives). The 17 environmental issue areas are listed below:

- land use
- population, employment, and housing
- transportation and circulation
- air quality
- noise
- geology, soils, and mineral resources
- hydrology and water quality
- hazardous materials and public health
- public services
- public utilities
- recreation
- agricultural resources
- terrestrial biology
- fisheries
- cultural resources
- paleontological resources
- aesthetic resources

Under the CEQA statutes and the State CEQA Guidelines, a lead agency may limit an EIR's discussion of environmental effects when they are not considered potentially significant (Pub. Res. Code §21002.1(e); State CEQA Guidelines §§15128, 15143). Information used to determine which impacts would be potentially significant was derived from a review of applicable planning and CEQA documentation; fieldwork; a review of the project; feedback from ongoing public and agency consultation; comments received during a public scoping meeting held on July 31, 2003; and comments received on the notice of preparation (NOP) (see Appendix A of this DEIR). Following the issuance of the NOP, comments were received and reviewed to determine the final scope of the DEIR. As a result of the review of existing

information and the scoping process, it was determined that each of the issue areas listed above should be evaluated fully in this DEIR.

1.4 AGENCY ROLES AND RESPONSIBILITIES

1.4.1 LEAD AGENCY

The City of Lathrop is the lead agency for the proposed project. The City has the principal responsibility for approving and carrying out the project and for ensuring that the requirements of CEQA have been met. The following list identifies the entitlements requested from the City for the CLSP project; unless otherwise specified, the entitlements pertain to the project in its entirety:

- adoption and implementation of the CLSP;
- amendments to the City of Lathrop General Plan;
- amendments to the Lathrop Water, Wastewater, and Recycled Water Master Plan;
- annexation of the CLSP area to the City (in conjunction with the San Joaquin LAFCO);
- annexation of offsite recycled water storage and disposal sites to the City (in conjunction with the San Joaquin LAFCO);
- annexation of an offsite water recycling plant (WRP) location if the WRP #2 North option is selected (in conjunction with the San Joaquin LAFCO);
- cancellation of Williamson Act contracts;
- adoption of the Lathrop Center Plan;
- amendment to the Bicycle Transportation Master Plan;
- Large Lot Tentative Map;
- amendment of the City's Municipal Code; and
- approval of a development agreement between the City and the applicant.

The applicant (Richland) is requesting these approvals to accommodate proposed development on lands it controls (i.e., lands owned or under contract). However, some approvals would apply to all lands in the CLSP area (e.g., adoption of the CLSP, amendments to the City of Lathrop General Plan). It is anticipated that the City will also rely on this DEIR without further environmental review for approval of other future discretionary entitlements and permits (e.g., small lot tentative subdivision maps, design review approvals, use permits) absent grounds for the preparation of a subsequent EIR, supplemental EIR, or addendum.

1.4.2 TRUSTEE AND RESPONSIBLE AGENCIES

A trustee agency is a state agency that has jurisdiction by law over natural resources that are held in trust for the people of the State of California. Trustee agencies that have jurisdiction over resources potentially affected by the project are the California Department of Fish and Game (fish and wildlife) and the California State Lands Commission (navigable waters).

Responsible agencies are public agencies, other than the lead agency, that are anticipated to have discretionary approval responsibility for reviewing, carrying out, or approving elements of a project. Responsible agencies should participate in the lead agency's CEQA process, review the lead agency's CEQA document, and use the document when making a decision on project elements. Several agencies may have responsibility for or jurisdiction over the implementation of elements of the proposed project. These agencies may include the following:

FEDERAL AGENCIES

- Federal Highway Administration
- National Oceanic and Atmospheric Administration, National Marine Fisheries Service
- Natural Resources Conservation Service
- U.S. Army Corps of Engineers
- U.S. Department of Agriculture
- U.S. Environmental Protection Agency
- U.S. Fish and Wildlife Service

STATE AGENCIES

- California Air Resources Board
- California Department of Boating and Waterways
- California Department of Conservation - California Geological Survey
- California Department of Fish and Game
- California Department of Health Services
- California Department of Transportation - District 10
- California Department of Water Resources (State Reclamation Board)
- California Public Utilities Commission
- California State Lands Commission
- California State Water Resources Control Board
- Regional Water Quality Control Board - Central Valley Region 5
- Native American Heritage Commission

REGIONAL AND LOCAL AGENCIES

- Lathrop-Manteca Fire Protection District
- Reclamation District No. 17
- San Joaquin Council of Governments
- San Joaquin County
- San Joaquin County Local Agency Formation Commission
- San Joaquin Valley Unified Air Pollution Control District
- Manteca Unified School District
- San Joaquin Regional Transit District

1.4.3 REQUIRED PERMITS AND APPROVALS

The following list identifies permit and other approval actions likely to be required before implementation of individual elements of the proposed project.

FEDERAL ACTIONS/PERMITS

- National Oceanic and Atmospheric Administration, National Marine Fisheries Service: federal Endangered Species Act consultation and issuance of take authorization
- U.S. Army Corps of Engineers (USACE): Section 404 Clean Water Act permit for discharge or fill of waters of the U.S.
- U.S. Fish and Wildlife Service: federal Endangered Species Act consultation and issuance of take authorization

STATE ACTIONS/PERMITS

- California Department of Education: approval of new school sites for which state funding is sought
- California Department of Fish and Game: potential California Endangered Species Act consultation and issuance of take authorization (Fish and Game Code §2081), streambed alteration agreement (Fish and Game Code §1602)
- California Department of Health Services: permit for land application of recycled water
- California Department of Transportation - District 10: encroachment permit for construction of facilities that could affect a state highway or right-of-way
- California Department of Water Resources (State Reclamation Board): encroachment permit to work on or adjacent to levees
- California State Lands Commission: lease agreement/permit for proposed stormwater outfall in the San Joaquin River
- Regional Water Quality Control Board - Central Valley Region 5: National Pollutant Discharge Elimination System construction stormwater permit (Notice of Intent to proceed under General Construction Permit), discharge permit for stormwater, potential discharge permit for wastewater, general order for dewatering, Section 401 Clean Water Act certification or waste discharge requirements, recycled water permit, review of recycled water storage pond design

REGIONAL AND LOCAL ACTIONS/PERMITS

- Reclamation District No. 17: encroachment permit to work on or adjacent to levees
- San Joaquin County: roadway encroachment permit
- San Joaquin LAFCO: annexation of CLSP area to the City of Lathrop, annexation of various recycled water storage and disposal sites to the City of Lathrop, potential annexation of a WRP site to the City of Lathrop, annexation of the project site into various service districts
- San Joaquin Valley Unified Air Pollution Control District: authority to construct, health risk assessment

1.5 STANDARD TERMINOLOGY/ACRONYMS

This DEIR uses the following terminology and acronyms.

1.5.1 STANDARD TERMINOLOGY

"No impact" means no change from existing conditions (no mitigation is needed).

"Less-than-significant impact" means no substantial adverse change in the physical environment (no mitigation is needed).

"Potentially significant impact" means an impact that might cause a substantial adverse change in the environment (mitigation is recommended because potentially significant impacts are treated as significant).

"Significant impact" means an impact that would cause a substantial adverse change in the physical environment (mitigation is recommended).

"Significant and unavoidable impact" means an impact that would cause a substantial adverse change in the physical environment and that cannot be avoided, even with the implementation of recommended mitigation.

"Water Master Plan" refers to the 2001 Lathrop Water, Wastewater, and Recycled Water Master Plan (consists of the Water System Master Plan, Wastewater Collection System Master Plan, Wastewater Treatment and Disposal Master Plan, and Recycled Water Master Plan).

"CLSP site/area" refers to the 1,521-acre area identified for the CLSP development proposal.

"Offsite facilities" refers collectively to project elements located outside the identified 1,521-acre CLSP project site. These consist primarily of potential recycled water storage and disposal sites, offsite options for Water Recycling Plant #2 (WRP #2), and various utility lines.

"Project site" refers to the combined CLSP site/area and the area upon which the related offsite facilities are to be located.

"Proposed project" refers to the CLSP project and related offsite facilities.

1.5.2 ACRONYMS AND ABBREVIATIONS

The following acronyms and abbreviations are used in this DEIR:

AASHTO	American Association of State Highway and Transportation Officials
AB	Assembly Bill
ACE	Altamont Commuter Express
ac-ft	acre-feet
AEP	Annual Exceedance Probability
AFY	acre-feet per year
APN	assessor's parcel number
ARB	California Air Resources Board

Basin Plan	water quality control plan
Bay-Delta Plan	1995 Bay-Delta Water Quality Control Plan
BMP	best management practice
BOD	biochemical oxygen demand
BP	before present
CAA	federal Clean Air Act
CAAQS	California Ambient Air Quality Standards
Cal-EPA	California Environmental Protection Agency
CALFED	CALFED Bay-Delta Program
Cal/OSHA	California Occupational Safety and Health Administration
Caltrans	California Department of Transportation
CCAA	California Clean Air Act
CCIC	Central California Information Center
CCR	California Code of Regulations
CDC	California Department of Conservation
CDE	California Department of Education
CDMG	California Division of Mines and Geology
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
cf	cubic feet
CFF	City of Lathrop Capital Facility Fee
CFR	Code of Federal Regulations
cfs	cubic feet per second
CGS	California Geological Survey
CHRIS	California Historical Resources Information System
City	City of Lathrop
City General Plan	City of Lathrop General Plan
CIWMB	California Integrated Waste Management Board
CLSP	Central Lathrop Specific Plan
CNDDB	California Natural Diversity Database
CNEL	community equivalent noise level
CNPS	California Native Plant Society
CO	carbon monoxide
County	San Joaquin County
County General Plan	San Joaquin County General Plan 2010
CP	Community Park
CRHR	California Register of Historical Resources
CTR	California Toxics Rule
CVP	Central Valley Project
CVRWQCB	Central Valley Regional Water Quality Control Board
CWA	Clean Water Act
DA	development agreement
dB	decibel
dBA	A-weighted decibel
D/DBW	Disinfection/Disinfection Byproduct
DEIR	draft environmental impact report
Delta	Sacramento-San Joaquin Delta
DFG	California Department of Fish and Game

DHS	California Department of Health Services
DMM	demand management measure
DO	dissolved oxygen
DOC	dissolved organic carbon
DPR	California Department of Parks and Recreation
DRB	Design Review Bard
DTSC	Department of Toxic Substances Control
du	dwelling unit
du/ac	dwelling units per acre
DWR	California Department of Water Resources
EC	electrical conductivity
EFH	Essential Fish Habitat
EIR	environmental impact report
EIS	environmental impact statement
EPA	U.S. Environmental Protection Agency
ESA	Environmental Site Assessment
ESU	Evolutionarily Significant Unit
FAR	floor area ratio
FEMA	Federal Emergency Management Agency
FESA	federal Endangered Species Act
FHWA	Federal Highway Administration
FIRM	Flood Insurance Rate Map
FPP	Farmland Protection Program
FPPA	Farmland Protection Policy Act
FSZ	Farmland Security Zone
FTE	Full-Time Equivalent
GO	General Obligation bonds
gpm	gallons per minute
HAP	hazardous air pollutant
HCD	California Department of Housing and Community Development
HCS	highway capacity software
HOR	Head of Old River
HR	High Density Residential
HS	High School
I-	interstate
IEP	Interagency Ecological Program
IS	initial study
kWh	kilowatt hours
kWh/day	kilowatt hours per day
K–8	kindergarten through grade 8
LAFCO	Local Agency Formation Commission
L_{dn}	day-night average noise level
L_{eq}	energy-equivalent noise level

LESA	Land Evaluation and Site Assessment
L_{max}	maximum noise level: the maximum instantaneous noise level during a specific period
LMFPD	Lathrop-Manteca Fire Protection District
L_{min}	minimum noise level: the minimum instantaneous noise level during a specific period
LOS	level of service
M	Maximum Moment Magnitude
MBTA	Migratory Bird Treaty Act
mcf	million cubic feet
MCL	Maximum Contaminant Level
MCM	Minimum Control Measure
mgd	million gallons per day
mg/l	milligrams per liter
ml	milliliter
MMI	Modified Mercalli Intensity
mm/yr	millimeter/year
mph	miles per hour
MPN	Most Probable Number
msl	mean sea level
MUSD	Manteca Unified School District
MUTCD	Manual of Uniform Traffic Control Devices
MWQI	Municipal Water Quality Investigations
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
NAPMPD	Northern Area Portion Master Plan of Drainage
NC	Neighborhood Commercial
NCCP	Natural Community Conservation Plan
NCCPA	Natural Community Conservation Planning Act
NEPA	National Environmental Policy Act
NEHRP	National Earthquake Hazards Reduction Program
NEHRPA	National Earthquake Hazards Reduction Program Act
NESHAP	National Emissions Standards for Hazardous Air Pollutants
NFIP	National Flood Insurance Program
NGVD	National Geodetic Vertical Datum
NMFS	National Marine Fisheries Service
NO	nitric oxide
NOAA	National Oceanic and Atmospheric Administration
NOI	Notice of Intent
NOP	notice of preparation
NO_x	oxides of nitrogen
NO_2	nitrogen dioxide
NP	Neighborhood Park
NPDES	National Pollutant Discharge Elimination System
NRCS	National Resources Conservation Service
NWP	nationwide permit

OC	Office-Commercial
OC/VR/WWTP	Office-Commercial/Variable Residential/Wastewater Treatment Plant
O&M	operation and maintenance
OS	Levees, Open-space, River
O_3	ozone
pc/mi/ln	passenger cars/mile/lane
PG&E	Pacific Gas and Electric Company
PM	particulate matter
$PM_{2.5}$	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, or suspended particulate matter
POC	point of connection
Porter-Cologne Act	Porter-Cologne Water Quality Control Act
ppm	parts per million
ppt	parts per thousand
psi	pounds per square inch
P-SP(NC)	Public/Semi-Public (Neighborhood Commercial underlay)
PSR	project study report
RD	reclamation district
REC	recognized environmental condition
Regional Transportation Fee	West Lathrop Specific Plan Regional Transportation Fee
RFC	Research and Forecasting Center
Richland	Richland Planned Communities
R/MU	Residential/Mixed Use
ROG	reactive organic gases
RV	recreational vehicle
RWD	Report of Waste Discharge
RWQCB	Regional Water Quality Control Board
SB	Senate Bill
SB 610 Report	SB 610 Water Supply Assessment
SCSWSP	South County Surface Water Supply Project
SEL	single-event noise level
SFPD	School Facilities Planning Division
SIP	State Implementation Policy
SJCCMP	San Joaquin County Congestion Management Program
SJCEHD	San Joaquin County Environmental Health Department
SJCOG	San Joaquin Council of Governments
SJMSCP	San Joaquin County Multi-Species Habitat Conservation and Open Space Plan
SJR	San Joaquin River
SJRTD	San Joaquin Regional Transit District
SJVAB	San Joaquin Valley Air Basin
SJVAPCD	San Joaquin Valley Air Pollution Control District
SMARA	Surface Mining and Reclamation Act
SO_2	sulfur dioxide
SPC	Specialty Commercial
SR	State Route
SRA	shaded riverine aquatic

SSJID	South San Joaquin Irrigation District
SWMP	stormwater management program
SWP	State Water Project
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TAC	toxic air contaminant
TDS	total dissolved solids
TKN	total Kjeldahl nitrogen
TMDL	total maximum daily load
TOC	total organic carbon
TPY	tons per year
UBC	Uniform Building Code
UCMP	University of California, Museum of Paleontology
ULFT	ultra-low flow toliet
UPRR	Union Pacific Railroad
USACE	U.S. Army Corps of Engineers
USC	U.S. Code
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
VAMP	Vernalis Adaptive Management Plan
VR	Variable Density Residential
Water Master Plan	Lathrop Water, Wastewater, and Recycled Water Master Plan
WDR	waste discharge requirements
WLSP	West Lathrop Specific Plan
WQCF	Water Quality Control Facility
WQCP	Water Quality Control Plan
WRP	wastewater treatment/recycling plant or water treatment plant
°C	degrees Celsius
°F	degrees Fahrenheit
µg/l	micrograms per liter
$\mu g/m^3$	micrograms per cubic meter

1.6 INCORPORATION BY REFERENCE

In accordance with §15150 of the State CEQA Guidelines, this EIR incorporates the following documents by reference:

- City of Lathrop. 1991 (December). Comprehensive General Plan & Environmental Impact Report for the City of Lathrop, California. As amended through January 28, 2003, Lathrop, California. Prepared by Grunwald & Associates. Sacramento, California.

- San Joaquin County. 1992. San Joaquin County General Plan 2010. Adopted July 29, 1992. As amended. Stockton, California.

- EDAW. 2001 (June). Final Environmental Impact Report for the Lathrop Water, Wastewater, and Recycled Water Master Plan. Sacramento, California. Prepared for City of Lathrop, Lathrop, California.

- Nolte Associates, Inc. 2001 (February). Water System Master Plan, Wastewater Treatment and Disposal Master Plan, Wastewater Collection System Master Plan, and Recycled Water Master Plan. From Volume 1, Master Plan Studies, of the City of Lathrop Master Plan Documents. Prepared for City of Lathrop, Lathrop, California.

- RBF Consulting. 2003 (May). Northern Area Portion Master Plan of Drainage. Prepared for City of Lathrop, Lathrop, California.

These documents are referenced and elements are discussed and summarized throughout this DEIR. Copies of each of these documents, and all others referenced in this DEIR, are available for review at the City of Lathrop Community Development Department/Planning Division, 16775 Howland Road, Suite One, Lathrop, California 95330 (209/858-2860, extension 327).

2 Summary

2 SUMMARY

2.1 INTRODUCTION

This summary is provided in accordance with the California Environmental Quality Act Guidelines (State CEQA Guidelines) §15123. As stated in §15123(a), "an EIR shall contain a brief summary of the proposed action and its consequences. The language of the summary should be as clear and simple as reasonably practical." As required by the guidelines, this chapter includes (1) a summary description of the proposed project, (2) a synopsis of environmental impacts and recommended mitigation measures (Table 2-1), (3) identification of the alternatives evaluated and of the environmentally superior alternative, and (4) a discussion of the areas of controversy associated with the project.

2.2 SUMMARY DESCRIPTION OF THE PROPOSED PROJECT

2.2.1 PROJECT BACKGROUND

The area being proposed for development in the Central Lathrop Specific Plan (CLSP) has been addressed by the City of Lathrop (City) in various planning documents since 1991, including the City of Lathrop General Plan (City General Plan), the Riverwalk Specific Plan, and two utility master plans. Each of these is discussed below.

CITY OF LATHROP GENERAL PLAN

The CLSP area was first designated for eventual urban development as part of Sub-Plan Area #2 in the City General Plan, adopted in 1991. The CLSP area is identified in the City General Plan as being within the City's sphere of influence but outside the city limits. The City General Plan designates Sub-Plan Area #2 as intended primarily for low-density residential development, with approximately 5,000–8,000 housing units anticipated. Commercial development in Sub-Plan Area #2 is intended to be primarily freeway commercial uses until the population of the City increases sufficiently to support a community shopping center at Lathrop Road and Interstate 5 (I-5). The City General Plan anticipates approximately 5–10 million square feet of commercial space in Sub-Plan Area #2. The schematic diagram of the City General Plan shows much of the western and central portions of what is proposed as the CLSP area to be residential uses. Office and commercial uses are shown along I-5 between Louise Avenue and Lathrop Road, with a community park and a golf course shown along I-5 north of Dos Reis Road. Along Lathrop Road in the central portion of the CLSP area, a civic center and a transit center are identified, as well as a community park where Lathrop Road ends at the San Joaquin River (City of Lathrop 1991).

RIVERWALK SPECIFIC PLAN

The Riverwalk Specific Plan was proposed by Award Homes in 2000. The project was presented as a development proposal for a 423-acre portion of Sub-Plan Area #2 (and now the CLSP area) between De Lima Road and the western extension of Squires Road (if it continued west of I-5). Development under the Riverwalk Specific Plan would have included approximately 1,750 single-family residences, an elementary school, two neighborhood parks, a community park, community commercial development at Lathrop Road and Manthey Road, and a 10-acre open-space corridor called the Riverwalk. A wastewater treatment plant to serve the project was also proposed to the north of the specific plan area, on a parcel of land immediately east of the San Joaquin River between Frewart Road and Manila Road. Early in the

CEQA review process, the applicant withdrew the proposal. The property identified for the Riverwalk project was later purchased by Richland Planned Communities (Richland).

LATHROP WATER, WASTEWATER, AND RECYCLED WATER MASTER PLAN

In 2000, the City prepared a Water, Wastewater, and Recycled Water Master Plan (Water Master Plan) that updated its water infrastructure master plans and enabled the City to phase the construction of infrastructure to link logically with the phasing of development in the City. The environmental impact report (EIR) for the Water Master Plan (EDAW 2001) indicates that, in 2001, municipal water pipes in the CLSP area were present in De Lima Road, Dos Reis Road, and along a small portion of Manthey Road south of Lathrop Road; other properties were served by onsite wells. All properties in the CLSP area are served by septic systems; there are no connections to the municipal wastewater system.

The Water Master Plan provides for phased development of water and wastewater infrastructure in the CLSP area and throughout the city. Water pipelines and a water storage tank/booster pump station are proposed in the CLSP area. Wastewater pipelines are identified for the CLSP area as well, with wastewater treatment planned for a newly constructed water recycling plant at I-5 and the western extension of Squires Road (Water Recycling Plant [WRP] #2). Recycled water pipelines are also proposed for installation throughout the CLSP area. The Water Master Plan permits recycled water to be used for public landscaping areas such as roadways, parks, medians, landscaped areas in commercial developments, and open-space areas. Irrigation of agricultural lands with recycled water is also permitted. Recycled water storage ponds and spray fields are conditionally permitted uses in various zoning districts in the City.

NORTHERN AREA PORTION MASTER PLAN OF DRAINAGE

Preparation of the Northern Area Portion Master Plan of Drainage (NAPMPD) (RBF Consulting 2003) was initiated primarily to support development proposals for a project known as Stonebridge, located east of I-5 in the City of Lathrop. However, the focus of the plan was expanded to include an evaluation of overall storm drainage infrastructure needs in the northern part of the City, including developed portions of the City east of I-5 and undeveloped areas west of I-5. The area west of I-5 evaluated in the plan includes what is now the CLSP area.

The most detailed analysis in the NAPMPD pertains to areas east of I-5. Because no definite land plan for the area encompassing the CLSP existed at the time the NAPMPD was prepared, this area was addressed only in general terms. However, consistent with directives regarding peak outflow limitations into the San Joaquin River, the NAPMPD does establish that areas west of I-5 (i.e., the CLSP area) cannot discharge more than 30% of the peak stormwater flow rate during a 100-year storm event. The NAPMPD also recommends installation of an outfall system that passes through the CLSP area along Dos Reis Road en route to the San Joaquin River (the Stonebridge Outfall). This outfall structure, which is currently under construction, will serve the Stonebridge development area, but will also include four additional outfall ports that have sufficient capacity to serve a portion of the CLSP area. The NAPMPD also identifies the need to construct a second outfall structure to serve the remaining lands in the drainage plan area and west of I-5 that are not served by the Stonebridge Outfall (i.e., the remainder of the CLSP area).

2.2.2 PROJECT GOALS AND OBJECTIVES

The overarching goal of the proposed project is the orderly and systematic development of an integrated, full-service, mixed-use community in the City General Plan Sub-Plan Area #2 that is generally consistent with the goals and policies of the City General Plan and compatible with site characteristics.

In support of this overarching goal, the proposed project is designed to achieve the following more specific goals and objectives:

Goal A: Establish a mixed-use community that implements the intent of the City General Plan that Sub-Plan Area #2 be developed with urban land uses that complement existing development in the City

1. Establish a comprehensive land use plan that will guide development of the plan area in a way that is compatible with and complements existing and planned land uses in other portions of the City.

2. Update the City's long-term vision for Sub-Plan Area #2 as a mixed-use community, as set forth in the City's 1991 General Plan (as amended), by incorporating refinements designed to reflect evolving innovation in land use planning concepts.

3. Provide a balanced mix of land uses, including residential neighborhoods; retail, office, service-related commercial, and other non-residential employment-generating land uses; and public/semi-public uses such as schools, parks, and other civic-oriented facilities.

4. Provide roadway improvements and land use planning that will tie together existing City of Lathrop development east of I-5 and new development west of the freeway.

Goal B: Provide a variety of housing types that will serve residents of differing incomes

5. Create opportunities for a variety of marketable housing types available to households of differing incomes, including single-family residential densities that are significantly higher than those found elsewhere in Lathrop and that are designed to provide more efficient land use, more affordable housing without reducing quality or amenities, more efficient use of public infrastructure, and more environmentally sensitive development patterns.

6. Contribute to the efforts to make provision for the growing housing needs of the City and the region by encouraging the production of a broad mix of housing types and densities.

Goal C: Create integrated neighborhoods that link with the surrounding commercial and public/semi-public uses

7. Create a distinctive focal point for the plan area and a social centerpiece for the surrounding neighborhoods by anchoring the plan area with a pedestrian-oriented, centrally located village center that will include neighborhood-serving retail, civic and cultural uses, a high school, and a large community park.

8. Incorporate a mix of neighborhoods organized around interior neighborhood parks and neighborhood kindergarten through grade 8 (K-8) schools.

9. Provide shopping, services, entertainment, and recreation such that those who live and work within the plan area will not have to travel elsewhere for most routine or daily needs and City residents who live outside the plan area will be able to address more of their needs without traveling outside the Lathrop community.

Goal D: Provide economic and planning benefits for the City as a whole through commercial and retail development, availability of civic and public/semi-public space, and increased tax revenues

10. Establish a regional commercial corridor (including both retail and office uses) adjacent to the I-5 freeway that makes use of the visibility and prime freeway access provided by the Louise Avenue and Lathrop Road interchanges while buffering nearby residential neighborhoods from freeway-related impacts.

11. Generate positive fiscal benefits for the City resulting primarily from the regional commercial development adjacent to the I-5 corridor.

12. Increase employment and retail shopping opportunities for City residents.

13. Create an opportunity to locate public and semi-public uses within the central core of the plan area.

14. Add value to the existing and future City community and contribute to the establishment of a strong local economic base through (a) job creation; (b) the economic stimulus that comes from the multi-million-dollar investment required to develop the Central Lathrop Specific Plan and the disposable income of the people who will ultimately live and work in the plan area; and (c) the local general fund revenues generated by increased property taxes, retail sales taxes, and transient occupancy taxes.

15. Create a town center to serve existing and new development in the City.

Goal E: Provide opportunities for improved integration of transportation modes and increased transportation efficiency

16. Encourage non-vehicular travel by linking plan area neighborhoods to the village center, parks, and schools as well as to each other through an interconnected system of pedestrian and bicycle pathways.

17. Establish residential and job-generating non-residential land uses in close proximity to each other to minimize home-to-work vehicular trip lengths, automobile usage, and related air quality impacts.

18. Provide an integrated, efficient, and safe circulation system for pedestrians, bicyclists, transit, and vehicles.

Goal F: Provide recreational benefits to plan area and City residents through a comprehensive public park program and riverside parks

19. Maximize active and passive recreational opportunities through the creation of a comprehensive public park program that includes a linear park and open space system located adjacent to and providing access to the San Joaquin River, a large community park located adjacent to the high school site that affords an opportunity for joint use, and neighborhood parks that are centrally located within each residential village to ensure ease of access for area residents.

20. Enrich the relationship between the City and the San Joaquin River by incorporating the river's edge as a critical component of the plan area parks program.

2.2.3 PROJECT CHARACTERISTICS

The project applicant, Richland, is requesting approval of various discretionary entitlements in support of a mixed use residential/commercial development on approximately 1,521 acres immediately west and north of the existing corporate limits of the City of Lathrop. The CLSP area is bounded by I-5 on the east, the San Joaquin River on the west, the West Lathrop Specific Plan (WLSP) area and the current city limit line on the south, and the point where Squires Road would continue westward if it crossed I-5 on the north. The CLSP area is within the planning sphere of influence of the City of Lathrop but not within the existing city limits, and project approval would require the San Joaquin County Local Agency Formation Commission (San Joaquin LAFCO) to approve annexation of the specific plan area into the City in order for the project to be implemented.

The proposed project includes 6,790 residential units at various densities, up to approximately 5 million square feet of office/commercial uses, a Main Street District, neighborhood and community parks, schools, and open space areas. Several offsite project elements could be located on land north or south of the 1,521-acre CLSP area. These offsite elements relate to possible construction of a second City of Lathrop WRP (WRP #2) and identification of land to be used for storage and disposal (via agricultural irrigation) of treated recycled water and to the siting of various utility lines. The project is divided into two phases: Phase 1, which encompasses approximately the southern two-thirds of the CLSP area, is estimated to be completed in 2010, and Phase 2, covering approximately the northern one-third of the plan area, is anticipated to reach buildout in 2020.

LAND USES

The land use plan proposed under the CLSP is a mixed-use development consisting of residential, commercial, public/civic, park, and open-space features. Most of the plan area is identified for residential development, with 6,790 housing units proposed in high-density (28.3 acres), variable-density (703 acres), and residential/mixed use (45.2 acres) designations. The variable-density (VR) designation generally encompasses the range of low and medium densities from the City General Plan (1–15 dwelling units per acre [du/ac]), with VR densities of 3-16 du/ac and an anticipated average density of 7.27 du/ac. This approach to residential development is intended to provide flexibility in the planning and development of neighborhoods over the approximately 15-year CLSP buildout period (2005–2020), and to allow a variety of housing types, ranging from detached single-family houses to townhouses and condominiums, rather than isolating specific housing types in separate neighborhoods. As each neighborhood is developed under the CLSP, the range of housing densities would be determined based on planning needs in the City and market demand. Portions of the residential/mixed use (R/MU) area could consist solely of residential uses, portions could consist solely of commercial uses, and portions could have both uses with commercial services at street level and apartments or similar residential units on the upper floor(s) or in adjacent structures.

A central civic area at the Lathrop Road/Golden Valley Parkway intersection is designed to serve as a Main Street District, with public and civic uses, a Main Street–type commercial/mixed-use area, a neighborhood commercial area, and residential/mixed use areas that could accommodate shops at street level with high-density residential dwellings above. Land located between I-5 and Golden Valley Parkway would be designated for up to approximately 4.01 million square feet of office and commercial uses. Combined office and commercial space for all land uses would total up to approximately 4.99 million square feet. The northeast corner of the CLSP area has multiple designations (OC/VR/WWTP), allowing for office/commercial uses, residential units, and/or a wastewater treatment plant (i.e., a WRP); the final determination of the land use for this property would depend on development conditions and decisions made regarding wastewater treatment service (see the Utilities subsection below).

The land use plan includes designations for a high school and three K-8 schools in the plan area. Various neighborhood parks are included in the land use plan, and a large community park area is proposed adjacent to the proposed high school location. A meandering greenbelt comprising community park, a trail, and open space areas would be created along the entire north-south extent of the San Joaquin River. Additional greenbelts, including trails, would follow along the west side of Golden Valley Parkway and a portion of the south side of Lathrop Road. These roadway greenbelts may also contain linear stormwater detention basins, and several of the neighborhood parks are identified as sites for potential multi-use stormwater detention basins. The multi-use basins would be managed in such a way as to serve as both park amenities and stormwater detention facilities (see Drainage Plan below).

Under the proposed project, the entire CLSP area would be annexed into the City, thus becoming part of the City of Lathrop. Most of this area is owned by or under contract to Richland. Lands owned by or under contract to Richland are also included in the project development proposal. Other lands in the CLSP area would also be annexed into the City and would be subject to proposed City zoning, but are not necessarily subject to the current development proposal.

TRAFFIC AND VEHICULAR ACCESS

Roadways providing access to and throughout the CLSP area would consist of existing roads, improved roads along existing roadway alignments, and new roads. The major arterials in the CLSP area would be Golden Valley Parkway and Lathrop Road. These arterials would prioritize the movement of through traffic while providing some access to adjacent properties. In general, the arterials serve those portions of the plan area anticipated to develop as commercial, office, and public uses. The existing De Lima Road and Dos Reis Road would be improved and would act as the major east/west collectors. The major north/south collector would be a newly constructed roadway, identified in the land use plan as Street A.

Primary freeway access to the CLSP area would be provided via the Lathrop Road and Louise Avenue/ River Islands Parkway interchanges on I-5. Freeway access north of the plan area would also be available from the I-5/Roth Road interchange. Surface street access between the CLSP area and locations east of I-5 would be provided by Lathrop Road and Louise Avenue where these roadways pass under I-5. Improvements to both these interchanges and associated underpasses are planned for in the City of Lathrop Capital Facility Fee program and the West Lathrop Specific Plan Regional Transportation Fee program.

DRAINAGE PLAN

Stormwater in the CLSP area would initially be collected via standard storm drains in streets and other impervious surface areas. In areas of potential pollutant "hot spots" (i.e., areas or uses that typically have high pollutant loads), drop inlet filters may be used. Drop inlet filters install directly into the storm drain and are filled or lined with filter media to remove pollutants as they enter the storm drain system. Within commercial areas, additional filter systems placed in vaults or incorporated into building downspouts would also be used as appropriate.

Filtered/cleansed stormwater would continue through an underground storm drain system to one of five pump stations in the CLSP area. Each pump station would serve a particular watershed in the plan area. Pumping capacity at each station would be sized so that pumps cannot discharge more than 30% of the peak stormwater flow rate during a 100-year storm event, in accordance with City requirements.

From the pump stations stormwater would be discharged to the San Joaquin River via one of two outfall structures. As stated above in the discussion of the NAPMPD, the Stonebridge Outfall, which is under construction, includes four outfall ports that have sufficient capacity to serve a portion of the CLSP area.

To accommodate the accumulation of stormwater in the drainage system during heavy rain events, various detention basins are proposed throughout the CLSP area. Three classes of detention facilities are proposed: multi-use detention basins, linear detention basins, and underground storage facilities. Among these three types of facilities, a total of 46.9 acre-feet (ac-ft) of stormwater storage capacity is proposed in the CLSP area. The multi-use detention basins would be located in the proposed neighborhood parks and would be designed to function as detention basins during storm events and remain available for park uses during the remainder of the year. Linear detention basins are being considered in the greenbelt area along a portion of Lathrop Road, in the greenbelt area adjacent to Golden Valley Parkway, along a segment of Street A in the Community Park area, and in the office-commercial and OC/VR/WWTP areas paralleling I-5. These linear detention basins would consist of long vegetated swales or canals and typically would not be available for recreational or public uses. Underground detention facilities are being considered in various office and commercial land use areas and other locations. However, additional underground facilities could be installed to replace the detention capacity provided by the multi-use and linear basins. If any of the multi-use or linear detention basins are replaced by underground storage facilities, the designated land use in the detention basin location (Neighborhood Park, Open Space/Greenbelt) would continue.

UTILITIES

Six WRP options are being considered to serve development associated with the CLSP. These options are identified as follows:

(1) WRP #2 North: a stand-alone WRP designed to provide an average 3 million gallons per day (mgd) of treatment capacity. This WRP would be located on approximately 7 acres north of the CLSP area, at the same site previously identified by the Riverwalk project for a WRP. This site is outside the existing City limits and the sphere of influence, but within City General Plan Sub-Plan Area #2.

(2) WRP #2 North (scalping): in the same location as the WRP #2 North option, but would consist of a "scalping plant," which separates solids from the raw wastewater and treats only the liquid segment on site, rather than a full water recycling plant. This allows for a smaller overall treatment facility. The solids would be transported via a pipeline/force main to the City's existing WRP #1 and would be treated there.

(3) WRP #2 Onsite: WRP #2 Onsite would be a stand-alone WRP designed to provide an average 3 mgd of treatment capacity. This WRP would be located on approximately 7 acres in the northeast portion of the CLSP area in the parcel identified as OC/VR/WWTP. This is the same location identified in the Water Master Plan for WRP #2. Because this WRP would be located in the CLSP area, no offsite sewer lines would be required.

(4) WRP #2 Onsite (scalping): The WRP #2 Onsite (scalping) option would be in the same location as the WRP #2 Onsite option, but would consist of a scalping plant rather than a full water recycling plant.

(5) WRP #2 South: WRP #2 South would be a stand-alone WRP designed to provide an average 3 mgd of treatment capacity. This WRP would be located on approximately 7 acres within the current City limits, near the existing WRP #1. The proposed WRP #2 South site is located on a parcel currently serving as spray fields for disposal of recycled water generated by WRP #1.

(6) WRP #2 South (integrated): The WRP #2 South (integrated) option would be the same as the WRP #2 South option in all respects except that its operation would be integrated with that of WRP #1. Pipelines would connect the WRP #2 South (integrated) plant to WRP #1, allowing the treatment capacity

of the two plants to be combined. Under the WRP #2 South (integrated) option, the WRP #1 treatment capacity would, in effect, be increased to 9 mgd.

The wastewater treatment process used at WRP #2 would meet or exceed the effluent specifications used at the WRP #1 Membrane Bioreactor Treatment Plant and would result in the production of disinfected tertiary-treated recycled water. This is the highest class of treated wastewater; it meets the requirements specified in Title 22, Chapter 4, of the California Code of Regulations (Title 22) for allowable contaminant levels in recycled water and represents essentially pathogen-free water considered suitable by the California Department of Health Services for unrestricted landscape irrigation and for irrigation of agricultural crops not used for human consumption.

To dispose of recycled water and as a general water conservation measure, the CLSP proposes the use of recycled water for irrigation of public landscaping areas (road medians, parks, commercial landscaping, school sports fields) and private front and back yards in the plan area. For the remaining recycled water for which no recycled water demand is found, and during periods when irrigation is not feasible (e.g., during periods of winter precipitation), temporary storage of recycled water generated by WRP #2 would be required.

To provide additional recycled water disposal sites and locations for recycled water storage ponds, approximately 826 acres of land outside the CLSP area are being evaluated for these uses. It is estimated that up to approximately 318 acres of storage and disposal within this 826 acres would be needed to support the CLSP project. The offsite utility service sites being evaluated are divided into five areas. An additional potential recycled water storage/disposal areas is within the CLSP, and if used, would provide temporary storage/disposal capacity while Phase 1 of the CLSP is being developed (see Phasing below). When this onsite area is developed during Phase 2 of the CLSP, the recycled water storage/disposal capacity provided by this area would be transferred to one or more of the five offsite areas.

Recycled water disposal sites would consist of agricultural fields irrigated with recycled water, and would in effect be a continuation of existing uses on what are now agricultural lands. Approximately 220 acres of offsite recycled water disposal sites are anticipated to be needed. Storage ponds would provide temporary storage of recycled water during periods when irrigation is not feasible. A majority of pond storage capacity would be above the existing ground level and would be contained within earthen berms reaching elevations of approximately 10-12 feet above the ground surface. Approximately 98 acres of storage ponds are anticipated to be needed.

PHASING

For planning purposes, and to assist with the orderly development of the CLSP area, implementation of the CLSP is anticipated to proceed in two phases. Phase 1 is estimated to begin construction in 2005 and be completed in 2010. The buildout period for Phase 2 is estimated to be 2011–2020. Project elements included in each phase are described below.

Phase 1

Phase 1 of the CLSP encompasses roughly the southern two-thirds of the plan area. Phase 1 includes the following project elements:

- the roadway network within the Phase 1 area,
- the CLSP Stormwater Outfall,

- construction of one of the WRP #2 options with 1.5 mgd of treatment capacity,
- use of approximately 62 acres of recycled water storage sites,
- use of approximately 139 acres of recycled water disposal sites,
- the Main Street District,
- approximately 191 acres of Office Commercial area between Golden Valley Parkway and I-5,
- the Specialty Commercial area,
- seven neighborhood parks,
- approximately 60 acres of the community park,
- the high school,
- two K-8 schools,
- the two Residential/Mixed Use areas containing up to approximately 591,000 square feet of commercial space and 723 du,
- approximately 28 acres of high-density residential areas containing up to 453 du, and
- approximately 394 acres of variable-density residential housing areas containing up to 2,866 du.

Among the first facilities to be developed in Phase 1 would be the high school so that it would be available to begin serving students already residing in Lathrop, but attending Sierra High School in Manteca and Weston High School in Weston Ranch. Remaining development would generally follow a south-to-north progression, as well as radiating outward from the high school.

Water, natural gas, electrical, and other utility infrastructure elements would be installed as development proceeds in the Phase 1 area. One of the WRP #2 options would be constructed. Treatment capacity in the WRP would have the ability to be expanded incrementally, and sufficient internal treatment equipment would be installed to serve Phase 1 demand (estimated to be 1.37 mgd). Approximately 62 acres of recycled water storage ponds and 139 acres of land disposal areas would be required to serve Phase 1 at full buildout. All or a portion of these facilities could be located temporarily in the CLSP Phase 2 area, or would be placed on one or more of the offsite storage and disposal areas.

Phase 2

Phase 2 of the CLSP encompasses roughly the northern one-third of the plan area. Phase 2 includes the following project elements:

- the roadway network within the Phase 2 area,
- use of approximately 36 additional acres of recycled water storage sites,
- use of approximately 81 additional acres of offsite recycled water disposal sites,

- approximately 48 acres of Office Commercial area,
- development of the OC/VR/WWTP parcel,
- three neighborhood parks,
- the remaining 10 acres of the community park,
- one K-8 school, and
- approximately 380 acres of variable-density residential housing areas containing up to 2,748 du (500 units of which may be located in the OC/VR/WWTP parcel).

Development in the Phase 2 area would generally follow a south-to-north progression. Water, natural gas, electrical, and other utility infrastructure elements would be installed as development proceeds. Wastewater treatment capacity in WRP #2 constructed during Phase 1 would be incrementally increased to meet demand generated by Phase 2 development (estimated 2.17 mgd of total project demand). If the WRP is constructed in the OC/VR/WWTP parcel, the remainder of the parcel would be developed as OC uses. If the WRP is constructed in another location, the OC/VR/WWTP parcel either would be developed entirely as OC or would support both OC and VR uses.

Approximately 36 acres of recycled water storage ponds and 81 acres of additional land disposal areas would be required to serve full buildout of Phase 2 facilities. These facilities would be located on one or more of the offsite storage and disposal areas. If a portion of the Phase 2 area is used temporarily for recycled water storage and disposal during Phase 1, the storage and disposal capacity provided in this area would be moved to one or more of the offsite parcels as Phase 2 is developed.

2.2.4 APPROVALS, ENTITLEMENTS, AND PERMITS REQUIRED

The following list identifies the entitlements requested from the City for the CLSP project; unless otherwise specified, the entitlements pertain to the project in its entirety:

- adoption and implementation of the CLSP;
- amendments to the City of Lathrop General Plan;
- amendments to the Lathrop Water, Wastewater, and Recycled Water Master Plan;
- annexation of the CLSP area to the City (in conjunction with the San Joaquin LAFCO);
- annexation of offsite recycled water storage and disposal sites to the City (in conjunction with the San Joaquin LAFCO);
- annexation of an offsite WRP location if the WRP #2 North option is selected (in conjunction with the San Joaquin LAFCO);
- cancellation of Williamson Act contracts;
- adoption of the Lathrop Center Plan;
- amendment to the Bicycle Transportation Master Plan;

- Large Lot Tentative Map;
- amendment of the City's Municipal Code; and
- approval of a development agreement between the City and the applicant.

The applicant (Richland) is requesting these approvals to accommodate proposed development on lands it controls (i.e., lands owned or under contract). However, some approvals would apply to all lands in the CLSP area (e.g., adoption of the CLSP, amendments to the City of Lathrop General Plan). It is anticipated that the City will also rely on this EIR without further environmental review for approval of other future discretionary entitlements and permits (e.g., small lot tentative subdivision maps, design review approvals, use permits) absent grounds for the preparation of a subsequent EIR, supplemental EIR, or addendum.

The following permit and other approval actions are likely to be required before implementation of individual elements of the proposed project. An environmental review under the National Environmental Policy Act (NEPA) also may be undertaken to address necessary federal actions associated with the proposed project.

FEDERAL ACTIONS/PERMITS

- National Oceanic and Atmospheric Administration, National Marine Fisheries Service: federal Endangered Species Act consultation and issuance of take authorization
- U.S. Army Corps of Engineers (USACE): Section 404 Clean Water Act permit for discharge or fill of waters of the U.S.
- U.S. Fish and Wildlife Service: federal Endangered Species Act consultation and issuance of take authorization

STATE ACTIONS/PERMITS

- California Department of Education: approval of new school sites for which state funding is sought
- California Department of Fish and Game: potential California Endangered Species Act consultation and issuance of take authorization (Fish and Game Code §2081), streambed alteration agreement (Fish and Game Code §1602)
- California Department of Health Services: permit for land application of recycled water
- California Department of Transportation - District 10: encroachment permit for construction of facilities that could affect a state highway or right-of-way
- California Department of Water Resources (State Reclamation Board): encroachment permit to work on or adjacent to levees
- California State Lands Commission: lease agreement/permit for proposed stormwater outfall in the San Joaquin River
- Regional Water Quality Control Board - Central Valley Region 5: National Pollutant Discharge Elimination System construction stormwater permit (Notice of Intent to proceed under General

Construction Permit), discharge permit for stormwater, potential discharge permit for wastewater, general order for dewatering, Section 401 Clean Water Act certification or waste discharge requirements, recycled water permit, review of recycled water storage pond design

REGIONAL AND LOCAL ACTIONS/PERMITS

- Reclamation District No. 17: encroachment permit to work on or adjacent to levees
- San Joaquin County: roadway encroachment permit
- San Joaquin LAFCO: annexation of CLSP area to the City of Lathrop, annexation of various recycled water storage and disposal sites to the City of Lathrop, potential annexation of a WRP site to the City of Lathrop, annexation of the project site into various service districts
- San Joaquin Valley Unified Air Pollution Control District: authority to construct, health risk assessment

2.3 ENVIRONMENTAL IMPACTS AND RECOMMENDED MITIGATION MEASURES

Table 2-1, presented at the end of this chapter, provides a summary of the project-specific and cumulative environmental impacts of the proposed project, the level of significance of the impact before mitigation, recommended mitigation measures, and the level of significance of the impact after implementation of the mitigation measures.

The project would result in project-level significant and unavoidable adverse impacts in six areas: transportation and circulation, air quality, noise, agricultural resources, terrestrial biology, and aesthetic resources. In addition, the project would contribute to cumulative significant and unavoidable adverse impacts in nine areas: transportation and circulation, air quality, noise, public services, public utilities, agricultural resources, terrestrial biology, fisheries, and aesthetic resources. It also would potentially contribute to significant indirect cumulative impacts on air quality (odors), surface water quality, and fisheries.

2.4 SUMMARY OF ALTERNATIVES

This EIR evaluates the following alternatives to the proposed project:

- No Project Alternative,
- Reduced Development (Phase 1 Only) Alternative, and
- Reduced Development/Environmentally Constrained Alternative

All three alternatives are environmentally superior to the proposed project. The No Project Alternative does not attain any of the project objectives.

The Reduced Development (Phase 1 Only) Alternative would reduce, but not to a less than significant level, each of the proposed project's significant and unavoidable impacts. It would result in slightly lesser beneficial impacts with respect to recreation compared with the proposed project. Because overall less development would occur, although this alternative would still contribute to the listed significant unavoidable impacts, its contributions would be less than what would occur with the proposed project.

For these reasons, the Reduced Development (Phase 1 Only) Alternative is environmentally superior to the proposed project.

Similarly, the Reduced Development/Environmentally Constrained Alternative would reduce but not avoid any of the significant unavoidable impacts of the project, but with one important exception: terrestrial biology. Whereas the proposed project and the Reduced Development (Phase 1 Only) Alternative would both reduce the range (but not restrict the numbers) of the endangered riparian brush rabbit, the Reduced Development/Environmentally Constrained Alternative would avoid impacts to this species and, in fact, would be beneficial to the species in that it would provide additional habitat compared with existing conditions (and No Project).

The only environmental impact that is reduced by the Reduced Development (Phase 1 Only) Alternative but not the Reduced Development/Environmentally Constrained Alternative is an impact to housing; the Environmentally Constrained Alternative would remove slightly more existing homes (all of which would be compensated for) than the Phase 1 Only Alternative. Other than this, the Reduced Development/ Environmentally Constrained Alternative has less overall development than the proposed project and the Reduced Development (Phase 1 Only) Alternative, and its overall contribution to impacts would be commensurately less. Further, because the Reduced Development/Environmentally Constrained Alternative avoids an impact that is significant and unavoidable under both the proposed project and the Reduced Development (Phase 1 Only) Alternative (i.e., riparian brush rabbit), the Reduced Development/ Environmentally Constrained Alternative is the environmentally superior alternative among the alternatives that may partially meet the objectives of the proposed project.

In accordance with State CEQA Guidelines §15123, the summary section of an EIR should identify each significant effect with proposed mitigation measures, as well as alternatives that would reduce or avoid that affect. As stated previously, Table 2-1 includes information describing the impacts and mitigation measures identified in the EIR. The last column of Table 2-1 also identifies alternatives that would reduce or avoid the identified impacts. In most instances each of the three alternatives evaluated in the EIR will reduce the level of impact simply because the alternative includes less development. For example, there would be less demand for potable water, police services, parks, recycled water storage, etc., because the alternative contains fewer housing units and less commercial space, or there would be less conversion of agricultural land simply because the development footprint is reduced. In most instances where a significant and unavoidable impact is identified for the proposed project, the No Project Alternative would reduce the impact to less than significant levels, but the remaining alternatives would not. The single exception is significant and unavoidable impacts to riparian brush rabbit (Impact 4.14-q), where both the No Project Alternative and the Reduced Development/Environmental Constrained Alternative would reduce this impact to a less than significant level.

2.5 AREAS OF CONTROVERSY

A Notice of Preparation (NOP) was issued for the project by the City of Lathrop on July 17, 2003. The purpose of the NOP was to solicit comments from public agencies and interested members of the public on issues germane to the proposed project that should be considered in the EIR. Additionally, a public scoping meeting on the project was held on July 31, 2003. Because of the relative magnitude of the project, a number of issues were raised are considered in this EIR.

Additionally, several issues of potential controversy or requiring extensive consideration were raised. Representatives for RD 17 raised concerns that the project site could be subject to levee seepage, high groundwater, and additional flooding hazards and identified requirements for disposal of effluent and levee setback distance. The California Department of Fish and Game and U.S. Fish and Wildlife Service

raised concerns about project effects on riparian brush rabbit and coordination with the San Joaquin Multi-species Habitat Conservation and Open Space Plan. The California Department of Food and Agriculture identified the issue of loss of Williamson Act contracts and Prime Farmland. The Delta Protection Commission pointed out that the project is located in the Secondary Zone of the Delta and should include commercial and public recreation facilities and access to Delta waterways. Other issues raised pertain to potential adverse effects on public services, public utilities, traffic, and impacts on adjacent agricultural lands.

Table 2-1
Summary of Impacts, Mitigation Measures, and Alternatives

Impact	Significance before Mitigation	Mitigation Measure	Significance after Mitigation	Alternative
4.2 LAND USE				
4.2-a: Land Use – Potential for Division of an Existing Community. The CLSP would allow residential development to occur in an area that is separated by I-5 from much of the established community within the City. The existing farm houses do not constitute a defined community and would be incorporated into the new community. For this reason, this impact is considered less than significant.	LTS	No mitigation is required.	LTS	None
4.2-b: Land Use – Conflicts with Land Use Plans, Policies, or Regulations. Implementation of the CLSP with the WRP #2 Onsite option or the WRP#2 South option would not result in land use incompatibilities or inconsistencies with applicable land use plans. However, the option to develop WRP #2 North or develop recycled water storage ponds in Areas 1, 2, or 3 would be inconsistent with the County general plan policies because these areas are located within existing agricultural land outside the City's sphere of influence and within land designated for agricultural uses by the County. The City itself could pursue development of these facilities without needing to comply with the County General Plan as long as the property is owned by the City. Therefore, the County General Plan designation for these sites would not preclude City-owned facilities in these areas. This impact would be less than significant.	LTS	No mitigation is required.	LTS	A, B, C

Notes: B = Beneficial PB = Potentially beneficial LTS = Less than significant PS = Potentially significant S = Significant SU = Significant and unavoidable
Alternatives: A = No Project Alternative B = Reduced Development (Phase 1 Only) Alternative C = Reduced Development/Environmentally Constrained Alternative
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Table 2-1
Summary of Impacts, Mitigation Measures, and Alternatives

Impact	Significance before Mitigation	Mitigation Measure	Significance after Mitigation	Alternative
4.2-c: Land Use – Consistency with San Joaquin County Multi-Species Habitat Conservation and Open Space Plan. The SJMSCP defers to city general plans and the County General Plan for land use designations. Therefore, with regard to land use and planning, the project's consistency with the City and County General Plans implies consistency with the SJMSCP. The SJMSCP does not identify the CLSP area or any of the potential WRP #2 locations or recycled water storage and disposal sites as preferred conservation sites. Therefore, development in the CLSP area and use of potential utility sites would not conflict with SJMSCP conservation goals. This impact is considered less than significant.	LTS	No mitigation is required.	LTS	None
4.3 POPULATION, EMPLOYMENT, AND HOUSING				
4.3-a: Population, Employment, and Housing – Population Growth and Housing Demand during Construction. The proposed project would generate a temporary increase in employment in the City of approximately 300 construction jobs during the peak construction period. The number of existing construction personnel in the region is considered sufficient to meet demand associated with the proposed project; therefore, this temporary increase in employment is not expected to generate any substantial new population growth in the area or generate the need for substantial additional housing for construction workers. This impact is considered less than significant.	LTS	No mitigation is required.	LTS	A, B, C

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4.3-b: Population, Employment, and Housing – Population Growth. The proposed project would develop new homes, which would result in direct increases in population. Although the project-related estimated increases in population are roughly comparable to and consistent with the increases in population that would have resulted from the planned residential growth in the project area for which provision is made in the City's 1991 General Plan, the project-related population increases exceed planned growth anticipated in the City and County General Plans and the Water Master Plan. However, inconsistencies solely between planned and anticipated population growth as described here would not cause significant environmental effects. Direct impacts that would occur with development and associated population growth are evaluated in appropriate sections of this DEIR. This impact is considered less than significant.	LTS	No mitigation is required.	LTS	A, B, C
4.3-c: Population, Employment, and Housing – Housing Demand from Project Development. Development of the proposed project would increase the number of housing units and jobs. At buildout of Phase 1, the jobs-housing index for the CLSP area would be 0.76, and at full buildout the index would be between 0.89 and 0.98 (depending on the final development plan chosen), indicating that the proposed development would be job rich and could generate demand for new housing in the region for onsite employees. However, because the existing and projected jobs-housing balance for the region is	LTS	No mitigation is required.	LTS	A, B, C

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Impact	Significance before Mitigation	Mitigation Measure	Significance after Mitigation	Alternative
job poor, the jobs generated by the proposed project are expected to be filled in large part by the existing labor pool in the region. The project is not expected to induce substantial new housing demand. This impact is considered less than significant.				
4.3-d: Population, Employment, and Housing – Housing Displacement. Dwelling units in the CLSP area consist primarily of permanent homes, although there are also some mobile homes and temporary housing units for agricultural workers. For this analysis it is assumed that all 35 existing homes would be purchased and removed, and the site would be constructed with 6,790 new homes. Construction of residential dwelling units in the CLSP area would replace the 35 units removed during project construction. This impact is considered less than significant.	LTS	No mitigation is required.	LTS	A, B
4.3-e: Population, Employment, and Housing – Consistency with Housing Policies. The County General Plan, City General Plan, and Updated housing element contain various goals, objectives, and policies related to the provision of affordable housing, housing for the elderly and handicapped, and non–single-family housing (e.g., apartments). Although the proposed project may not meet the desired availability and ratio of these housing types at all times, overall the project would be consistent with housing policies in these planning documents. This impact is considered less than significant.	LTS	No mitigation is required.	LTS	None

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Summary of Impacts, Mitigation Measures, and Alternatives

Impact	Significance before Mitigation	Mitigation Measure	Significance after Mitigation	Alternative
4.4 TRANSPORTATION AND CIRCULATION				
4.4-a1: Transportation and Circulation – Operation of LOS F at Intersection 2. Roth Road/I-5 Southbound Ramps Under Existing Plus Project Conditions. Under the existing plus project scenarios, Intersection 2. Roth Road/I-5 Southbound Ramps would operate at LOS F during the AM and/or PM periods. This impact is considered significant.	S	**Operation of LOS F at Intersection 2. Roth Road/I-5 Southbound Ramps Under Existing Plus Project Conditions.** The mitigation for this impact would be the signalization of this intersection, which would occur in conjunction with the reconstruction of the Roth Road/I-5 interchange. This improvement is identified in the City of Lathrop CFF. The project would pay for its fair share of the cost of this improvement through payment of traffic impact fees to the City of Lathrop, as identified by the CFF document.	LTS	A, B, C
4.4-a2: Transportation and Circulation – Operation of LOS F at Intersection 3. Roth Road/I-5 Northbound Ramps Under the Existing Plus Buildout Scenario. Under the Existing Plus Buildout Scenario, Intersection 3. Roth Road/I-5 Northbound Ramps would operate at LOS F during the PM period. This impact is considered significant.	S	**Operation of LOS F at Intersection 3. Roth Road/I-5 Northbound Ramps Under the Existing Plus Buildout Scenario.** The mitigation for this impact would be the signalization of this intersection, which would occur in conjunction with the reconstruction of the Roth Road/I-5 interchange. This improvement is identified in the City of Lathrop CFF. The project would pay for its fair share of the cost of this improvement through payment of traffic impact fees to the City of Lathrop, as identified by the CFF document.	LTS	A, B, C
4.4-a3: Transportation and Circulation – Operation of LOS F at Intersection 4. Roth Road/Old Harlan Road Under Existing Plus Project Conditions. Under the existing plus project scenarios, Intersection 4. Roth Road/Harlan Road would operate at LOS F during the AM and PM periods. This impact is considered significant.	S	**Operation of LOS F at Intersection 4. Roth Road/Old Harlan Road Under Existing Plus Project Conditions.** The mitigation for this impact would be the construction of a traffic signal and widening of the intersection at this location. A traffic signal would be installed in conjunction with the proposed interchange improvements identified in Mitigation Measures 4.4-a1 and 4.4-a2. Improvements associated with these past mitigation measures are identified in the City of Lathrop CFF. The	LTS	A, B, C

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Impact	Significance before Mitigation	Mitigation Measure	Significance after Mitigation	Alternative
		project would pay for its fair share for signalization of this intersection through payment of traffic impact fees to the City of Lathrop, as identified by the CFF document. The intersection widening component of this mitigation measure would include converting a westbound shared right/through/left-turn lane to a left-turn lane and a shared through/right-turn lane and converting the eastbound shared through/left-turn lane to separate left-turn and through lanes. These improvements are not included in the CFF; therefore the project would contribute to this mitigation through payment of the fair share of the cost of these improvements to the City of Lathrop. A mechanism shall be created to ensure that such fair share payments, together with similar fair share payments from other projects, shall be collected and devoted to funding and construction of the identified improvements. Such a mechanism shall consist of either the creation of a new fee program or the amendment of an existing fee program.		
4.4-a4: Transportation and Circulation – Operation of LOS E and F at Intersection 7. Lathrop Road/Manthey Road/Golden Valley Parkway Under the Existing Plus Buildout Scenario. Under the Existing Plus Buildout scenario, Intersection 7. Lathrop Road/Manthey Road/Golden Valley Parkway would operate at LOS E during the AM period and LOS F during the PM period. This impact is considered significant.	S	**Operation of LOS E and F at Intersection 7. Lathrop Road/Manthey Road/Golden Valley Parkway Under the Existing Plus Buildout Scenario.** The mitigation for this impact would be the improvement of other access routes into the CLSP area, including the Louise Avenue and Roth Road interchanges as described in Mitigation Measures 4.4-a1, 4.4-a2, 4.4-a9, and 4.4-a10. With the improvements to these interchanges, traffic volumes would shift from Intersection 7. Lathrop Road/Manthey Road/Golden Valley Parkway, to adjacent intersections with improved capacity. As indicated in the post project conditions for the mitigated 2010 Plus Phase 1 and 2020	LTS	A, B, C

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Impact	Significance before Mitigation	Mitigation Measure	Significance after Mitigation	Alternative
		Plus Buildout scenarios (Tables 4.4-23 and 4.4-24), with anticipated roadway improvements Intersection 7. would operate at acceptable levels with the anticipated lane configuration.		
4.4-a5: Transportation and Circulation – Operation of LOS F at Intersection 8. Lathrop Road/I-5 Southbound Ramps Under Existing Plus Project Conditions. Under the existing plus project scenarios, Intersection 8. Lathrop Road/I-5 Southbound Ramps would operate at LOS F during the AM and PM periods. This impact is considered significant.	S	**Operation of LOS F at Intersection 8. Lathrop Road/I-5 Southbound Ramps Under Existing Plus Project Conditions.** The mitigation for this impact would be the construction of a traffic signal and widening of Lathrop Road from Golden Valley Parkway through the I-5 interchange. Specific improvements required to mitigate this impact include the addition of a west bound through lane, converting an eastbound shared through/right-turn lane to separate through and right-turn lanes, the addition of an eastbound through lane and right-turn lane, the conversion of a southbound shared right/through/left-turn lane to a right-turn lane and a left-turn lane, and addition of a southbound right-turn lane. These improvements are identified in the City of Lathrop CFF. The project would pay for its fair share of the cost of these improvements through payment of traffic impact fees to the City of Lathrop, as identified by the CFF document.	LTS	A, B, C
4.4-a6: Transportation and Circulation – Operation of LOS F at Intersection 9. Lathrop Road/I-5 Northbound Ramps Under Existing Plus Project Conditions. Under the existing plus project scenarios, Intersection 9. Lathrop Road/I-5 Northbound Ramps would operate at LOS F during the AM and PM periods. This impact is considered significant.	S	**Operation of LOS F at Intersection 9. Lathrop Road/I-5 Northbound Ramps Under Existing Plus Project Conditions.** The mitigation for this impact would be the construction of a traffic signal, the addition of a northbound left-turn lane, the conversion of a westbound shared through/right-turn lane to separate though and right-turn lanes, the addition of a westbound through lane and a westbound right-turn lane, and the	LTS	A, B, C

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Impact	Significance before Mitigation	Mitigation Measure	Significance after Mitigation	Alternative
		addition of an eastbound left-turn and through lane. These improvements are identified in the City of Lathrop CFF. The project would pay for its fair share of the cost of these improvements through payment of traffic impact fees to the City of Lathrop, as identified by the CFF document.		
4.4-a7: Transportation and Circulation – Operation of LOS F at Intersection 11. Lathrop Road/New Harlan Road Under Existing Plus Project Conditions. Under the existing plus project scenario, Intersection 11.Lathrop Road/New Harlan Road would operate at LOS F during the AM period. This impact is considered significant.	S	**Operation of LOS F at Intersection 11. Lathrop Road/New Harlan Road Under Existing Plus Project Conditions.** Mitigation of this impact would be widening of Lathrop Road to add a westbound through lane. This improvement is funded in the 2003 Measure K Strategic Plan. This improvement would extend to Intersection 10. Lathrop Road/Old Harland Road.	LTS	A, B, C
4.4-a8: Transportation and Circulation – Operation of LOS E at Intersection 13. Lathrop Road/Airport Way Under the Existing Plus Buildout Scenario. Under the Existing Plus Buildout Scenario, Intersection 13. Lathrop Road/Airport Way would operate at LOS E during the PM period. This impact is considered significant.	S	**Operation of LOS E at Intersection 13. Lathrop Road/Airport Way Under the Existing Plus Buildout Scenario.** The mitigation for this impact would be the re-optimization of this traffic signal. The project would pay for its fair share of the cost of this improvement to the City of Manteca.	LTS	A, B, C
4.4-a9: Transportation and Circulation – Operation of LOS F at Intersection 15. Louise Avenue/I-5 Southbound Ramps Under Existing Plus Project Conditions. Under the existing plus project scenarios, Intersection 15. Louise Avenue/I-5 Southbound Ramps would operate at LOS E during the AM period and LOS F during the PM period. This impact is considered significant.	S	**Operation of LOS F at Intersection 15. Louise Avenue/I-5 Southbound Ramps Under Existing Plus Project Conditions.** The mitigation for this impact would be the proposed Louise Avenue/I-5 interchange improvements identified by the CFF. The CFF describes the interchange improvements at the Louise Avenue/I-5 interchange as consisting of widening Louise Avenue to 8 lanes in the area of the interchange and upgrading signals. The initial improvement required at Louise Avenue would consist of the addition of a westbound left-turn	LTS	A, B, C

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Impact	Significance before Mitigation	Mitigation Measure	Significance after Mitigation	Alternative
		lane, converting a shared though/right-turn lane to separate through and right-turn lanes, and adding an eastbound through lane. The project would pay for its fair share of the costs of these improvement through payment of traffic impact fees identified by the CFF document.		
4.4-a10: Transportation and Circulation – Operation of LOS F at Intersection 16. Louise Avenue/I-5 Northbound Ramps Under Existing Plus Project Conditions. Under the existing plus project scenarios, Intersection 16. Louise Avenue/I-5 Northbound Ramps would operate at LOS E or F during the PM period. This impact is considered significant.	S	**Operation of LOS F at Intersection 16. Louise Avenue/I-5 Northbound Ramps Under Existing Plus Project Conditions.** The mitigation for this impact would be the proposed Louise Avenue/I-5 interchange improvements identified by the CFF. The CFF describes the interchange improvements at the Louise Avenue/I-5 interchange as consisting of widening Louise Avenue to 8-lanes in the area of the interchange and upgrading signals. The initial improvements required would be to add a westbound through lane and a northbound right-turn lane on the interchange off ramp. The project would pay for its fair share of the costs of these improvements through payment of traffic impact fees identified by the CFF document.	LTS	A, B, C
4.4-a11: Transportation and Circulation – Operation of LOS F at Intersection 22. Louise Avenue/Airport Way Under Existing Plus Project Conditions. Under the existing plus project scenarios, Intersection 22. Louise Avenue/Airport Way would operate at LOS F during the AM and PM periods. This impact is considered significant.	S	**Operation of LOS F at Intersection 22. Louise Avenue/Airport Way Under Existing Plus Project Conditions.** The mitigation for this impact would require the addition of a traffic signal at this location and the conversion of shared right/through/left-turn lanes to shared through/right-turn lanes and separate left-turn lanes on each approach. The project would pay its fair share of the cost of this improvement to the City of Manteca.	LTS	A, B, C

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Impact	Significance before Mitigation	Mitigation Measure	Significance after Mitigation	Alternative
4.4-a12: Transportation and Circulation – Operation of LOS F at Intersection 2. Roth Road/I-5 Southbound Ramps Under the 2010 Plus Phase 1 Scenario. Under the 2010 Plus Phase 1 Scenario, Intersection 2. Roth Road/I-5 Southbound Ramps would operate at LOS F during the AM period. This impact is considered significant.	S	**Operation of LOS F at Intersection 2. Roth Road/I-5 Southbound Ramps Under the 2010 Plus Phase 1 Scenario.** Initial improvements at this intersection to mitigate Existing Plus Phase I and Existing Plus Buildout conditions are addressed above in Mitigation Measure 4.4-a1. Subsequent mitigation of deficient conditions at this location would include an additional westbound left-turn lane and converting an eastbound shared through/right-turn lane to separate through and right-turn movements. These improvements are identified in the City of Lathrop CFF. The project would pay for its fair share of the cost of these improvements through payment of traffic impact fees to the City of Lathrop, as identified by the CFF document.	LTS	A
4.4-a13: Transportation and Circulation – Operation of LOS E at Intersection 4. Roth Road/Old Harlan Road Under the 2010 Plus Phase 1 Scenario. Under the 2010 Plus Phase 1 Scenario, Intersection 4. Roth Road/Old Harlan Road would operate at LOS E during the AM and PM periods. This impact is considered significant.	S	**Operation of LOS E at Intersection 4. Roth Road/Old Harlan Road Under the 2010 Plus Phase 1 Scenario.** The mitigation for this impact would be widening of Harlan Road and Roth Road at this location. Additional lanes include converting a shared northbound right/through/left-turn lane to a shared through/left-turn lane and a right-turn lane, converting a northbound shared right/though/left-turn lane to a left-turn lane and a shared through/tight-turn lane, adding a westbound through lane, and converting an eastbound shared through/right turn lane to separate through and right-turn lanes. These improvements are identified in the City of Lathrop CFF. The project would pay for its fair share of the cost of this improvement through payment of traffic impact fees to the City of Lathrop, as identified by the CFF document.	LTS	A

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4.4-a14: Transportation and Circulation – Operation of LOS F at Intersection 5. Roth Road/McKinley Avenue Under the 2010 Plus Phase 1 Scenario. Under the 2010 Plus Phase 1 Scenario, Intersection 5. Roth Road/McKinley Avenue would operate at LOS F during the PM period. This impact is considered significant.	S	**Operation of LOS F at Intersection 5. Roth Road/McKinley Avenue Under the 2010 Plus Phase 1 Scenario.** The mitigation for this impact would require the installation of a traffic signal at the intersection. This improvement is not included in the City of Lathrop CFF; therefore the project would contribute to this mitigation through payment of the fair share of the cost of this improvement to the City of Lathrop. A mechanism shall be created to ensure that such fair share payments, together with similar fair share payments from other projects, shall be collected and devoted to funding and construction of the identified improvements. Such a mechanism shall consist of either the creation of a new fee program or the amendment of an existing fee program.	LTS	A
4.4-a15: Transportation and Circulation – Operation of LOS E and F at Intersection 8. Lathrop Road/I-5 Southbound Ramps Under the 2010 Plus Phase 1 Scenario. Under the 2010 Plus Phase 1 Scenario, Intersection 8. Lathrop Road/I-5 Southbound Ramps would operate at LOS F and LOS E during the AM and PM periods respectively. This impact is considered significant.	S	**Operation of LOS E and F at Intersection 8. Lathrop Road/I-5 Southbound Ramps Under the 2010 Plus Phase 1 Scenario.** Additional improvements, beyond those identified by Mitigation Measure 4.4-a5, would be required to mitigate the project impacts at this intersection. These additional improvements would include the addition of a westbound left-turn lane and a south-bound right-turn lane. These improvements are identified in the City of Lathrop CFF. The project would pay for its fair share of the cost of these improvements through payment of traffic impact fees to the City of Lathrop, as identified by the CFF document.	LTS	A
4.4-a16: Transportation and Circulation – Operation of LOS F at Intersection 9. Lathrop Road/I-5 Northbound Ramps Under the 2010 Plus Phase 1 Scenario. Under the 2010 Plus Phase 1	S	**Operation of LOS F at Intersection 9. Lathrop Road/I-5 Northbound Ramps Under the 2010 Plus Phase 1 Scenario.** Additional improvements, beyond those identified in Mitigation Measure 4.4-a6, would be	LTS	A

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Scenario, Intersection 9. Lathrop Road/I-5 Northbound Ramps would operate at LOS F during the PM period. This impact is considered significant.		required to mitigate the project impacts at this location. The additional mitigation would require adding a north-bound right-turn lane. This improvement is identified in the City of Lathrop CFF. The project would pay for its fair share of the cost of this improvement through payment of traffic impact fees to the City of Lathrop, as identified by the CFF document.		
4.4-a17: Transportation and Circulation – Increase in Traffic of 1% or More at Intersection 16. Louise Avenue/I-5 Northbound Ramps When Operating at LOS E Under the 2010 No Project Scenario. Under the 2010 Plus Phase 1scenario, Intersection 16. Louise Avenue/I-5 Northbound Ramps would operate at LOS E during the PM period. This would be an improvement relative to the no project condition (2010 No Project Scenario) where the intersection would operate at LOS F. The improved LOS would result from interchange improvements to be implemented as part of City and regional funding programs. Although the improvement from LOS F to LOS E occurs with the proposed project, traffic generated by the CLSP project would still result in an increase in traffic of more than 1% at an intersection operating at LOS E. This impact is considered significant.	S	**Increase in Traffic of 1% or More at Intersection 16. Louise Avenue/I-5 Northbound Ramps When Operating at LOS E Under the 2010 No Project Scenario.** The mitigation for this impact would consist of the conversion of a northbound right-turn lane into a shared right/through/left-turn lane on the northbound ramp. This improvement is identified in the City of Lathrop CFF. The project would pay its fair share of the cost for this improvement through payment of traffic fees to the City of Lathrop, as identified by the CFF document.	LTS	A
4.4-a18: Transportation and Circulation – Operation of LOS F at Intersection 17. Louise Avenue/Old Harlan Road Under 2010 Plus Phase 1 Scenario. Under the 2010 Plus Phase 1 scenario, Intersection 17. Louise Avenue/Old Harlan Road	S	**Operation of LOS F at Intersection 17. Louise Avenue/Old Harlan Road Under 2010 Plus Phase 1 Scenario.** Given the proximity of this intersection to Intersection 18. Louise Avenue/New Harlan Road, it is not feasible to mitigate this impact by installing a traffic	SU	A*

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would operate at LOS F during the AM period. This impact is considered significant.		signal. Additionally, only right-in/right-out turns are currently allowed, therefore turn prohibitions are not available to mitigate this impact.		
4.4-a19: Transportation and Circulation – Operation of LOS E and F at Intersection 18. Louise Avenue/New Harlan Under 2010 Plus Phase 1 Scenario. Under the 2010 Plus Phase 1 Scenario, Intersection 18. Louise Avenue/New Harlan Road would operate at LOS F during the AM period and LOS E during the PM period. This impact is considered significant.	S	**Operation of LOS E and F at Intersection 18. Louise Avenue/New Harlan Road Under 2010 Plus Phase 1 Scenario.** The mitigation for this impact would be the addition of a southbound right-turn lane and converting a shared through/right-turn lane to exclusive northbound right-turn and through lanes. This improvement is not included in the City of Lathrop CFF; therefore the project would contribute to this mitigation through payment of the fair share of the cost of this improvement to the City of Lathrop. A mechanism shall be created to ensure that such fair share payments, together with similar fair share payments from other projects, shall be collected and devoted to funding and construction of the identified improvement. Such a mechanism shall consist of either the creation of a new fee program or the amendment of an existing fee program.	LTS	A

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4.4-a20: Transportation and Circulation – Increase in Traffic of 1% or More at Intersection 21. Louise Avenue/McKinley Avenue Under When Operating at LOS E/F Under the 2010 No Project Scenario. Under the 2010 No Project Scenario, Intersection 21. Louise Avenue/McKinley Avenue would operate at LOS F during the AM period and LOS E during the PM period. Traffic generated by the CLSP project would result in intersection operations degrading the LOS F for the AM and PM period under the 2010 Plus Phase 1 Scenario, and the proposed project would increase traffic at the intersection by more than 1%. This impact is considered significant.	S	**Increase in Traffic of 1% or More at Intersection 21. Louise Avenue/McKinley Avenue Under When Operating at LOS E/F Under the 2010 No Project Scenario.** The mitigation for this impact would be the addition of a westbound through lane, and an eastbound through lane at the intersection. These improvements are not included in the City of Lathrop CFF; therefore the project would contribute to this mitigation through payment of the fair share of the cost of this improvement to the City of Lathrop. A mechanism shall be created to ensure that such fair share payments, together with similar fair share payments from other projects, shall be collected and devoted to funding and construction of the identified improvements. Such a mechanism shall consist of either the creation of a new fee program or the amendment of an existing fee program.	LTS	A
4.4-a21: Transportation and Circulation – Operation of LOS E and F at Intersection 23. Vierra Road/McKinley Avenue Under the 2010 Plus Phase 1 Scenario. Under the 2010 Plus Phase 1 Scenario, Intersection 23. Vierra Road/McKinley Avenue would operate at LOS E during the AM period and LOS F during the PM period. This impact is considered significant.	S	**Operation of LOS E and F at Intersection 23. Vierra Road/McKinley Avenue Under the 2010 Plus Phase 1 Scenario.** The mitigation for this impact would include the addition of a southbound through lane, the conversion of a northbound shared through left-turn lane to exclusive left-turn and through lanes, the conversion of a westbound shared right/through/ left-turn lane to two through lanes and a right-turn lane, and the addition of an eastbound right-turn lane. Additional improvements would also be required to Intersection 24. McKinley Avenue/Yosemite Avenue, given the close proximity of these intersections. The improvements at the McKinley Avenue/Yosemite Avenue intersection would include the conversion of the shared right/through/left-turn lanes to a shared through/right-turn and a left-turn lane on the	LTS	A

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Summary of Impacts, Mitigation Measures, and Alternatives

Impact	Significance before Mitigation	Mitigation Measure	Significance after Mitigation	Alternative
		southbound and northbound approaches, the addition of a westbound shared through/left-turn lane, the conversion of an eastbound shared through/right-turn lane to exclusive through and right-turn lanes, and the conversions of an eastbound left-turn lane to a shared though/left-turn lane. The project's contributions to these improvements would be the payment of its fair share of the costs to the City of Lathrop. These improvements are not included in the City of Lathrop CFF; therefore the project would contribute to this mitigation through payment of the fair share of the cost of this improvement to the City of Lathrop. A mechanism shall be created to ensure that such fair share payments, together with similar fair share payments from other projects, shall be collected and devoted to funding and construction of the identified improvements. Such a mechanism shall consist of either the creation of a new fee program or the amendment of an existing fee program. As noted in the discussion of Impact 4.4-a21, it is assumed that by 2020 road and intersection reconfigurations planned in the area of Intersection 23. and Intersection 24. (Yosemite Avenue/McKinley Avenue) will result in Intersection 24. being the only intersection supporting traffic movements between Yosemite Avenue and McKinley Avenue. Intersection 23. would become a three way intersection only connecting the Vierra Road cul-de-sac to McKinley Avenue. Under these conditions, Intersection 23. would support minimal turning movements consisting only of vehicles entering and leaving the Vierra Road cul-de-sac. If these road and intersection reconfigurations take place		

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Table 2-1
Summary of Impacts, Mitigation Measures, and Alternatives

Impact	Significance before Mitigation	Mitigation Measure	Significance after Mitigation	Alternative
		before 2010 (or before impacts exceed significant levels based on the TMMP), Mitigation Measure 4.4-21a would not be required.		
4.4-a22: Transportation and Circulation – Operation of LOS E at Intersection 5. Roth Road/McKinley Avenue Under the 2020 Plus Buildout Scenario. Under the 2020 Plus Buildout Scenario, Intersection 5. Lathrop Road/McKinley Avenue would operate at LOS E during the PM period. This impact is considered significant.	S	**Operation of LOS E at Intersection 5. Roth Road/McKinley Avenue Under the 2020 Plus Buildout Scenario.** The mitigation for this impact would consist of the conversion of a southbound shared left/right-turn lane to exclusive left-turn and right-turn lanes, the addition of a westbound through lane, and the addition of an eastbound through lane. These improvements are not included in the City of Lathrop CFF; therefore the project would contribute to this mitigation through payment of the fair share of the cost of this improvement to the City of Lathrop. A mechanism shall be created to ensure that such fair share payments, together with similar fair share payments from other projects, shall be collected and devoted to funding and construction of the identified improvements. Such a mechanism shall consist of either the creation of a new fee program or the amendment of an existing fee program.	LTS	A, B, C
4.4-a23: Transportation and Circulation – Increase in Traffic of 1% or More at Intersection 8. Lathrop Road/I-5 Southbound Ramps When Operating at LOS F Under the 2020 No Project Scenario. Under the 2020 No Project Scenario, Intersection 8. Lathrop Road/I-5 Southbound Ramps would operate at LOS F during the PM period. Under the 2020 Plus Buildout scenario the intersection would continue to operate at LOS F, and traffic generated by the CLSP project would	S	**Increase in Traffic of 1% or More at Intersection 8. Lathrop Road/I-5 Southbound Ramps When Operating at LOS F Under the 2020 No Project Scenario.** The mitigation for this impact would be the buildout of the Lathrop Road/I-5 interchange improvements planned for in the City of Lathrop CFF, including converting a southbound left-turn lane into a shared right/through/left-turn lane, the addition of two westbound through lanes and a westbound left-turn lane, the conversion of an eastbound shared through/right-turn	LTS	A, B, C

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Table 2-1
Summary of Impacts, Mitigation Measures, and Alternatives

Impact	Significance before Mitigation	Mitigation Measure	Significance after Mitigation	Alternative
contribute more than 1% of the total traffic at this intersection. This impact is considered significant.		lane to exclusive through and right-turn lanes, and the addition of two eastbound through lanes. These improvements are identified in the CFF. The project would pay its fair share of the cost for these improvements through payment of traffic impact fees to the City of Lathrop, as identified by the CFF document.		
4.4-a24: Transportation and Circulation – Increase in Traffic of 1% or More at Intersection 9. Lathrop Road/I-5 Northbound Ramps When Operating at LOS E Under the 2020 No Project Scenario. Under the 2020 No Project Scenario, Intersection 9. Lathrop Road/I-5 Northbound Ramps would operate at LOS E during the AM and PM periods. Traffic generated by the CLSP project would result in intersection operations degrading to LOS F during the AM and PM periods under the 2020 Plus Buildout scenario, and the proposed project would increase traffic at the intersection by more than 1%. This impact is considered significant.	S	**Increase in Traffic of 1% or More at Intersection 9. Lathrop Road/I-5 Northbound Ramps When Operating at LOS E Under the 2020 No Project Scenario.** The mitigation for this impact would be the buildout of the Lathrop Road/I-5 interchange improvements planned for in the City of Lathrop CFF, include adding a northbound shared right/through/left-turn lane, a northbound right-turn lane, a westbound through lane, a westbound right-turn lane, an eastbound through lane, and an eastbound left-turn lane. These improvements are identified in the CFF. The project would pay its fair share of the cost for these improvements through payment of traffic fees to the City of Lathrop, as identified by the CFF document.	LTS	A, B, C
4.4-a25: Transportation and Circulation – Increase in Traffic of 1% or More at Intersection 10. Lathrop Road/Old Harlan Road When Operating at LOS F Under the 2020 No Project Scenario. Under the 2020 No Project Scenario, Intersection 10. Lathrop Road/Old Harlan would operate at LOS F during the AM and PM periods. Traffic generated by the CLSP project under the 2020 Plus Buildout Scenario would increase traffic at the intersection by more than 1%. This impact is considered significant.	S	**Increase in Traffic of 1% or More at Intersection 10. Lathrop Road/Old Harlan Road When Operating at LOS F Under the 2020 No Project Scenario.** Mitigation for this impact would require the signalization of the intersection. However, this intersection is located too closely to the adjacent intersections to the west and east for signalization to be feasible. Because this intersection cannot be signalized, this impact cannot be mitigated.	SU	A*, B, C

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Table 2-1
Summary of Impacts, Mitigation Measures, and Alternatives

Impact	Significance before Mitigation	Mitigation Measure	Significance after Mitigation	Alternative
4.4-a26: Transportation and Circulation – Increase in Traffic of 1% or More at Intersection 11. Lathrop Road/New Harlan Road When Operating at LOS F Under the 2020 No Project Scenario. Under the 2020 No Project Scenario, Intersection 11. Lathrop Road/New Harlan Road would operate at LOS F during the AM & PM periods. Traffic generated by the CLSP project under the 2020 Plus Buildout Scenario would increase traffic at the intersection by more than 1%. This impact is considered significant.	S	**Increase in Traffic of 1% or More at Intersection 11. Lathrop Road/New Harlan Road When Operating at LOS F Under the 2020 No Project Scenario.** To improve LOS conditions at this intersection under the 2020 Plus Buildout scenario would require the addition of more lanes than can be feasibly accommodated at the intersection. Although intersection improvements would be constructed consistent with the lane configurations shown in Exhibit 4.4-26a, these would not be sufficient to result in the intersection operating at an acceptable LOS during the AM and PM peak periods.	SU	A*, B, C
4.4-a27: Transportation and Circulation – Operation of LOS F at Intersection 12. Lathrop Road/Fifth Street Under the 2020 Plus Buildout Scenario. Under the 2020 Plus Buildout Scenario, Intersection 12. Lathrop Road/Fifth Street would operate at LOS E during the AM and PM periods. This impact is considered significant.	S	**Operation of LOS F at Intersection 12. Lathrop Road/Fifth Street Under the 2020 Plus Buildout Scenario.** The mitigation for this impact would be the conversion of a westbound shared through/right-turn lane to exclusive through and right-turn lanes. This improvement is not included in the City of Lathrop CFF; therefore the project would contribute to this mitigation through payment of the fair share of the cost of this improvement to the City of Lathrop. A mechanism shall be created to ensure that such fair share payments, together with similar fair share payments from other projects, shall be collected and devoted to funding and construction of the identified improvements. Such a mechanism shall consist of either the creation of a new fee program or the amendment of an existing fee program.	LTS	A, B, C
4.4-a28: Transportation and Circulation – Increase in Traffic of 1% or More at Intersection 13. Lathrop Road/Airport Way When Operating	S	**Increase in Traffic of 1% or More at Intersection 13. Lathrop Road/Airport Way When Operating at LOS E/F Under the 2020 No Project Scenario.** The	SU	A*, B, C

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Table 2-1
Summary of Impacts, Mitigation Measures, and Alternatives

Impact	Significance before Mitigation	Mitigation Measure	Significance after Mitigation	Alternative
at LOS E/F Under the 2020 No Project Scenario. Under the 2020 No Project Scenario, Intersection 13. Lathrop Road/Airport Way would operate at LOS F during the AM period and at LOS E during the PM period. Traffic generated by the CLSP project would result in intersection operations degrading to LOS F during the PM period under the 2020 Plus Buildout Scenario, and the proposed project would increase traffic at the intersection by more than 1%. This impact is considered significant.		mitigation for this impact would be the conversion of shared through/right-turn lanes to exclusive through and right-turn lanes on all approaches. Additionally, a second northbound left-turn lane would be required to fully mitigate the project's impacts and provide an acceptable LOS. The project would pay for its fair share of the cost of these improvements to the City of Manteca.		
4.4-a29: Transportation and Circulation – Increase in Traffic of 1% or More at Intersection 17. Louise Avenue/Old Harlan Road When Operating at LOS F Under the 2020 No Project Scenario. Under the 2020 No Project Scenario, Intersection 17. Louise Avenue/Old Harlan Road would operate at LOS F during the AM period. Traffic generated by the CLSP project under the 2020 Plus Buildout Scenario would increase traffic at the intersection by more than 1%. This impact is considered significant.	S	**Increase in Traffic of 1% or More at Intersection 17. Louise Avenue/Old Harlan Road When Operating at LOS F Under the 2020 No Project Scenario.** Given the proximity of this intersection to Intersection 18. Louise Avenue/New Harlan Road, it is not feasible to mitigate this impact by installing a traffic signal. Additionally, only right-in/right-out turns are currently allowed, so turn prohibition are not available to mitigate this impact.	SU	A*, B, C
4.4-a30: Transportation and Circulation – Increase in Traffic of 1% or More at Intersection 18. Louise Avenue/New Harlan Road When Operating at LOS E Under the 2020 No Project Scenario. Under the 2020 No Project Scenario, Intersection 18. Louise Avenue/New Harlan Road would operate at LOS E during the AM period. Traffic generated by the CLSP project would result in intersection operations degrading to LOS F during	S	**Increase in Traffic of 1% or More at Intersection 18. Louise Avenue/New Harlan Road When Operating at LOS E Under the 2020 No Project Scenario.** The mitigation for this impact would be the conversion of a southbound shared through/right-turn lane into two right-turn lanes. This improvement is not included in the City of Lathrop CFF; therefore, the project would contribute to this mitigation through payment of the fair share of the cost of this improvement to the City of Lathrop. A mechanism	LTS	A, B, C

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the AM period under the 2020 Plus Buildout Scenario, and the proposed project would increase traffic at the intersection by more than 1%. This impact is considered significant.		shall be created to ensure that such fair share payments, together with similar fair share payments from other projects, shall be collected and devoted to funding and construction of the identified improvement. Such a mechanism shall consist of either the creation of a new fee program or the amendment of an existing fee program.		
4.4-a31: Transportation and Circulation – Operation of LOS F at Intersection 21. Louise Avenue/McKinley Avenue Under the 2020 Plus Buildout Scenario. Under the 2020 Plus Buildout Scenario, Intersection 21. Louise Avenue/McKinley Avenue would operate at LOS E during the AM period. This impact is considered significant.	S	**Operation of LOS F at Intersection 21. Louise Avenue/McKinley Avenue Under the 2020 Plus Buildout Scenario.** The mitigation of this impact would be the addition of southbound and northbound through lanes. This improvement is not included in the City of Lathrop CFF; therefore the project would contribute to this mitigation through payment of the fair share of the cost of this improvement to the City of Lathrop. A mechanism shall be created to ensure that such fair share payments, together with similar fair share payments from other projects, shall be collected and devoted to funding and construction of the identified improvement. Such a mechanism shall consist of either the creation of a new fee program or the amendment of an existing fee program.	LTS	A, B, C
4.4-a32: Transportation and Circulation – Increase in Traffic of 1% or More at Intersection 22. Louise Avenue/Airport Way When Operating at LOS E/F Under the 2020 No Project Scenario. Under the 2020 No Project Scenario, Intersection 22. Louise Avenue/Airport Way would operate at LOS E and LOS F during the AM and PM periods respectively. Traffic generated by the CLSP project under the 2020 Plus Buildout Scenario would increase traffic at the intersection by more than 1%. This impact is considered significant.	S	**Increase in Traffic of 1% or More at Intersection 22. Louise Avenue/Airport Way When Operating at LOS E/F Under the 2020 No Project Scenario.** The mitigation for this impact would be the addition of a northbound left-turn lane, and the conversion of an eastbound shared through/right-turn lane to exclusive through and right-turn lanes. The project would pay for its fair share of the cost of these improvements to the City of Manteca.	LTS	A, B, C

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Impact	Significance before Mitigation	Mitigation Measure	Significance after Mitigation	Alternative
4.4-a33: Transportation and Circulation – Operation of LOS F at Intersection 24. Yosemite Avenue/McKinley Avenue Under the 2020 Plus Buildout Scenario. Under the 2020 Plus Buildout Scenario, Intersection 24. Yosemite Avenue/McKinley Avenue would operate at LOS F during the AM period. This impact is considered significant.	S	**Operation of LOS F at Intersection 24. Yosemite Avenue/McKinley Avenue Under the 2020 Plus Buildout Scenario.** The mitigation for this impact would be the addition of a southbound through lane, a northbound left-turn lane, and the conversion of an eastbound shared through/left-turn lane to exclusive through and left-turn lanes. These improvements are not included in the City of Lathrop CFF; therefore the project would contribute to this mitigation through payment of the fair share of the cost of this improvement to the City of Lathrop. A mechanism shall be created to ensure that such fair share payments, together with similar fair share payments from other projects, shall be collected and devoted to funding and construction of the identified improvement. Such a mechanism shall consist of either the creation of a new fee program or the amendment of an existing fee program.	LTS	A, B, C
4.4-a34: Transportation and Circulation – Operation of LOS F at Intersection 36. Main Street (Mossdale Landing)/Golden Valley Parkway Under the 2020 Plus Buildout Scenario. Under the 2020 Plus Buildout Scenario, Intersection 36. Main Street (Mossdale Landing)/Golden Valley Parkway would operate at LOS F during the PM period. This impact is considered significant.	S	**Operation of LOS F at Intersection 36. Main Street (Mossdale Landing)/Golden Valley Parkway Under the 2020 Plus Buildout Scenario.** Mitigation for this impact would be the conversion of the eastbound through lane to a through/left-turn lane. This improvement is identified in the City of Lathrop CFF as part of the construction of Golden Valley Parkway. The project would pay for its fair share of the cost of this improvement through payment of traffic impact fees to the City of Lathrop, as identified in the CFF document.	LTS	A, B, C
4.4-b1: Transportation and Circulation – Operation at Deficient LOS on Segments of I-5 Under Existing Plus Project Conditions. Under the	S	**Operation at Deficient LOS on Segments of I-5 Under Existing Plus Project Conditions.** The City of Lathrop shall ensure that the project applicant pays its applicable	SU	A*, B, C

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Impact	Significance before Mitigation	Mitigation Measure	Significance after Mitigation	Alternative
existing plus project scenarios (Existing Plus Phase 1and Existing Plus Buildout), various segments of I-5 would either operate below acceptable LOS thresholds with the addition of project traffic, or they currently operate below acceptable LOS thresholds and the proposed project would increase traffic volumes at these segments by more than 1%. This impact is considered significant.		Transportation Impact Fees for its fair share contribution for I-5 freeway improvements. However, because the needed I-5 improvements are not scheduled to be completed by Caltrans by the time demand is anticipated (2010, 2020), and because the development of these improvements by the proposed project is outside the scope of the project (i.e., these are regional improvements), the CLSP project would result in significant unavoidable traffic impacts at the identified freeway segments until necessary improvements are completed.		
4.4-b2: Transportation and Circulation – Operation at Deficient LOS on Segments of SR 99 Under Existing Plus Project Conditions. Under the existing plus project scenarios (Existing Plus Phase 1 and Existing Plus Buildout), various segments of SR 99 would either operate below acceptable LOS thresholds with the addition of project traffic, or they currently operate below acceptable LOS thresholds and the proposed project would increase traffic volumes at these segments by more than 1%. This impact is considered significant.	S	**Operation at Deficient LOS on Segments of SR 99 Under Existing Plus Project Conditions.** The City of Lathrop shall ensure that the project applicant pays its applicable Transportation Impact Fees for its fair share contribution for SR 99 freeway improvements. However, because the needed SR 99 improvements are not scheduled to be completed by Caltrans by the time demand is anticipated (2010, 2020), and because the development of these improvements by the proposed project is outside the scope of the project (i.e., these are regional improvements), the CLSP project would result in significant unavoidable traffic impacts at the identified freeway segments until necessary improvements are completed.	SU	A*, B, C
4.4-b3: Transportation and Circulation – Operation of LOS E on SR 120 Between I-5 and Yosemite Avenue Under Existing Plus Project Conditions. Under the existing plus project scenarios (Existing Plus Phase 1 and Existing Plus	S	**Operation of LOS E on SR 120 Between I-5 and Yosemite Avenue Under Existing Plus Project Conditions.** The City of Lathrop shall ensure that the project applicant pays its applicable Transportation Impact Fees for its fair share contribution for	SU	A*, B, C

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Impact	Significance before Mitigation	Mitigation Measure	Significance after Mitigation	Alternative
Buildout), the segment of SR 120 between I-5 and Yosemite Avenue would operate at LOS E during the PM period. This impact is considered significant.		improvements to this segment of SR 120. However, because the needed improvements are not scheduled to be completed by Caltrans by the time demand is anticipated (2010, 2020), and because the development of these improvements by the proposed project is outside the scope of the project (i.e., this is a regional scale improvement), the CLSP project would result in significant unavoidable traffic impacts at the identified freeway segment until necessary improvements are completed.		
4.4-b4: Transportation and Circulation – Operation of LOS F on segments of I-205 Under Existing Plus Project Conditions. Under the existing plus project scenarios (Existing Plus Phase 1 and Existing Plus Buildout), several segments of I-205 currently operate at LOS F during the AM and PM periods and the proposed project would increase traffic volumes at these segments by more than 1%. This impact is considered significant.	S	**Operation of LOS F on segments of I-205 Under Existing Plus Project Conditions.** The City of Lathrop shall ensure that the project applicant pays its applicable Transportation Impact Fees for its fair share contribution for I-205 freeway improvements. However, because the needed I-205 improvements are not scheduled to be completed by Caltrans by the time demand is anticipated (2010, 2020), and because the development of these improvements by the proposed project is outside the scope of the project (i.e., these are regional improvements), the CLSP project would result in significant unavoidable traffic impacts at the identified freeway segments until necessary improvements are completed.	SU	A*, B, C
4.4-b5: Transportation and Circulation – Operation at Deficient LOS on Segments of I-5 Under the 2010 Plus Phase I Scenario. Under the 2010 Plus Phase 1scenario, several segments of I-5 would either operate below acceptable LOS thresholds with the addition of project traffic, or they	S	**Operation at Deficient LOS on Segments of I-5 Under the 2010 Plus Phase I Scenario.** See Mitigation Measure 4.4-b1 above. The same mitigation discussion and conclusion of "significant and unavoidable" would apply.	SU	A*

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Impact	Significance before Mitigation	Mitigation Measure	Significance after Mitigation	Alternative
would operate below acceptable LOS thresholds under the 2010 No Project scenario and the proposed project would increase traffic volumes at these segments by more than 1%. This impact is considered significant.				
4.4-b6: Transportation and Circulation – Operation at Deficient LOS on Segments of SR 99 Under the 2010 Plus Phase I Scenario. Under the 2010 Plus Phase 1 scenario, various segments of SR 99 would either operate below acceptable LOS thresholds with the addition of project traffic, or they would operate below acceptable LOS thresholds under the 2010 No Project scenario and the proposed project would increase traffic volumes at these segments by more than 1%. This impact is considered significant.	S	**Operation at Deficient LOS on Segments of I-5 Under the 2010 Plus Phase I Scenario.** See Mitigation Measure 4.4-b1 above. The same mitigation discussion and conclusion of "significant and unavoidable" would apply.	SU	A*
4.4-b7: Transportation and Circulation – Operation at Deficient LOS on Segments of SR 120 Under the 2010 Plus Phase I Scenario. Under the 2010 Plus Phase I scenario, various segments of SR 120 would either operate below acceptable LOS thresholds with addition of project traffic, or would operate below acceptable LOS thresholds under the 2010 No Project scenario and the proposed project would increase traffic volumes at these segments by more than 1%. This impact is considered significant.	S	**Operation at Deficient LOS on Segments of SR 120 Under the 2010 Plus Phase I Scenario.** The City of Lathrop shall ensure that the project applicant pays its applicable Transportation Impact Fees for its fair share contribution for SR 120 freeway improvements. However, because the needed SR 120 improvements are not scheduled to be completed by Caltrans by the time demand is anticipated (2010), and because the development of these improvements by the proposed project is outside the scope of the project (i.e., these are regional improvements), the CLSP project would result in significant unavoidable traffic impacts at the identified freeway segments until necessary improvements are completed.	SU	A*

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Impact	Significance before Mitigation	Mitigation Measure	Significance after Mitigation	Alternative
4.4-b8: Transportation and Circulation – Operation of LOS F on Segments of I-205 Under the 2010 Plus Phase I Scenario. Under the 2010 No Project scenario, several segments of 1-205 would operate at LOS F during the AM and PM periods and the proposed project would increase traffic volumes at these segments by more than 1%. This impact is considered significant.	S	**Operation of LOS F on Segments of I-205 Under the 2010 Plus Phase I Scenario.** See Mitigation Measure 4.4-b4 above. The same mitigation discussion and conclusion of "significant and unavoidable" would apply.	SU	A*
4.4-b9: Transportation and Circulation – Operation at Deficient LOS on Segments of I-5 Under the 2020 Plus Buildout Scenario. Under the 2020 Plus Buildout scenario, several segments of I-5 would either operate at below acceptable thresholds with the addition of project traffic, or the would operate below acceptable LOS thresholds under the 2020 No Project scenario and the proposed project would increase traffic volumes at these segments by more than 1%. This impact is considered significant.	S	**Operation at Deficient LOS on Segments of I-5 Under the 2020 Plus Buildout Scenario.** See Mitigation Measure 4.4-b1 above. The same mitigation discussion and conclusion of "significant and unavoidable" would apply.	SU	A*, B, C
4.4-b10: Transportation and Circulation – Operation at Deficient LOS on Segments of SR 99 Under the 2020 Plus Buildout Scenario. Under the 2020 Plus Buildout scenario, various segments of SR 99 would operate below acceptable LOS thresholds with the addition of project traffic, or they would operate below acceptable LOS thresholds under the 2020 No Project scenario and the proposed project would increase traffic volumes at these segments by more than 1%. This impact is considered significant.	S	**Operation at Deficient LOS on Segments of SR 99 Under the 2020 Plus Buildout Scenario.** See Mitigation Measure 4.4-b2 above. The same mitigation discussion and conclusion of "significant and unavoidable" would apply.	SU	A*, B, C

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4.4-b11: Transportation and Circulation – Operation of LOS F on Segments of SR 120 Under the 2020 Plus Buildout Scenario. Under the 2020 No Project Scenario, several segments of SR 120 would operate at LOS F during the AM and PM periods and the proposed project would increase traffic volumes at these segments by more than 1%. This impact is considered significant.	S	**Operation of LOS F on Segments of SR 120 Under the 2020 Plus Buildout Scenario.** See Mitigation Measure 4.4-b7 above. The same mitigation discussion and conclusion of "significant and unavoidable" would apply.	SU	A*, B, C
4.4-12: Transportation and Circulation – Operation of LOS F on segments of I-205 Under the 2020 Plus Buildout Scenario. Under the 2020 No Project scenario, several segments of I-205 would operate at LOS F during the AM and PM periods and the proposed project would increase traffic volumes at these segments by more than 1%. This impact is considered significant.	S	**Operation of LOS F on segments of I-205 Under the 2020 Plus Buildout Scenario.** See Mitigation Measure 4.4-b4 above. The same mitigation discussion and conclusion of "significant and unavoidable" would apply.	SU	A*, B, C
4.4-c1: Transportation and Circulation – Operation of LOS F at the Louise Avenue/I-5 Northbound On Ramp Under the 2010 Plus Phase 1 Scenario. Under the 2010 Plus Phase 1 scenario, the Louise Avenue/I-5 Northbound On Ramp would operate at LOS F during the PM period with the addition of project traffic. This impact is considered significant.	S	**Operation of LOS F at the Louise Avenue/I-5 Northbound On Ramp Under the 2010 Plus Phase 1 Scenario.** There are two causes for deficient ramp segment operations. The first cause is the lack of available capacity on a ramp which directly impacts the ability of persons to utilize the ramp. The second cause is the lack of capacity on the freeway mainline segment which may indirectly impact the operation of a ramp segment. For example, when there is significant congestion on a freeway segment, persons entering a freeway on ramp may not be able to access the freeway. For the Louise Avenue/I-5 Northbound On Ramp it was determined that additional ramp capacity would improve the operation of the ramp. A supplemental analysis	LTS	A

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Impact	Significance before Mitigation	Mitigation Measure	Significance after Mitigation	Alternative
		concluded that adding a second lane on the northbound on ramp would improve the operations within acceptable levels. The LOS improves from LOS F to LOS B with the addition of a second lane on the on ramp. This additional lane is included in the proposed interchange improvements at Louise Avenue as documented by the City of Lathrop CFF. The project would pay for its fair share of the cost of this improvement through payment of traffic impact fees to the City of Lathrop, as identified by the CFF documents.		
4.4-c2: Transportation and Circulation – Operation of LOS F at the Louise Avenue/I-5 Southbound On Ramp Under the 2010 Plus Phase 1 Scenario. Under the 2010 Plus Phase 1 scenario, the Louise Avenue/I-5 Southbound On Ramp would operate at LOS F during the AM period with the addition of project traffic. This impact is considered significant.	S	**Operation of LOS F at the Louise Avenue/I-5 Southbound On Ramp Under the 2010 Plus Phase 1 Scenario.** For the Louise Avenue/I-5 Southbound On Ramp it was determined that additional ramp capacity would improve the operation of the ramp. A supplemental analysis concluded that adding a second lane on the southbound on ramp would improve the operations within acceptable levels. The LOS improves from LOS F to LOS B with the addition of a second lane on the on ramp. This additional lane is included in the proposed interchange improvements at Louise Avenue as documented by the City of Lathrop CFF. The project would pay for its fair share of the cost of this improvement through payment of traffic impact fees to the City of Lathrop, as identified by the CFF documents.	LTS	A
4.4-c3: Transportation and Circulation – Operation of LOS F at the Louise Avenue/I-5 Northbound Off Ramp Under the 2010 Plus Phase 1 Scenario. Under the 2010 Plus Phase 1 scenario, the Louise Avenue/I-5 Northbound Off Ramp would operate at LOS F during the PM period with the	S	**Operation of LOS F at the Louise Avenue/I-5 Northbound Off Ramp Under the 2010 Plus Phase 1 Scenario.** For the Louise Avenue/I-5 Northbound Off Ramp it was determined that additional ramp capacity would improve the operation of the ramp. A supplemental analysis concluded that adding a second	LTS	A

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Table 2-1
Summary of Impacts, Mitigation Measures, and Alternatives

Impact	Significance before Mitigation	Mitigation Measure	Significance after Mitigation	Alternative
addition of project traffic. This impact is considered significant.		lane on the southbound on ramp would improve the operations within acceptable levels. The LOS improves from LOS F to LOS B with the addition of a second lane on the off ramp. This additional lane is included in the proposed interchange improvements at Louise Avenue as documented by the City of Lathrop CFF. The project would pay for its fair share of the cost of this improvement through payment of traffic impact fees to the City of Lathrop, as identified by the CFF documents.		
4.4-c4: Transportation and Circulation – Operation of LOS F at the Louise Avenue/I-5 Southbound Off Ramp Under the 2010 Plus Phase 1 Scenario. Under the 2010 Plus Phase 1 scenario, the Louise Avenue/I-5 Southbound Off Ramp would operate at LOS F during the AM period with the addition of project traffic. This impact is considered significant.	S	**Operation of LOS F at the Louise Avenue/I-5 Southbound Off Ramp Under the 2010 Plus Phase 1 Scenario.** For the Louise Avenue/I-5 Southbound Off Ramp it was determined that this facility operates at a deficient LOS because of the deficient operations on the mainline freeway segments adjacent to the ramp. A supplemental analysis concluded that a second lane to the off ramp would not produce improved operations; therefore it can be concluded that the operations of the freeway segment is negatively impacting the operations of the ramp. Although addition of a second lane at this ramp is included in the City of Lathrop CFF, and therefore the project would pay for its fair share of the cost of this improvement through the payment of traffic impact fees to the City of Lathrop (as identified by the CFF documents), provision of this extra lane would not reduce this impact to a less than significant level. The segments of I-5 north and south of this interchange are projected to operate at LOS F during various times under the 2010 Plus Phase 1 scenario. Therefore, mitigation for deficient LOS at the Louise Avenue/I-5 Southbound Off Ramp could be provided by improving I-	SU	A*

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		5 adjacent to the ramp area. However, as described above in the discussions of Mitigation Measures 4.4-b1 and 4.4-b5, although proposed mitigation to improve operations on I-5 would assist in reducing degradation of freeway operations, actual freeway improvements may not be implemented by Caltrans rapidly enough to reduce the impact to less than significant levels. Therefore, because freeway operations may not be improved, operation of the Louise Avenue/I-5 Southbound Off Ramp also would not be improved and this impact would remain at a significant level.		
4.4-c5: Transportation and Circulation – Operation of LOS F at the Roth Road/I-5 Southbound On Ramp Under the 2020 Plus Buildout Scenario. Under the 2020 Plus Buildout scenario, the Roth Road/I-5 Southbound On Ramp would operate at LOS F during the AM period with the addition of project traffic. This impact is considered significant.	S	**Operation of LOS F at the Roth Road/I-5 Southbound On Ramp Under the 2020 Plus Buildout Scenario.** The deficient operations at this ramp can be attributed to the congestion on I-5. The segments of I-5 north and south of Roth Road operates at LOS F during various times under the 2010 Plus Phase 1 scenario. Because of the congestion on I-5, traffic is unable to access the freeway from the ramp and the ramp operates at a deficient level. Mitigation for this impact would be improving I-5 adjacent to the ramp area. However, as described above in the discussions of Mitigation Measures 4.4-b1 and 4.4-b9, although proposed mitigation to improve operations on I-5 would assist in reducing degradation of freeway operations, actual freeway improvements may not be implemented by Caltrans rapidly enough to reduce the impact to less than significant levels. Therefore, because freeway operations may not be improved, operation of the Roth Road/I-5 Southbound On Ramp also would not be improved and this impact would remain at a significant level.	SU	A*, B, C

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Impact	Significance before Mitigation	Mitigation Measure	Significance after Mitigation	Alternative
4.4-c6: Transportation and Circulation – Operation of LOS F at the Roth Road/I-5 Northbound On Ramp Under the 2020 Plus Buildout Scenario. Under the 2020 Plus Buildout scenario, the Roth Road/I-5 Northbound On Ramp is projected to operate at LOS F during the PM period with the addition of project traffic. This impact is considered significant.	S	**Operation of LOS F at the Roth Road/I-5 Northbound On Ramp Under the 2020 Plus Buildout Scenario.** The discussion and conclusion for this Mitigation Measure are the same as for Mitigation Measure 4.4-c5 above.	SU	A*, B, C
4.4-c7: Transportation and Circulation – Increase in Traffic of 1% or More at the Roth Road/I-5 Northbound Off Ramp When Operating at LOS F Under the 2020 No Project Scenario. Under the 2020 No Project scenario, the Roth Road/I-5 Southbound Off Ramp would operate at LOS F during the PM period. Traffic generated by the CLSP project under the 2020 Plus Buildout scenario would increase traffic at this ramp by more than 1%. This impact is considered significant.	S	**Increase in Traffic of 1% or More at the Roth Road/I-5 Northbound Off Ramp When Operating at LOS F Under the 2020 No Project Scenario.** The discussion and conclusion for this Mitigation Measure are the same as for Mitigation Measure 4.4-c5 above.	SU	A*, B, C
4.4-c8: Transportation and Circulation – Increase in Traffic of 1% or More at the LathropRoad/I-5 Southbound On Ramp When Operating at LOS F Under the 2020 No Project Scenario. Under the 2020 No Project scenario, the Lathrop Road/I-5 Southbound On Ramp would operate at LOS F during the AM period. Traffic generated by the CLSP project under the 2020 Plus Buildout scenario would increase traffic at this ramp by more than 1%. This impact is considered significant.	S	**Increase in Traffic of 1%or More at the LathropRoad/I-5 Southbound On Ramp When Operating at LOS F Under the 2020 No Project Scenario.** The deficient operations at this ramp can be attributed to the congestion on I-5. The segments of I-5 north and south of Lathrop Road operate at LOS F during various times under the 2020 Plus Buildout scenario. Because of the congestion on I-5, traffic is unable to access the freeway from the ramp and the ramp operates at a deficient level. Mitigation for this impact would be improving I-5 adjacent to the ramp area. However, as described above in the discussions of Mitigation	SU	A*, B, C

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Impact	Significance before Mitigation	Mitigation Measure	Significance after Mitigation	Alternative
		Measures 4.4-b1 and 4.4-b9, although proposed mitigation to improve operations on I-5 would assist in reducing degradation of freeway operations, actual freeway improvements may not be implemented by Caltrans rapidly enough to reduce the impact to less than significant levels. Therefore, because freeway operations may not be improved, operation of the Roth Road/I-5 Southbound On Ramp also would not be improved and this impact would remain at a significant level.		
4.4-c9: Transportation and Circulation – Increase in Traffic of 1% or More at the LathropRoad/I-5 Northbound On Ramp When Operating at LOS F Under the 2020 No Project Scenario. Under the 2020 No Project scenario, the Lathrop Road/I-5 Northbound On Ramp would operate at LOS F during the PM period. Traffic generated by the CLSP project under the 2020 Plus Buildout scenario would increase traffic at this ramp by more than 1%. This impact is considered significant.	S	**Increase in Traffic of 1% or More at the Lathrop Road/I-5 Northbound On Ramp When Operating at LOS F Under the 2020 No Project Scenario.** The discussion and conclusion for this Mitigation Measure are the same as for Mitigation Measure 4.4-c8 above.	SU	A*, B, C
4.4-c10: Transportation and Circulation – Operation of LOS F at the LathropRoad/I-5 Southbound Off Ramp Under the 2020 Plus Project Scenario. Under the 2020Plus Project scenario, the Lathrop Road/I-5 Southbound Off Ramp would operate at LOS F during the AM period with the addition of project traffic. This impact is considered significant.	S	**Operation of LOS F at the LathropRoad/I-5 Southbound Off Ramp Under the 2020 Plus Project Scenario.** The discussion and conclusion for this Mitigation Measure are the same as for Mitigation Measure 4.4-c8 above.	SU	A*, B, C
4.4-c11: Transportation and Circulation – Increase in Traffic of 1% or More at the LathropRoad/I-5 Northbound Off Ramp When	S	**Increase in Traffic of 1% or More at the LathropRoad/I-5 Northbound Off Ramp When Operating at LOS F Under the 2020 No Project**	SU	A*, B, C

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Impact	Significance before Mitigation	Mitigation Measure	Significance after Mitigation	Alternative
Operating at LOS F Under the 2020 No Project Scenario. Under the 2020 No Project scenario, the Lathrop Road/I-5 Northbound Off Ramp would operate at LOS F during the PM period. Traffic generated by the CLSP project under the 2020 Plus Project scenario would increase traffic at this ramp by more than 1%. This impact is considered significant.		**Scenario.** The discussion and conclusion for this Mitigation Measure are the same as for Mitigation Measure 4.4-c8 above.		
4.4-c12: Transportation and Circulation – Operation of LOS F at the Louise Avenue/I-5 Southbound On Ramp Under the 2020 Plus Buildout Scenario. Under the 2020 Plus Buildout scenario, the Louise Avenue/I-5 Southbound On Ramp is projected to operate at LOS F during the AM period with the addition of project traffic. This impact is considered significant.	S	**Operation of LOS F at the Louise Avenue/I-5 Southbound On Ramp Under the 2020 Plus Buildout Scenario.** The deficient operations at this ramp can be attributed to the congestion on I-5. The segments of I-5 north and south of Louise Avenue operate at LOS F during various times under the 2020 Plus Buildout scenario. Because of the congestion on I-5, traffic is unable to access the freeway from the ramp and the ramp operates at a deficient level. Mitigation for this impact would be improving I-5 adjacent to the ramp area. However, as described above in the discussions of Mitigation Measures 4.4-b1 and 4.4-b9, although proposed mitigation to improve operations on I-5 would assist in reducing degradation of freeway operations, actual freeway improvements may not be implemented by Caltrans rapidly enough to reduce the impact to less than significant levels. Therefore, because freeway operations may not be improved, operation of the Roth Road/I-5 Southbound On Ramp also would not be improved and this impact would remain at a significant level.	SU	A*, B, C

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4.4-c13: Transportation and Circulation – Operation of LOS F at the Louise Avenue/I-5 Northbound On Ramp Under 2020 Plus Buildout Scenario. Under the 2020 Plus Buildout scenario, the Louise Avenue/I-5 Northbound On Ramp is projected to operate at LOS F during PM period with the addition of project traffic. This impact is considered significant.	S	**Operation of LOS F at the Louise Avenue/I-5 Northbound On Ramp Under the 2020 Plus Buildout Scenario.** The discussion and conclusion for this Mitigation Measure are the same as for Mitigation Measure 4.4-c12 above.	SU	A*, B, C
4.4-c14: Transportation and Circulation – Increase in Traffic of 1% or More at the Louise Avenue/I-5 Southbound Off Ramp When Operating at LOS F Under the 2020 No Project Scenario. Under the 2020 No Project scenario, the Louise Avenue/I-5 Southbound Off Ramp would operate at LOS F during the AM period. Traffic generated by the CLSP project under the 2020 Plus Buildout scenario would increase traffic at this ramp by more than 1%. In addition, during the PM period, LOS levels would be degraded from B to F. This impact is considered significant.	S	**Increase in Traffic of 1% or More at the Louise Avenue/I-5 Southbound Off Ramp When Operating at LOS F Under the 2020 No Project Scenario.** The discussion and conclusion for this Mitigation Measure are the same as for Mitigation Measure 4.4-c12 above.	SU	A*, B, C
4.4-c15: Transportation and Circulation – Operation of LOS F at the Louise Avenue/I-5 Northbound Off Ramp Under the 2020 Plus Buildout Scenario. Under the 2020 plus buildout scenario, the Louise Avenue/I-5 Northbound Off Ramp is projected to operate at LOS F during PM period with the addition of project traffic. This impact is considered significant.	S	**Operation of LOS F at the Louise Avenue/I-5 Northbound Off Ramp Under the 2020 Plus Buildout Scenario.** The discussion and conclusion for this Mitigation Measure are the same as for Mitigation Measure 4.4-c12 above.	SU	A*, B, C

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Impact	Significance before Mitigation	Mitigation Measure	Significance after Mitigation	Alternative
4.4-d: Transportation and Circulation – Increased Safety Concerns for Vehicles, Pedestrians, and Bicycle Riders Resulting From Proposed Design Of Roadways. The proposed roadway network and pedestrian and bicycle trails and facilities included as part of the CLSP meet applicable safety design standards. Therefore, for the most part, the proposed project would not result in substantial increases in auto, pedestrian, or bicycle safety concerns. The exception is that the proposed use of roundabouts at up to five project intersections could result in hazardous conditions for bicyclists and pedestrians. This impact is considered significant.	S	**Increased Safety Concerns for Vehicles, Pedestrians, and Bicycle Riders Resulting From Proposed Design Of Roadways.** Crosswalks shall be provided at the roadway crossings at intersections with roundabouts. Signage shall be provided at all roundabouts to indicate the proper flow of vehicle traffic, speed limits through the roundabout, and the appropriate method for bicyclists to cross the intersection.	LTS	A
4.4-e: Transportation and Circulation – Accommodation of Public Transit Service on Internal Streets. The project's internal circulation system does not specifically provide for public transit service facilities along internal streets. However, the planned design of the internal project roadways can accommodate public transit service and provide for needed facilities. This impact is considered less than significant.	LTS	No mitigation is required.	LTS	None
4.4-f: Transportation and Circulation – Construction Traffic. It is estimated that up to 300 construction workers could access the project site on a daily basis during peak construction periods. This could result in adverse effects on the operation of area roadways during the peak commute periods. In addition, construction traffic, particularly truck traffic, could degrade pavement conditions along	S	**Construction Traffic.** Before project construction activities begin the project applicant shall prepare a construction traffic control plan that shall be applied to all construction activities associated with the CLSP project. The plan shall include, at a minimum, the following conditions: ▸ No construction delivery truck traffic shall be allowed on the local roadway network before 8:00	LTS	A, B, C

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roadways used for access. This impact is considered significant.		AM or after 4:30 PM. ▸ No construction worker traffic shall be allowed on the local roadway network between 7:00 and 8:00 AM and between 4:30 and 6:00 PM. ▸ Local roadways will be jointly monitored by the City and project applicant every six months to determine whether project related construction traffic is degrading roadway conditions. Roadways with potential to be damaged by construction traffic and included in the monitoring effort shall be agreed to by the City and the project applicant. All degradation of pavement conditions because of CLSP related construction traffic will be fully repaired by the project applicant to the satisfaction of the City of Lathrop.		
4.5 AIR QUALITY				
4.5-a: Air Quality – Increases in Regional Criteria Pollutants during Construction. Construction associated with the CLSP (under both Phase 1 and Phase 2 development) would result in the generation of NO_X, ROG, and PM_{10} emissions in addition to the potential airborne entrainment of asbestos associated with demolition of existing structures. Sufficient emissions could be generated during project construction that applicable air quality standards could be violated, or emissions would contribute substantially to an existing or projected air quality violation. This is considered a significant impact.	S	**Increases in Regional Criteria Pollutants during Construction.** The SJVAPCD emphasizes implementation of effective and comprehensive control measures rather than requiring a detailed quantification of construction emissions. The SJVAPCD requires that all feasible control measures (dependent on the size of the construction area and the nature of the construction operations) shall be incorporated and implemented. ▸ Based on available information, it appears that the application of standard construction mitigation measures for the control of fugitive dust (i.e., the application of water or soil stabilizers) are effective methods of reducing dust-related impacts on	SU	A*, B, C

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		agricultural crops. ▸ In accordance with SJVAPCD guidelines (SJVAPCD 1998), the following mitigation measures, which includes SJVAPCD Basic, Enhanced, and Additional Control Measures, shall be incorporated and implemented. In addition to the mitigation measures identified below, construction of the proposed project is required to comply with applicable SJVAPCD rules and regulations, including the requirement of a California Occupational Safety and Health Administration–qualified asbestos survey before demolition. ▸ It is recognized that SJVAPCD Regulation VIII, upon which the following control measures are based, has recently undergone revision and that these control measures are subject to future periodic revision. Therefore, the project applicant shall annually contact the SJVAPCD to identify the most recent fugitive dust control measures required to be implemented by the proposed project and implement them accordingly during project construction. ▸ All disturbed areas, including storage piles, which are not being actively utilized for construction purposes, shall be effectively stabilized of dust emissions using water, chemical stabilizer/suppressant, or vegetative ground cover. ▸ All onsite unpaved construction roads and offsite unpaved construction access roads shall be effectively stabilized of dust emissions using water or chemical stabilizer/suppressant.		

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		▸ All land clearing, grubbing, scraping, excavation, land leveling, grading, cut and fill, and demolition activities shall be effectively controlled of fugitive dust emissions utilizing application of water or by presoaking. ▸ During demolition of buildings all exterior surfaces of the building shall be wetted. ▸ When materials are transported offsite, all material shall be covered, effectively wetted to limit visible dust emissions, or at least 6 inches of freeboard space from the top of the container shall be maintained. ▸ All operations shall limit or expeditiously remove the accumulation of mud or dirt from adjacent public streets at least once every 24 hours when operations are occurring. (The use of dry rotary brushes is expressly prohibited except where preceded or accompanied by sufficient wetting to limit the visible dust emissions. Use of blower devices is expressly forbidden.) ▸ Following the addition of materials to, or the removal of materials from, the surfaces of outdoor storage piles, piles shall be effectively stabilized of fugitive dust emissions utilizing sufficient water or chemical stabilizer/suppressant. ▸ Onsite vehicle speeds on unpaved roads shall be limited to 15 mph. ▸ Sandbags or other erosion control measures shall be installed to prevent silt runoff to public roadways from adjacent project areas with a slope greater than		

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		1 percent. ▸ Wheel washers shall be installed for all exiting trucks and equipment, or wheels shall be washed to remove accumulated dirt prior to leaving the site. ▸ Excavation and grading activities shall be suspended when winds exceed 20 mph. ▸ The overall area subject to excavation and grading at any one time shall be limited to the fullest extent possible. ▸ Onsite equipment shall be maintained and properly tuned in accordance with manufacturers' specifications. ▸ When not in use, onsite equipment shall not be left idling. ▸ In addition to the measures identified above, the following measures from Table 6-3 of the *Guide for Assessing and Mitigating Air Quality Impacts* shall be implemented: ▸ Install wind breaks at windward sides of construction areas. (This measure will be implemented if the City, in coordination the SJVAPCD, determines that the fugitive dust control measures described above are not sufficiently effective.) ▸ Comply with the NESHAPS during the renovation/demolition of any existing buildings on the project site with the potential to contain asbestos. Consult the SJVAPCD's *Asbestos-Compliance Assistance Bulletin*, dated December 1994, to ascertain whether individual structures on the project		

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		site are subject to NESHAPS. ▸ The City, after consultation with the applicant, shall require all feasible additional measures to control construction emissions. Such measures may include, but are not limited to the following items from Table 6-4 of the *Guide for Assessing and Mitigating Air Quality Impacts* and other sources: ▸ Use alternative-fueled construction equipment, where reasonably available, such as equipment capable of using biodiesel or emulsified fuel. ▸ Limit the hours of operation of heavy-duty equipment and/or the amount of equipment in use at any one time. ▸ Replace fossil-fueled equipment with electrically driven equivalents (provided they are not run via a portable generator set). ▸ Curtail construction during periods of high ambient pollutant concentration; this may include ceasing of construction activity during the peak hour of vehicular traffic on adjacent roadways (or ceasing/reducing heavy-duty equipment usage on Spare the Air Days). Before construction contracts are issued, the project applicant would perform a review of new technology, as it relates to heavy-duty equipment, to determine what (if any) advances in emissions reduction are available for use and are economically feasible. Construction contracts/bid specifications shall require contractors to utilize the available and economically feasible technology on an established percentage of the equipment fleet. It is		

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		anticipated that in the near future both NO_X and PM_{10} control equipment will be available. The SJVAPCD shall be consulted with on this process.		
4.5-b: Air Quality – Increases in Stationary and Mobile-Source Toxic Air Contaminants. Commercial and Office land uses proposed under the CLSP would have the potential to house facilities that may involve the use of TACs. Although these facilities would be subject to stringent regulations, because the locations of these facilities in relation to sensitive receptors is not known at this time, there is a theoretical potential that sensitive receptors could be located in proximity to stationary TAC emissions sources, and elements of the public could be exposed to TAC emissions in excess of SJVAPCD significance thresholds. Construction and/or operational activities related to both Phase 1 development and full buildout would require use of diesel-fueled vehicles. Regular localized use of diesel trucks in some commercial areas could result in the generation of diesel PM emissions that would exceed SJVAPCD significance thresholds. This is considered a potentially significant impact.	PS	**Increases in Stationary and Mobile-Source Toxic Air Contaminants.** As indicated in the discussion of Impact 4.5-b, implementation of the proposed project would result in potentially significant increases in stationary-source and mobile-source TACs associated with Commercial and Office land use areas. The SJVAPCD shall impose various permitting conditions for stationary TAC sources. These conditions reflect the stringent application of air quality laws and substantially lessen the severity of potential impacts. However, as discussed above, even with implementation of permit conditions there is a theoretical potential that elements of the public could be exposed to levels of TACs that would exceed SJVAPCD significance thresholds. The only available mitigation to ensure no exposure of sensitive receptors to significant levels of TACs would be to completely separate emission sources from all sensitive receptor. However, many stationary TAC sources (gas stations, dry cleaners, auto repair facilities) are typically integrated with land uses containing sensitive receptors. Restricting the locations of all TAC generating facilities to specific areas would not be practical or economically feasible. Thus, implementing the proposed project would result in a significant and unavoidable adverse impact with respect to stationary-source TACs. Mobile-source TACs are a relatively new concern for the ARB, so specific guidelines and practices regarding assessing impacts and providing mitigation are not	SU	A*, B, C

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		available. It is also unclear what effects the ARB's new diesel engine emission standards and diesel particulate matter regulations would have on the level of impact and the necessity for, or type of, mitigation. Therefore, the specific conditions of mobile-source TAC impacts cannot be determined at this time. The only available mitigation—completely separating emission sources (diesel vehicles) from all sensitive receptor—is not feasible. Therefore, no feasible mitigation is available for Impact 4.5-b to reduce the impact to a less-than-significant level. Thus, implementing the proposed project would result in a significant and unavoidable adverse impact with respect to mobile-source TACs. The project applicant shall coordinate with the SJVAPCD as the project proceeds to assess situations in which toxic risk from diesel PM may occur and to review methodologies that may become available to estimate the risk.		
4.5-c: Air Quality – Increases in Odorous Emissions. The wastewater treatment/water recycling facility and recycled water storage ponds included in the proposed project would potentially result in increased odor generation that could affect nearby residences. This is considered a potentially significant impact.	PS	**Increases in Odorous Emissions.** The following mitigation measures shall be incorporated into the design and operation of the WRP #2 facility and recycled water storage ponds to reduce potential emissions of airborne odors: ▸ Before final design, the City shall ensure that appropriate engineering controls have been incorporated into the design and construction of the proposed WRP #2 to minimize the production of unpleasant odors. Engineering controls to diminish odors could include, but would not be limited to, covering the headworks and/or perchlorinating at the headworks, using chemical additives to mask odors,	LTS	A, B, C

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		installing systems (e.g., air scrubbers) to collect odorous air and remove unpleasant odors, and locating storage facilities (e.g., tanks, vaults, pipes, detention mechanisms) underground. Appropriate engineering controls to minimize odors shall also be incorporated into the design and construction of the recycled water storage ponds, such as aeration equipment and water circulation systems. ▸ During operation of WRP #2 and the recycled water storage ponds, the City shall ensure that engineering controls designed to avoid/suppress odors are functioning properly by periodically evaluating odor levels adjacent to the facilities. Should offensive odors be identified, the City shall take appropriate action to correct them to the extent practical.		
4.5-d: Air Quality – Increases in Local Mobile-Source CO Concentrations. Implementation of the proposed project would result in the generation of CO at nearby intersections from increased vehicular traffic on the local transportation network. However, the proposed project would not contribute to CO concentrations that exceed the CAAQS of 9.0 ppm for 8 hours or 20 ppm for 1 hour. Therefore, the proposed project's contribution to localized mobile-source CO concentrations at sensitive receptors is considered a less-than-significant impact.	LTS	No mitigation is required.	LTS	A, B, C
4.5-e: Air Quality – Increases in Long-term Regional Emissions. Implementation of the proposed project would result in increases in long-term regional emissions, primarily associated with	S	**Increases in Long-term Regional Emissions.** The City, after consultation with the applicant, shall require that all feasible emission control measures be incorporated into project design and operation. Such measures may	SU	A*, B, C

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mobile sources, that would exceed the SJVAPCD's recommended significant thresholds of 10 TPY for ozone precursor pollutants ROG and NO_X. This impact is considered significant.		include, but are not limited to, the following items recommended in the SJVAPCD Guide for Assessing and Mitigating Air Quality Impacts (SJVAPCD 1998) and other sources. It should be noted that many of these measures are already included in the proposed project design (as indicated in parenthetical notes below); however, they are repeated here to allow a complete listing of the SJVAPCD guidelines. ▸ Provide transit enhancing infrastructure that includes transit shelters, benches, street lightening, route signs and displays, and/or bus turnouts/bulbs (already incorporated into project design). ▸ Provide park and ride lots (one park and ride lot is already included in the project design). ▸ Provide pedestrian enhancing infrastructure that includes sidewalks and pedestrian paths, direct pedestrian connections, street trees to shade sidewalks, pedestrian safety designs/infrastructure, street furniture and artwork, street lightening, and/or pedestrian signalization and signs (already incorporated into the project design). ▸ Provide bicycle enhancing infrastructure that includes bikeways/paths connecting to a bikeway system, secure bicycle parking, and/or employee lockers and showers (bicycle lanes and trails already incorporated into the project design). ▸ Use solar, low-emissions, central, or tankless water heaters (residential and commercial), increase wall and attic insulation beyond Title 24 requirements (residential and commercial), orient buildings to take		

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		advantage of solar heating and natural cooling and use passive solar designs (residential, commercial, and industrial), replace wood-burning stoves and fireplaces with gas-fired fireplaces or inserts. ▸ Deciduous trees should be planted on the south-facing and west-facing sides of buildings. ▸ Natural gas lines and electrical outlets should be installed in patio areas to encourage the use of gas and/or electric barbecues. ▸ Businesses or individuals shall be allowed, through the zoning and building permit process, the option of installing electric/natural gas fuel hookups. ▸ If a gasoline service station is developed as part of the proposed project, it is encouraged that natural gas fueling be incorporated as part of the station. ▸ The project applicant shall develop and implement a program to encourage employers to promote the use of low-emission vehicles, thus providing emission reductions. The program may include financial incentives, preferred parking, or other benefits for employees and businesses that use low-emission vehicles. ▸ The City shall encourage the project applicant to develop/participate in a program to provide, or subsidize the purchase cost of electric lawnmowers and electric edgers for project homeowners.		

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4.6 NOISE				
4.6-a: Noise – Increases in Short-term Construction-generated Noise. Depending on the activities being performed, as well as the duration and hours during which activities occur, construction-generated noise levels at nearby residences could violate City Noise Ordinance standards. Activities occurring during the more noise-sensitive evening and nighttime hours could result in increased levels of annoyance and sleep disruption for occupants of nearby residences. This impact is considered significant.	S	**Increases in Short-term Construction-generated Noise.** In accordance with the City Noise Ordinance, construction activities in or within 500 feet of a residential zone (i.e., an area containing occupied residences) shall be permitted only between 7 a.m. and 10 p.m. on Monday through Thursday, between 7 a.m. and 11 p.m. on Friday, between 9 a.m. and 11 p.m. on Saturday, and between 9 a.m. and 10 p.m. on Sunday and legal holidays. These limitations shall be specified in all construction contracts and specifications entered into by the applicant and/or its successors in interest. In addition, all construction vehicles or equipment, fixed or mobile, shall be equipped with properly operating and maintained mufflers and acoustical shields or shrouds, in accordance with manufacturers' recommendations. Construction equipment and truck routes shall be arranged to minimize travel adjacent to occupied residences. Stationary construction equipment and staging areas shall be located as far as possible from sensitive receptors, and temporary acoustic barriers may be installed around stationary equipment if necessary.	LTS	A, B, C
4.6-b: Noise – Stationary-Source Noise Generated by Onsite Land Uses. Increases in stationary-source noise associated with proposed project land uses could potentially exceed the City's maximum allowable noise standards. This impact is considered significant.	S	**Stationary-Source Noise Generated by Onsite Land Uses.** As individual facilities, subdivisions, and other project elements are permitted by the City, the City shall evaluate the element for compliance with the City's Noise Ordinance and noise policies in the City General Plan. Where individual project elements do not clearly comply with interior noise standards included in these guidelines, mitigation measures shall be required to	LTS	A, B, C

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		reduce projected interior and exterior noise levels to within acceptable levels. Mitigation measures may include, but are not limited to, the following: ▸ Dual-pane, noise-rated windows; mechanical air systems; exterior wall insulation; and other noise-reducing building materials shall be used. ▸ Mechanical equipment (e.g., air conditioning and ventilation systems) and area-source operations (e.g., loading docks, parking lots, recreational use areas) shall be located at the farthest distance from and/or be shielded from nearby existing and proposed noise-sensitive land uses. In addition, the following measures will apply to noise-generating activities associated with school grounds, neighborhood and community parks, and open space areas: ▸ Onsite landscape maintenance equipment shall be equipped with properly operating exhaust mufflers and engine shrouds, in accordance with manufacturers' specifications. ▸ For maintenance areas located within 500 feet of noise-sensitive land uses, the operation of onsite landscape maintenance equipment shall be limited to the least noise sensitive periods of the day, between the hours of 7 a.m. and 7 p.m. ▸ Outdoor use of amplified sound systems within 500 feet of noise-sensitive land uses shall only be permitted between 7 a.m. and 10 p.m. on Sunday through Thursday, and between 7 a.m. and 11 p.m.		

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		on Friday and Saturday. ▸ Also, prior to the approval of site development plans for WRP #2, each lift station, and each booster pump station, the City's contractor shall submit a supplemental noise analysis demonstrating that stationary noise sources will be adequately designed and constructed (including the incorporation of shielding or enclosures) to ensure that operational noise levels at the property lines and at the nearest noise-sensitive land uses comply with the City Noise Ordinance.		
4.6-c: Noise – Increases in Existing Traffic Noise Levels. Implementation of the proposed CLSP project would result in a noticeable increase in traffic noise levels (i.e., 3 dBA or more) along several roadway segments. This is considered a significant impact.	S	**Increases in Existing Traffic Noise Levels.** Noticeable increases in traffic noise (i.e., 3 dBA or more) in and of themselves would not result in an adverse effect on the environment if there are no sensitive receptors in the vicinity of the increased noise levels. Noticeable increases in traffic noise are simply an indication that nearby sensitive receptors could be exposed to higher noise levels, and therefore could be subject to increased potential for disturbance, annoyance, sleep disruption, and other potential adverse noise effects. To determine whether increases in traffic noise attributable to the proposed project would result in a significant adverse effect on nearby sensitive receptors, a traffic noise study shall be conducted at the six roadway segments where the EIR noise modeling indicates that project-related traffic would increase noise by 3 dBA or more: ▸ Manthey Road south of Roth Road, ▸ Harlan Road north of Roth Road,	SU	A*, B, C

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		▸ McKinley Avenue north of Roth Road, ▸ Roth Road west of McKinley Avenue, ▸ Roth Road east of McKinley Avenue, and ▸ Lathrop Road west of Fifth Street. The traffic noise study shall determine whether dBA increases attributable to the proposed project (as shown in Table 4.6-8) would result in, or contribute to, interior or exterior noise levels at nearby receptors exceeding applicable City or County standards. If applicable standards would be exceeded as a result of the proposed project, or if existing conditions exceed the applicable standard, the City shall determine whether there are feasible mitigation measures that can attenuate the project's contribution to increased noise levels. Such a determination shall include consideration of the following: the cost of erecting any necessary structures or implementing nonstructural mitigation measures; current availability of land for any proposed structures or vegetation; consistency with regulatory objectives, requirements, and limitations; the existence of any mechanism for obtaining reimbursement from any other parties contributing to the need for mitigation to ensure that the applicant is not required to pay more than its fair share of the cost of mitigation; and the willingness of residents or landowners in the affected area to cooperate with the implementation of mitigation. Potentially feasible mitigation measures might include: ▸ Installation of sound walls, ▸ Planting of vegetative screening, or ▸ Providing existing homes with dual-pane noise-rated windows, exterior wall insulation, improved exterior		

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		fencing, or other noise-attenuating structural features. The first noticeable increase in traffic noise attributable to the CLSP project is anticipated to occur some time during the development of Phase 1 (see Table 4.6-8). To ensure that project-generated increases in traffic noise remain below noticeable levels at sensitive receptors, the noise study described above shall be completed and applicable mitigation measures shall be in place, before approval of a final small-lot subdivision map or similar discretionary approval for nonresidential uses (e.g., a use permit) that would permit development of traffic-generating land uses on more than 25% of the Phase 1 area (i.e., before more than 235 acres of the project site are developed with traffic-generating land uses). As noted in the discussion of Impact 4.6-c, increased traffic noise attributed to the proposed project, as shown in Table 4.6-8, may be overstated in some instances as a result of noise contributed by nearby roadways (i.e., I-5). The noise study conducted to assess traffic noise conditions at the six roadway segments may also revisit and refine the CLSP project's contribution to traffic noise. If this analysis is conducted, the results may be used to define the project's contribution to traffic noise, and hence the extent of noise attenuation measures, if needed.		
4.6-d: Noise – Compatibility of Proposed Land Uses with Projected Onsite Noise Levels. Predicted noise levels at some noise-sensitive receptors associated with the proposed project would exceed	S	**Compatibility of the Proposed Land Uses with Projected Onsite Noise Levels.** As the City considers approval of individual discretionary projects (e.g., tentative small-lot subdivision maps, use permits, and	SU	A*, B, C

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the City's "normally acceptable" land use compatibility noise standards. As a result, this impact is considered significant.		design review approvals), the City shall evaluate such projects for compliance with the City's Noise Ordinance and noise policies in the General Plan. Where individual projects do not clearly comply with the interior noise standards included in these guidelines, mitigation measures such as use of dual-pane windows, mechanical air systems, exterior wall insulation, and other noise-reducing building materials and methods shall be required as appropriate to reduce interior noise exposure to the "normally acceptable" levels identified by the City (Exhibit 4.6-1). Where individual projects do not clearly comply with exterior noise standards included in the City guidelines (Table 4.6-2), mitigation measures such as use of sound walls, vegetative screening, buildings for screening, and setbacks between noise sources and receptors, shall be implemented as appropriate to minimize exterior noise levels. Any outdoor human-made noise barriers shall have an aesthetically pleasing appearance that agrees with the color and character of nearby homes or other facilities. Where there is a question regarding premitigation or postmitigation noise levels in a particular area, site-specific noise studies may be conducted to determine compliance or noncompliance with City guidelines. Title 24 of the California Code of Regulations requires the preparation of an acoustical analysis for multifamily residences that demonstrates how interior noise levels will achieve a 45-dBA CNEL/ L_{dn} in locations where the exterior noise levels exceed 60-dBA CNEL/ L_{dn}. As a result, a Title 24 analysis shall be prepared as part of the final design of any proposed multifamily residential		

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		dwellings. To the extent necessary, noise control measures shall be designed according to the type of building construction and specified sound rating for each building element to achieve an interior noise level of 45-dBA CNEL/ L_{dn}.		
4.7 GEOLOGY, SOILS, AND MINERAL RESOURCES				
4.7-a: Geology, Soils, and Mineral Resources – Soil Erosion. Construction activities during project implementation would involve excavations, fills, and movement and stockpiling of earth, which could expose soils to erosion and the loss of topsoil. Levees along the western side of the CLSP area would provide a barrier to sediment entering the San Joaquin River, and erosion control measures (such as practices to control spillage or leaks, control site runoff, and control drainage from raw material storage) would be implemented as part of the project. This impact is considered less than significant.	LTS	No mitigation is required.	LTS	A, B, C
4.7-b: Geology, Soils, and Mineral Resources – Seismic Hazards (Ground Shaking). Ground shaking on the project site could expose people or structures to substantial risk of loss, injury, or death. This impact is considered significant.	S	**Ground Shaking.** Project facilities shall be designed for maximum horizontal ground surface accelerations of at least 0.3g. Geotechnical reports completed by ENGEO in 2004 for the proposed project predict that a horizontal ground surface acceleration of 0.3g at the CLSP site would have a 10% probability of being exceeded in a 50-year project design life. This estimate incorporates the possibility of a seismic event associated with the Great Valley Fault System. A surface acceleration of 0.3g exceeds the maximum ground surface accelerations previously recorded in the area (estimated at 0.16g), which occurred during the 1906 San Francisco	LTS	A

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		earthquake. If project facilities are designed to meet minimum safety standards during a seismic event with ground surface accelerations of at least 0.3g, the risk of loss, injury, or death from ground shaking would be substantially reduced.		
4.7-c: Geology, Soils, and Mineral Resources – Seismic Hazards (Liquefaction). Earthquake-induced liquefaction at the project site could result in substantial risk of structural damage and could expose residents, workers, and visitors on the project site to substantial risk of bodily injury. This impact is considered significant.	S	**Liquefaction.** A site-specific, design-level geotechnical study shall be completed for each project development component (e.g., housing area, commercial area, school, water recycling plant, group of recycled water storage ponds) before a grading permit is issued. The study shall include an evaluation of liquefaction potential in the area and identify appropriate means to minimize or avoid damage from liquefaction. Geotechnical design recommendations included in each study shall be implemented during project construction. Potential recommendations include over-excavating and recompacting the area with engineered fill or in-place soil densification. In-place densification measures may include deep dynamic compaction, compaction grouting, vibro-compaction, and the use of nonliquefiable caps. Special design features may need to be utilized for foundations (such as post-tensioned mat foundations for residential structures and stiffening grade beams and reinforced slabs-on-grade). However, other foundation types may be considered if further geotechnical study shows the liquefaction potential to be less than significant or if the effects of liquefaction-induced settlement can be mitigated with earthwork.	LTS	A
4.7-d: Geology, Soils, and Mineral Resources – Expansive Soil (Shrink-Swell Potential). The shrinking and swelling of soils could result in	S	**Shrink-Swell Potential.** A site-specific, design-level geotechnical study shall be completed for each project development component (e.g., housing area, commercial	LTS	A

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damage to structures, underground utilities, and other facilities on the project site during the operation of proposed development. This impact is considered significant.		area, school, water recycling plant, group of recycled water storage ponds) before a grading permit is issued. The study shall include an evaluation of expansive soils in the area and identify appropriate means to address these soils and minimize or avoid damage from shrinking and swelling consistent with UBC standards. Methods to address expansive soils include regrading with appropriate soils and adding special design features to foundations and other underground facilities. Measures included in each geotechnical study shall be implemented as appropriate, based on the specific soil conditions and the type of facility being constructed.		
4.7-e: Geology, Soils, and Mineral Resources – Mineral Resources. The development of recycled water storage and disposal sites for the project on land classified MRZ-2 or MRZ-3 could result in the loss of access to potentially important sand deposits classified by the CDMG. This impact is considered significant.	S	**Mineral Resources.** The City shall allow recycled water storage and disposal within the project site in areas classified as MRZ-2 or MRZ-3 only with the condition that the City may later approve mineral extraction activities in these areas, as long as equal replacement recycled water storage and disposal capacity is provided elsewhere. Replacement recycled water storage and disposal capacity may be provided by the City, the entity performing the mineral extraction, or others, and must be in place prior to initiating mineral extraction activities in the area in question.	LTS	A, B, C
4.8 HYDROLOGY AND WATER QUALITY				
4.8-a: Hydrology and Water Quality – Effects on Potential Onsite and Offsite Flooding Risk from Increased Stormwater Runoff. Implementation of the CLSP would increase the amount of impervious surface on site and thereby increase surface runoff and the need for discharge to the SJR. The increased	LTS	No mitigation is required.	LTS	A, B, C

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surface runoff could result in a greater potential for offsite and onsite flooding. However, the CLSP project includes a stormwater runoff collection system, including drainage detention facilities, to provide onsite stormwater storage and discharge capacity sufficient to protect the CLSP area during a 48-hour, 100-year flood event and avoid increases in offsite flooding. Therefore, this impact is considered less than significant.				
4.8-b: Hydrology and Water Quality – Exposure of People or Structures to a Significant Risk of Flooding as a Result of the Failure of a Levee. The proposed project would not expose people or structures to a significant risk of flooding, including flooding as a result of the failure of a levee, because the east levee of the SJR has been constructed consistent with all applicable requirements, has been improved in recent years by RD 17 and the USACE consistent with the latest levee design and construction policies, and has resulted in FEMA removing the CLSP area from the 100-year floodplain. Therefore, this impact is considered less than significant.	LTS	No mitigation is required.	LTS	A, B, C
4.8-c: Hydrology and Water Quality – Temporary Construction-related Water Quality Effects. Temporary construction-related disturbances within the CLSP area could result in the discharge of contaminated stormwater and nonstormwater discharges to drainage systems and ultimately the SJR. Project-related impacts on water quality	PS	**Temporary Construction-related Water Quality Effects.** The project applicant shall consult with the Central Valley RWQCB to acquire the appropriate regulatory approvals that may be necessary to obtain Section 401 water quality certification, SWRCB statewide NPDES stormwater permit for general construction activity, Central Valley RWQCB NPDES	LTS	A, B, C

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attributable to construction activities are considered potentially significant.		permit for construction dewatering activity, and any other necessary site-specific WDRs or waivers under the Porter-Cologne Act. As required under the NPDES stormwater permit for general construction activity, the project applicant shall prepare and submit the appropriate NOIs and prepare the SWPPP and any other necessary engineering plans and specifications for pollution prevention and control. The SWPPP and other appropriate plans shall identify and specify the use of erosion and sediment control BMPs, means of waste disposal, implementation of approved local plans, nonstormwater management controls, permanent postconstruction BMPs, and inspection and maintenance responsibilities. The SWPPP will also specify the pollutants that are likely to be used during construction that could be present in stormwater drainage and nonstormwater discharges. A sampling and monitoring program will be included in the SWPPP that meets the requirements of SWRCB Order 99-08-DWQ to ensure that the BMPs are effective. Construction techniques shall be identified that will reduce the potential for runoff, and the plan shall identify the erosion and sedimentation control measures to be implemented. The SWPPP shall also specify spill prevention and contingency measures, identify the types of materials used for equipment operation, and identify measures to prevent or clean up spills of hazardous materials used for equipment operation and hazardous waste. Emergency procedures for responding to spills shall also be identified. BMPs identified in the SWPPP shall be used in all subsequent site development		

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		activities. The SWPPP will identify personnel training requirements and procedures that will be used to ensure that workers are aware of permit requirements and proper installation and performance inspection methods for BMPs specified in the SWPPP. The SWPPP shall also identify the appropriate personnel responsible for supervisory duties related to implementation of the SWPPP. All construction contractors shall retain a copy of the approved SWPPP on the construction site. The project applicant shall also prepare and submit an NOI and acquire authorization for the Central Valley RWQCB NPDES permit for construction dewatering activities that may be necessary for foundation and utility installations within the CLSP area. Under SWRCB Order 99-08-DWQ, as amended, the SWRCB has determined that implementation of a SWPPP, the BMPs identified in the SWPPP, and the monitoring and sampling program required in the SWPPP are considered to meet the water quality requirements of the Porter-Cologne Act, barring a violation identified by the monitoring or sampling procedures.		
4.8-d: Hydrology and Water Quality – Long-term Water Quality Effects of Urban Runoff. The proposed project would convert agricultural lands to residential and commercial uses and thereby change the amount and timing of potential waste discharges in stormwater runoff to the SJR. However, the combination of nonstructural and structural BMPs for the new stormwater drainage system would reduce the overall amount of potential contaminant	LTS	No mitigation is required.	LTS	None

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discharges compared to existing conditions. Therefore, this impact is considered less than significant.				
4.8-e: Hydrology and Water Quality – Effects of Recycled Water Use on Surface Water and Groundwater Quality. Runoff from areas proposed for recycled water application could potentially be discharged to the SJR and affect river water quality, or percolate to groundwater and affect sub-surface aquafers. However, the high level of treatment to be applied to the recycled water, the pollutant reduction capacity of the soil and plant matter onto which the recycled water is to be applied, the proposed application of the recycled water at the agronomic rate, the fact that all stormwater would first pass through the project's proposed BMPs, and the presence of the SJR east levee between the river and the project site that would prevent gravity flow of recycled water (or stormwater containing recycled water) to the river, would all combine to result in a less-than-significant water quality impact.	LTS	No mitigation is required.	LTS	A, B, C
4.9 HAZARDOUS MATERIALS AND PUBLIC HEALTH				
4.9-a: Hazardous Materials and Public Health – Use of Hazardous Materials. The proposed project would involve the storage, use, and transport of hazardous materials at the project site during construction activities. In addition, because the project proposes commercial uses, it is likely that some facilities (e.g., dry cleaners and gas stations) could use hazardous materials during operation. However, use of hazardous	LTS	No mitigation is required.	LTS	A, B, C

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materials at the site would be in compliance with local, state, and federal regulations. Therefore, impacts related to creation of significant hazards to the public through routine transport, storage, use, disposal, and risk of upset would not occur. This impact is considered less than significant.				
4.9-b: Hazardous Materials and Public Health – Exposure of Construction Workers, Residents, and Others to Hazardous Materials. Although no RECs have been identified to date on the CLSP project site, the entire project site has not been evaluated using the ESA process. Past agricultural and farming operations at the project site could have resulted in contamination of soil and/or groundwater in some locations. Demolition, excavation, and construction activities in the CLSP area could result in the exposure of construction workers to hazardous materials, including asbestos, petroleum hydrocarbons, pesticides, herbicides, and fertilizers. In addition, if contaminated sites in the CLSP area are not remediated before occupation or use of the site, then residents and others could be exposed to hazardous materials. This impact is considered significant.	S	**Hazardous Materials and Public Health – Exposure of Construction Workers, Residents, and Others to Hazardous Materials.** Before excavations in any areas not previously evaluated using the ESA process or before demolition of any structures associated with past and current farming operations (e.g., buildings, aboveground and underground storage tanks), the project applicant shall investigate the extent to which soil and/or groundwater has been contaminated from these operations. This investigation shall follow ESA and/or other appropriate testing guidelines and shall include, as necessary, analysis of soil and/or groundwater samples taken at or near the potential contamination sites. Areas previously evaluated in the Terrasearch (1999) and ENGEO (2003) ESAs shall also receive an evaluation that follows appropriate testing guidelines before excavation begins to determine whether conditions have changed since completion of the previous ESAs. If the results of any evaluation indicate that contamination exists at levels above regulatory action standards, then the SJCEHD shall be notified and the site shall be remediated in accordance with recommendations made by SJCEHD; RWQCB; DTSC; or other appropriate federal, state, or local regulatory agencies. The agencies involved would be dependent on the type and extent of	LTS	A, B, C

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		contamination. In addition, the following measures shall apply to construction activities as appropriate. (1) The SJCEHD shall be notified if evidence of previously undiscovered soil or groundwater contamination (e.g., stained soil, odorous groundwater) is encountered during excavation and dewatering activities. Any contaminated areas shall be remediated in accordance with recommendations made by SJCEHD; RWQCB; DTSC; or other appropriate federal, state, or local regulatory agencies. (2) Before demolition of any onsite buildings, the project applicant shall hire a qualified consultant to investigate whether any of these buildings contain asbestos-containing materials and lead that could become friable or mobile during demolition activities. If found, the asbestos-containing materials and lead shall be removed by an accredited inspector in accordance with EPA and California Occupational Safety and Health Administration (Cal/OSHA) standards. In addition, all activities (construction or demolition) in the vicinity of these materials shall comply with Cal/OSHA asbestos and lead worker construction standards. The asbestos-containing materials and lead shall be disposed of properly at an appropriate offsite disposal facility.		
4.9-c: Hazardous Materials and Public Health – Potential Public Health Impacts Associated with Recycled Water. The proposed project includes the use of recycled water to irrigate residential and nonresidential landscaping in the CLSP area and for	LTS	No mitigation is required.	LTS	A, B, C

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crop irrigation at recycled water disposal sites. The recycled water would comply with state requirements for unrestricted use. Application methods would also meet state standards. Because recycled water and the methods for its use would comply with state health requirements, conflicts related to public health are not anticipated. This impact is considered less than significant.				
4.10 PUBLIC SERVICES				
4.10-a: Public Services – Obstruction of Roadways during Construction. Implementation of the proposed project could obstruct roadways in the vicinity during construction, which could obstruct or slow emergency vehicles attempting to access the area. This impact is considered significant.	S	**Obstruction of Roadways during Construction.** In accordance with City requirements, the applicant/contractor shall prepare and implement traffic control plans for construction activities that may affect road rights-of-way. The traffic control plan must follow California Department of Transportation standards and be signed by a professional engineer. Measures typically used in traffic control plans include advertising of planned lane closures, warning signage, flagmen to direct traffic flows when needed, and methods to ensure continued access by emergency vehicles. During project construction, access to existing land uses shall be maintained at all times, with detours being used as necessary during road closures.	LTS	A, B, C
4.10-b: Public Services – Increased Demand for Fire Protection Facilities and Services. Development of the proposed project would result in increased demand for fire protection facilities and services. If a fire station (or stations) is not constructed in the CLSP area, existing fire protection facilities could not adequately serve the plan area.	S	**Increased Demand for Fire Protection Facilities and Services.** As development proceeds in the CLSP area, the City shall authorize occupancy of new structures only if confirmation of 3- to 4-minute average emergency response times to the structures can be provided using LMFPD methodologies. First response may initially be provided by the existing Station 31, or Station 34 planned	LTS	A, B, C

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This impact is considered significant.		on the Mossdale Landing site. At some currently undetermined point in project development, a new fire station in the CLSP area would need to be constructed and brought into service to meet the response time requirement in the northern portion of the plan area. The location of the fire station will be determined in consultation with the LMFPD to maximize its ability to meet the response time requirement. The LMFPD would build and equip the fire station, as needed, on land acquired by the LMFPD. The project applicant shall pay all applicable fire service fees and assessments required to fund its fair share of fire district facilities and services required to serve the CLSP project. The City shall not allow or approve construction of structures greater than 50 feet in height or four stories until the LMFPD possesses appropriate equipment (e.g., aerial trucks) to provide fire suppression and emergency services to the upper stories of these buildings. If the CLSP project includes buildings that would exceed this height restriction, the project applicant shall pay to the City all applicable fire service fees and assessments required to fund its share of this equipment.		
4.10-c: Public Services – Increased Demand for Fire Flow. The proposed project would include the development of residential, commercial, school, and other uses that would require adequate available water flow for fire suppression. Lack of adequate fire flow would impede the ability of the LMFPD to provide effective fire suppression at the project site. This impact is considered significant.	S	**Increase Demand for Fire Flow.** The City shall not authorize the occupancy of any structures until the project applicant has confirmed provision of adequate minimum fire flows as required by the LMFPD and the California Fire Code.	LTS	A, B, C

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4.10-d: Public Services – Increased Demand for Police Protection Facilities and Services. Development of the proposed project would increase the demand for police protection facilities and services, resulting in the need for additional staff and equipment to maintain an adequate level of service. This impact is considered significant.	S	**4.10-d: Increased Demand for Police Protection Facilities and Services.** The project applicant shall pay to the City upon the filing of each final small-lot residential subdivision map its pro rata share (on a per-unit basis) of the total startup costs incurred in the hiring and training for each of the new police officer positions needed to serve the project (a total of 28 officers in the CLSP area, assuming the identified target ratio of 1.5 officers to 1,000 residents). This fee shall be incurred once per position (i.e., it shall not be used to train turnover staff). In addition, the following equipment costs shall be paid for by the project applicant: ▸ standard safety equipment for each officer (e.g., sidearm, belt, holster, body armor, mobile radio); and ▸ a fully equipped patrol vehicle for every two officers, including radio, siren, roof lighting, Opticom mobile strobe, mobile computer terminal, and vehicle video recorder. The payment of the above startup fees and equipment costs shall be phased to coincide with the need for new officers generated by project development. Resident generation rates to be used for this calculation are: ▸ variable-density residential 2.9 persons per dwelling unit ▸ high-density residential 2.1 persons per dwelling unit As police officers and support staff members are hired to meet the demand associated with the proposed project, the planned Government Center, or similar or interim facilities, would be completed before Police Department	LTS	A, B, C

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		staff exceed available space in the Seventh Street building. The project applicant shall also ensure the use of 3M Addressable Opticom Traffic Control Preemption devices and detectors/reflectors (or equivalent based on Police Department standards) in all traffic lights for which the project is responsible and the City has jurisdiction.		
4.10-e: Public Services – Increased Demand for Animal Control Facilities and Services. Development of the proposed project would increase the number of City residents, thereby increasing the number of pets, and consequently increasing the demand for animal control facilities and services. New facilities and staff members would be required to maintain the existing level of service in the City. This impact is considered significant.	S	**Increased Demand for Animal Control Facilities and Services.** The project applicant and the City shall include in the Development Agreement provisions for funding animal control facilities and services, as follows: (a) Animal Control Startup Costs: The Development Agreement shall include a provision that will ensure maintenance of the existing level of animal control service in the City. The agreement shall be designed to ensure that resources are available for animal control facilities and staff to expand to meet demand associated with the proposed project. The project applicant shall pay the one-time startup cost for these animal control services. (b) Animal Control Ongoing Costs: The applicant shall pay a proportionate share of ongoing costs associated with additional services until revenues generated from the project can cover this cost through participation in a community facilities district or an equivalent funding mechanism. (c) Capital Facilities Fees: The applicant shall pay capital facilities fees to defray capital facility costs associated with an animal control facility.	LTS	A, B, C

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4.10-f: Public Services – Increased Demand for Public School Facilities and Services. Implementation of the proposed project would increase demand for elementary school (K-8) and high school services in the MUSD. The project would pay the state mandated school impact fees and would dedicate three K-8 school sites and one high school site. Construction of schools on these sites, to meet project generated demand, would reduce the project's long-term impacts on public school facilities to less-than-significant levels. There is a potential that the proposed project would exceed the existing available high school capacity of the MUSD prior to the development of the proposed onsite high school; however, payment of the State mandated school impact fee is legislatively deemed full mitigation by the state. Therefore, the project's short-term impacts on public school facilities would be less than significant.	LTS	No mitigation is required.	LTS	A, B, C
4.10-g: Public Services – Increased Generation of Solid Waste. The proposed project would substantially increase solid waste generation. However, Foothill Sanitary Landfill, which would receive solid waste from the project area, has ample available disposal capacity in the long term. Therefore, this impact is considered less than significant.	LTS	No mitigation is required.	LTS	A, B, C

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4.11 PUBLIC UTILITIES				
4.11-a: Public Utilities – Demand for Potable Water. The proposed project would create demand for potable water that could not be met by existing City water production facilities (i.e., wells). Although construction of additional City wells and the SCSWSP project is planned and/or underway to meet the needs of several proposed or approved projects in addition to the CLSP project, the timing of when these facilities will begin water deliveries cannot be confirmed. This impact is considered significant.	S	**Demand for Potable Water.** The applicant or its successor in interest shall comply with the requirements of Government Code Section 66473.7 for all small-lot tentative subdivision map applications of more than 500 lots. In addition, approval of small-lot tentative maps for a lesser number of lots, or for nonresidential projects requiring conditional use permits or similar discretionary entitlements, shall be conditioned to require a showing, prior to final map approval for residential projects or prior to building permit approval for nonresidential discretionary projects, that the City, for a 20-year planning period following the date of approval of the tentative map, conditional use permit, or similar discretionary entitlement, has a sufficient water supply to serve the project, in addition to existing and planned future uses, during normal, single-dry, and multiple-dry years. For purposes of this mitigation measure, "sufficient water supply" has the same meaning found in Government Code Section 66473.7.	LTS	A, B, C
4.11-b: Public Utilities – Environmental Impacts Associated with the Development of New City Wells. According to the Water Master Plan EIR (EDAW 2001), the construction and operation of planned City Wells #21–23 could contribute to significant geotechnical, groundwater, flooding, noise, farmland, aesthetic/visual, terrestrial biological, and cultural resource impacts. These wells would provide municipal water to the City, including the proposed project. Implementation of the	S	Although some of the specific subimpacts associated with Impacts 4.11-b, 4.11c, and 4.11-e, are significant, no mitigation measures are required of the CLSP for those impacts because the responsibility for mitigation, where it is feasible, lies with the agencies that are the proponents of the projects at issue (the City for the new City wells and WRP#1, and SSJID for the SCSWSP), which are separate from the CLSP.	SU	None

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mitigation measures identified in the Water Master Plan EIR would reduce these impacts to a less-than-significant level, with the exception of farmland conversion impacts, which would be significant and unavoidable.				
4.11-c: Public Utilities – Environmental Impacts Associated with the SSJID SCSWSP. According to the EIR prepared for the SSJID SCSWSP, construction and operation of this facility could contribute to significant impacts for the following issue areas: hydrology, flooding, and water quality; air quality; geology, soils, and seismicity; biological resources; noise; hazardous materials / public health; visual resources; transportation and traffic circulation; public service and utilities / energy; cultural resources; and recreation. The SCSWSP would provide municipal water to the City, including the proposed project. These impacts would be reduced to less-than-significant levels with implementation of the mitigation measures identified in the SCSWSP EIR.	S	Although some of the specific subimpacts associated with Impacts 4.11-b, 4.11c, and 4.11-e, are significant, no mitigation measures are required of the CLSP for those impacts because the responsibility for mitigation, where it is feasible, lies with the agencies that are the proponents of the projects at issue (the City for the new City wells and WRP#1, and SSJID for the SCSWSP), which are separate from the CLSP.	LTS	None
4.11-d: Public Utilities – Demand for Wastewater Treatment Capacity. Implementation of Phase 1 of the CLSP would generate demand for approximately 1.37 mgd of wastewater treatment capacity. At full buildout demand for treatment capacity is estimated to be 2.17 mgd. This demand could not be met by the City's existing wastewater treatment facilities. The proposed project includes development of 3.0 mgd of wastewater treatment capacity at WRP #2.	S	**Demand for Wastewater Treatment Capacity.** No element of the proposed project (i.e., housing sub-division, commercial area) shall be occupied until both adequate treatment capacity at WRP #2 or another comparable wastewater treatment facility is available and wastewater infrastructure (e.g., pipelines) is in place to serve that portion of the project site.	LTS	A, B, C

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However, if treatment capacity at WRP #2 is not brought into service concurrently with demand generated by the proposed project, there may not be sufficient treatment capacity available in the City to support the project. This is considered a significant impact.				
4.11-e: Environmental Impacts Associated with the Expansion of WRP #1. If either of the scalping plant options are selected for WRP #2, the solids portion of the wastewater generated by the proposed project would be treated at WRP #1. If the WRP #2 South (integrated) option is selected, operation of WRP #2 could be integrated with operation of WRP #1. According to the Water Master Plan EIR, and the EIR prepared for the WRP #1 Phase 1 Expansion Project, the expansion of WRP #1 and the potential discharges of treated wastewater to the San Joaquin River during later expansion phases could contribute to significant geotechnical, groundwater, flooding, air, odor, noise, land use, farmland, aesthetics/ views, terrestrial biology, cultural resources, and public utility emergency impacts. These impacts would be reduced to less-than-significant levels with implementation of the mitigation measures identified in the Master Plan EIR and the WRP #1 Phase 1 Expansion EIR, with the exception of odor impacts, cumulative surface water quality and fisheries impacts, and impacts associated with conversion of important farmland, which would be significant and unavoidable.	S	Although some of the specific subimpacts associated with Impacts 4.11-b, 4.11-c, and 4.11-e are significant, no mitigation measures are required of the CLSP for those impacts because the responsibility for mitigation, where it is feasible, lies with the agencies that are the proponents of the projects at issue (the City for the new City wells and WRP #1, and SSJID for the SCSWSP), which are separate from the CLSP.	SU	None

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4.11-f: Public Utilities – Demand for Recycled Water Storage and Disposal Capacity. The proposed project would increase the demand for recycled water storage and disposal areas. Because adequate storage and disposal areas are available to accommodate the quantity of recycled water to be generated by the proposed project, this impact is considered less than significant.	LTS	No mitigation is required.	LTS	A, B, C
4.11-g: Public Utilities – Stormwater/Surface Runoff Management. Implementation of the CLSP would increase the amount of impervious surface on site, producing increased stormwater runoff that would require collection and discharge. However, the CLSP project includes a stormwater management system, including detention facilities, to provide onsite stormwater storage and discharge capacity sufficient to protect the CLSP area during a 100-year/48-hour storm event. Therefore, this impact is considered less than significant.	LTS	No mitigation is required.	LTS	A, B, C
4.11-h: Public Utilities – Demand for Electricity and Natural Gas. The proposed project would increase the demand for electricity and natural gas. PG&E is able to provide electricity and natural gas to the project, and the increase in demand for electricity and natural gas would not be substantial in relation to the existing electricity and natural gas consumption in PG&E's service area; therefore, this impact is considered less than significant.	LTS	No mitigation is required.	LTS	A, B, C

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4.12 RECREATION				
4.12-a: Recreation – Demand for Neighborhood and Community Parks. Residential development proposed for Phase 1 of the CLSP would require 16.62 acres of neighborhood parks and 24.93 acres of community parks to meet standards in the City General Plan. Phase 1 of the CLSP would provide 32.25 acres of neighborhood park credit and 50.05 acres of community park credit. Residential development at buildout of the CLSP would require 37.50 acres of neighborhood parks and 56.25 acres of community parks to meet standards in the City General Plan. At buildout, the CLSP would provide 40.0 acres of neighborhood park credit and 60.15 acres of community park credit. The CLSP provides sufficient park facilities to meet demand generated by the proposed project. Implementation of the proposed project would not increase demand on existing neighborhood and community parks such that the physical deterioration of existing facilities would occur or be accelerated. This impact is considered less than significant.	LTS	No mitigation is required.	LTS	A, B, C
4.12-b: Recreation – Reduced Availability of Existing Facilities. The proposed project would result in the CLSP community park being constructed around the existing Dos Reis Regional Park. However, after project development, Dos Reis Regional Park would remain in County ownership and would continue to provide similar facilities and services. There would be no change to the boat	LTS	No mitigation is required.	LTS	A, C

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launch facilities and RV and tent camping would be retained. Therefore, the proposed project would not reduce the availability of existing recreational facilities at Dos Reis Regional Park. This impact is considered less than significant.				
4.13 AGRICULTURAL RESOURCES				
4.13-a: Agricultural Resources – Conversion of Important Farmland. Implementation of the proposed project would result in the permanent conversion of up to approximately 818 acres of Prime Farmland (713 acres on the CLSP site, up to 98 acres associated with construction of recycled water storage ponds, and up to 7 acres associated with WRP #2), 622 acres of Farmland of Statewide Importance, and 96 acres of Farmland of Local Importance (Table 4.13 1, Exhibit 4.13-2), as designated by the NRCS FPP and CDC's Important Farmland Inventory System and Mapping and Monitoring Program. This impact is considered significant.	S	**Conversion of Important Farmland.** The City would participate in the SJMSCP. Fees would be paid by the project applicant to the SJCOG on a per-acre basis for lost agricultural land during development of proposed CLSP and associated offsite utility infrastructure. The SJCOG will use these funds to purchase conservation easements on agricultural and habitat lands in the project vicinity (in the Central Index Zone identified in the SJMSCP). The preservation in perpetuity of agricultural lands through the SJMSCP, a portion of which would consist of Important Farmland, would ensure the continued protection of farmland in the project vicinity, partially offsetting project impacts.	SU	A*, B, C
4.13-b: Agricultural Resources – Conflict with Williamson Act Contracts. Implementation of the proposed project would result in the cancellation of up to 1,244.3 acres of Williamson Act contracts. This impact is considered significant.	S	**Williamson Act Contract Cancellations.** Although all Williamson Act contracts in the CLSP area may be cancelled in a single cancellation, the project applicant shall continue to allow/promote farming operations as long as possible on portions of the CLSP plan area until an area is to be developed. This action would minimize impacts on agricultural production associated with the cancellation of Williamson Act contracts. In addition, the project applicant shall participate in the	SU	A*, B, C

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		SJMSCP pursuant to Mitigation Measure 4.13-a. Fees would be paid to the SJCOG on a per-acre basis for agricultural lands converted to nonagricultural uses. The SJCOG uses these funds to purchase conservation easements on agricultural and habitat lands in the project vicinity (in the Central Index Zone identified in the SJMSCP). Participation in the SJMSCP would assist in compensating for Williamson Act contract cancellations by placing farmlands under conservation easements, requiring conservation of agricultural lands in perpetuity. These easements provide much more stringent and longer lasting protections than Williamson Act contracts. However, because easements are also purchased for land exhibiting benefits to wildlife, including a combination of habitat, open space, and agricultural lands, the overall farmland compensation provided by the fee contribution for the proposed project would not be applied exclusively to agricultural lands. Therefore, fees contributed to the SJMSCP would only partially offset the loss of agricultural lands under Williamson Act contract associated with the CLSP project. In addition, no new farmland would be made available. Therefore, full compensation for losses of Williamson Act contracts would not be achieved.		
4.13-c: Agricultural Resources – Adjacent Landowner/User Conflicts. Long-term impacts on adjacent offsite landowners and conflicts associated with noise, odor, and dust from agricultural operations are expected to be minimal because the CLSP area is bordered by surrounding development and natural buffers on the east (I-5), south (Mossdale	S	**Adjacent Landowner/User Conflicts.** The project applicant shall phase the development of agricultural lands in the CLSP area in such a way as to avoid the fragmentation of continuing agricultural operations. As development occurs in the CLSP area, fencing, walls, or other suitable barriers shall be constructed or established at the interface between development and adjacent	LTS	A

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Village development), and west (San Joaquin River). However, proposed development could be located immediately adjacent to agricultural operations to the north and within the CLSP area. WRP #2 and recycle water storage ponds could also be located adjacent to agricultural activities. Potential conflicts between ongoing agricultural operations and development of the CLSP area are considered significant.		agricultural lands. In addition, a buffer zone or barrier, as determined by the City, shall be provided between the edge of residential or commercial development and the adjacent agricultural land. Roads, greenbelts, and similar facilities can function as these buffers. The City shall include the buffer as a condition of development approval, with the buffer being maintained until development of the adjacent agricultural land is initiated. Growers cultivating lands near or adjacent to urban development in the CLSP area can be expected to comply with all necessary federal, state, and local restrictions regarding buffers between pesticide/herbicide applications and sensitive areas, such as schools, residences, and parks. Required buffer distances may vary depending on the type of chemicals used and the method of application. Residents and other individuals purchasing property near agricultural lands shall be provided information on the types of conflicts that may occur and appropriate means to address these conflicts, consistent with the City's Right-to-Farm Ordinance.		
4.14 TERRESTRIAL BIOLOGY				
4.14-a: Terrestrial Biology – General Biological Resources. Implementation of the proposed project would result in development or conversion of approximately 1,470 acres of agricultural, ruderal, and park/residential habitats in the CLSP area. As much as an additional 105 acres of the same habitat types could be converted to WRP and recycled water storage ponds in potential offsite recycled water storage and disposal areas. Agricultural, ruderal, and	LTS	No mitigation is required.	LTS	A, B, C

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Summary of Impacts, Mitigation Measures, and Alternatives

Impact	Significance before Mitigation	Mitigation Measure	Significance after Mitigation	Alternative
park/residential plant communities provide habitat for a limited number of common plant and wildlife species. These habitats are locally and regionally abundant. This impact is considered less than significant.				
4.14-b: Terrestrial Biology – Special-status Plants. Implementation of the CLSP would result in the removal of approximately 15 acres of freshwater emergent wetland, cottonwood riparian forest, and riparian scrub in the CLSP area. Removal of these habitats could result in the loss of eight special-status plants that have potential to occur in these types of habitat. The potential WRP #2 and recycled water storage and disposal sites do not support suitable habitat for special-status plants. This impact is considered significant.	S	**Terrestrial Biology – Special-Status Plants.** The following is a summary and clarification of SJMSCP incidental take avoidance and minimization measures for special-status plants: (1) Before project construction, surveys for the special-status plants listed in Table 4.14-1 shall be conducted by a qualified botanist at the appropriate time of year when the target species would be in flower or otherwise clearly identifiable. Surveys shall be conducted in accordance with specific methodologies described in Section 5.2.2.5 of the SJMSCP. (2) If special-status plants are found, the following measures shall be implemented: a. Sanford's arrowhead, Delta button-celery, and slough thistle: The SJMSCP requires complete avoidance for these species; therefore, potential impacts on these species could not be covered through participation in the plan. If these species are present in the project area and cannot be avoided, a mitigation plan shall be developed, with review and input from the regulatory agencies (e.g., DFG). The mitigation plan shall identify mitigation measures for any populations affected by the project, such as creation of offsite populations through seed collection or	LTS	A, B, C

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		transplanting, preserving and enhancing existing populations, or restoring or creating suitable habitat in sufficient quantities to compensate for the impact. All mitigation measures that the City determines through this consultation to be necessary shall be implemented by the project proponent. These measures shall be designed to ensure that the proposed project does not result in a net reduction in the population size or range of Delta button-celery. b. Mason's lilaeopsis, rose mallow, Suisun Marsh aster, and Delta tule pea: These species are considered widely distributed species by the SJMSCP, and dedication of conservation easements is the preferred option for mitigation. If these species are found in the project area, the possibility of establishing a conservation easement shall be evaluated. If dedication of a conservation easement is not a feasible option, payment of SJMSCP development fees may be used to mitigate impacts on these species. Use of conservation easements or development fees for establishment of habitat preserves, or a combination of the two mechanisms, shall be sufficient to avoid an overall net reduction in the population size or range of Mason's lilaeopsis. c. Wright's trichocoronis: This species is considered a narrowly distributed species by the SJMSCP, and dedication of conservation easements is the preferred option for mitigation. If this species is found in the project area, the		

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		possibility of establishing a conservation easement shall be evaluated. If dedication of a conservation easement is not an option, the SJMSCP requires a consultation with the permitting agency representatives on the Technical Advisory Committee to determine the appropriate mitigation measures. These may include seed collection or other measures and would be determined on a population basis, taking into account the species type, relative health, and abundance. After the appropriate mitigation has been determined, it shall be implemented by the project proponent.		
4.14-c: Terrestrial Biology – Valley Elderberry Longhorn Beetle. Implementation of the CLSP could result in removal and/or disturbance of blue elderberry shrubs, which provide habitat for the valley elderberry longhorn beetle (federally listed as threatened). No elderberry shrubs are anticipated to occur at the potential WRP #2 and recycled water storage/disposal sites. Loss of elderberry shrubs is considered a significant impact.	S	**Terrestrial Biology – Valley Elderberry Longhorn Beetle.** The following is a summary and clarification of SJMSCP incidental take avoidance and minimization measures for VELB: (1) Before project construction, a survey shall be conducted in areas where elderberry shrubs could occur within 50 feet of construction areas, including along the banks of the San Joaquin River and along the levee. (2) For all shrubs that are to be retained on the project site, a setback of 20 feet from the dripline of each elderberry shrub found during the survey shall be established. Brightly colored flags or fencing shall be used to demarcate the 20-foot setback area and shall be maintained until project construction in the vicinity is complete. No construction activities shall occur within the setback area.	LTS	A, B, C

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		(3) For all shrubs without evidence of VELB exit holes that cannot be retained on the project site, all stems of 1 inch or greater in diameter at ground level shall be counted. Compensation for removal of these stems shall be provided in SJMSCP preserves as provided in SJMSCP Section 5.5.4(B). This is designed to avoid a net reduction in the number of VELB by requiring establishment of three new plants for each stem over 1 inch in diameter that would be removed. (4) All shrubs with evidence of VELB exit holes or other evidence of VELB occupation that cannot be retained in the project area shall be transplanted to VELB mitigation sites during the dormant period for elderberry shrubs (November 1 to February 15). For elderberry shrubs displaying evidence of VELB occupation that cannot be transplanted, compensation for removal of shrubs shall be provided in accordance with SJMSCP Sections 5.5.4(B and C). This is designed to avoid a net reduction in the number of VELB by requiring establishment of six new plants for each stem over 1 inch that displays evidence of VELB occupation but cannot be transplanted.		
4.14-d: Terrestrial Biology – Giant Garter Snake. Agricultural ditches within the CLSP area could provide suitable habitat for giant garter snake (state listed and federally listed as threatened), although the potential for the species to occur in them is very low. No loss of individual giant garter snakes is expected to result from implementation of the CLSP, but	PS	**Terrestrial Biology – Giant Garter Snake.** The SJMSCP requires full avoidance of known occupied giant garter snake habitat. Based on the low quality of habitat in the CLSP area, giant garter snake is not expected to be present. However, if giant garter snake is discovered in the CLSP area, a separate consultation with USFWS under the FESA and with DFG under the CESA may be	LTS	A, B, C

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potential habitat would be converted to development. The potential WRP #2 and recycled water storage/disposal sites do not support suitable habitat for giant garter snakes. Conversion of suitable giant garter snake habitat is considered a potentially significant impact.		required. The following is a summary of SJMSCP and USFWS incidental take avoidance and minimization measures for giant garter snake: (1) Construction within 200 feet of suitable aquatic habitat for giant garter snake shall occur during the active period for the snake, between May 1 and October 1. Between October 2 and April 30, the Joint Powers Authority, with the concurrence of the permitting agencies' representatives on the Technical Advisory Committee, shall determine whether additional measures (e.g., daily presence/absence surveys, exclusion fencing) are necessary to minimize and avoid take. (2) Preconstruction surveys for the giant garter snake shall be conducted within 24 hours of ground disturbance. (3) Vegetation clearing within 200 feet of the banks of potential giant garter snake aquatic habitat shall be limited to the minimal area necessary. (4) The movement of heavy equipment within 200 feet of the banks of potential giant garter snake aquatic habitat shall be confined to existing roadways as much as practicable to minimize habitat disturbance. (5) Before ground disturbance, all onsite construction personnel shall be given instruction regarding the presence of the giant garter snake and the importance of avoiding impacts on this species and its habitats. (6) In areas where wetlands, irrigation ditches, or other potential giant garter snake habitats are being retained on the site and are within 200 feet of an		

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		active construction area: a. Temporary fencing or other obvious markers shall be installed around potential garter snake habitat; b. Working areas, spoils and equipment storage, and other project activities shall be restricted to areas outside of potential garter snake habitat; and c. Water quality shall be maintained and construction runoff into wetland areas shall be limited through the use of hay bales, filter fences, vegetative buffer strips, or other accepted equivalents.		
4.14-e: Terrestrial Biology – Western Pond Turtle. Suitable aquatic habitat for western pond turtle (a federal and state Species of Concern) would not be converted as a result of CLSP implementation, and turtles are unlikely to nest in the CLSP area. The potential WRP #2 and recycled water storage/disposal sites do not support suitable habitat for western pond turtle. This impact is considered less than significant.	LTS	No mitigation is required.	LTS	A, B, C
4.14-f: Terrestrial Biology – Swainson's Hawk. Implementation of the CLSP would result in conversion of approximately 1,400 acres of foraging habitat for Swainson's hawk (state listed as threatened and a federal Species of Concern) and could result in loss of active nests and removal of potential nest trees. Construction of WRP #2 and	S	**Terrestrial Biology – Swainson's Hawk.** The following is a summary and clarification of SJMSCP incidental take avoidance and minimization measures for Swainson's hawk: (1) If the project proponent elects to remove nest trees, then nest trees shall be removed between September 1 and February 15, when the nests are unoccupied.	LTS	A, B, C

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recycled water storage ponds would result in conversion of as much as 105 additional acres of foraging habitat and could result in loss of additional active nests. This impact is considered significant.		(2) If the project proponent elects to retain a tree with an active nest, all construction activities shall remain a distance of two times the dripline of the tree, measured from the nest. This setback shall be maintained during the nesting season for the period encompassing nest building and continuing until fledglings leave the nest. Setbacks shall be marked by brightly colored temporary fencing or other obvious markers.		
4.14-g: Terrestrial Biology – Aleutian Canada Goose and Greater Sandhill Crane. Implementation of the CLSP would result in conversion of suitable foraging habitat for wintering Aleutian Canada geese (federal Species of Concern) and greater sandhill cranes (state listed as threatened). Construction of WRP #2 and recycled water storage ponds would result in conversion of as much as 105 additional acres of foraging habitat. Similar habitat is locally and regionally abundant. This impact is considered less than significant.	LTS	No mitigation is required.	LTS	A, B, C
4.14-h: Terrestrial Biology – Burrowing Owl. Implementation of the CLSP would result in conversion of foraging habitat for burrowing owl (a federal and state Species of Concern) and could result in loss of occupied burrows. Construction of WRP #2 and recycled water storage ponds would result in conversion of as much as 105 additional acres of foraging habitat and could result in additional loss of occupied burrows. This impact is considered significant.	S	**Terrestrial Biology – Burrowing Owl.** The following is a summary and clarification of SJMSCP incidental take avoidance and minimization measures for burrowing owl: (1) Burrowing owls may be discouraged from entering or occupying construction areas by discouraging the presence of ground squirrels. To accomplish this, the project proponent could prevent ground squirrels from occupying the project site by employing one of several methods outlined in Section 5.2.4.15 of the SJMSCP. These include retention of tall vegetation,	LTS	A, B, C

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		regular disking of the site, or use of chemicals or traps to kill ground squirrels. (2) Preconstruction surveys for burrowing owls shall be conducted within 75 meters of areas of project activity in locations with potential burrow habitat, including field edges, roadsides, levees, and fallow fields. Actively farmed agricultural fields and regularly disked or graded fields do not provide suitable burrow sites and need not be surveyed. The survey shall be conducted within 1 week before the beginning of construction. If burrowing owls are found, the following measures shall be implemented: a. During the nonbreeding season (September 1 through January 31), burrowing owls occupying the project site shall be evicted from the project site by passive relocation as described in the DFG's Staff Report on Burrowing Owls (DFG 1995). b. During the breeding season (February 1 through August 31), occupied burrows shall not be disturbed and shall be provided with a 75-meter protective buffer until and unless the Technical Advisory Committee, with the concurrence of the permitting agencies' representatives on the Technical Advisory Committee, or a qualified biologist approved by the permitting agencies, verifies through noninvasive means that either (1) the birds have not begun egg laying or (2) juveniles from the occupied burrows are foraging independently and are capable of independent survival. After the fledglings are		

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		capable of independent survival, the burrow can be destroyed.		
4.14-i: Terrestrial Biology – Colonial Nesting Birds. Implementation of the CLSP would result in conversion of suitable foraging habitat for tricolored blackbird (federal and state Species of Concern), black-crowned night-heron (SJMSCP species), and great blue heron (SJMSCP species). No nesting colonies of these species are known or expected to occur in the CLSP area. Construction of WRP #2 and recycled water storage ponds would result in conversion of as much as 105 additional acres of foraging habitat, but no suitable nesting habitat is present at the potential WRP #2 and recycled water storage/disposal sites. Suitable foraging habitat for these species is locally and regionally abundant. This impact is considered less than significant.	LTS	No mitigation is required.	LTS	A, B, C
4.14-j: Terrestrial Biology – Ground-Nesting or Streamside/Lakeside-Nesting Birds. Implementation of the CLSP would result in conversion of suitable nesting and foraging habitat for northern harrier (state Species of Concern). Construction of WRP #2 and recycled water storage ponds would result in conversion of as much as 105 additional acres of foraging and nesting habitat. This impact is considered significant.	S	**Terrestrial Biology – Ground-Nesting or Streamside/Lakeside-Nesting Birds.** The following is the SJMSCP incidental take avoidance and minimization measure for northern harrier: A setback of 500 feet from northern harrier nesting areas shall be established and maintained during the nesting season for the period encompassing nest building and continuing until fledglings leave nests. This setback applies whenever construction or other ground-disturbing activities must begin during the nesting season in the presence of nests that are known to be occupied. Setbacks shall be marked by brightly colored temporary fencing.	LTS	A, B, C

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4.14-k: Terrestrial Biology – Birds Nesting in Isolated Trees or Shrubs Outside of Riparian Habitat. Yellow warblers (state Species of Concern) are not expected to nest in the CLSP area and are unlikely to be affected by implementation of the CLSP. Suitable foraging habitat for loggerhead shrikes (federal and state Species of Concern) would be converted and active shrike nests could be lost as a result of CLSP implementation. Construction of WRP #2 and recycled water storage ponds would result in conversion of as much as 105 additional acres of foraging habitat, but no additional nests are expected to be lost. This impact is considered potentially significant.	PS	**Terrestrial Biology – Birds Nesting in Isolated Trees or Shrubs Outside of Riparian Habitat.** The following is the SJMSCP incidental take avoidance and minimization measure for loggerhead shrike: A setback of 100 feet from loggerhead shrike nesting areas shall be established and maintained during the nesting season for the period encompassing nest building and continuing until fledglings leave nests. This setback applies whenever construction or other ground-disturbing activities must begin during the nesting season in the presence of nests that are known to be occupied. Setbacks shall be marked by brightly colored temporary fencing.	LTS	A, B, C
4.14-l: Terrestrial Biology – Birds Nesting along Riparian Corridors. Yellow-breasted chats (state Species of Concern) are not expected to nest in the CLSP area and are unlikely to be affected by implementation of the CLSP. Suitable foraging habitat for white-tailed kites (federal Species of Concern, state fully protected species) would be converted and active kite nests could be lost as a result of CLSP implementation. Construction of WRP #2 and recycled water storage ponds would result in conversion of as much as 105 additional acres of foraging habitat for white-tailed kite and could result in loss of additional active nests. This impact is considered significant.	S	**Terrestrial Biology – Birds Nesting along Riparian Corridors.** The following are SJMSCP incidental take avoidance and minimization measures for white-tailed kite: (1) Preconstruction surveys shall be conducted to investigate all potential nesting trees on the project site (e.g., especially tree tops 15-59 feet above the ground in oak, willow, eucalyptus, cottonwood, or other deciduous trees), during the nesting season (February 15 to September 15), whenever white-tailed kites are noted on or in the vicinity of the site during the nesting season (2) A setback of 100 feet from white-tailed kite nesting areas shall be established and maintained during the nesting season for the period encompassing nest building and continuing until fledglings leave nests. This setback applies whenever construction or other	LTS	A, B, C

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		ground-disturbing activities must begin during the nesting season in the presence of nests that are known to be occupied. Setbacks shall be marked by brightly colored temporary fencing.		
4.14-m: Terrestrial Biology – Snowy Egret, American White Pelican, Double-Crested Cormorant, and White-Faced Ibis. Implementation of the CLSP would result in conversion or disturbance of potential foraging habitat for these species (all federal and/or state Species of Concern), but they are not expected to nest in the CLSP area. Construction of WRP #2 and recycled water storage ponds would result in conversion of as much as 105 additional acres of foraging habitat. Suitable foraging habitat for these species is locally and regionally abundant. This impact is considered less than significant.	LTS	No mitigation is required.	LTS	A, B, C
4.14-n: Terrestrial Biology – Ferruginous Hawk, Mountain Plover, Merlin, and Long-Billed Curlew. Implementation of the CLSP would result in conversion of potential foraging habitat for these wintering species (all federal and/or state Species of Concern). Construction of WRP #2 and recycled water storage ponds would result in conversion of as much as 105 additional acres of foraging habitat. Suitable foraging habitat for these species is locally and regionally abundant. This impact is considered less than significant.	LTS	No mitigation is required.	LTS	A, B, C
4.14-o: Terrestrial Biology – Common Raptors. Implementation of the CLSP could result in loss of	S	**Terrestrial Biology – Common Raptors.** The following measures are designed to avoid loss of common tree-	LTS	A, B, C

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active nests of common raptors (protected under California Fish and Game Code Section 3503.5). Implementation of the WRP #2 North option could result in loss of additional active nests. This impact is considered significant.		nesting raptors: (1) If project activity would occur during the raptor nesting season (February 15 through September 15), preconstruction surveys shall be conducted during the nesting season in suitable nesting habitat within 100 feet of areas of project activity. Large trees throughout the project area provide suitable habitat. The survey shall be conducted within 1 week before the beginning of construction or tree removal. (2) A setback of 100 feet from nesting areas shall be established and maintained during the nesting season for the period encompassing nest building and continuing until fledglings leave nests. This setback applies whenever construction or other ground-disturbing activities must begin during the nesting season in the presence of nests that are known to be occupied. Setbacks shall be marked by brightly colored temporary fencing.		
4.14-p: Terrestrial Biology – Special-Status Bats. Implementation of the CLSP could alter the suitability of potential foraging habitat for special-status bats (federal and/or state Species of Concern). Construction of WRP #2 and recycled water storage ponds could alter additional foraging habitat. Bat foraging habitat is locally and regionally abundant, and the CLSP area and potential WRP #2 and recycled water storage pond sites are not expected to contain important roost sites. This impact is considered less than significant.	LTS	No mitigation is required.	LTS	A, B, C

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4.14-q: Terrestrial Biology – Riparian Brush Rabbit. Implementation of the CLSP would result in conversion of occupied habitat for riparian brush rabbit and could result in direct impacts on brush rabbits (federally listed and state listed as endangered). The potential WRP #2 and recycled water storage/disposal sites do not support suitable habitat for riparian brush rabbit. This impact is considered significant.	S	**Terrestrial Biology – Riparian Brush Rabbit.** The SJMSCP requires full avoidance of riparian brush rabbit habitat in areas of known occupied habitat. No conversion of occupied habitat or mortality to individual riparian brush rabbits is allowed under the SJMSCP. For the proposed project to qualify for coverage under the SJMSCP for riparian brush rabbit, a permanent setback of 300 feet from the outer edge of the dripline of riparian vegetation would be required. Because maintenance of such setbacks may not be feasible, a separate consultation with USFWS under the FESA and with DFG under CESA would be conducted, and an Incidental Take Permit would be required. These actions would be separate from the SJMSCP and would require project-specific authorization and permitting. Specific mitigation measures would be developed during the consultation process. Because the limited habitat within the CLSP area is not expected to support a viable long-term population of riparian brush rabbits, it may be most appropriate to provide offsite mitigation for adverse effects on occupied habitat. Potential measures to avoid direct take of individuals may include, but would not be limited to, conducting preconstruction surveys, conducting daily surveys of construction areas, installing exclusion fencing to prevent brush rabbits from entering construction areas, and allowing trapping of riparian brush rabbits at the project site in support of the USFWS captive breeding program to establish new populations in appropriate habitat. These measures to minimize direct take in conjunction with compensation for adverse effects are	SU	A*, B, C*

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		anticipated to avoid a net reduction in the number of riparian brush rabbits. However, the potential loss of riparian brush rabbit population on the project site could restrict the range of this species because it is currently the northernmost known extent of the population.		
4.14-r: Terrestrial Biology – Sensitive Habitats. Implementation of the CLSP would result in conversion of riparian habitat and could result in fill of Waters of the United States, including wetlands. These habitats are protected under various regulations. No loss of riparian habitat or waters of the United States would result from use of the potential WRP #2 and recycled water storage/disposal sites. This impact is considered significant.	S	**Terrestrial Biology – Sensitive Habitats.** The following measures are designed to minimize and mitigate impacts on jurisdictional waters of the United States and riparian habitat: (1) Before project implementation, a delineation of waters of the United States, including wetlands that would be affected by the proposed project shall be made by qualified biologists through the formal Section 404 wetland delineation process. The delineation shall be submitted to and verified by USACE. (2) If, based on the verified delineation, it is determined that fill of waters of the United States would result from CLSP implementation, authorization for such fill shall be secured from USACE through the Section 404 permitting process. (3) A DFG Streambed Alteration Agreement and RWQCB water quality certification are also expected to be required for work within existing levees along the San Joaquin River and may be required for fill of agricultural ditches. (4) The acreage of waters of the United States and riparian habitat that would be removed shall be replaced or restored/enhanced on a "no net loss" basis in accordance with USACE and DFG	LTS	A, B, C

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		regulations and Development Title 9-1505. Habitat restoration, enhancement, and/or replacement shall be at a location and by methods agreeable to USACE and DFG, as determined during the permitting processes for CWA Section 404 and California Fish and Game Code Section 1602. (5) Measures to minimize erosion and runoff into the San Joaquin River shall be included in all drainage plans. Appropriate runoff controls such as berms, storm gates, detention basins, overflow collection areas, filtration systems, and sediment traps shall be implemented to control siltation and the potential discharge of pollutants.		
4.14-s: Terrestrial Biology – Wildlife Corridors. Implementation of the CLSP is not expected to interfere substantially with established wildlife corridors or impede the use of native wildlife nursery sites. However, use of recycled water storage/disposal Area 6 could conflict with the SJMSCP prohibition against development in the San Joaquin River Wildlife Corridor. This impact is considered potentially significant for project options that include conversion of habitat in Area 6.	PS	**Terrestrial Biology – Wildlife Corridors.** The following measures are designed to address inconsistency with the SJMSCP: (1) Coordination with the Technical Advisory Committee, Joint Powers Authority, and resource agencies (e.g., USFWS and DFG) shall be conducted, as appropriate, to obtain a minor revision, minor amendment, or major amendment to the SJMSCP. No amendment to the incidental take permit is anticipated, because habitat alteration (with implemented mitigation measures) is not expected to result in significant effects on any state-listed or federally listed species. (2) During this coordination process, it shall be determined whether any compensation would be required. Compensation may include, but would not necessarily be limited to, onsite or offsite habitat	LTS	A, B, C

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		improvements along the San Joaquin River, such as restoration of other areas in the corridor that provide limited habitat for terrestrial wildlife.		
4.15 FISHERIES				
4.15-a: Fisheries – Construction Sediment on the Landward Side of the SJR Levee. General construction activities in the proposed CLSP area on the landward side of the SJR levee and at potential sites for recycled water storage ponds could result in the release of sediment and other water quality constituents into the SJR, which could adversely affect fish species locally. However, given the location of construction activities relative to the levee and the requirements for erosion control during construction, limited to no sediment releases would occur. This impact is considered less than significant.	LTS	No mitigation is required.	LTS	A, B, C
4.15-b: Fisheries – Design and Construction of Project Facilities on the River Side of the SJR Levee. Construction/grading activities and design of open space areas on the river side of the SJR levee may cause temporary sediment releases into the SJR and create depressions that may strand fish during flood events. This impact is considered significant.	S	**Design and Construction of Project Facilities on the River Side of the SJR Levee.** The project applicant shall design and construct open space areas on the riverside of the SJR levee without any ground depressions that could retain/pool high water flows from the SJR which could strand fish, especially juvenile chinook salmon and steelhead, delta smelt, and Sacramento splittail. During construction/grading activities on the riverside of the SJR levee, all applicable erosion avoidance and minimization measures, and erosion control BMPs shall be implemented. In addition, guidelines from Mitigation Measure 4.8-c (included in Section 4.8, Hydrology and Water Quality) and	LTS	A, B, C

Notes: B = Beneficial PB = Potentially beneficial LTS = Less than significant PS = Potentially significant S = Significant SU = Significant and unavoidable
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Table 2-1
Summary of Impacts, Mitigation Measures, and Alternatives

Impact	Significance before Mitigation	Mitigation Measure	Significance after Mitigation	Alternative
		Mitigation Measure 4.15-c below, shall be implemented.		
4.15-c: Fisheries – Degradation of Aquatic Habitat from Construction of the Proposed Stormwater Outfall. Construction of the proposed stormwater outfall to the San Joaquin River could result in the removal of riparian vegetation that may benefit fishery resources, sediment releases to the river associated with soil disturbing activities, fish mortality during in water construction (if required), and habitat removal from installation of hardened slope armoring on the levee below the ordinary high water mark. Although installation of the outfall would affect a relatively small area and would incorporate design features to minimize disruption of aquatic habitat, impacts to fishery resources are considered significant.	S	**Degradation of Aquatic Habitat from the Proposed Stormwater Outfall.** The project applicant, possibly through a permitting process conducted by a federal agency (e.g., the U.S. Army Corps of Engineers) shall consult with NOAA Fisheries and USFWS regarding the design of the proposed outfall station. If required by NOAA Fisheries and/or USFWS, incidental take permits shall be acquired prior to installation of the outfall station. Permits from the U.S. Army Corps of Engineers related to Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act shall also be obtained as necessary and all permit requirements shall be implemented. Project engineers shall design the proposed outfall consistent with the NOAA Fisheries Guidelines for Salmonid Passage at Stream Crossings (2000). In addition, the following actions shall be implemented: ▸ Remove the minimum amount of vegetation on the levee to accommodate the outfall facility. ▸ All trees and shrubs that are removed and that shade the SJR shall be replaced. Conceivably, through careful siting of the outfall and various construction practices, most impacts to these canopy species could be avoided. However, any loss of canopy vegetation shall be compensated for by replacement plantings on the river side of the levee on the project site. Each tree or shrub impacted shall be replaced with three trees or shrubs of the same species, or a California native equivalent. Replacement tree/shrub	LTS	A

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Impact	Significance before Mitigation	Mitigation Measure	Significance after Mitigation	Alternative
		stock shall be in 5 gallon pots or larger. Plantings shall have a temporary irrigation system that shall be maintained a minimum of three years or until the planted trees/shrubs are established. Trees/shrubs shall be planted in the fall, no later than one year after the outfall station is installed, but not before water and electricity is available for the temporary irrigation system. ▸ Flap gates shall be installed on each outfall pipe. ▸ Implement erosion control BMPs during construction. These measures include: (1) revegetation before the rainy season of all barren soils resulting from the outfall construction or any other construction-related activities if the barren areas could contribute silt runoff into the SJR; (2) keep silt and silt laden water from entering the SJR during the construction period (including isolating the outfall work area [i.e., dewatering the work area] from the SJR via construction of a sheet pile wall or similar barrier if needed), pumping silt-laden waters in the isolated work area to a desiltation basin on the land side of the levee; and (3) collection and disposing of silt and water collected in the desiltation basins to land (i.e., use as soil supplements, irrigation water, etc.). ▸ Restrict construction activity within the river side of the levee to between the dates of June 1 to October 30 when migrating anadromous fish would not be expected to be in the SJR near the project site. ▸ Construct the outfall to follow the topographic contour of the existing levee so as to not reduce the		

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Summary of Impacts, Mitigation Measures, and Alternatives

Impact	Significance before Mitigation	Mitigation Measure	Significance after Mitigation	Alternative
		original volume of the SJR. ▸ Remove all surplus material in the channel upon completion of the outfall. ▸ Restrict hardened slope protection to the use of interlocking brick material (i.e., amorflex or similar material). These methods of slope protection allow natural sediments to be exposed through the armoring, thus also allowing herbaceous vegetation to grow on the armored surface. No riprap shall be used as erosion control material. ▸ No curing concrete shall have contact with SJR waters. Allow any concrete material installed below the water line of the river to cure a minimum of 30 days without an appropriate sealer, or 7 days with an appropriate sealer, prior to coming in contact with SJR waters. ▸ Restrict all equipment refueling and maintenance to designated containment areas below the outside wall (non-river side) of the levee.		
4.15-d: Fisheries – Stormwater Discharges. Stormwater from the CLSP area would be discharged into the SJR and could adversely affect special-status fish species. However, the overall water quality of discharges into the SJR would be improved under the proposed project compared to the agricultural discharges experienced under existing conditions. This impact is considered less than significant and potentially beneficial.	LTS/PB	Because the postproject condition is considered to improve water quality for almost all constituents, and therefore not adversely affect habitat conditions for fisheries in the project vicinity relative to existing conditions, this impact is considered less than significant and potentially beneficial.	LTS/PB	C

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Table 2-1
Summary of Impacts, Mitigation Measures, and Alternatives

Impact	Significance before Mitigation	Mitigation Measure	Significance after Mitigation	Alternative
4.15-e: Fisheries – Reduction in Unscreened SJR Diversions. Currently much of the irrigation water used for agricultural operations in the CLSP area, and several of the potential recycled water storage/disposal areas, is diverted from the SJR at various unscreened agricultural intakes. These intakes have the potential to draw in special-status fish species as irrigation water is diverted to the agricultural fields. Operation of these unscreened intakes would cease, or screens would be installed, as agricultural lands are replaced by development in the CLSP area and recycled water storage ponds off site. Demand for water from the SJR would also be reduced in the recycled water disposal areas as recycled water would support all, or a majority, of the irrigation demand. This impact is considered beneficial.	B	Implementation of the proposed project would result in a reduction in the number of unscreened agricultural intakes used on the SJR, a reduction in the use of unscreened intakes supporting recycled water disposal areas, and potentially an overall reduction in agricultural diversion volumes in the project area. The net effect of the proposed project would be a decrease in fish entrainment associated with SJR diversions. This impact is considered beneficial.	B	None
4.16 CULTURAL RESOURCES				
4.16-a: Cultural Resources – Recorded Archaeological Sites. Construction of the proposed project may affect one recorded prehistoric archaeological site, CA-SJO-3, if recycled water storage ponds are constructed in Area 6. This impact is considered significant.	S	**Recorded Archaeological Sites.** The northern portions of potential recycled water storage/disposal Area 6 may include a portion of site CA-SJO-3, a prehistoric site found eligible for listing on the NRHP and CRHR. Intact portions of this site have been found below the I-5/State Route 120 interchange embankment and additional portions may extend to the south. Therefore, project-related subsurface disturbances should be avoided in this area. It is recommended that Area 6 be utilized for a sprayfield only. If any subsurface disturbances are required to turn this area into a sprayfield, those disturbances shall be monitored by a qualified	LTS	A, B

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Summary of Impacts, Mitigation Measures, and Alternatives

Impact	Significance before Mitigation	Mitigation Measure	Significance after Mitigation	Alternative
		professional archaeologist. If project planning calls for construction of any facilities other than a sprayfield for Area 6, then the City shall retain a qualified professional archaeologist to conduct Phase II testing at site CA-SJO-3 to confirm whether site CA-SJO-3 extends into Area 6, the boundary of site CA-SJO-3 in Area 6 (if it extends into this area), and the significance of any resources related to site CA-SJO-3 that may occur in Area 6. The investigations shall be conducted before construction begins at this site. If any archaeological resources found in Area 6 are concluded by the archaeologist to represent deposits from site CA-SJO-3, the archaeologist shall recommend additional actions deemed necessary for the protection of these resources. Such actions may include additional testing, data recovery, mapping, capping, or avoidance of the resource. The City will be responsible for approval of recommended mitigation as it deems appropriate. The City shall ensure that approved protection actions (if needed) are implemented before construction begins at this site.		
4.16-b: Cultural Resources – Historic Properties. Project construction would result in the removal of several existing structures. None of these structures appears to be eligible for listing on the California Register of Historical Resources. This impact is considered less than significant.	LTS	No mitigation is required.	LTS	A, B
4.16-c: Cultural Resources – Undiscovered/Unrecorded Archaeological Sites. Construction of the proposed project may affect as-	PS	**Undiscovered/Unrecorded Archaeological Sites.** Before the initiation of construction or ground-disturbing activities associated with the proposed project, the parcels	LTS	A, B, C

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Impact	Significance before Mitigation	Mitigation Measure	Significance after Mitigation	Alternative
yet-undiscovered or- unrecorded archaeological sites. This impact is considered potentially significant.		that have not been surveyed during previous efforts shall be plowed or disked, or the soil surface otherwise exposed as necessary, and surveyed by a qualified professional archaeologist. If any unique archaeological resources or historical resources are found, they will be treated in a manner consistent with the impact evaluation and mitigation measures provided in this section. At the onset of construction, all construction personnel shall be alerted to the possibility of buried cultural resources. If artifacts or unusual amounts of stone, bone, or shell are uncovered during construction activities, work within 50 feet of the specific construction site at which the suspected resources have been uncovered shall be suspended, and the City of Lathrop Community Development Department/Planning Division shall be immediately contacted. At that time, the City or the project proponent shall retain a qualified professional archaeologist who shall conduct a field investigation of the specific site and recommend mitigation deemed necessary for the protection or recovery of any cultural resources concluded by the archaeologist to represent historical resources or unique archaeological resources. The City will be responsible for approval of recommended mitigation as it deems appropriate. The City or the project proponent shall implement the approved mitigation before the resumption of construction activities at the construction site.		
4.16-d: Cultural Resources – Undiscovered/Unrecorded Archaeologically Significant Human Remains. Project-related construction activities could affect as yet	PS	**Undiscovered/Unrecorded Human Remains.** If human remains are discovered at any project construction sites during any phase of construction, work within 50 feet of the remains shall be suspended immediately, and the City	LTS	A, B, C

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Impact	Significance before Mitigation	Mitigation Measure	Significance after Mitigation	Alternative
undiscovered or unrecorded human remains. This impact is considered potentially significant.		of Lathrop Community Development Department/Planning Division and the county coroner shall be immediately notified. If the remains are determined by the county coroner to be Native American, the Native American Heritage Commission (NAHC) shall be notified within 24 hours, and the guidelines of the NAHC shall be adhered to in the treatment and disposition of the remains. The City or the project proponent shall also retain a qualified professional archaeologist with Native American burial experience who shall conduct a field investigation of the specific site and consult with the Most Likely Descendant, if any, identified by the NAHC who responds in timely manner (i.e., within 24 hours after being notified by NAHC). As necessary, the archaeologist may provide professional assistance to the Most Likely Descendant including the excavation and removal of the human remains. The City will be responsible for approval of recommended mitigation as it deems appropriate, taking account of the provisions of state law, as set forth in State CEQA Guidelines §§15064.5(e) and Public Resources Code §§5097.98. The City or the project proponent shall implement approved mitigation before the resumption of activities at the site where the remains were discovered.		
4.17 PALEONTOLOGICAL RESOURCES				
4.17-a: Paleontological Resources – Disturbance of Paleontological Resources During Earth-Moving Activities. Although no previously recorded paleontological sites occur within the proposed project area, unknown paleontological resources could occur in sediments of the Modesto Formation	PS	**Paleontological Resources – Disturbance of Paleontological Resources During Earth-Moving Activities.** For earth-moving activities in the paleontologically sensitive areas identified in Exhibit 4.17-1, the project applicant shall implement the	LTS	A, B, C

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Impact	Significance before Mitigation	Mitigation Measure	Significance after Mitigation	Alternative
that underlie portions of the project site, as shown in Exhibit 4.17-1. Therefore, construction activities in these areas could disturb unknown subsurface paleontological resources. This impact is considered potentially significant.		following measures: (1) Before the start of construction activities, construction personnel involved with earth-moving activities shall be informed of the possibility of encountering fossils, the appearance and types of fossils likely to be seen during construction activities, and proper notification procedures should fossils be encountered. This worker training shall be prepared and presented by a qualified paleontologist. (2) If paleontological resources are discovered during earth-moving activities, the construction crew shall immediately cease work in the vicinity of the find. The City or the project applicant shall retain a qualified paleontologist to evaluate the resource and prepare a proposed mitigation plan in accordance with Society of Vertebrate Paleontology guidelines (1995). The proposed mitigation plan may include a field survey, construction monitoring, sampling and data recovery procedures, museum storage coordination for any specimen recovered, and a report of findings. Recommendations determined by the City to be necessary and feasible shall be implemented by the project applicant before construction activities can resume at the site where the paleontological resources were discovered.		
4.18 AESTHETIC RESOURCES				
4.18-a: Aesthetic Resources – Impacts on a Scenic Vista. No views on or near the CLSP project site would be considered a scenic vista. Therefore, development of the proposed project would not alter	LTS	No mitigation is required.	LTS	A, B

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Impact	Significance before Mitigation	Mitigation Measure	Significance after Mitigation	Alternative
or obscure a scenic vista. This impact is considered less than significant.				
4.18-b: Aesthetic Resources – Damage to Scenic Resources within a State Scenic Highway. The proposed project is not visible from a state scenic highway and would not damage scenic resources. This impact is considered less than significant.	LTS	No mitigation is required.	LTS	None
4.18-c: Aesthetic Resources – Degradation of Visual Character. Implementation of the proposed project would substantially alter the visual character of the project site through conversion of agricultural land to developed urban uses, potential construction of an offsite WRP, and construction of offsite recycled water storage ponds. Assessment of visual quality is a subjective matter and reasonable people can disagree as to whether such an alteration in the visual character of the project site would also be considered a substantial degradation of the visual character. For this analysis a conservative approach is taken and the potential for degradation of the visual character of the project site are considered a significant impact.	S	**Degradation of Visual Character.** Because of the scale and location of the CLSP, there is no feasible mitigation available to address aesthetic resource impacts associated with the conversion of agricultural land to urban development. Although design, architectural, development, and maintenance standards are included to ensure that urban development in the plan area remains within certain aesthetic guidelines, there is no mechanism to allow implementation of the project while avoiding the conversion of the local viewshed from agricultural to urban development.	SU	A*, B
4.18-d: Aesthetic Resources – Impacts from Lighting. The proposed project would require lighting of new development that could inadvertently cause light and glare for motorists on I-5. In addition, the degree of darkness in the City of Lathrop and on the proposed project site would diminish as a result of development, effectively obscuring views of stars, constellations, and other	LTS	No mitigation is required.	LTS	A, B, C

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Summary of Impacts, Mitigation Measures, and Alternatives

Impact	Significance before Mitigation	Mitigation Measure	Significance after Mitigation	Alternative
features of the night sky. Implementation of lighting guidelines included in the CLSP would substantially reduce the potential level of light generated by the proposed project, thereby minimizing the potential for these effects. This impact is considered less than significant.				

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3 Description of the Proposed Project

3 DESCRIPTION OF THE PROPOSED PROJECT

3.1 LOCATION AND SETTING

The Central Lathrop Specific Plan (CLSP) area encompasses approximately 1,521 acres immediately west and north of the existing corporate limits of the City of Lathrop (City) in San Joaquin County, California. Lathrop is situated in the San Joaquin Valley, at the junction of Interstate 5 (I-5), I-205, and State Route (SR) 120, approximately 65 miles east of San Francisco and 55 miles south of Sacramento (Exhibit 3-1). The specific plan area encompasses the land west of I-5, east of the San Joaquin River, north of the City's West Lathrop Specific Plan (WLSP) area, and south of the point where Squires Road would continue westward if it crossed I-5. The CLSP area is within the planning area and sphere of influence of the City of Lathrop but not within the existing City limits (Exhibit 3-1), and project approval and implementation would require annexation of the specific plan area into the City.

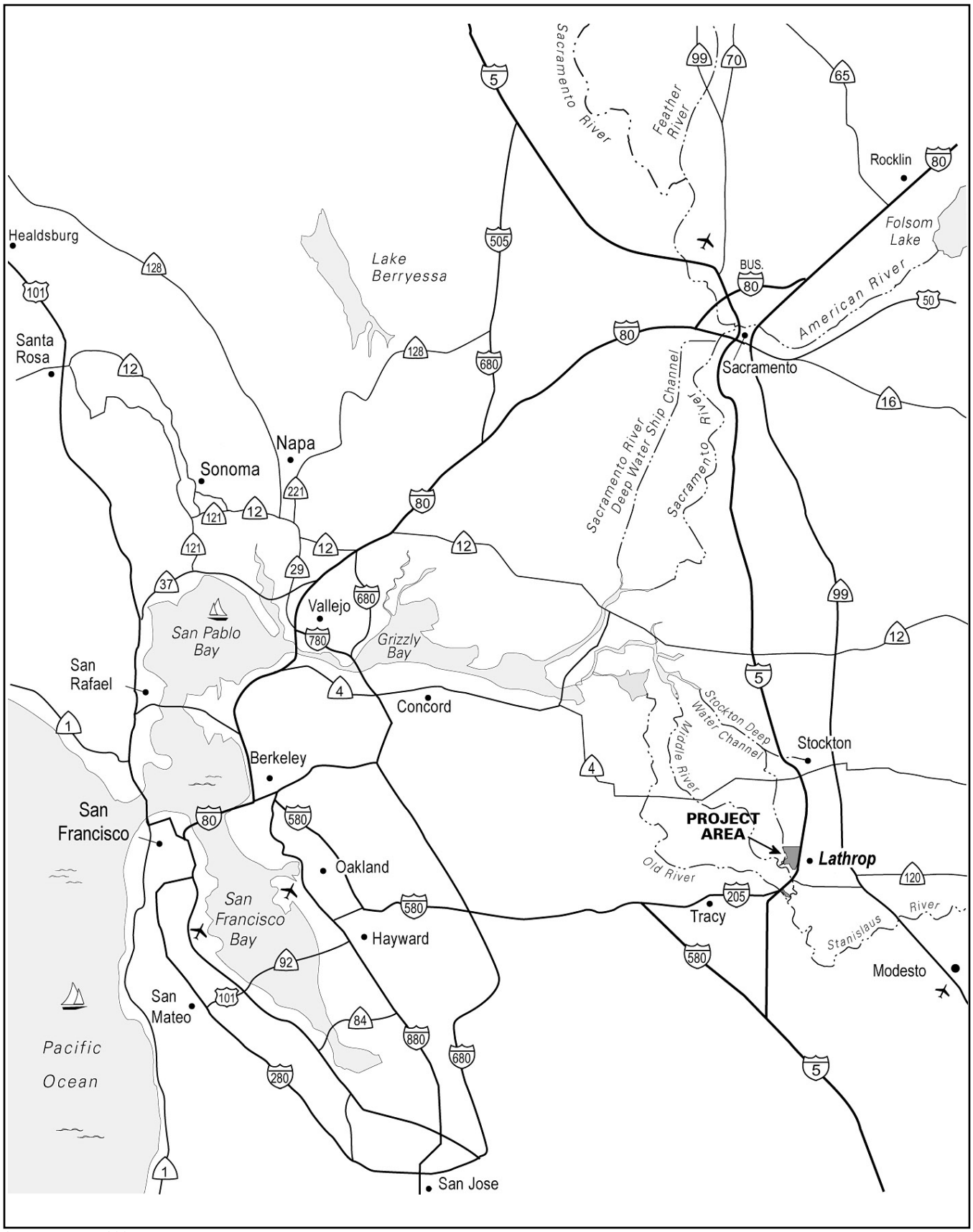
The CLSP area and adjacent lands are dominated by actively farmed agricultural lands interspersed with farmsteads and associated outbuildings. Much of the agricultural land in the specific plan area is under Williamson Act contract. Land south of the project site has been approved for residential and commercial development for the Mossdale Landing project in the WLSP area. Land west of the San Joaquin River is primarily in agricultural use. I-5 acts as the eastern boundary of the specific plan area, with the existing developed portions of the City of Lathrop east of I-5.

Richland Planned Communities (Richland) has provided a development proposal for the CLSP area that is reflected in the CLSP. Some parcels within the proposed CLSP area are not under the control of Richland (i.e., owned or under contract). If the project is approved, those properties would be annexed into the City and would be zoned consistent with the CLSP designations. Any proposed development on these properties not consistent with the new zoning would require additional CEQA review. The development agreement (DA) between Richland and the City would apply only to the lands under Richland's control at the time the DA becomes effective. However, it is anticipated that lands in the CLSP that may be purchased or put under contract by Richland in the future would become subject to the same DA.

Local vehicular access to the project area is provided by the Lathrop Road and Louise Avenue/River Islands Parkway interchanges on I-5 (Exhibit 3-2). The Roth Road interchange can also be used to reach the plan area from the north. From these interchanges, the land is accessible by traveling north and south on Manthey Road and west on Louise Avenue/River Islands Parkway, Dos Reis Road, or De Lima Road. Access to the remainder of the CLSP area is provided primarily by unpaved farm roads.

The proposed action includes various options and potential alternative locations for construction of a water recycling plant (WRP) to accommodate wastewater treatment demand generated in the CLSP area. The WRP would produce disinfected tertiary-treated effluent as defined by Title 22 of the California Code of Regulations (Title 22), which is the highest level of wastewater treatment. Related to the WRP, the proposed action also includes several potential sites for recycled water storage ponds and land application sites to address the disposal of recycled water generated by treatment of project-generated wastewater. Up to approximately 325 acres of area would be needed for these wastewater treatment and recycled water storage and disposal facilities. Specific sites for these various facilities are explained in detail in Section 3.4.4, Utilities, later in this chapter; however, the general areas being considered for these facilities are shown in Exhibit 3-3.

The sites shown in Exhibit 3-3 north of the CLSP area (Areas 1, 2, and 3) total approximately 558 acres and consist of actively farmed agricultural lands interspersed with farmsteads and associated outbuildings.



Source: EDAW 2004

Regional Location

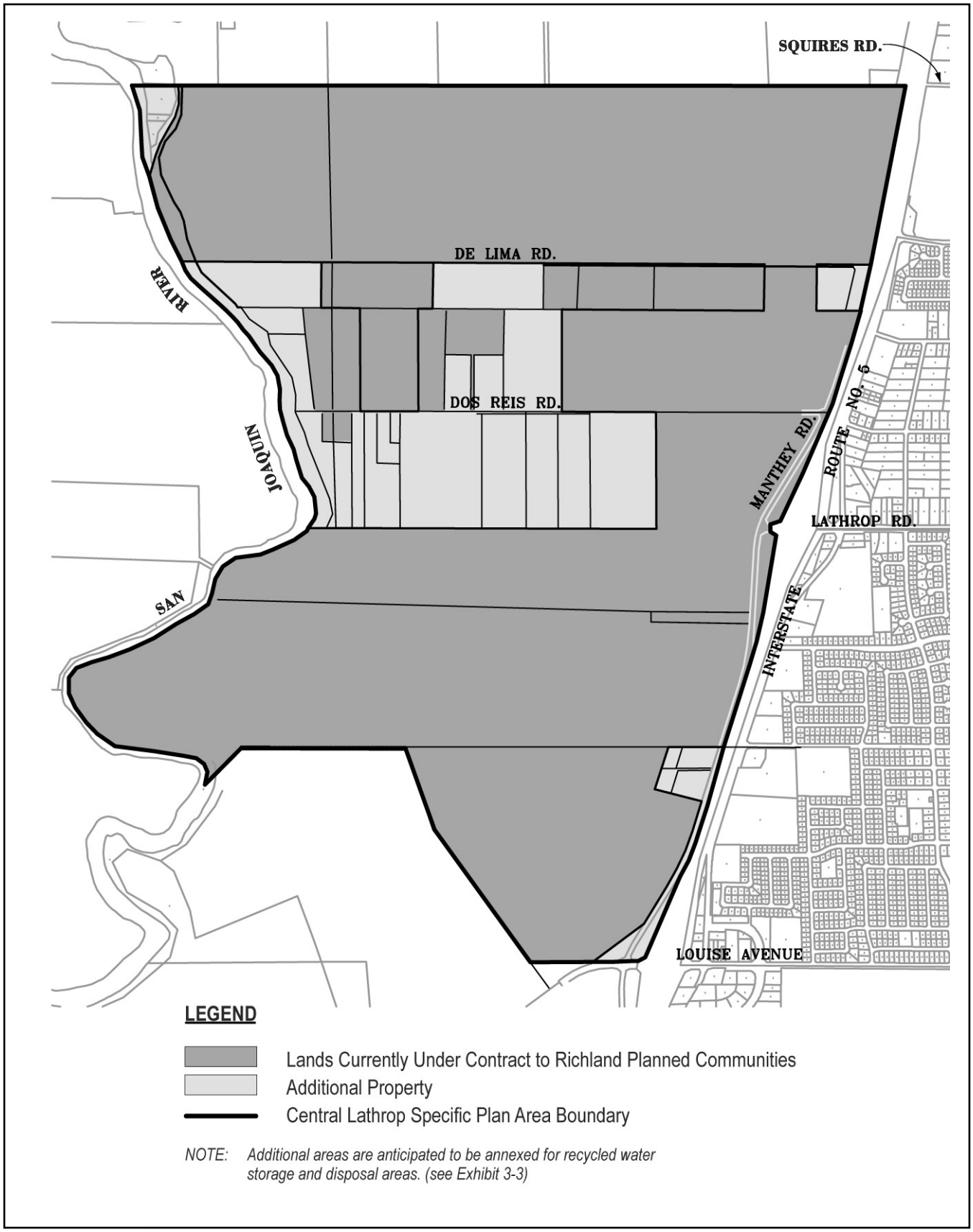
EXHIBIT 3-1

Central Lathrop Specific Plan Draft EIR
City of Lathrop
P 3T017.01 04/04

0 10 20
MILES

NORTH

EDAW



Base Map: MacKay & Somps

Central Lathrop Specific Plan Area

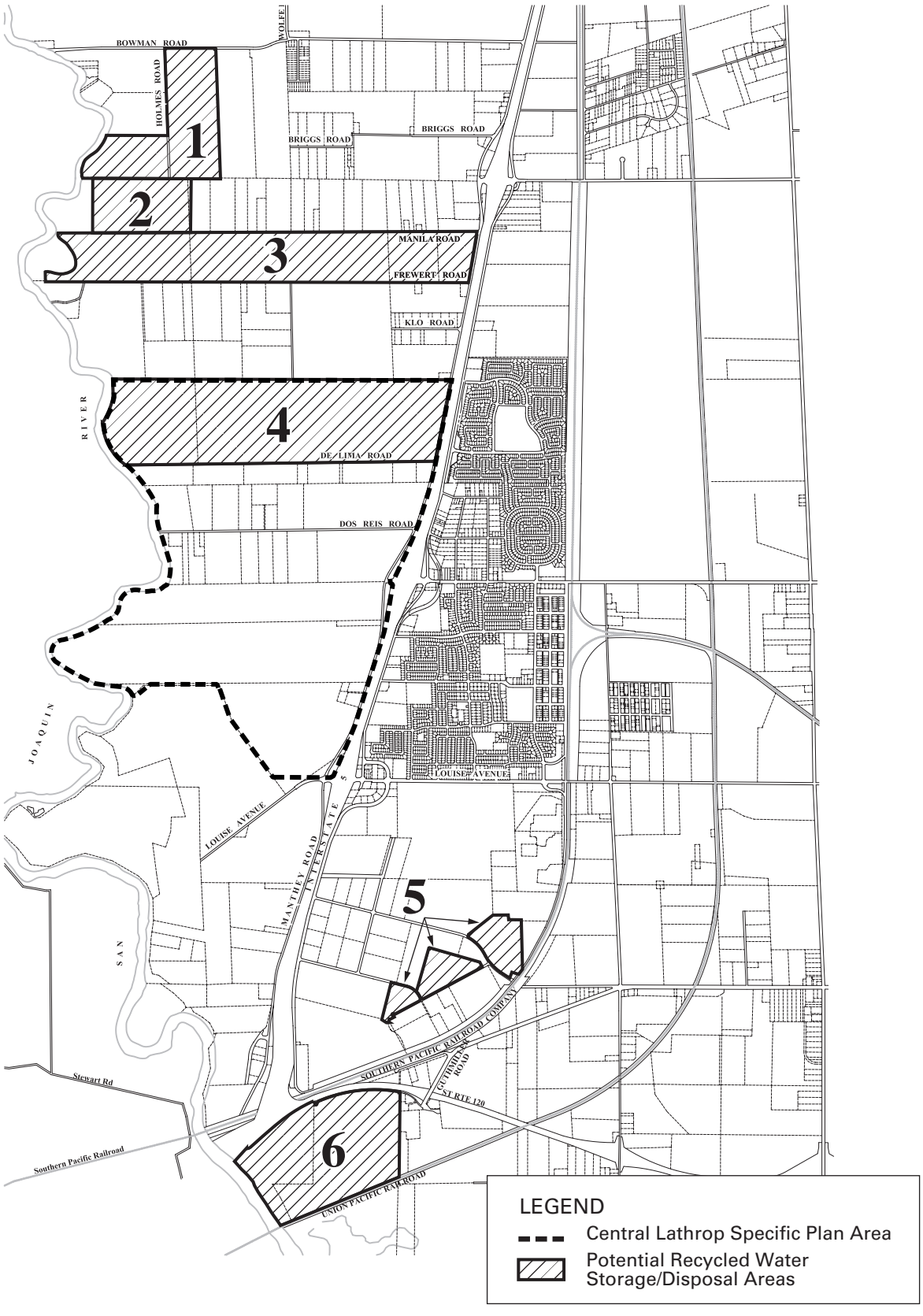
EXHIBIT 3-2

Central Lathrop Specific Plan Draft EIR
City of Lathrop
P 3T017.01 07/04

0 825 1650
FEET

NORTH

EDAW



Source: MacKay & Somps 2004

Areas Considered for Recycled Water Storage and Disposal Facilities

EXHIBIT 3-3

Central Lathrop Specific Plan EIR
City of Lathrop
G 3T017.01 05/04

0 2000 4000
FEET

NORTH

EDAW

Surrounding lands support similar uses. These areas are within San Joaquin County and outside the planning area and sphere of influence of the City of Lathrop. However, they are within the boundaries of Sub-Plan Area #2 of the City of Lathrop General Plan (see Section 3.4.4, Utilities, later in this chapter). Area 4 covers approximately 413 acres within the "Phase 2" portion of the CLSP area (see Section 3.4.6 for a discussion of project phases) and is considered for temporary recycled water storage and disposal sites until the development of Phase 2, as proposed in the CLSP, occurs. A potential site for a WRP is also located in the far eastern portion of this area. Onsite and surrounding land uses are described above for the overall CLSP area. The Area 5 complex consists of three parcels totaling approximately 56 acres within the City of Lathrop. These parcels are currently used as spray fields for disposal of recycled water generated by the City's existing WRP. The surrounding land uses include the existing WRP, industrial facilities, and vacant parcels associated with the Crossroads Industrial Park. Area 6 is bounded by SR 120 to the north, Union Pacific Railroad (UPRR) tracks to the south, the San Joaquin River to the west, and various industrial and commercial uses to the east. A majority of this approximately 224-acre site consists of agricultural fields; however, there is also an orchard in the southern portion of Area 6. This site is within the planning area and sphere of influence of the City of Lathrop but not within the existing city limits.

3.2 PROJECT BACKGROUND

The area being proposed for development in the CLSP has been addressed by the City in various planning documents since 1991, including the City of Lathrop General Plan, the Riverwalk Specific Plan, and two utility master plans. Each of these is discussed below.

3.2.1 CITY OF LATHROP GENERAL PLAN

The CLSP area was first designated for eventual urban development as part of Sub-Plan Area #2 in the City of Lathrop General Plan (City General Plan), adopted in 1991. The CLSP area is identified in the City General Plan as being within the City's sphere of influence but outside the city limits. Residential development in the City General Plan is designated as low density (1–7 dwelling units per acre [du/ac]), medium density (8–15 du/ac), or high density (16–25 du/ac). The City General Plan designates Sub-Plan Area #2 as intended primarily for low-density residential development, with approximately 5,000–8,000 housing units anticipated. Commercial development in Sub-Plan Area #2 is intended to be primarily freeway commercial uses until the population of the City increases sufficiently to support a community shopping center at Lathrop Road and I-5. The City General Plan anticipates approximately 5–10 million square feet of commercial space in Sub-Plan Area #2. The schematic diagram of the City General Plan (provided in Section 4.2, Land Use Consistency and Compatibility) shows much of the western and central portions of what is proposed as the CLSP area to be residential uses (low, medium, and high density). Along I-5, between Louise Avenue and Lathrop Road, office and commercial uses are shown, with a community park and a golf course shown along I-5 north of Dos Reis Road. Along Lathrop Road in the central portion of the CLSP area, a civic center and a transit center are identified, as well as a community park where Lathrop Road ends at the San Joaquin River (City of Lathrop 1991).

3.2.2 RIVERWALK SPECIFIC PLAN

The Riverwalk Specific Plan was proposed by Award Homes in 2000. The project was presented as a development proposal for a 423-acre portion of Sub-Plan Area #2 (and now the CLSP area) between De Lima Road and the western extension of Squires Road, as well as a narrow band between Manthey Road and I-5 that extended south from De Lima Road to Lathrop Road (generally corresponding to Parcel 4 in Exhibit 3-3). Development under the Riverwalk Specific Plan would have included approximately 1,750 single-family residences, an elementary school, two neighborhood parks, a community park, community

commercial development at Lathrop Road and Manthey Road, and a 10-acre open-space corridor called the Riverwalk. A wastewater treatment plant to serve the project was also proposed to the north of the specific plan area, on a parcel of land immediately east of the San Joaquin River between Frewart Road and Manila Road (corresponding to the western portion of Parcel 3 in Exhibit 3-3). Early in the CEQA review process, the applicant withdrew the proposal. The property identified for the Riverwalk project was later purchased by Richland.

3.2.3 LATHROP WATER, WASTEWATER, AND RECYCLED WATER MASTER PLAN

In 2000, the City prepared a Water, Wastewater, and Recycled Water Master Plan (Water Master Plan) that updated its water infrastructure master plans and enabled the City to phase the construction of infrastructure to link logically with the phasing of development in the City. The environmental impact report (EIR) for the Water Master Plan (EDAW 2001) indicates that, in 2001, municipal water pipes in the CLSP area were present in De Lima Road, Dos Reis Road, and along a small portion of Manthey Road south of Lathrop Road; other properties were served by onsite wells. All properties in the CLSP area are served by septic systems; there are no connections to the municipal wastewater system.

The Water Master Plan provides for phased development of water and wastewater infrastructure in the CLSP area and throughout the city. Water pipelines and a water storage tank/booster pump station are proposed in the CLSP area. Wastewater pipelines are identified for the CLSP area as well, with wastewater treatment planned for a newly constructed water recycling plant at I-5 and the western extension of Squires Road (Water Recycling Plant [WRP] #2) (corresponding to the eastern portion of Parcel 4 in Exhibit 3-3). Recycled water pipelines are also proposed for installation throughout the CLSP area. The Water Master Plan permits recycled water to be used for public landscaping areas such as roadways, parks, medians, landscaped areas in commercial developments, and open-space areas. Irrigation of agricultural lands with recycled water is also permitted. Recycled water storage ponds and spray fields are conditionally permitted uses in various zoning districts in the City.

3.2.4 NORTHERN AREA PORTION MASTER PLAN OF DRAINAGE

Preparation of the Northern Area Portion Master Plan of Drainage (NAPMPD) (RBF Consulting 2003) was initiated primarily to support development proposals for a project known as Stonebridge, located east of I-5 in the City of Lathrop. However, the focus of the plan was expanded to include an evaluation of overall storm drainage infrastructure needs in the northern part of the City, including developed portions of the City east of I-5 and undeveloped areas west of I-5. The area west of I-5 evaluated in the plan includes what is now the CLSP area.

The most detailed analysis in the NAPMPD pertains to areas east of I-5. Because no definite land plan for the area encompassing the CLSP existed at the time the NAPMPD was prepared, this area was addressed only in general terms. However, consistent with directives regarding peak outflow limitations into the San Joaquin River, the NAPMPD does establish that areas west of I-5 (i.e., the CLSP area) cannot discharge more than 30% of the peak stormwater flow rate during a 100-year storm event. The NAPMPD also recommends installation of an outfall system that passes through the CLSP area along Dos Reis Road en route to the San Joaquin River (the Stonebridge Outfall). This outfall structure (i.e., headwall), which is currently under construction, will serve the Stonebridge development area, but will also include four additional outfall ports that have sufficient capacity to serve a portion of the CLSP area. The NAPMPD also identifies the need to construct a second outfall structure to serve the remaining lands in the drainage plan area and west of I-5 that are not served by the Stonebridge Outfall (i.e., the remainder of the CLSP area).

3.3 PROJECT GOALS AND OBJECTIVES

The overarching goal of the proposed project is the orderly and systematic development of an integrated, full-service, mixed-use community in the City General Plan Sub-Plan Area #2 that is generally consistent with the goals and policies of the City General Plan and compatible with site characteristics.

In support of this overarching goal, the proposed project is designed to achieve the following more specific goals and objectives:

Goal A: Establish a mixed-use community that implements the intent of the City General Plan that Sub-Plan Area #2 be developed with urban land uses that complement existing development in the City

1. Establish a comprehensive land use plan that will guide development of the plan area in a way that is compatible with and complements existing and planned land uses in other portions of the City.

2. Update the City's long-term vision for Sub-Plan Area #2 as a mixed-use community, as set forth in the City's 1991 General Plan (as amended), by incorporating refinements designed to reflect evolving innovation in land use planning concepts.

3. Provide a balanced mix of land uses, including residential neighborhoods; retail, office, service-related commercial, and other non-residential employment-generating land uses; and public/semi-public uses such as schools, parks, and other civic-oriented facilities.

4. Provide roadway improvements and land use planning that will tie together existing City of Lathrop development east of I-5 and new development west of the freeway.

Goal B: Provide a variety of housing types that will serve residents of differing incomes

5. Create opportunities for a variety of marketable housing types available to households of differing incomes, including single-family residential densities that are significantly higher than those found elsewhere in Lathrop and that are designed to provide more efficient land use, more affordable housing without reducing quality or amenities, more efficient use of public infrastructure, and more environmentally sensitive development patterns.

6. Contribute to the efforts to make provision for the growing housing needs of the City and the region by encouraging the production of a broad mix of housing types and densities.

Goal C: Create integrated neighborhoods that link with the surrounding commercial and public/semi-public uses

7. Create a distinctive focal point for the plan area and a social centerpiece for the surrounding neighborhoods by anchoring the plan area with a pedestrian-oriented, centrally located village center that will include neighborhood-serving retail, civic and cultural uses, a high school, and a large community park.

8. Incorporate a mix of neighborhoods organized around interior neighborhood parks and neighborhood kindergarten through grade 8 (K-8) schools.

9. Provide shopping, services, entertainment, and recreation such that those who live and work within the plan area will not have to travel elsewhere for most routine or daily needs and City residents who live outside the plan area will be able to address more of their needs without traveling outside the Lathrop community.

Goal D: Provide economic and planning benefits for the City as a whole through commercial and retail development, availability of civic and public/semi-public space, and increased tax revenues

10. Establish a regional commercial corridor (including both retail and office uses) adjacent to the I-5 freeway that makes use of the visibility and prime freeway access provided by the Louise Avenue and Lathrop Road interchanges while buffering nearby residential neighborhoods from freeway-related impacts.

11. Generate positive fiscal benefits for the City resulting primarily from the regional commercial development adjacent to the I-5 corridor.

12. Increase employment and retail shopping opportunities for City residents.

13. Create an opportunity to locate public and semi-public uses within the central core of the plan area.

14. Add value to the existing and future City community and contribute to the establishment of a strong local economic base through (a) job creation; (b) the economic stimulus that comes from the multi-million-dollar investment required to develop the Central Lathrop Specific Plan and the disposable income of the people who will ultimately live and work in the plan area; and (c) the local general fund revenues generated by increased property taxes, retail sales taxes, and transient occupancy taxes.

15. Create a town center to serve existing and new development in the City.

Goal E: Provide opportunities for improved integration of transportation modes and increased transportation efficiency

16. Encourage non-vehicular travel by linking plan area neighborhoods to the village center, parks, and schools as well as to each other through an interconnected system of pedestrian and bicycle pathways.

17. Establish residential and job-generating non-residential land uses in close proximity to each other to minimize home-to-work vehicular trip lengths, automobile usage, and related air quality impacts.

18. Provide an integrated, efficient, and safe circulation system for pedestrians, bicyclists, transit, and vehicles.

Goal F: Provide recreational benefits to plan area and City residents through a comprehensive public park program and riverside parks

19. Maximize active and passive recreational opportunities through the creation of a comprehensive public park program that includes a linear park and open space system located adjacent to and providing access to the San Joaquin River, a large community park located adjacent to the high school site that affords an opportunity for joint use, and

neighborhood parks that are centrally located within each residential village to ensure ease of access for area residents.

20. Enrich the relationship between the City and the San Joaquin River by incorporating the river's edge as a critical component of the plan area parks program.

3.4 PROJECT CHARACTERISTICS

3.4.1 LAND USES

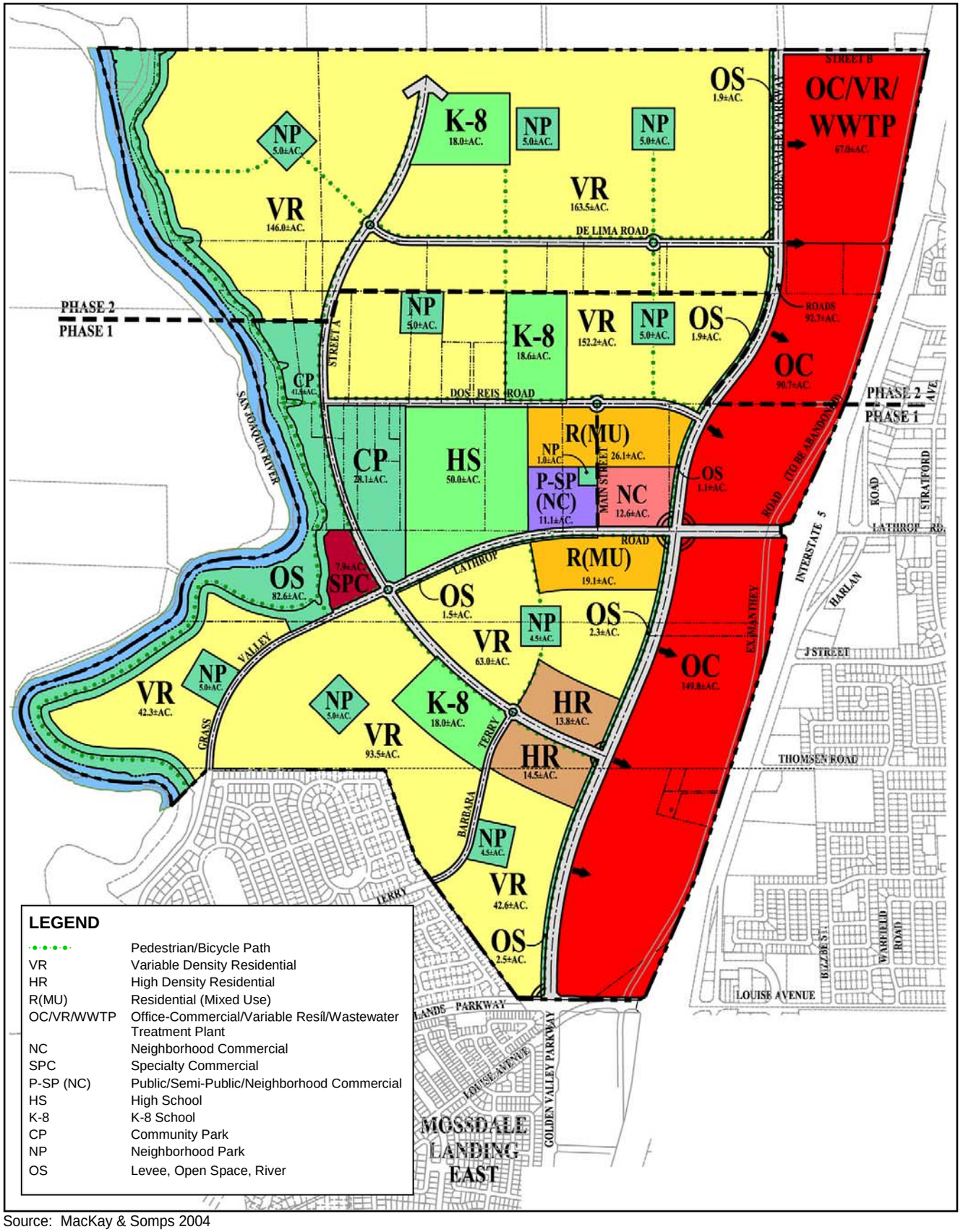
The land use plan proposed under the CLSP is a mixed-use development consisting of residential, commercial, public/civic, park, and open-space features (Exhibit 3-4, Table 3-1). Most of the plan area is identified for residential development, with 6,790 housing units proposed in high-density, variable-density, and residential/mixed use designations. A central civic area at the Lathrop Road/Golden Valley Parkway intersection is designed to serve as a Main Street District, with public and civic uses, a Main Street–type commercial/mixed-use area, a neighborhood commercial area, and residential/mixed use areas that could accommodate shops at street level with high-density residential dwellings above. Land located between I-5 and Golden Valley Parkway would be designated for up to approximately 4.01 million square feet of office and commercial uses. Combined office and commercial space for all land uses would total up to approximately 4.99 million square feet. The northeast corner of the CLSP area has multiple designations allowing for office/commercial uses, residential units, and/or a wastewater treatment plant (i.e., a WRP); the final determination of the land use for this property would depend on development conditions and decisions made regarding wastewater treatment service (see the subsection titled "Wastewater Treatment/Water Recycling Plant" in Section 3.4.4, Utilities, below).

The land use plan includes designations for a high school and three K-8 schools in the plan area. Various neighborhood parks are included in the land use plan, and a large community park area is proposed adjacent to the proposed high school location. A meandering greenbelt comprising community park, a trail, and open space areas would be created along the entire north-south extent of the San Joaquin River. Additional greenbelts, including trails, would follow along the west side of Golden Valley Parkway and a portion of the south side of Lathrop Road (Exhibit 3-4). These roadway greenbelts may also contain linear stormwater detention basins, and several of the neighborhood parks are identified as sites for potential multi-use stormwater detention basins. The multi-use basins would be managed in such a way as to serve as both park amenities and stormwater detention facilities (see Section 3.4.3, Drainage Plan, below).

Under the proposed project, the entire CLSP area would be annexed into the City, thus becoming part of the City of Lathrop. Most of this area is owned by or under contract to Richland (Exhibit 3-2). Lands owned by or under contract to Richland are also included in the project development proposal (Exhibit 3-4). Other lands in the CLSP area (those indicated as "Additional Property" in Exhibit 3-2) would also be annexed into the City and would be subject to proposed City zoning, but are not necessarily subject to the current development proposal.

RESIDENTIAL AREAS

In contrast to the usual practice of designating low-, medium-, and high-density residential areas, the CLSP identifies variable-density and high-density residential areas. The variable-density (VR) designation generally encompasses the range of low and medium densities from the City General Plan (1–15 du/ac), with VR densities of 3-16 du/ac and an anticipated average density of 7.27 du/ac. This approach to residential development is intended to provide flexibility in the planning and development of neighborhoods over the approximately 15-year CLSP buildout period (2005–2020), and to allow a variety



Source: MacKay & Somps 2004

Central Lathrop Specific Plan ñ Land Use Plan

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of housing types, ranging from detached single-family houses to townhouses and condominiums, rather than isolating specific housing types in separate neighborhoods. As each neighborhood is developed under the CLSP, the range of housing densities would be determined based on planning needs in the City and market demand.

Table 3-1
Land Use Summary for the Central Lathrop Specific Plan

Land Use	Acres	Average Density*	Dwelling Units	Square Feet
Variable Density Residential (VR)	703.1	7.27 du/ac	5,114 or 5,614	
High Density Residential (HR)	28.3	16.0 du/ac	453	
Residential/Mixed Use (R/MU)	45.2	0.3 FAR and/or 16.0 du/ac	723	590,674
Office-Commercial/Variable Residential/Wastewater Treatment Plant (OC/VR/WWTP)	67.0	0.3 FAR and/or 7.27 du/ac	500 or 0	437,778 or 875,556
Office-Commercial (OC)	239.7	0.3 FAR		3,132,400
Neighborhood Commercial (NC)	12.6	0.3 FAR		164,657
Specialty Commercial (SPC)	7.9	0.25 FAR		86,031
Public/Semi-Public (Neighborhood Commercial underlay) [P-SP(NC)]	11.1	0.3 FAR		145,055
High School (HS)	50.0			
K-8 School (K-8) (3 schools)	54.6			
Community Park (CP)	70.0			
Neighborhood Park (NP)	45.0			
Levees, Open-space, River (OS)	93.8			
Roads	92.7			
Total	1,521.0	N/A	6,790	4,556,394 or 4,994,372

*Residential density is shown as average dwelling units per acre (du/ac); commercial density is shown in average floor area ratio (FAR).
Source: MacKay & Somps 2004

Lands under the VR designation would cover approximately 703 acres, with either 5,114 or 5,614 housing units planned in these areas, depending on the ultimate uses in the Office-Commercial/Variable Residential/Wastewater Treatment Plant (OC/VR/WWTP) area (see discussion of this mixed-use parcel below). An estimated 453 housing units would be in areas zoned as High Density Residential (HR), encompassing 28.3 acres with an anticipated average density of 16 units per acre.

The 45 acres of area designated as Residential/Mixed Use (R/MU) could accommodate up to 723 additional high-density housing units. Portions of this area could consist solely of residential uses, portions could consist solely of commercial uses, and portions could have both uses with commercial services at street level and apartments or similar residential units on the upper floor(s) or in adjacent structures. For purposes of this EIR analysis, it is assumed that the entire R/MU area would support both uses (commercial at street level and residential above) to ensure that the maximum possible density of

potential development is evaluated. Experience may prove this to have been a worst-case assumption, but it is included to ensure that potential environmental impacts are not understated.

A 67-acre parcel in the northeast corner of the CLSP area is designated as OC/VR/WWTP. This location is considered for three potential development scenarios:

(1) developed entirely for office-commercial uses,

(2) contain a WRP as well as office-commercial uses, or

(3) contain up to 500 variable-density housing units on half the parcel (33.5 acres) with the remainder of the parcel utilized for office-commercial uses.

These options are described further in the discussions of commercial uses and WRP sites below. If option 1 or 2 is ultimately selected and no housing units are located on the OC/VR/WWTP parcel, the 500 housing units considered in option 3 would be shifted into the variable-density residential neighborhoods (VR land use areas) in the Phase 2 portion of the CLSP area (Exhibit 3-4) (see Section 3.4.6 for a discussion of project phases).

MAIN STREET DISTRICT

The Main Street District identifies a location between Dos Reis Road, Lathrop Road, Golden Valley Parkway, and the proposed high school (Exhibit 3-4) that would bring together commercial, public and civic, and residential uses that would serve as a focal point for the specific plan area. The Main Street District would include approximately 12.6 acres of Neighborhood Commercial (NC) uses at the northwest corner of the Lathrop Road/Golden Valley Parkway intersection. West of the commercial area, across a pedestrian-oriented Main Street, would be approximately 11 acres of Public/Semi-Public [P-SP(NC)] uses such as city offices, library, and police or fire departments. This parcel has an underlying zoning allowing for neighborhood commercial uses if public/semi-public uses are not developed here. A 1-acre neighborhood park would also be located in this portion of the district.

The northern half of the Main Street District would consist of approximately 26 acres of R/MU areas, bisected by the pedestrian-oriented Main Street. Although not technically part of the Main Street District, an additional 19 acres of R/MU would be developed on the south side of Lathrop Road at Golden Valley Parkway. Further discussions of the Main Street District in this EIR include this R/MU area south of Lathrop Road. As stated above, the R/MU areas are intended to have flexibility to develop as commercial space at street level with high-density residential units above or adjacent, or to have portions develop solely as commercial or residential space. For this EIR analysis, the maximum-density development scenario is assumed, with combined commercial uses at street level and high-density residential above.

COMMERCIAL AREAS

The CLSP provides for several varieties of commercial development. The eastern side of the plan area, between I-5 and Golden Valley Parkway, would be designated for up to approximately 4.01 million square feet of Office-Commercial (OC) uses (assuming maximum OC use of the 67-acre OC/VR/WWTP parcel). The Main Street District would contain neighborhood commercial and mixed-use areas (see discussion above) with up to approximately 900,000 square feet of commercial and office uses. At the intersection of Lathrop Road/Grass Valley Road and Street A (Exhibit 3-4) is a roughly 8-acre Specialty Commercial area that could accommodate up to approximately 86,000 square feet of commercial space. This area is intended to be used for recreation-oriented businesses that could take advantage of the location near the community park and the San Joaquin River.

As discussed above, the OC/VR/WWTP area at the northeast corner of the CLSP area could be developed entirely as office-commercial space, or designed for a combination of OC and VR uses or OC and a WRP. The office-commercial space that could be developed under these options is considered to range from 437,778 square feet for a shared use to 875,556 square feet for a pure OC use.

PUBLIC USES

Schools

The CLSP designates land for a high school and three K-8 schools. Schools would be within the boundaries of and operated by the Manteca Unified School District. The K-8 school sites are spread throughout the plan area to serve as neighborhood schools that would be constructed progressively as the plan area develops. Each K-8 school would cover approximately 18 acres and would be designed to serve approximately 1,000 students. Each K-8 school would have sufficient expansion capacity to accommodate up to 200 additional students if needed. The high school would be located centrally on approximately 50 acres and would be bounded by Lathrop Road on the south, Dos Reis Road on the north, the community park on the west, and the Main Street District on the east. The high school would be designed to serve approximately 2,000 students and have the expansion capacity to accommodate up to 500 additional students if needed. The high school would be constructed early in the development of the plan area to serve students housed within the proposed project as well as potentially accommodating high school students residing elsewhere in Lathrop who currently attend Sierra High School in Manteca or Weston High School in Weston Ranch.

Parks and Open Space

Several types of parks and open space areas are designated in the CLSP area. An approximately 70-acre community park would extend along the San Joaquin River from the northern border of the plan area to the southern boundary, with parkland expanding east into the central portion of the CLSP area and crossing Street A between Dos Reis Road and Lathrop Road/Grass Valley Road. The community park would focus on community-oriented activities and active recreation opportunities such as ball field complexes and group picnic facilities. The location for the community park encompasses the existing Dos Reis Regional Park, which is located along the San Joaquin River at the western terminus of Dos Reis Road and is owned and operated by San Joaquin County. The existing park includes recreational vehicle (RV) and tent campsites, boat launch facilities, and picnic and play areas. After project development, Dos Reis Regional Park would remain in County ownership and would continue to provide similar facilities and services. There would be no change to the boat launch facilities and RV and tent camping would be retained. However, some picnic and play areas may be improved or altered to better integrate the County park with the surrounding City-owned community park facilities, with County approval.

Neighborhood parks would be distributed throughout the plan area and provide recreational facilities directed at neighborhood needs such as play lots and multi-purpose fields. Nine neighborhood parks of approximately 4-5 acres each would be located in residential neighborhoods. An additional 1-acre neighborhood park is proposed in the P-SP(NC) portion of the Main Street District.

Open space greenbelt areas are identified along the levee on the east side of the San Joaquin River and along the west side of Golden Valley Parkway. A smaller open space greenbelt would be provided along a portion of Lathrop Road. The riverfront greenbelt may include various park-like facilities such as multi-use trails, picnic areas, and free-play lawn areas. In all, approximately 94 acres of the plan area are identified as open space, levee, and river shoreline/river.

The community park, many of the neighborhood parks, and the greenbelt areas along Golden Valley Parkway and Lathrop Road are being designed to accommodate stormwater detention basins of various sizes and configurations. These basins would fill for only limited periods during severe storm events and would drain relatively quickly after storms subside. The basins within the parks would be constructed with gentle slopes so that they would grade relatively naturally into the overall park facility and would be landscaped with turf or similar vegetation, consistent with their use as a park feature. The detention basins along the Golden Valley Parkway and Lathrop Road greenbelts would consist of a long, linear vegetated swale or canal consistent with the linear nature of the greenbelt. Another linear detention basin would be located along the west side of Street A where it passes through the community park. Underground storage is also being considered as a stormwater detention option. If underground storage is used, all or a portion of the park and linear detention basins may not be required. The detention basins and underground storage options are described in more detail in Section 3.4.3, Drainage Plan, below.

Trails

An interconnected pedestrian and bicycle pathway system is proposed within the CLSP area that would link the various neighborhoods, schools, parks, and the Main Street District. Locations for the various pathways and trails are shown in Exhibit 3-4. Prominent within the trail system is a multi-use trail (pedestrian and bicycle) that would be located on or adjacent to the San Joaquin River levee. The levee, trail, and associated open space corridor would provide views of the river and environs, allow for regional trail access to the north and south of the CLSP area, and create areas for passive recreation activities. Facilities such as picnic areas and free-play lawn areas may be provided along the trail. The trail, if located on the levee, would also function as a maintenance road for Reclamation District 17 (RD 17), which has inspection and maintenance responsibility for the levee.

Off-street multi-use trails would be provided adjacent to the major arterial roadways and many of the collector roadways, including Golden Valley Parkway, De Lima Road, Dos Reis Road, Lathrop Road, and Street A. Some additional roadways, such as Grass Valley Avenue and Barbara Terry Road, would be designed with on-street bicycle lanes. In addition to the trails associated with the roadway network, various paths and/or multi-use trails would be located within the residential neighborhoods to connect schools and parks to the overall trail system.

3.4.2 TRAFFIC AND VEHICULAR ACCESS

The arterial and collector road network proposed for the CLSP area is shown in Exhibit 3-4. Roadways providing access to and throughout the CLSP area would consist of existing roads, improved roads along existing roadway alignments, and new roads. The major arterials in the CLSP area would be Golden Valley Parkway and Lathrop Road. These arterials would prioritize the movement of through traffic while providing some access to adjacent properties. In general, the arterials serve those portions of the plan area anticipated to develop as commercial, office, and public uses. Golden Valley Parkway would consist of four lanes between Lathrop Road and the northern plan boundary (i.e., Street B), and six lanes between Lathrop Road and Louise Avenue. Lathrop Road would provide six traffic lanes between Golden Valley Parkway and I-5; four lanes between Golden Valley Parkway and Main Street; and two lanes west of Main Street, with this final two-lane segment being classified as a collector street.

The remaining major roadways in the CLSP area are collector streets, which serve some level of through traffic while providing access to adjacent properties. The collector streets are generally adjacent to less intensive land uses such as residences and parks. The existing De Lima Road and Dos Reis Road would be improved and would act as the major east/west collectors. Each road would provide two travel lanes. The major north/south collector would be Street A, which would also provide two travel lanes. The right-of-way width for Street A would vary considerably based on adjoining land uses and whether a particular

segment contains on-street parking, on-street bicycle lanes, and other roadway features. Grass Valley Road and Barbary Terry Road, both two-lane collector streets, would provide roadway connections between the CLSP area and the Mossdale Landing development to the south. The Golden Valley Parkway arterial would also serve this function. The final collector street, Street B, would provide a connection along the northern CLSP boundary between Golden Valley Parkway and the existing Manthey Road, which continues north outside the plan area.

Primary freeway access to the CLSP area would be provided via the Lathrop Road and Louise Avenue/ River Islands Parkway interchanges on I-5. Freeway access north of the plan area would also be available from the I-5/Roth Road interchange. Surface street access between the CLSP area and locations east of I-5 would be provided by Lathrop Road and Louise Avenue where these roadways pass under I-5. Improvements to both these interchanges and associated underpasses are planned for in the City of Lathrop Capital Facility Fee (CFF) program and the West Lathrop Specific Plan Regional Transportation Fee (Regional Transportation Fee) program. Both these fee programs and roadway improvements to be funded by the fees are explained in more detail in Section 4.4, Transportation and Circulation. Development in the CLSP area would be designed to accommodate these planned interchange and roadway improvements, which would also serve the CLSP area.

3.4.3 DRAINAGE PLAN

BACKGROUND

Currently, there are no public storm drain facilities that serve any properties within the CLSP area. Storm runoff is collected in a system of shallow agricultural ditches and discharged into the San Joaquin River via several relatively small pump and outfall systems. A formal stormwater management system is proposed for the CLSP area.

Several factors in the CLSP area provide challenges to site drainage and design and operation of a stormwater management system. Topography in the plan area is very flat, with roughly 4 feet of elevation change between the highest and lowest points east of the San Joaquin River levee. Therefore, it can be difficult to establish gravity flows for stormwater drainage. Ultimate discharge to the San Joaquin River must be pumped over or through the RD 17 levee. Various water quality best management practices (BMPs) must be implemented to allow stormwater discharges into the San Joaquin River. Shallow groundwater in the plan area can limit stormwater detention and retention options. Detention/retention basins cannot be located within 200 feet from the base of the RD 17 levee. In addition, the City has adopted a policy that within the area encompassed by the CLSP, during a 100-year storm event, only 30% of the peak stormwater flow rate may be discharged (i.e., if the total estimated post-project peak discharge rate during a 100-year storm was 10 cubic feet per second [cfs], stormwater discharges from the project site during any storm event could not exceed 3 cfs). The remaining stormwater must be detained/retained until precipitation levels decline.

The drainage plan proposed for the CLSP area is designed to address the various constraints and requirements applicable to the plan area. Key elements of the drainage plan are described here. The Project Area Drainage Plan (MacKay & Somps 2004) is included as Appendix H of this DEIR.

STORMWATER COLLECTION AND FILTRATION

Stormwater in the CLSP area would initially be collected via standard storm drains in streets and other impervious surface areas. In areas of potential pollutant "hot spots" (i.e., areas or uses that typically have high pollutant loads), drop inlet filters may be used. Drop inlet filters install directly into the storm drain and are filled or lined with filter media to remove pollutants as they enter the storm drain system. These

devices are used with filter media specific to the types of pollutants associated with common development hot spots, such as gas stations, nurseries, light industry, and maintenance yards. Within commercial areas, additional filter systems placed in vaults or incorporated into building downspouts would also be used as appropriate.

In residential districts, underground hydrodynamic separators (also called vortex separators or swirl concentrators) would be incorporated into the drainage system. These devices receive stormwater in a circular chamber and, through the movement, slowing, and screening of water, use standard hydraulic principles to separate trash, debris, and various particulate matter from the stormwater. Addition of absorbent materials to the inflow area also allows the removal of oils and grease in these devices.

Filtered/cleansed stormwater would continue through an underground storm drain system to one of five pump stations in the CLSP area. Each pump station would serve a particular watershed in the plan area (Exhibit 3-5). Watershed boundaries are based on various factors, such as property ownership, anticipated future land use, timing of project construction, and surface water and groundwater hydrology. The establishment of the individual watersheds assists in the planning, design, and operation of the overall drainage system. Pumping capacity at each station would be sized so that pumps cannot discharge more than 30% of the peak stormwater flow rate during a 100-year storm event, in accordance with City requirements.

STORMWATER DISCHARGE AND OUTFALLS

From the pump stations stormwater would be discharged to the San Joaquin River via one of two outfall structures. As stated above in the discussion of the NAPMPD, the Stonebridge Outfall (Exhibit 3-5), which is under construction, includes four outfall ports that have sufficient capacity to serve a portion of the CLSP area.

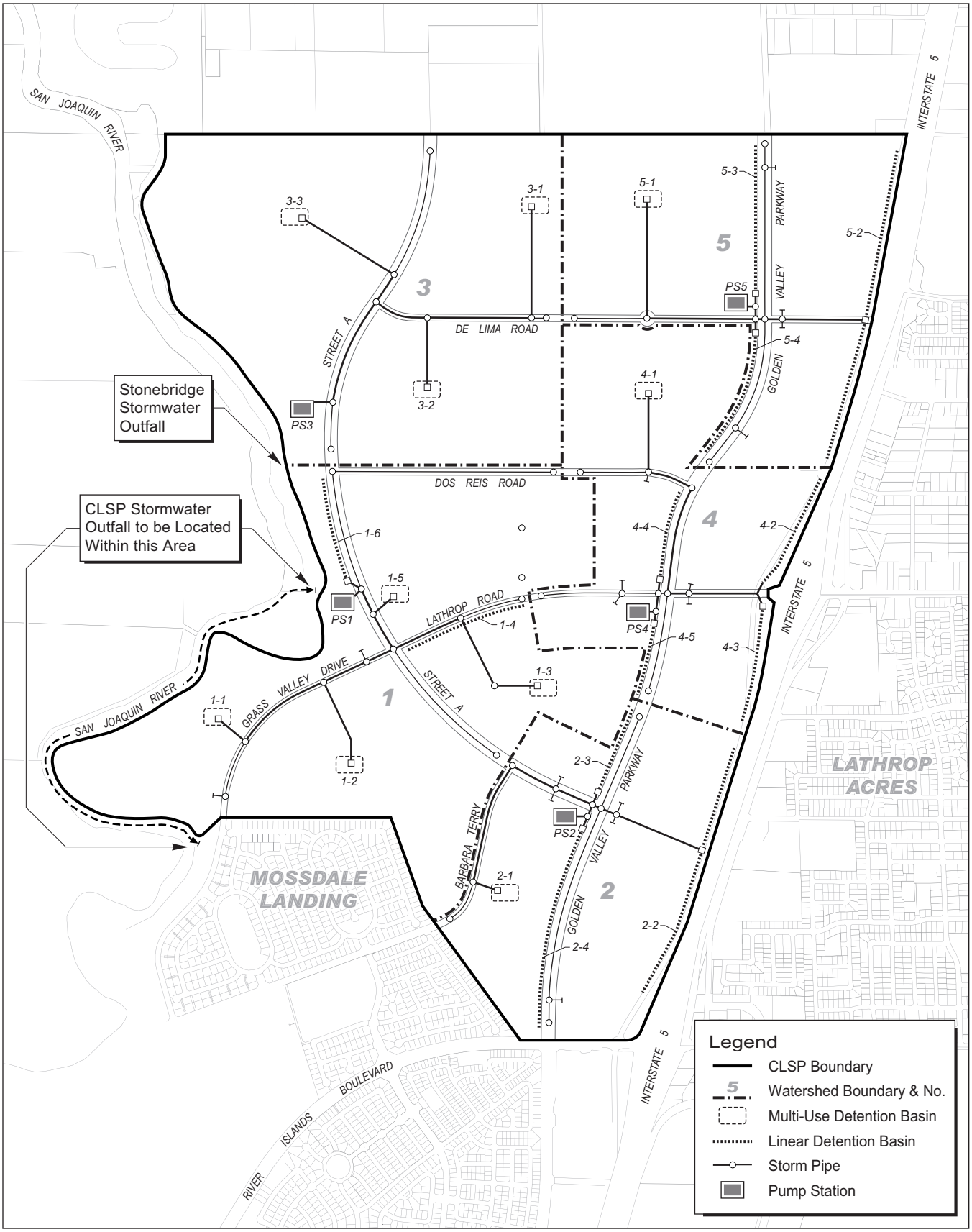
It is expected that pump stations 3 and 5 (serving watersheds 3 and 5) would discharge stormwater via the Stonebridge Outfall.

The NAPMPD also identifies the need to construct a second outfall to serve remaining lands not served by the Stonebridge Outfall. The CLSP drainage plan includes a second outfall structure to be located along the San Joaquin River (CLSP Outfall). A specific site for the CLSP Outfall has not been determined; however, the structure would be installed on the river somewhere between Pump Station #1 and the southern plan area boundary (Exhibit 3-5). It is most likely that the outfall structure would be installed in the northern portion of the area being considered.

It is anticipated that the CLSP Outfall would discharge stormwater collected in watersheds 1, 2, and 4. Approximately six or seven 30-inch-diameter outfall ports would be required to accommodate discharges from these watersheds, pumped to the outfall via pump stations 1, 2, and 4 (Exhibit 3-5).

DETENTION FACILITIES

To meet City requirements, the five pump stations identified in the drainage plan are designed to discharge no more than 30% of the peak stormwater flow rate during a 100-year storm event. During most storm events, this pumping capacity would be sufficient to immediately discharge all stormwater collected in the CLSP area. However, during periods of heavy precipitation, these pumps would not be able to discharge stormwater as quickly as it enters the system. To accommodate the accumulation of stormwater in the drainage system during heavy rain events, various detention basins are proposed



Source: MacKay & Somps 2004

Proposed Stormwater Collection System

EXHIBIT 3-5

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throughout the CLSP area (Exhibit 3-5). As stormwater backs up in the pipes leading to the pump stations during heavy precipitation periods, the excess water could ultimately flow into the detention basins and be stored there temporarily until precipitation levels subside. As rainfall declines and the input of new runoff into the system is reduced, the pump stations would continue to operate, ultimately draining the stormwater collected in the detention basins and the remainder of the stormwater system.

Underground storage facilities (e.g., tanks, vaults, pipes) are also being considered as stormwater detention mechanisms. These underground facilities would function in a similar manner as the detention basins. The underground storage facilities could be installed in various locations throughout the CLSP area as long as the aboveground facilities and structures constructed over the tanks are designed appropriately to accommodate their presence. All or a portion of the proposed detention basin storage capacity could potentially be provided by underground storage facilities as an alternative stormwater detention option.

Three classes of detention facilities are proposed: multi-use detention basins, linear detention basins, and underground storage facilities. Among these three types of facilities, a total of 46.9 acre-feet (ac-ft) of stormwater storage capacity is proposed in the CLSP area.

The multi-use detention basins would be located in the proposed neighborhood parks (Exhibits 3-4 and 3-5) and would be designed to function as detention basins during storm events and remain available for park uses during the remainder of the year. The multi-use basins would be constructed with gentle slopes so they would grade relatively naturally into the overall park facility and would be landscaped with turf or similar vegetation consistent with their use as a park feature. Because the basins would only fill for limited periods during severe storm events and would drain relatively quickly after storms subside, park-like landscaping could be maintained, and the basin area would be available for recreational uses for a majority of the year.

Linear detention basins are being considered in the greenbelt area along a portion of Lathrop Road, in the greenbelt area adjacent to Golden Valley Parkway, along a segment of Street A in the Community Park area, and in the OC and OC/VR/WWTP areas paralleling I-5. These linear detention basins would consist of long vegetated swales or canals and typically would not be available for recreational or public uses.

Underground detention facilities are being considered in various office and commercial land use areas (Exhibits 3-4 and 3-5). However, additional underground facilities could be installed to replace the detention capacity provided by the multi-use and linear basins. If any of the multi-use or linear detention basins are replaced by underground storage facilities, the designated land use in the detention basin location (Neighborhood Park, Open Space/Greenbelt) would continue.

3.4.4 UTILITIES

WASTEWATER TREATMENT/WATER RECYCLING PLANT

Six wastewater treatment plant/water recycling plant (WRP) options are being considered to serve development associated with the CLSP. These options are identified as follows:

(1) WRP #2 North
(2) WRP #2 North (scalping)
(3) WRP #2 Onsite
(4) WRP #2 Onsite (scalping)
(5) WRP #2 South
(6) WRP #2 South (integrated)

Each of these options is described below. Locations are shown in Exhibit 3-6. Treatment capacity associated with the proposed WRP #2 would be in addition to the City's existing WRP #1. Each of the WRP #2 options being considered would be designed to allow internal wastewater treatment infrastructure to be installed in stages. In this way, treatment capacity could be expanded incrementally as development in the CLSP area (and other portions of the City to be served by WRP #1) proceeds.

WRP #2 North

WRP #2 North would be a stand-alone WRP designed to provide an average 3 million gallons per day (mgd) of treatment capacity. This WRP would be located on approximately 7 acres north of the CLSP area (Exhibit 3-6), at the same site previously identified by the Riverwalk project for a WRP (see Section 3.2.2, Riverwalk Specific Plan). This site is outside the existing City limits and the sphere of influence, but within City General Plan Sub-Plan Area #2. The area would need to be annexed into the City prior to its use as a WRP. A sewer force main would transport wastewater from the CLSP to WRP #2 North using one of the routes shown in Exhibit 3-6.

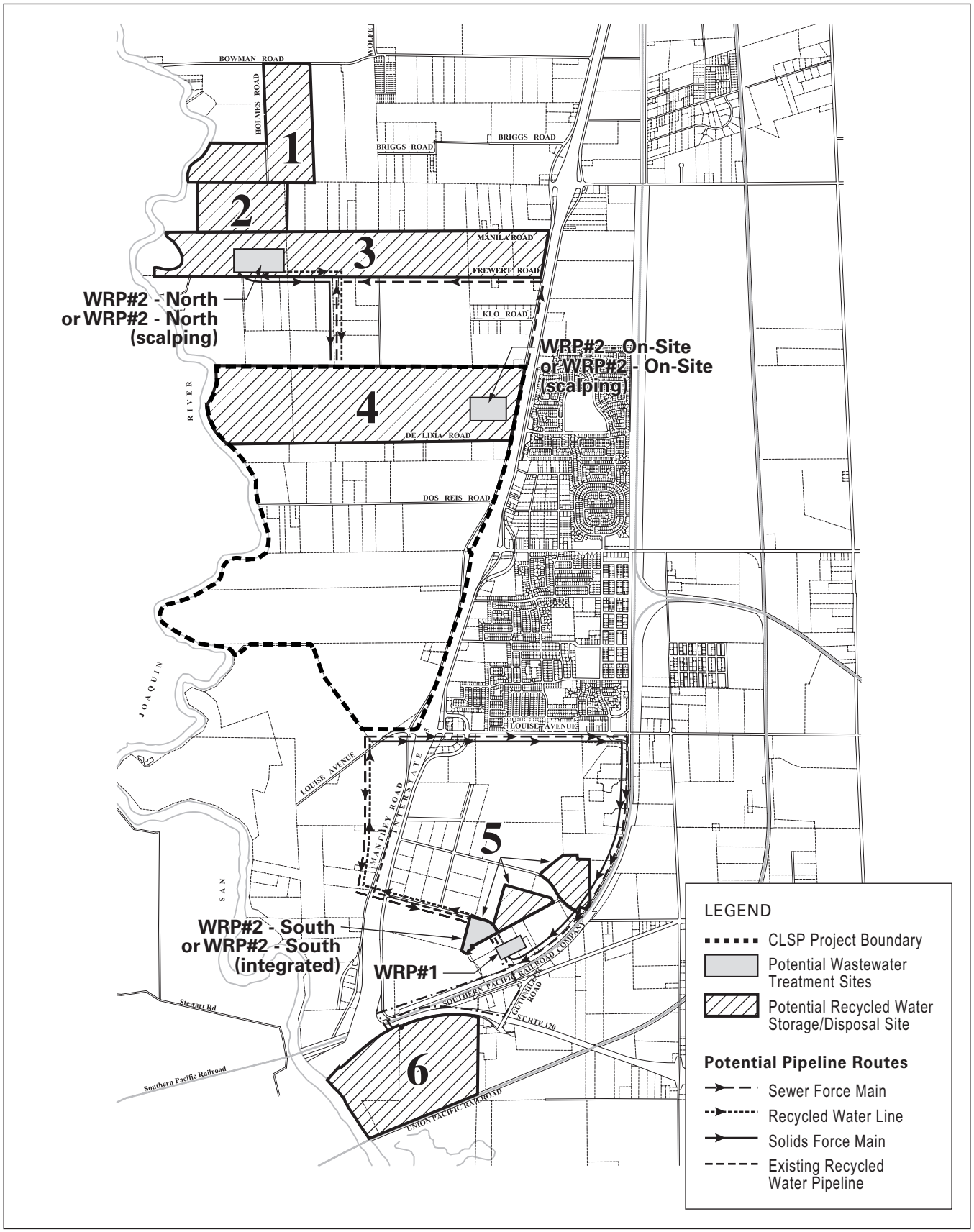
WRP #2 North (Scalping)

The WRP #2 North (scalping) option would be in the same location as the WRP #2 North option (Exhibit 3-6), but would consist of a "scalping plant" rather than a full water recycling plant. A scalping plant separates solids from the raw wastewater and treats only the liquid segment on site. This allows for a smaller overall treatment facility. The solids would be transported via a pipeline/force main to the City's existing WRP #1 and would be treated there. The proposed solids force main route from the WRP #2 North (scalping) site to the CLSP area, and from the CLSP area to WRP #1, is shown in Exhibit 3-6. The potential pipeline routes considered for transport of wastewater from the CLSP area to the WRP #2 North (scalping) site are the same as those indicated for the WRP #2 North option.

It is estimated that, of the wastewater generated by the CLSP area, approximately 90% would be treated as liquid at the WRP #2 North (scalping) site and 10% would be treated as solids at WRP #1. It is assumed that the overall treatment capacity for the WRP #2 North (scalping) option would be the same as the 3-mgd capacity of the WRP #2 North standard plant option. Therefore, the WRP #2 North (scalping) plant would be designed to treat 2.7 mgd of wastewater liquid constituent (3.0 mgd x 90%) and approximately 0.3 mgd of solids (3.0 mgd x 10%) would be transported to WRP #1 for treatment. The solid constituent of wastewater is more difficult to treat than the liquid constituent and requires more WRP plant resources. Therefore, the 0.3 mgd of solids transported to WRP #1 would actually require more than 0.3 mgd of "effective treatment" capacity. It is estimated that to treat 0.3 mgd of solids at WRP #1, up to 0.6 mgd of effective treatment capacity at the plant would be required, depending on management options and processes.

WRP #2 Onsite

WRP #2 Onsite would be a stand-alone WRP designed to provide an average 3 mgd of treatment capacity. This WRP would be located on approximately 7 acres in the northeast portion of the CLSP area (Exhibit 3-6) in the parcel identified as OC/VR/WWTP (Exhibit 3-4). This is the same location identified in the Water Master Plan for WRP #2. Because this WRP would be located in the CLSP area, no offsite sewer lines would be required. As with the CLSP area as a whole, this potential WRP site is outside the existing City limits and would need to be annexed into the City prior to its use as a WRP.



Source: MacKay & Somps 2004

Potential Locations for Recycled Water Storage and Disposal Facilities

EXHIBIT 3-6

Central Lathrop Specific Plan EIR
City of Lathrop
G 3T017.01 05/04

0 2000 4000
FEET

NORTH

EDAW

WRP #2 Onsite (Scalping)

The WRP #2 Onsite (scalping) option would be in the same location as the WRP #2 Onsite option, but would consist of a scalping plant rather than a full water recycling plant. Scalping plant operations and capacity would be the same as described for the WRP #2 North (scalping) option. The proposed solids force main pipeline from the CLSP area to WRP #1 would also be the same.

WRP #2 South

WRP #2 South would be a stand-alone WRP designed to provide an average 3 mgd of treatment capacity. This WRP would be located on approximately 7 acres within the current City limits, near the existing WRP #1 (Exhibit 3-6). The proposed WRP #2 South site is located on a parcel currently serving as spray fields for disposal of recycled water generated by WRP #1. If the WRP #2 South option is constructed, the recycled water disposal capacity lost to the development of this parcel would be replaced at one of the recycled water disposal sites proposed as part of the CLSP project (see the discussion of recycled water disposal below). A sewer force main would transport wastewater from the CLSP to WRP #2 South using one of the routes shown in Exhibit 3-6. The force main would be sized to accommodate wastewater generated by the CLSP project as well as other development in the northern part of the City designated in the Water Master Plan to be served by WRP #2.

WRP #2 South (Integrated)

The WRP #2 South (integrated) option would be the same as the WRP #2 South option in all respects except that its operation would be integrated with that of WRP #1. Pipelines, as shown in Exhibit 3-6, would connect the WRP #2 South (integrated) plant to WRP #1, allowing the treatment capacity of the two plants to be combined. WRP #1 is currently planned for a maximum 6 mgd of treatment capacity, consistent with the Water Master Plan and the WRP #1 Phase 1 Expansion EIR (EDAW 2003). Under the WRP #2 South (integrated) option, the WRP #1 treatment capacity would, in effect, be increased to 9 mgd.

RECYCLED WATER DISPOSAL

The wastewater treatment process used at WRP #2 would meet or exceed the effluent specifications used at the WRP #1 Membrane Bioreactor Treatment Plant and would result in the production of disinfected tertiary-treated recycled water. This is the highest class of treated wastewater; it meets the requirements specified in Title 22, Chapter 4, of the California Code of Regulations (Title 22) for allowable contaminant levels in recycled water and represents essentially pathogen-free water considered suitable by the California Department of Health Services (DHS) for unrestricted landscape irrigation and for irrigation of agricultural crops not used for human consumption. For WRP #1, the current Waste Discharge Permit with the Regional Water Quality Control Board (RWQCB), Central Valley Region, allows only land disposal of recycled water. It is assumed that the same restriction will be applied to WRP #2 and that only land disposal of recycled water will be permitted.

To dispose of recycled water and as a general water conservation measure, the CLSP proposes the use of recycled water for irrigation of public landscaping areas (road medians, parks, commercial landscaping, school sports fields) and private front and back yards in the plan area. However, water demand for the area available for irrigation (estimated to be 340 acres) is not expected to be sufficient to dispose of the entire 2.17 mgd of recycled water estimated to be generated by development in the CLSP area (PACE 2004). In addition, during periods when irrigation is not feasible (e.g., during periods of winter precipitation), temporary storage of recycled water generated by WRP #2 would be required.

To provide additional recycled water disposal sites and locations for recycled water storage ponds, approximately 826 acres of land outside the CLSP area are being evaluated for these uses. It is estimated that up to approximately 318 acres of storage and disposal within this 826 acres would be needed to support the CLSP project (PACE 2004). The offsite utility service sites being evaluated are divided into five areas as shown in Exhibit 3-6. Potential recycled water storage/disposal Area 4 is within the CLSP, and if used, would provide temporary storage/disposal capacity while Phase 1 of the CLSP is being developed (see Section 3.4.6, Phasing, for a discussion of project phasing). When Area 4 is developed during Phase 2 of the CLSP, the recycled water storage/disposal capacity provided by this area would be transferred to one or more of the five offsite areas.

Recycled water disposal sites would consist of agricultural fields irrigated with recycled water, and would in effect be a continuation of existing uses on what are now agricultural lands. Approximately 220 acres of offsite recycled water disposal sites are proposed. Storage ponds would provide temporary storage of recycled water during periods when irrigation is not feasible. A majority of pond storage capacity would be above the existing ground level and would be contained within earthen berms reaching elevations of approximately 10-12 feet above the ground surface. Approximately 98 acres of storage ponds are proposed.

The three parcels identified as Area 5 and approximately 63 acres in the western portion of Area 6 (which includes approximately 224 total acres) are either currently being used, or are proposed for use, as recycled water disposal sites in support of WRP #1. If these sites are used in support of WRP #2—as recycled water storage ponds, disposal sites, or (in the case of the eastern parcel in Area 5) as a site for WRP #2—the WRP #1–related disposal function provided by these areas would be transferred to some combination of Areas 1, 2, 3, and the eastern portion of Area 6.

Various pipelines would be needed to move recycled water from the potential WRP #2 locations to the recycled water storage/disposal areas being considered. Potential routes for the recycled water lines are shown in Exhibit 3-6. In the case of the route between the WRP #2 South site and the CLSP area, an existing recycled water line may be used for a portion of this distance.

Recycled water storage and disposal Areas 1, 2, and 3 are outside the existing City limits and the City's sphere of influence, but are within the boundary of City General Plan Sub-Plan Area #2. Recycled water storage and disposal Area 6 is also outside the existing City limits, but is within the City's sphere of influence and is within the boundary of City General Plan Sub-Plan Area #1. Each of these four areas would need to be annexed into the City prior to their use as recycled water storage and disposal sites. If Area 4 is used, it would be annexed into the City as part of the CLSP area. The parcels identified as Area 5 are currently within the City limits.

POTABLE WATER SUPPLY

A water supply analysis has been prepared for the proposed project in compliance with Senate Bill (SB) 610 (Nolte Associates 2004a; included as Appendix J of this DEIR); the analysis indicates that, with water anticipated to be provided to the City through a combination of groundwater and the South San Joaquin Irrigation District (SSJID) South County Surface Water Supply Project now under construction, the supply of water is adequate to serve the project.

The Water Master Plan calls for the construction of two water storage tanks and a booster pump station in the area encompassed by the CLSP and Mossdale Village (i.e., Sub-Plan Area #2). The two storage tanks would have a combined capacity of 2.5 million gallons of water for equalization, fire flow, and emergency storage. The Water Master Plan identifies a location for the tanks and booster pump station that would fall within the proposed CLSP community park. The Water Master Plan also identifies a

potential location for a storage tank and booster pump station within the Mossdale Village area. The Mossdale Landing project (within the Mossdale Village area) includes plans for a 1.0-million-gallon water storage tank and booster pump station. To provide the total 2.5 million gallons of storage capacity in Sub-Plan Area #2 called for in the Water Master Plan, the CLSP project includes plans for an additional 1.5 million gallons of storage capacity (in one or more tanks) and a booster pump station in the CLSP area.

ELECTRICITY

Pacific Gas and Electric Company (PG&E) currently provides electrical service to the CLSP area via a number of transmission lines, including lines along Manthey Road, De Lima Road, and Dos Reis Road. PG&E would continue to be the electrical service provider for the CLSP project, delivering power via connections to existing main electrical feeder lines in the developed portion of the City east of I-5. As the plan area is developed, all existing aboveground electrical lines would be relocated underground or replaced with new underground lines. All new power lines in the CLSP area would also be installed underground.

NATURAL GAS

No natural gas service is currently available in the CLSP area. Propane is used for gas appliances. PG&E would provide natural gas service to the CLSP area as project development proceeds. Natural gas would be delivered directly from PG&E's existing Louise Avenue feeder (located on Louise Avenue approximately 1,500 feet west of I-5), from natural gas lines installed to serve the Mossdale Landing project, or from a combination of these two sources.

3.4.5 CITY GENERAL PLAN AMENDMENTS

PROPOSED CITY GENERAL PLAN AMENDMENTS

The proposed project analyzed in this DEIR includes amendments to the City General Plan that are needed to accommodate the proposed CLSP project. The Water Master Plan, which is part of the City General Plan, would also be amended as part of the CLSP project. Those amendments are discussed separately later in this section.

Most of the proposed amendments to the City General Plan deal purely with text changes to accurately describe the proposed project. The City General Plan amendments also include minor editorial corrections (e.g., "Central Business District" replaced by "City Center") and updated information (e.g., population and water demand figures for the City) where appropriate.

Before adoption of the proposed CLSP, the City General Plan Land Use Diagram (adopted December 17, 1991, as amended through 2001) would be amended to reflect the proposed land uses. The project also includes amendments to several policies contained in the Community Development, Transportation and Circulation, Resource Management, and Hazard Management Elements of the General Plan, as summarized below. Clarifying amendments also are proposed to Part II, Growth Assumptions and Opportunities: Major Policies and Major Proposals of the General Plan, and Part VII of the General Plan regarding General Plan interpretation and implementation. Complete copies of the Draft Amended General Plan are available at the City of Lathrop Community Development/Planning Department, 16775 Howland Road, Suite One, Lathrop, California 95330 (209/858-2860, extension 327).

The following summarizes the proposed amendments to General Plan text and policies.

Growth Assumptions and Opportunities: Major Policies and Major Proposals of the General Plan

Text revisions are proposed to Part II, Growth Assumptions and Opportunities: Major Policies and Major Proposals of the General Plan, to clarify that a Village Center may be located in but is not required for every village. New and revised land use designations (e.g., Neighborhood Commercial [in Sub-Plan Areas #1 and #2], Residential/Mixed Use [in Sub-Plan Area #2], Specialty Commercial, Office Commercial, Office Commercial/Variable Residential/Wastewater Treatment Plant) are included, while the Central Business District land use designation is deleted. Text and a table describing the socioeconomic characteristics of the City, based on 1991 dollar values and information, are deleted.

Community Development Element

The description of Sub-Plan Area #2 is revised to reflect updated information from the Water Master Plan, which would be amended concurrently with the General Plan. Text on Sub-Plan Area #2 is also revised to separate descriptions of Sub-Plan Area #2 portions inside the CLSP area from descriptions of portions of Sub-Plan Area #2 that are outside the Specific Plan. In part to support this new editorial approach, some text regarding existing uses and land use designations is deleted, and text is added or modified to describe new and revised land use designations, including the associated development standards. For example, text regarding the Central Business District designations is removed from descriptions of the non-CLSP areas within Sub-Plan Area #2 because this land use designation is proposed for deletion and would be replaced by several new land use designations in the CLSP area. Tables IV-1A and IV-2.5A are added to show the density standards for the new variable-density residential land use designation. Other minor text revisions are proposed to reflect new street names.

Transportation and Circulation Element

Revisions are proposed to the text and corresponding diagrams and tables in the Transportation and Circulation Element to allow for greater flexibility in the design of the circulation system (i.e., allowing alleys in the CLSP area). Text is added to acknowledge that greater flexibility has been incorporated in the City's other specific plans. Proposed policy amendments would allow for fewer lanes on the north-south arterials, reduced widths of the travel lanes, and reduced spacing between intersections, as well as wider planting strips. Text changes are made to apply the requirement to evaluate phasing and secondary impacts of circulation improvements to the CLSP. Additional text is included for Lathrop Road, which is also proposed as a truck route. Other minor text revisions are proposed to reflect new street names.

Water, Sewerage, Storm Drainage and Flood Control Element

City General Plan amendments are proposed to reflect updated information from the Water Master Plan, which would be amended concurrently with the City General Plan. Other text changes expand the variety of land uses on which recycled water may be applied (i.e., adding commercial and residential uses). Other minor text revisions are proposed for editorial purposes.

Resource Management Element

A City General Plan policy amendment is proposed to eliminate the requirement for a landscaped corridor along the northern, eastern, and southern boundaries of Sub-Plan Area #2. The landscape corridor requirement would remain applicable to the western boundary (i.e., along the San Joaquin River levee). Text changes are proposed to assert that the provision of public access to this corridor would be contingent on permission from RD-17. Other text changes are made to eliminate reference to a municipal golf course and, at the request of the Manteca Unified School District, to eliminate the requirement that

neighborhood parks be combined with schools. Text addition is proposed to reference the Central Lathrop Parks Master Plan.

Greater flexibility on the methods for providing adequate visibility of the open space corridor would be allowed for by proposed text additions. The required minimum width of pedestrian parkway or paseo, vehicle/pedestrian parkway, and community-wide open space corridor would be reduced. In addition, the pedestrian parkway or paseo and vehicle/pedestrian parkway would not be required to meander. Flexibility for allowing multi-use trails is incorporated in the proposed text changes. With regard to the communitywide open space corridor, text revisions would allow for linkages to trails rather than to the community park, and text referencing the alignment of the open space corridor through the urban pattern is eliminated. The text describing the alignment of landscaped buffer corridors along Manthey Road is revised because Manthey Road may be abandoned as a public roadway within the CLSP area. The requirement that landscaped buffer corridors be provided along the edge of Sub-Plan Area #2 is eliminated. Text is added to permit breaks in the landscaped buffer corridors that allow for visibility of commercial areas.

Text changes to Agricultural Land Policy 2 are proposed to clarify that exclusive agricultural zoning would be continued on areas outside the three sub-plan areas.

Bicycle Transportation Master Plan

The Bicycle Transportation Master Plan is being amended to incorporate the bicycle transportation network included in the CLSP.

Hazard Management Element

A City General Plan policy amendment is proposed to allow for building heights greater than 50 feet if appropriate fire-fighting equipment is procured.

Directions for General Plan Interpretation and Implementation

Text referencing the adoption of a Comprehensive Annexation Plan is eliminated.

PROPOSED WATER MASTER PLAN AMENDMENTS

Amendments to the Water Master Plan (Nolte Associates 2004b) are proposed to bring the four parts of the master plan into agreement with the CLSP and amendments proposed to the City General Plan.

Potable Water Master Plan

Editorial revisions are proposed to the Potable Water Master Plan to acknowledge changes in proposed land uses for the CLSP area. The description of the City's existing water supply system is updated to reflect current conditions (e.g., Well No. 5 has been abandoned and a replacement well is being designed). Tables and text describing well capacity and maximum contaminant levels in the water supply are updated. Population projections are updated to include estimates for the River Islands, Mossdale Landing, and CLSP areas.

Tables and text are added that show water demand factors for the CLSP area, including residential and commercial water demand and water use by land use for each 5-year increment until buildout of the CLSP project. An updated summary is provided of projected average annual water demand for the City through 2025.

Projected groundwater pumping for the City is updated, and a comparison is provided of demand and supply for each 5-year increment through 2025. Information about the proposed water distribution system for the City is updated to include the CLSP area as well as other new information.

Wastewater Collection Master Plan

The Wastewater Collection Master Plan is updated to provide revised sewer generation rates for residential and mixed-use areas in the CLSP area. The description of the land use plan and projected wastewater flows are updated through the addition of information about the CLSP area, Mossdale Landing, River Islands, and remaining portions of west Lathrop. Descriptions are provided of the six wastewater conveyance alternatives for the CLSP area, and details are provided about gravity sewer and lift station components for the CLSP area. Conveyance strategies are compared for the six conveyance alternatives. Detailed flow calculations are provided for the City.

Wastewater Treatment and Disposal Master Plan

The text of the Wastewater Treatment and Disposal Master Plan is updated to include current operational conditions at WRP #1 and the Manteca Wastewater Quality Control Facility and to describe the Phase I Remediation project. Other updates include information on current waste discharge requirements at the Manteca facility, water balance calculations for spray disposal in the City (including the CLSP area), and descriptions of the six WRP alternatives and recommended WRP configuration.

Recycled Water Master Plan

The Recycled Water Master Plan is updated with design criteria and projected demand calculations for recycled water use in the CLSP area and updated Title 22 water quality requirements for the City.

3.4.6 PHASING

For planning purposes, and to assist with the orderly development of the CLSP area, implementation of the CLSP is anticipated to proceed in two phases, as indicated in Exhibit 3-4. Phase 1 is estimated to begin construction in 2005 and be completed in 2010. The buildout period for Phase 2 is estimated to be 2011–2020. Project elements included in each phase are described below.

PHASE 1

Phase 1 of the CLSP encompasses roughly the southern two-thirds of the plan area. Phase 1 includes the following project elements:

- the roadway network within the Phase 1 area,
- the CLSP Stormwater Outfall,
- construction of one of the WRP options with 1.5 mgd of treatment capacity,
- use of approximately 62 acres of recycled water storage sites,
- use of approximately 139 acres of recycled water disposal sites,
- the Main Street District,

- approximately 191 acres of Office Commercial area between Golden Valley Parkway and I-5,
- the Specialty Commercial area,
- seven neighborhood parks,
- approximately 60 acres of the community park,
- the high school,
- two K-8 schools,
- the two Residential/Mixed Use areas containing up to approximately 591,000 square feet of commercial space and 723 du,
- approximately 28 acres of high-density residential areas containing up to 453 du, and
- approximately 394 acres of variable-density residential housing areas containing up to 2,866 du.

Among the first facilities to be developed in Phase 1 would be the high school so that it would be available to begin serving students already residing in Lathrop, but attending Sierra High School in Manteca and Weston High School in Weston Ranch. Remaining development would generally follow a south-to-north progression, as well as radiating outward from the high school.

Water, natural gas, electrical, and other utility infrastructure elements would be installed as development proceeds in the Phase 1 area. One of the WRP options listed above in Section 3.4.4, Utilities, would be constructed. However, treatment capacity in the WRP would have the ability to be expanded incrementally, and sufficient internal treatment equipment would be installed to serve Phase 1 demand (estimated to be 1.37 mgd). Approximately 62 acres of recycled water storage ponds and 139 acres of land disposal areas would be required to serve Phase 1 at full buildout. All or a portion of these facilities could be located temporarily in the CLSP Phase 2 area, or would be placed on one or more of the offsite storage and disposal areas shown in Exhibit 3-3.

PHASE 2

Phase 2 of the CLSP encompasses roughly the northern one-third of the plan area. Phase 2 includes the following project elements:

- the roadway network within the Phase 2 area,
- use of approximately 36 additional acres of recycled water storage sites,
- use of approximately 81 additional acres of offsite recycled water disposal sites,
- approximately 48 acres of Office Commercial area,
- development of the OC/VR/WWTP parcel,
- three neighborhood parks,
- the remaining 10 acres of the community park,

- one K-8 school, and
- approximately 380 acres of variable-density residential housing areas containing up to 2,748 du (500 units of which may be located in the OC/VR/WWTP parcel).

Development in the Phase 2 area would generally follow a south-to-north progression. Water, natural gas, electrical, and other utility infrastructure elements would be installed as development proceeds. Wastewater treatment capacity in the WRP constructed during Phase 1 would be incrementally increased to meet demand generated by Phase 2 development (estimated 2.17 mgd of total project demand). If the WRP is constructed in the OC/VR/WWTP parcel, the remainder of the parcel would be developed as OC uses. If the WRP is constructed in another location, the OC/VR/WWTP parcel either would be developed entirely as OC or would support both OC and VR uses, as described above in Section 3.4.1, Land Uses.

Approximately 36 acres of recycled water storage ponds and 81 acres of additional land disposal areas would be required to serve full buildout of Phase 2 facilities. These facilities would be located on one or more of the offsite storage and disposal areas shown in Exhibit 3-3. If a portion of the Phase 2 area is used temporarily for recycled water storage and disposal during Phase 1 (i.e., Area 4 in Exhibit 3-3), the storage and disposal capacity provided in this area would be moved to one or more of the offsite parcels as Phase 2 is developed.

4 Affected Environment, Environmental Consequences, and Mitigation Measures

4 AFFECTED ENVIRONMENT, ENVIRONMENTAL CONSEQUENCES, AND MITIGATION MEASURES

4.1 APPROACH TO THE ENVIRONMENTAL ANALYSIS

Sections 4.2 through 4.18 of this draft environmental impact report (EIR) present a discussion of existing conditions, environmental impacts associated with implementation of the proposed project, mitigation measures to reduce the level of impact, and residual significant impacts (i.e., impacts that would be significant and unavoidable despite the imposition of any proposed mitigation measures). Issues evaluated in these sections consist of a full range of environmental topics originally identified for review in the notice of preparation (NOP) prepared for the Central Lathrop Specific Plan (CLSP) project. The NOP is included as Appendix A. Sections 4.2 through 4.18 each include the following components.

- **Regulatory Background:** This subsection presents information on the laws, regulations, plans, and policies that relate to the issue area being discussed. Regulations originating from the local, state, and federal levels are each discussed as appropriate.

- **Existing Conditions:** This subsection presents the existing environmental conditions on the project site and in the surrounding area as appropriate, in accordance with the California Environmental Quality Act Guidelines (State CEQA Guidelines) §15125. The discussions of the environmental setting focus on information relevant to the issue under evaluation.

- **Environmental Impacts:** This subsection identifies the impacts of the proposed project on the existing environment, in accordance with State CEQA Guidelines §§15125 and 15143. Before presenting an evaluation of impacts, the section describes the analysis methodology used, and the thresholds of significance used to identify impacts are then listed. Project impacts are identified alphanumerically and sequentially throughout this section. For example, impacts in Section 4.4 are identified as 4.4-a, 4.4-b, and so on. An impact statement precedes the discussion of each impact and provides a summary of the impact and its level of significance. The discussion that follows the impact statement includes the evidence on which a conclusion is made regarding the level of impact. The discussions of cumulative impacts and growth-inducing impacts are presented in Chapter 5 and Chapter 6, respectively.

- **Mitigation Measures:** This subsection identifies potentially feasible mitigation measures to reduce significant and potentially significant impacts of the proposed project, in accordance with State CEQA Guidelines §15002(a)(3), §15021(a)(2), and §15091(a)(1). Each mitigation measure is identified alphanumerically to correspond with the number of the impact being reduced by the measure. For example, Impact 4.3-a would be mitigated with Mitigation Measure 4.3-a. This subsection also describes whether the mitigation measures would reduce impacts to less-than-significant levels. Significant and unavoidable impacts are identified as appropriate in this subsection, as well as in the "Residual Significant Impacts" subsection described below. Significant and unavoidable impacts are also summarized in Chapter 7.

- **Residual Significant Impacts:** This section identifies any significant impacts that would remain significant following implementation of the mitigation measures.

4.2 Land Use Consistency and Compatibility

4.2 LAND USE CONSISTENCY AND COMPATIBILITY

This section includes a description of the existing land use plans that apply to the Central Lathrop Specific Plan (CLSP) area and a description of existing land uses in the vicinity. It also includes an analysis of the relationship between the proposed project, including the proposed annexation, and these plans and their environmental policies.

4.2.1 REGULATORY BACKGROUND

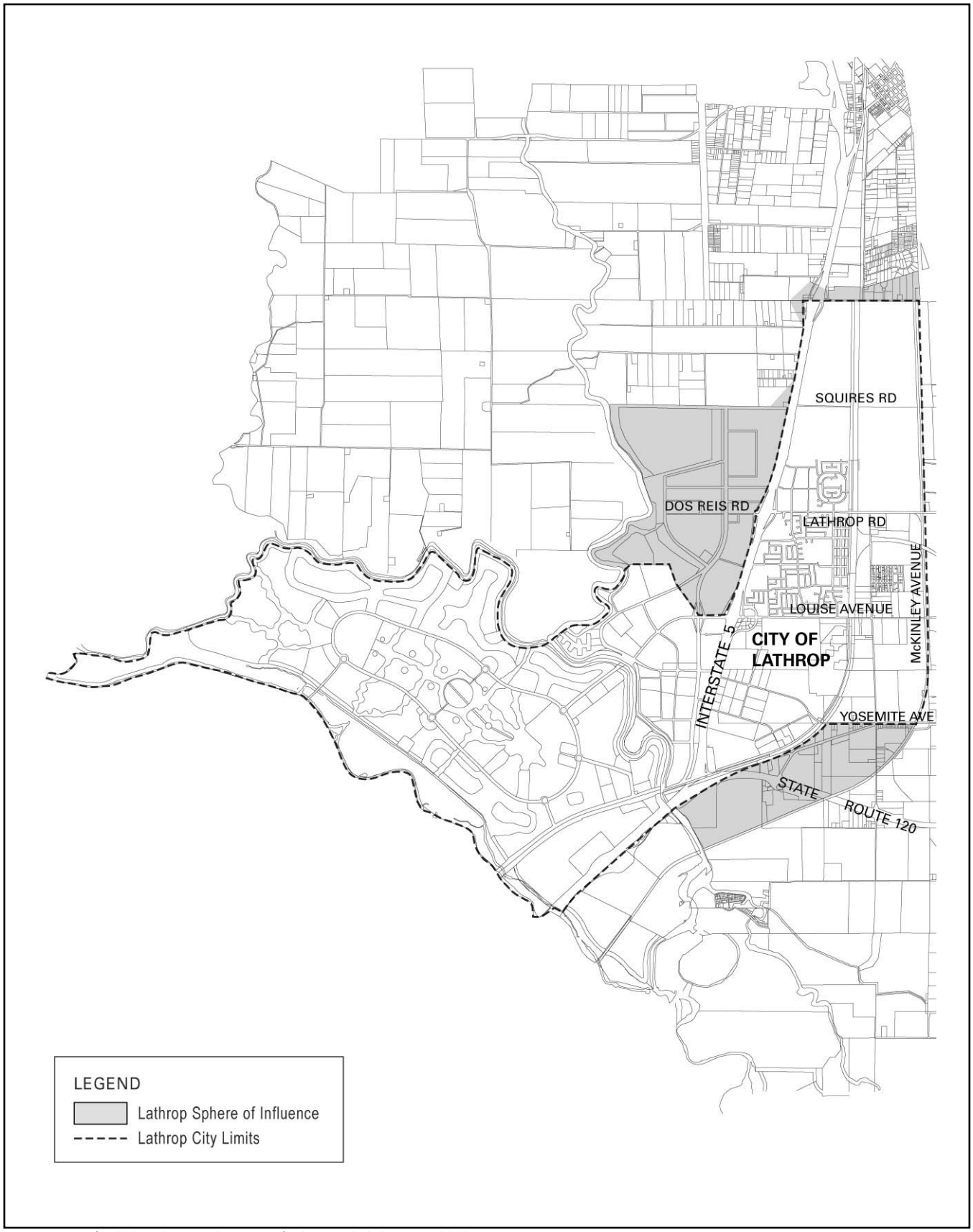
The land use planning and zoning authority of local jurisdictions in California are set forth in the state's planning laws. The CLSP area is currently under the planning jurisdiction of both the County of San Joaquin (the County) and the City of Lathrop (the City). The CLSP area is also within the boundaries of the "secondary zone" of the Sacramento-San Joaquin Delta as defined in §29722 and §29731 of the Public Resources Code. However, the secondary zone is not within the planning area of the Delta Protection Commission, an agency with planning influence in the "primary zone" of the Delta (see Pub. Resources Code, §29731). The planning jurisdictions of these entities, in relationship to the proposed project, are included in the discussion below. The respective land use plans and regulations are also described.

STATE PLANNING AND ZONING LAWS

California Government Code §65300 et seq. establishes the obligation of cities and counties to adopt and implement general plans. The general plan is a comprehensive, long-term, and general document that describes plans for the physical development of the City or County and of any land outside its boundaries that, in the City's or County's judgment, bears relation to its planning. The general plan addresses a broad range of topics, including, at a minimum, land use, circulation, housing, conservation, open space, noise, and safety. In addressing these topics, the general plan identifies the goals, objectives, policies, principles, standards, and plan proposals that support the City's or County's vision for the area. The general plan is a long-range document that typically addresses the physical character of an area over a 20-year period. Finally, although the general plan serves as a blueprint for future development and identifies the overall vision for the planning area, it remains general enough to allow for flexibility in the approach taken to achieve the plan's goals.

The State Zoning Law (California Government Code §65800 et seq.) establishes that zoning ordinances, which are laws that define allowable land uses within a specific district, are required to be consistent with the general plan and any applicable specific plans. When amendments to the general plan are made, corresponding changes in the zoning ordinance may be required within a reasonable time to ensure the land uses designated in the general plan would also be allowable by the zoning ordinance (Gov. Code, §65860, subd. (c)).

The Local Government Reorganization Act of 2000 (California Government Code §56000 et seq.) establishes the process through which a local agency boundary change is made and associated planning authority is transferred from one local agency to another. The Local Agency Formation Commission (LAFCO) of each County oversees and approves such boundary changes. To encourage orderly growth, LAFCOs establish a sphere of influence for each City and each special district. The sphere of influence is an area that is subject to the planning influence (though not direct land use authority) of a City or special district because the City/special district has identified an intention to at sometime annex the area into its physical boundary and service area. Exhibit 4.2-1 shows the sphere of influence established by the San Joaquin LAFCO for the City of Lathrop.



Base Map: Nolte 2004; Source: San Joaquin County GIS Systems 2002

City of Lathrop and City Sphere of Influence

EXHIBIT 4.2-1

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When approving annexations, LAFCOs consider various factors, including the following:

- availability of organized community services and facilities such as water supply, sewer service, storm drainage, police protection, and fire protection;
- consistency with City or County general plan;
- effect on physical and economic integrity of agricultural lands; and
- social, economic, and other effects on adjacent areas.

SAN JOAQUIN LAFCO

San Joaquin LAFCO has authority over the CLSP area. Established in 1963, San Joaquin LAFCO is responsible for coordinating logical and timely changes in local governmental boundaries within San Joaquin County, including annexations and detachments of territory; incorporations of cities; formations of special districts; and consolidations, mergers, and dissolutions of districts. San Joaquin LAFCO also reviews ways to reorganize, simplify, and streamline governmental structure. San Joaquin LAFCO has the authority to initiate proposals involving district consolidation, mergers, and reorganizations. In addition, San Joaquin LAFCO is responsible for reviewing out-of-agency service agreements between property owners and service providers (San Joaquin LAFCO n.d.).

San Joaquin LAFCO has adopted its Guidelines for Formation and Development of Local Governmental Agencies (San Joaquin LAFCO Guidelines), which are generally based on statutory criteria and identify several standards against which annexation proposals would be evaluated. The following excerpts from the Proposal Evaluation Standard pertain to environmental issues (San Joaquin LAFCO n.d.):

C. The Executive Officer's report on all annexations or formations shall ascertain if the adoption of the proposal would result in two or more districts or a City and a district possessing, in any common territory, the authority to perform the same or similar functions. Proposals, which would result in duplication of authority to perform similar functions, will be opposed.

E. Annexation to an adjacent City will be favored over a proposal for providing urban services by special districts.

F. Annexations to agencies providing urban services shall be progressive steps toward filling in the territory designated by the affected agency's adopted Sphere of Influence. Proposed growth shall be from inner toward outer areas.

G. Boundaries which create islands, strips or corridors within an agency providing urban services shall be avoided.

H. Annexation to or formation of a multiple service agency will be favored over a proposal for providing urban services by a multiplicity of limited service districts.

I. Annexation to an existing agency will be favored over a proposal for forming a new agency to provide the same services.

K. Economical efficiency of a larger annexation will be favored over a proposal for "single parcel" or "piecemeal" annexation.

L. A proposal establishing urban encroachment of areas designated by the County General Plan for open space or agricultural use will be opposed unless it complies with a previously adopted Sphere of Influence of an incorporated City.

San Joaquin LAFCO Guideline Standards F, G, and K are intended to discourage noncontiguous, single parcel, strip, or corridor annexations. Section 56742 of the Government Code, however, allows a LAFCO to approve non-contiguous annexations by cities if the annexed territory is located in the same county as the city, is owned by the city, and is used for municipal purposes. San Joaquin LAFCO's guidelines, as quoted above, are not intended to apply to noncontiguous annexations effectuated through Government Code §56742 (Baracco, pers. comm., 2004).

SAN JOAQUIN COUNTY GENERAL PLAN 2010

The current San Joaquin County General Plan 2010 was adopted in 1992 and includes community plans for each of the County's 11 planning sub-areas. The CLSP area is located in the Lathrop Planning Area. The County General Plan establishes within each planning sub-area a broad range of land use designations to classify different types of land uses and identifies appropriate development guidelines for each. As shown in Exhibit 4.2-2, the entire CLSP area is designated Agriculture-Urban Reserve (A/UR), which denotes areas currently undeveloped and perhaps in agricultural production but expected to be converted to urban uses at some point. The Water Recycling Plant #2 (WRP #2) North site and nearby potential recycled water storage and disposal sites are located in an area of the County that is designated and zoned General Agriculture (A/G), which denotes areas generally committed to agriculture with viable commercial agricultural enterprises that require large land areas to efficiently produce their crops (County of San Joaquin 1992). The southernmost potential recycled water storage/disposal site is designated and zoned Open Space/Resource Conservation (OS/RC), which denotes "areas with significant resources that generally are to remain in open space." The remaining potential recycled water storage/disposal sites are within the City of Lathrop.

The County General Plan contains the following policies applicable to the Lathrop Planning Area as long as it remains within the County unincorporated area:

1. Development on the west side of Interstate 5 shall occur in a phased, orderly manner, with adequate infrastructure within the City of Lathrop.

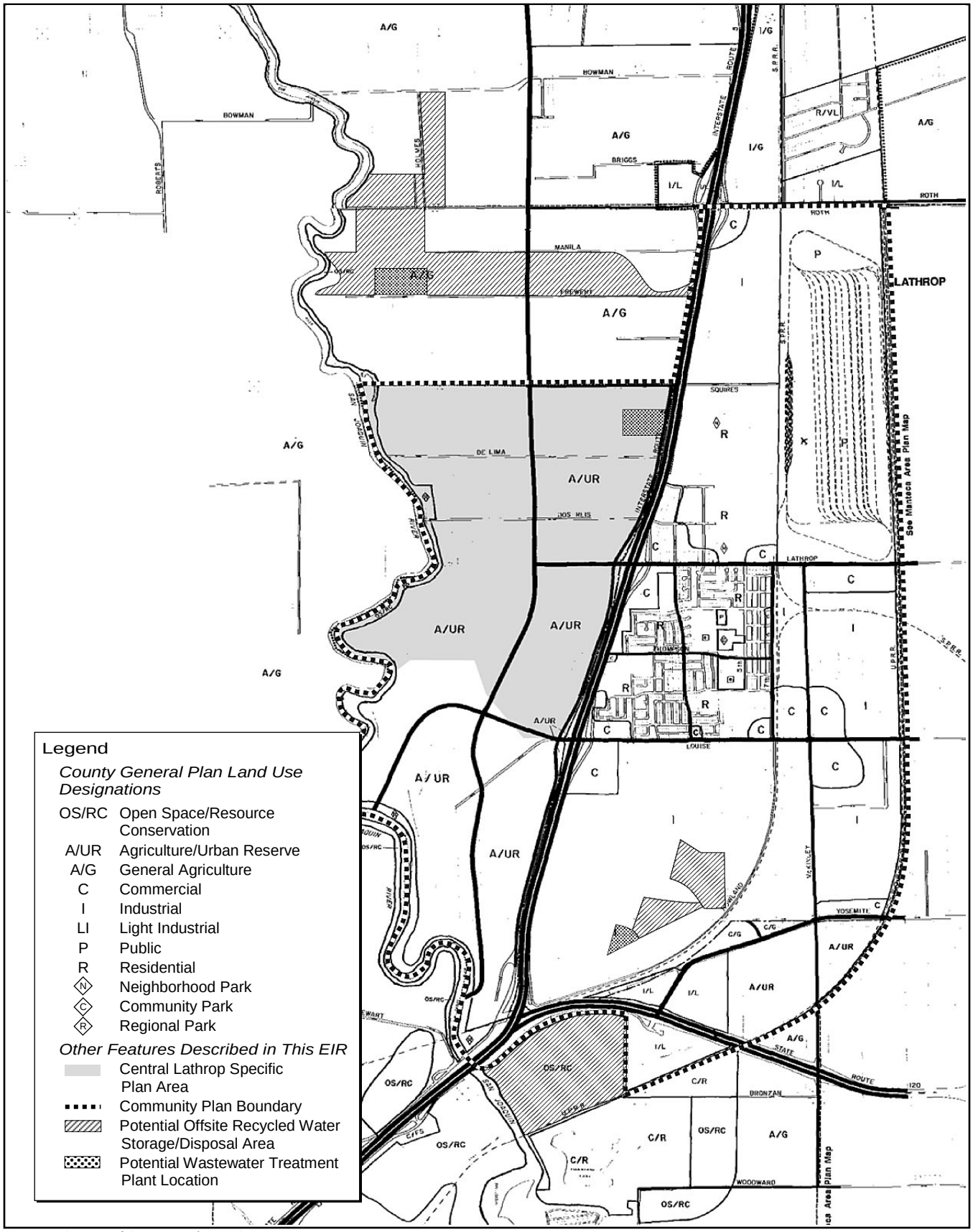
2. Riparian vegetation along the San Joaquin River shall be preserved and public access to and along the river shall be established as riverfront development occurs.

3. Lathrop's internal circulation system should minimize the use of freeways.

The County prepared a review and revision of the County General Plan in 2000. This General Plan 2010 Review includes maps of existing and expected future urban growth areas through 2020. The CLSP area is designated as Urban Reserve and is identified within an Existing and Planned Urban Area. The CLSP area is expected to be within the City limits of the City of Lathrop within the life of the General Plan 2010 Review (County of San Joaquin 2000a).

CITY OF LATHROP GENERAL PLAN

The current City of Lathrop General Plan (City General Plan) was adopted in December 1991 and was amended most recently in 2003. The proposed project includes amendments to the City General Plan needed to accommodate the CLSP. The City General Plan does not specifically identify any goals or



Source: County of San Joaquin 1992

San Joaquin County General Plan 2010

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objectives related to land use. Section A of the Community Development Element sets forth policies and proposals that provide the basis for the zoning and development of all available public and private land in the community. The discussion below is divided according to the three sub-plan areas that make up the General Plan planning area.

The CLSP area is identified for urban development as part of Sub-Plan Area #2 in the City General Plan; prezoning is required as part of the annexation application to San Joaquin LAFCO. The CLSP portion of Sub-Plan Area #2 is outside the city limits and within the City's sphere of influence. The General Plan designates Sub-Plan Area #2 as primarily intended for low-density residential development. The priorities for commercial development in Sub-Plan Area #2 are for primarily freeway commercial uses until the population of the City of Lathrop increases sufficiently to support a community shopping center at Lathrop Road and Interstate 5 (I-5).

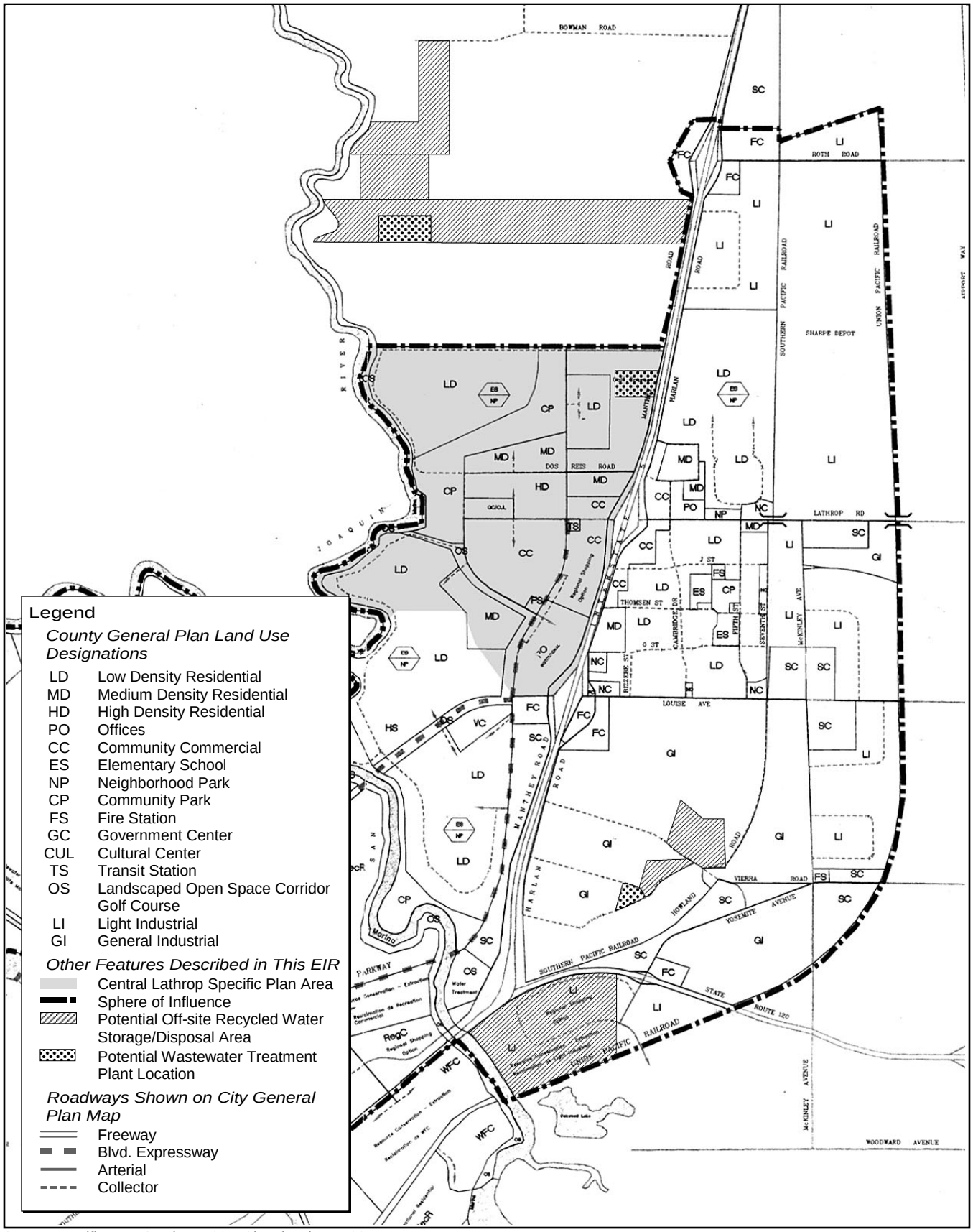
The City General Plan establishes development categories that correspond to land use designations shown on the General Plan Map. The land use categories and land use designations assigned to the CLSP area are shown in Exhibit 4.2-3. The acreage of each City General Plan land use designation and the maximum development potential for each residential land use designation is shown in Table 4.2-1. City General Plan residential designations for the CLSP area are Low Density, Medium Density, or High Density. Commercial land use categories within the CLSP area include Community Commercial and Offices. The City General Plan states that these land use categories are to be considered with "flexibility for ingenuity and innovation in the selection, promotion, design, and development of commercial uses and area." Furthermore, the City General Plan encourages the use of planned development and/or specific plan processes, which permit site design flexibility to avoid potential operational and aesthetic conflicts. Other land use designations within the CLSP area include Neighborhood Park, Community Park, Elementary School, High School, Government Center, and Cultural Center (City of Lathrop 1991).

Because land use–related goals and objectives are not identified in the City General Plan, they are not discussed further in this section. Because the CLSP area is currently outside the legal boundary of the City of Lathrop, no zoning districts have been assigned to the plan area.

SAN JOAQUIN COUNTY MULTI-SPECIES HABITAT CONSERVATION AND OPEN SPACE PLAN

The San Joaquin County Multi-Species Habitat Conservation and Open Space Plan (SJMSCP) is a 50-year plan to provide a strategy for balancing the desires to conserve open space in San Joaquin County, maintain the agricultural economy, and allow development of more than 109,300 acres of open space while protecting habitat for several endangered species (County of San Joaquin 2000). The SJMSCP was prepared by the County and the U.S. Fish and Wildlife Service, and the County and cities within the County can participate in the terms of the plan by each choosing to adopt it and its implementation agreement.

The City of Lathrop adopted the SJMSCP on January 16, 2001, and has signed the implementation agreement. Among other purposes, the SJMSCP addresses potential impacts on nearly 100 special-status plant, fish, and wildlife species in 52 vegetative communities scattered throughout San Joaquin County. Projects that would cause impacts associated with specifically covered species are required to implement avoidance and minimization measures to lessen the impacts and provide compensation through payment of fees (or in-lieu land dedication) for conversion of open space lands. These fees are to be used to fund the purchase of conservation easements on agricultural lands and the preservation and creation of natural habitats to be managed in perpetuity through the establishment of habitat preserves. Final management of SJMSCP conservation areas is determined by the San Joaquin Council of Governments (SJCOG).



Source: Pacific Data Services 1997; City of Lathrop 1991

City of Lathrop General Plan Map

EXHIBIT 4.2-3

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Table 4.2-1
Land Use Designations and Maximum Residential Development Potential Within Central Lathrop Specific Plan Area

Land Use Type	Land Use Designation	Per City General Plan (Acres) (Dwelling Units)[1]	Per Central Lathrop Specific Plan (Acres) (Dwelling Units)[2]
Residential	Low Density Residential (LD)	475.9 Ac (3,331 units)	--
	Medium Density Residential (MD)	150.3 Ac (2,254 units)	--
	High Density Residential (HD or HR)	93.1 Ac (2,328 units)	28.3 Ac (453 units)
	Variable Density Residential (VR)	--	703.1 Ac (5,114 units)
	Residential/Mixed Use (R/MU)	--	45.2 Ac (723 units)
	Office-Commercial/Variable Density Residential/Wastewater Treatment Plant (OC/VR/WWTP)	--	[67.0 Ac (500 units) – acreage accounted for in office/commercial section below]
Subtotal:		***719.3 Ac (7,913 units)***	***776.6 Ac (6,790 units)***
Office/Commercial	Professional Office (PO)	88.1 Ac	--
	Community Commercial (CC)	233.7 Ac	--
	Office-Commercial/Variable Density Residential/Wastewater Treatment Plant (OC/VR/WWTP)	--	67.0 Ac
	Office/Commercial	--	239.7 Ac
	Neighborhood Commercial (NC)	--	12.6 Ac
	Specialty Commercial (SPC)	--	7.9 Ac
	Residential/Mixed Use (R/MU)	--	[45.2 Ac – acreage accounted for in residential section above]
Subtotal:		***321.8 Ac***	***327.2 Ac***
Schools	Elementary School (ES)	0[3] Ac	0 Ac
	K-8 School (K-8)	--	54.6 Ac
	High School (HS)	--	50.0 Ac
Subtotal:		***0 Ac***[3]	***104.6 Ac***
Parks	Neighborhood Park (NP)	0 Ac[4]	45.0 Ac
	Community Park (CP)	178.9 Ac	70.0 Ac
Subtotal:		***178.9 Ac***	***115.0 Ac***

Table 4.2-1
Land Use Designations and Maximum Residential Development Potential Within Central Lathrop Specific Plan Area

Land Use Type	Land Use Designation	Per City General Plan (Acres) (Dwelling Units)[1]	Per Central Lathrop Specific Plan (Acres) (Dwelling Units)[2]
Government	Fire Station (FS)	3.7 Ac	[2.0 Ac[5] – acreage accounted for in the P-SP parcel]
	Government Center (GC)	20.0 Ac	(included in P-SP)
	Cultural Center (CUL)	(included in GC above)	(included in P-SP)
	Transit Station (TS)	2.7 Ac	(included in P-SP)
	Public/Semi-Public (P-SP)	--	11.1 Ac
Subtotal:		***26.4 Ac***	***11.1 Ac***
Open Space	Landscaped Open Space Corridor (OS)	127.3 Ac	--
	Golf Course	147.2 Ac	--
	Levee, Open Space, River (OS)	--	93.8 Ac
Subtotal:		***274.5 Ac***	***93.8 Ac***
Rights-of-Way	Rights-of-Way	0[6]	92.7 Ac
Subtotal:		***0 Ac***	***92.7 Ac***
Total:		***1,521 Ac***	***1,521 Ac[7]***

[1] Refers to the portion of the General Plan located within the CLSP area. Acreages for General Plan land use designations include major street rights-of-way, so the net acreage of developable area is less than indicated in this column.
[2] Acreages for CLSP land use designations do not include major street rights-of-way, thus indicating the net acreage of developable area.
[3] The General Plan does not specify acreages or locations for schools. Instead, the General Plan acknowledges that specific requirements are to be determined during the Specific Plan stage of development approval. The acreage for school sites is included in the acreage shown for the Low Density Residential land use designation.
[4] Similar to schools, the General Plan does not specify acreages or locations for neighborhood park sites. The acreage for neighborhood parks is included in the acreage shown for the Low Density Residential land use designation.
[5] Estimated. To be refined through coordination with the Lathrop-Manteca Fire Protection District.
[6] Acreages for General Plan land use designations include major street rights-of-way. Acreages for CLSP land use designations do not include major street rights-of-way.
[7] Represents the maximum development potential. The CLSP encompasses 1,521 acres of geographic area.
Ac = acres
Source: MacKay & Somps 2004; City of Lathrop 1991

LATHROP WATER, WASTEWATER, AND RECYCLED WATER MASTER PLAN

In 2000, the City prepared a Water, Wastewater, and Recycled Water Master Plan (Water Master Plan) that updated its water infrastructure master plans and enabled the City to phase the construction of infrastructure to link logically with the phasing of development in the City. The Water Master Plan identified a planned WRP at the northeast corner of the CLSP area near I-5 and the western extension of Squires Road (Exhibit 4.2-3). A contingency strategy in the Wastewater Collection Master Plan element of the overall Water Master Plan allows for wastewater from Sub-Plan Area #2 to be conveyed to the existing WRP #1.

LAND USE AND RESOURCE MANAGEMENT PLAN FOR THE PRIMARY AND SECONDARY ZONE OF THE DELTA

The Delta Protection Commission is a state agency, created by the Delta Protection Act of 1992, that is authorized to oversee land use and resource management activities in the Primary and Secondary Zones of the "Legal Delta" as defined in §12220 of the California Water Code. The Legal Delta covers approximately 738,239 acres, with the Primary Zone comprising 487,625 acres. The Delta Protection Act defines the Primary Zone, which comprises the principal jurisdiction of the Delta Protection Commission, as primarily for agricultural uses. Recreational uses, wildlife habitat, and nature preserves can also be approved uses within the Primary Zone. The commission has the authority to appeal local government activities within the Primary Zone. The Secondary Zone is the area outside the Primary Zone and within the Legal Delta; however, the Secondary Zone is not within the planning area of the Delta Protection Commission. (Delta Protection Commission 2002.) Notably, Government Code §29764 provides that nothing in the Delta Protection Act gives the Delta Protection Commission permitting authority within the Secondary Zone or requires local governments to conform their general plans or land use decisions to policies within the Commission's regional plan relating to the Secondary Zone.

The CLSP area is located in the Secondary Zone and is separated from the nearest portion of the Primary Zone, located just to the west of the CLSP area, by the San Joaquin River (Delta Protection Commission 2002). The San Joaquin River and associated levees provide approximately 500 feet of separation between the boundaries of the CLSP area and the nearest agricultural lands in the Primary Zone.

The Delta Protection Commission adopted its Land Use and Resource Management Plan for the Primary Zone of the Delta in 1995. This document included the following policy and recommendation that pertain to the Secondary Zone:

- **Land Use Policy No. 8.** Local government policies regarding mitigation of adverse environmental impacts under CEQA may allow mitigation beyond County boundaries, if acceptable to reviewing fish and wildlife agencies, for example in approved mitigation banks. Mitigation in the Primary Zone for loss of agricultural lands in the Secondary Zone may be appropriate if the mitigation program supports continued farming in the Primary Zone.

- **Land Use Recommendation No. 5.** To the extent possible, any development in the Secondary Zone should include an appropriate buffer zone to prevent impacts of such development on the lands in the Primary Zone. Local governments should consider needs of agriculture in determining such a buffer.

In 2003, a bill was introduced to the California Legislature, which if passed, could affect the authority of the Delta Protection Commission, potentially extending its authority to the secondary zone. This bill, Senate Bill 86, is still up for consideration as of the release date of this DEIR. Because it has not passed the legislature, the proposed bill does not affect the analysis in this EIR.

4.2.2 EXISTING CONDITIONS

The CLSP area encompasses approximately 1,520 acres of land west of I-5, east of the San Joaquin River, north of the West Lathrop Specific Plan (WLSP) area, and south of the point where Squires Road would continue westward if it crossed I-5. The CLSP area and the adjacent lands are dominated by actively farmed agricultural lands interspersed with farmsteads and associated outbuildings. There are approximately 35 occupied dwelling units in the CLSP area. These consist primarily of permanent homes, although there are also several mobile homes and temporary housing for agricultural workers (Lichliter,

pers. comm., 2003). Dos Reis Regional Park is located at the western terminus of Dos Reis Road along the San Joaquin River.

Much of the agricultural land in the CLSP area is under Williamson Act contract. Land north of the CLSP area, including the WRP #2 North site, is primarily in agricultural use. This includes lands considered for potential recycled water storage and disposal sites. Land south of the CLSP area has been approved for residential and commercial development as part of the Mossdale Landing project in the WLSP area. Land west of the San Joaquin River is primarily in agricultural use. I-5 provides the eastern boundary of the plan area, separating the CLSP area from the existing developed portions of Lathrop, located east of I-5. Parcels identified as potential recycled water storage and disposal Area 5 are either currently used or proposed for use as recycled water disposal sites (Exhibit 4.2-4). Potential recycled water storage and disposal Area 6 is in agricultural production.

4.2.3 Environmental Impacts

Analysis Methodology

The information presented in this section is based on a review of relevant literature and adopted plans, including the City and County General Plans and associated EIRs, the SJMSCP, the Water Master Plan, and the Land Use and Resource Management Plan for the Primary Zone of the Delta. The proposed project includes amendments to the City General Plan and associated Water Master Plan needed to accommodate the CLSP. This section of the EIR, therefore, analyzes consistency of the CLSP with these two plans, as amended.

Thresholds of Significance

The CLSP project would cause a significant impact on land use if it would:

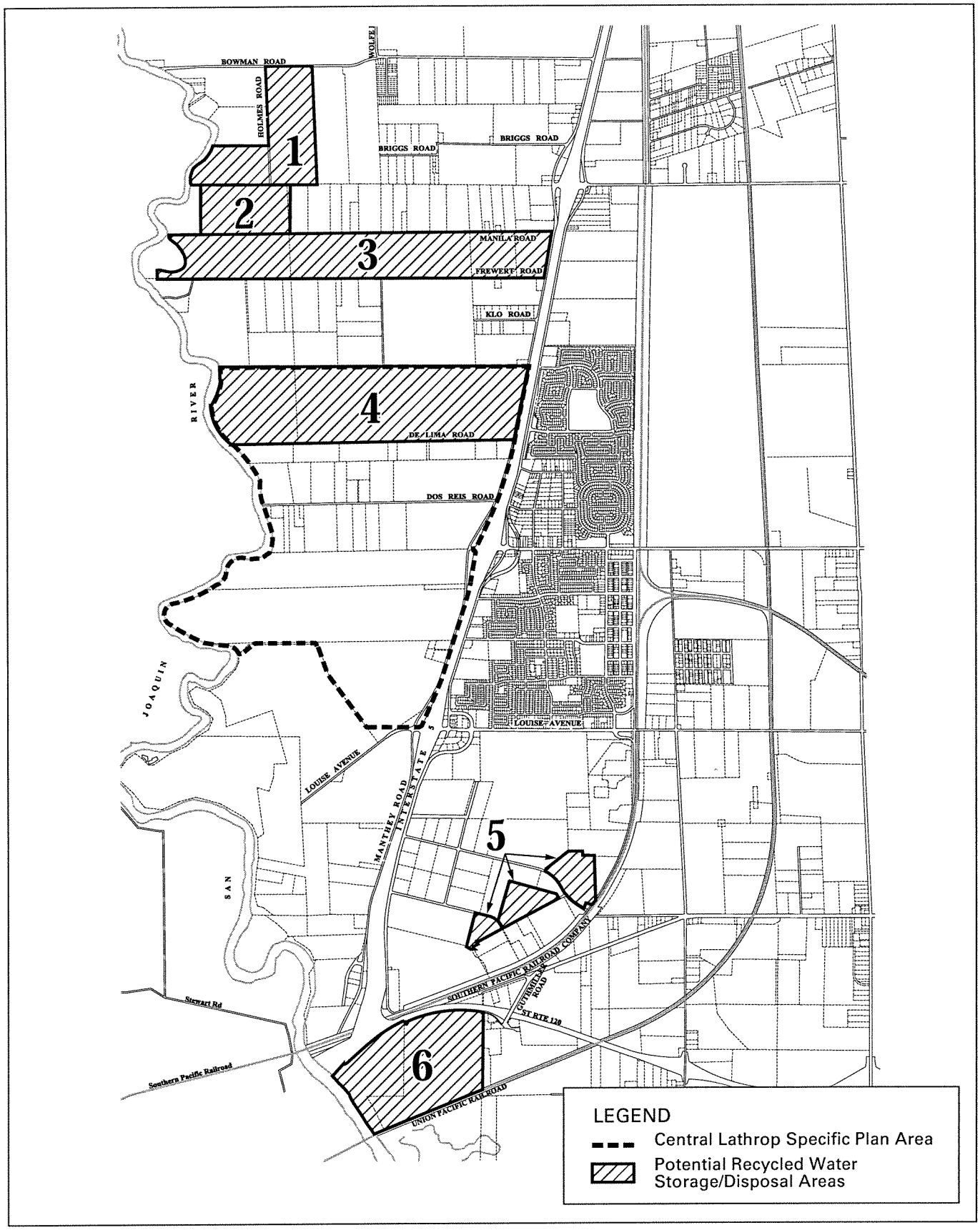
- physically divide an established community;
- conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project adopted for the purpose of avoiding or mitigating an environmental effect; or
- conflict with any applicable habitat conservation plan or natural community conservation plan.

Impact Analysis

Impact 4.2-a

Land Use – Potential for Division of an Existing Community. *The CLSP would allow residential development to occur in an area that is separated by I-5 from much of the established community within the City. The existing farm houses do not constitute a defined community and would be incorporated into the new community. For this reason, this impact is considered* ***less than significant.***

The proposed project would be located in an agricultural area west of the developed portion of the City of Lathrop. To the south, the proposed development would be connected with the Mossdale Landing development in the WLSP area. To the west is the San Joaquin River and to the north is agricultural land that is not within a defined community. The CLSP area would be separated from much of the existing developed portion of the City by I-5, but the proposed project itself would not create a division in an



Source: MacKay & Somps 2004

Areas Considered for Recycled Water Storage and Disposal Facilities

EXHIBIT 4.2-4

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established community. There are approximately 35 farm residences located in the middle of the CLSP area. These residences are not formally or informally known as a community. The project would establish a new community in the CLSP area, and the lands associated with these residences would be incorporated into the new community. Because the proposed project would not divide an established community, this impact is considered less than significant.

Impact 4.2-b

Land Use – Conflicts with Land Use Plans, Policies, or Regulations. *Implementation of the CLSP with the WRP #2 Onsite option or the WRP#2 South option would not result in land use incompatibilities or inconsistencies with applicable land use plans. However, the option to develop WRP #2 North or develop recycled water storage ponds in Areas 1, 2, or 3 would be inconsistent with the County general plan policies because these areas are located within existing agricultural land outside the City's sphere of influence and within land designated for agricultural uses by the County. The City itself could pursue development of these facilities without needing to comply with the County General Plan as long as the property is owned by the City. Therefore, the County General Plan designation for these sites would not preclude City-owned facilities in these areas. This impact would be* ***less than significant****.*

Currently, both the County and the City have planning jurisdiction over the CLSP area, though the City will have no direct land use authority over the area unless and until annexation to the City is approved by San Joaquin LAFCO. Because the plan area is located within San Joaquin County and outside the legal boundaries of the City of Lathrop, the County maintains the authority to designate allowable land uses and approve development on the site. The County's land use designations for the CLSP area are shown in Exhibit 4.2-2. Under the proposed project, the entire CLSP area, and WRP #2 North and recycled water storage pond areas 1, 2, or 3 if needed, would be annexed to the City of Lathrop. Following the approval of the annexation by LAFCO, the County would relinquish land use planning authority to the City, and the County General Plan would no longer apply to the annexed areas. Nonetheless, the proposed project may be appropriately compared to the County General Plan to determine the consistency of the proposed project with existing land use designations because the City does not have the current land use control. It should be recognized, however, that the project as proposed includes a request for annexation and assumes that the City, with its General Plan, will gain land use authority over the property, rendering the County General Plan no longer relevant.

The proposed project would be consistent with the overall intent of the County General Plan's designation of Agriculture-Urban Reserve (A/UR). The CLSP would allow the development of urban uses on existing agricultural land, and the A/UR designation assumes the existing agricultural land would be developed for urban uses at some point in the future (County of San Joaquin 1992). As such, the proposed annexation would be consistent with the intent of the County General Plan.

The CLSP area is located within the sphere of influence of the City of Lathrop, as shown in Exhibit 4.2-1. Because the CLSP area is located within the sphere of influence, the City's potential annexation, which would expand the legal boundaries of the City, has already been contemplated by the City when it last considered its growth boundaries (in its 1991 General Plan).

The proposed CLSP land use plan is expected to meet the general requirements for annexation established by state law. Availability of organized community services and water supplies is analyzed in Section 4.10, Public Services, and Section 4.11, Public Utilities. Consistency with the City and County general plans is discussed below. Effects on physical and economic integrity of agricultural lands are analyzed in Section 4.13, Agricultural Resources. Social, economic, and other effects on adjacent areas are described

throughout this document, to the extent required by CEQA, including in Chapter 6, Growth-Inducing Impacts.

The proposed land use plan would allow for a mixed-use development consisting of residential, commercial, public/civic, park, and open-space features (see Exhibit 3-3). The proposed project also includes several WRP options and locations, and potential recycled water storage/disposal area locations (Exhibit 3-6). Consistency of the proposed land use plan with the existing City General Plan land use map is also analyzed below.

Residential Areas

The proposed CLSP and accompanying General Plan amendments would designate residential uses with a range of densities similar to those identified in the City General Plan in its current form. Most of the CLSP area is identified for residential land uses in both plans. As shown in Table 4.2-1, the General Plan contemplates a maximum of 7,913 residential dwelling units for the area covered by the CLSP, although the actual number of dwelling units would likely be less (see footnote 1 of Table 4.2-1). By comparison, the CLSP would result in approximately 6,790 dwelling units within this same geographic area, which is about 86 percent of the maximum development potential contemplated by the General Plan.

As shown is Table 4.2-1, approximately 453 housing units would be in areas zoned as High Density Residential (HR) in the CLSP. The area designated as Residential/Mixed Use (R/MU) could accommodate up to approximately 723 additional high-density housing units. In addition, the northeast corner of the CLSP area could be developed under the VR designation if the WRP is not located there, adding 500 dwelling units. If WRP #2 is constructed in this OC/VR/WWTP area, the 500 dwelling units would be constructed in the remaining portion of the Phase 2 acreage at a slightly higher density. The remaining residential uses are encompassed in the VR areas.

The locations of the residential areas proposed in the CLSP would differ somewhat from the residential districts identified in the current City General Plan land use map, but the proposed project includes amendments to the General Plan land use map to show the residential locations proposed for the CLSP. Therefore, the CLSP would be consistent with the City General Plan (as amended), with respect to the location of residential districts.

An important City General Plan residential development policy for both Medium Density and High Density areas is that the minimum number of units shown in the density range of Table IV-1 [Standards of Housing and Population Density] shall not be reduced to reinforce commercial land use, transit and infrastructure proposals of the General Plan, and policies of the Housing Element concerning the City's fair-share responsibility in meeting low-moderate income housing needs of the region (City of Lathrop 1991). The CLSP would include land designated and zoned as HR and R/MU. The average density of the HR and R/MU designations would be 16 units per net acre, and would meet the criteria for low- to moderate-income or affordable housing. Therefore, it is expected that some of the future development within the CLSP area would be considered affordable housing. Thus, the proposed project is considered consistent with this development policy.

The City General Plan also includes the following development standards designed to avoid environmental impacts related to visual incompatibility and inadequacy of parking capacity:

- Where multi-story housing units are proposed adjacent to existing or planned Low Density areas, building elevations and the location of windows, balconies and air conditioning units above the first story shall be reviewed by the City to assure visual compatibility and residential privacy.

- …all multi-family housing projects shall provide off-street parking for visitors…at the rate of one space for each four units.

Under the CLSP, all development proposals involving permitted uses and administratively permitted uses under the Lathrop Zoning Code would be subject to review and approval by the Central Lathrop Design Review Board. One purpose of the Central Lathrop Design Review process would be to determine whether the development proposal is in conformity with the City General Plan (as amended by the general plan amendments associated with the CLSP). The design review process, therefore, will ensure these development standards or their intent would be met. No inconsistencies with related environmental goals, policies, or development standards would result.

Main Street District

The CLSP includes a Main Street District area at the Lathrop Road/Golden Valley Parkway intersection that includes public and civic uses, a main street–type pedestrian-oriented area, a neighborhood commercial area, and residential/mixed use areas that could accommodate shops at street level with high-density residential units above. This Main Street District area would include approximately 13 acres of Neighborhood Commercial (NC) uses at the northwest corner of Lathrop Road and Golden Valley Parkway (Exhibit 3-3). West of this commercial area, across a pedestrian main street, would be approximately 10 acres of Public/Semi-Public [P-SP(NC)] uses (e.g., potential City hall, library, police or fire departments, and potentially additional neighborhood commercial uses) and a 1-acre area designated for a Neighborhood Park. North of these two areas, on the south side of Dos Reis Road west of Golden Valley Parkway, would be 26.1 acres of R/MU areas, and an additional 19.1 acres of R/MU would be developed on the south side of Lathrop Road at Golden Valley Parkway. These R/MU areas are intended to allow flexibility to develop as commercial space at street level with high-density residential units above, or to have portions develop solely as either commercial or residential space.

The CLSP Main Street District area would be analogous to the central business district designated for the site in the City General Plan. The City General Plan states that the central business district should include the following features, which would minimize environmental effects related to incompatible land uses:

- Off-street parking to satisfy the need for all-day static parking of owners, managers, and employees of downtown businesses and public service activities.

The proposed CLSP includes development standards that ensure this City General Plan development standard would be met.

The CLSP Main Street District area would be located a little farther east than the civic center identified in the City General Plan, although it would still be along Lathrop Road. As shown in Table 4.2-1, the General Plan contemplates 20 acres of land would be designated for Government Center and Cultural Center uses within the area covered by the CLSP. By comparison, the CLSP would result in approximately 11 acres of Public/Semi-Public uses in the CLSP Main Street District. Before adoption of the CLSP, the City General Plan would be amended to reflect the modifications proposed in the CLSP. No inconsistencies with related environmental goals, policies, or development standards would result.

Commercial Areas

Land between I-5 and the proposed Golden Valley Parkway and between Louise Avenue/River Islands Parkway and the northern edge of the CLSP would be designated as Office-Commercial (OC) for up to approximately 4 million square feet of building space under the proposed CLSP (Exhibit 3-3). The Main

Street District area would contain neighborhood commercial and mixed-use commercial areas (see discussion above). (The OC/VR/WWTP area in the northeast corner of the CLSP area is described separately below.)

The City General Plan designates the lands encompassed by the OC area for a wider variety of uses, as shown in Exhibit 4.2-3. At the southern end of this area, the City General Plan designation is Offices (PO), with an option for institutional uses. Farther north, the City General Plan designation is for Community Commercial (CC), with an option for regional shopping. North of this area to approximately midway between Dos Reis and Lathrop roads, the land is designated CC, with the southeast corner of Golden Valley Parkway and Lathrop Road designated for a Transit Station (TS). Given that the proposed OC designation would allow similar types of uses as the City General Plan designations of CC and PO, the proposed CLSP is considered generally consistent with the City General Plan for the area to just above Lathrop Road. However, just below and above Dos Reis Road, the area is designated by the City General Plan for Medium Density Residential (MD), Low Density Residential (LD) and Open Space (OS), with an option for golf courses. For this reason, commercial development in this area, as allowed by the CLSP, would not be consistent with the City General Plan. As a part of the proposed project, an amendment to the City General Plan would be made to ensure consistency between the City General Plan and the CLSP.

At the intersection of the proposed Lathrop Road/Grass Valley Road and Street A, at the corner of an area designated by the City General Plan as Community Park (CP), the CLSP includes a 9-acre Specialty Commercial (SPC) area. This area is intended for recreation-oriented businesses that could take advantage of the location near the proposed community park and San Joaquin River. Because the City General Plan does not identify commercial uses at this location, it is not considered consistent with the City General Plan. The proposed project would include an amendment to the City General Plan to ensure consistency between the City General Plan and the CLSP.

The City General Plan includes the following development standards, compliance with which would minimize environmental effects related to incompatible land uses:

- The visual interface between commercial and residential areas shall be designed and developed so as to avoid obtrusive visual impacts of commercial activities on nearby residential areas.

- All outdoor storage areas shall be visually screened with ornamental fencing or walls, and landscaping.

The CLSP includes a landscaped open space corridor along Golden Valley Parkway that would screen views of the OC area from the nearby residential areas. The proposed Neighborhood Commercial land uses would be surrounded by Residential/Mixed Use, Public/Semi-Public, and high school land uses that would buffer views of commercial activities from nearby residential areas. The Specialty Commercial use would be surrounded on three sides by parks and open space, and a landscape corridor along Grass Valley Avenue (approximately 25 to30 feet wide) would screen views of the Specialty Commercial uses from the proposed residential area to the southeast. The CLSP also includes development standards to screen loading docks, storage areas, and refuse bins, further reducing undesirable views.

Schools

The proposed CLSP land use plan includes designations for a high school and three kindergarten-through-eighth grade (K-8) schools in the CLSP area. The high school would be located centrally on approximately 50 acres and would be bounded by Lathrop Road on the south, Dos Reis Road on the north, a community park on the west, and the Main Street District area on the east. One of the K-8 schools would be located north of De Lima Road on Street A. Another K-8 school would be between De Lima and Dos

Reis roads, and the third K-8 school would be south of Street A at Barbara Terry. All of these schools would be within the boundaries of and operated by the Manteca Unified School District.

The current City General Plan Land Use Map identifies one elementary school site (ES), in combination with a neighborhood park, within the CLSP area. Another combination of school/neighborhood park sites is identified just south of the CLSP area (Exhibit 4.2-3). The ES designation used in the City General Plan is analogous to the K-8 designation used in the proposed CLSP. Each of the school site designations denotes one or more school sites within a residential village. The ES school site designation north of De Lima Road would be at approximately the same location as a K-8 school identified in the CLSP. The City General Plan states that the school locations are somewhat flexible. However, the CLSP would include two more K-8 schools and one more high school than shown on the current City General Plan land use map for the CLSP area. The proposed project includes an amendment of the City General Plan Land Use Map to show the locations of the K-8 schools and the high school as proposed in the CLSP. It should be noted that a high school designated in the City General Plan at a location south of the CLSP area and within the Mossdale Landing project area was not included in that project, which was approved by the City in 2003. With the absence of a planned high school south of the CLSP area, the designation of a high school in the CLSP would compensate for the site to the south. The anticipated need for school facilities in the CLSP area is evaluated in detail in Section 4.10, Public Services.

The City General Plan states that "school sites should be interconnected by recreation corridors that encourage pedestrian and bicycle use with a minimum of conflict with the street system" (Grunwald & Associates 1991). The proposed K-8 school locations would be connected to pedestrian and bicycle trails/recreation corridors and are not adjacent to major arterial roadways (e.g., Golden Valley Parkway and Lathrop Road/Grass Valley Road). The proposed high school would also be connected to pedestrian and bicycle trails/recreation corridors and would be adjacent to Lathrop Road, which is appropriate in view of the higher volume of traffic anticipated for a high school. The high school location is not expected to cause conflicts with the proposed street system (see Section 4.4, Transportation). For these reasons, the proposed schools are not anticipated to conflict with the environmental policies in the City General Plan.

Parks

Several types of parks are designated in the CLSP. A 70-acre community park would extend along the San Joaquin River from the northern border of the CLSP area to the southern boundary, with parkland expanding east into the central portion of the project area and crossing Street A between Dos Reis Road and Lathrop Road/Grass Valley Road. The community park designated in the CLSP would generally be in the same location as the area designated Community Park (CP) in the City General Plan. As such, the proposed community park location is considered consistent with the City General Plan.

Nine neighborhood parks of approximately 4–5 acres each and one 1-acre neighborhood park would be distributed throughout the CLSP area. The City General Plan identifies only one neighborhood park, adjacent to the designated elementary school, within the CLSP area.

The City General Plan identifies landscaped open space corridors along the San Joaquin River, along an unnamed roadway between the river and Golden Valley Parkway, and along Golden Valley Parkway southward from Street A. According to the City General Plan, intended uses for these open space corridors include wildlife habitat, drainage and flood control basins, wastewater detention basins, and other low-intensity public uses that would permit irrigation of vegetation through the use of treated wastewater. The City General Plan also states that the open space corridors would have a typical width in the range of 200–300 feet, although the City General Plan anticipates that the width would vary depending on location and intended uses (Grunwald & Associates 1991).

Under the CLSP, open space/greenbelt areas are identified along the levee on the east side of the San Joaquin River (100-foot minimum width) and along the west side of Golden Valley Parkway. Smaller open space corridors would be provided along Lathrop Road and landscape/pedestrian corridors (i.e., a paseo along a road) on Street A, DeLima Road and Dos Reis Road. As such, the alignments of the proposed open space/greenbelt areas are consistent with the landscaped open space corridors designated in the City General Plan.

Variable Uses in the Northeast Corner

A 67-acre area in the northeast corner of the CLSP area is designated as Office Commercial/Variable Density Residential/Wastewater Treatment Plant (OC/VR/WWTP). The final determination of the land use for this property would depend on development conditions and decisions made regarding WRP options (described below; for more detail see Chapter 3, Description of the Proposed Project, and Section 4.11, Public Utilities). If WRP #2 is not developed at this location, it would be developed at one of two alternative locations, discussed below.

Up to 500 proposed variable-density housing units could be included in the northeast corner of the CLSP area. Office/commercial uses would be developed in conjunction with the residential uses to provide a buffer between the residential neighborhoods and I-5. If this area is developed as only office/commercial uses or as office/commercial uses and WRP #2, these 500 housing units would be shifted (as an increase in density) into the variable-density residential neighborhoods in the northern (Phase 2) part of the CLSP area.

The City General Plan identifies this area for low-density residential and open space uses, with an option for a golf course; however, the Water Master Plan identifies this area as the future location of WRP #2. The proposed project includes amendments to the City General Plan to identify the various WRP options evaluated as part of the CLSP. Therefore, no inconsistency would occur between the CLSP, the General Plan, or the Water Master Plan on this issue.

The Water Master Plan identifies the northeast corner of the CLSP area as the site of WRP #2, which would be constructed when the amount of development west of I-5 makes construction and operation of the plant economically feasible. The CLSP would provide the flexibility to allow land uses other than WRP #2 to be developed in this area. If this happens, the CLSP would not be consistent with the Water Master Plan with respect to the location of WRP #2, but would be consistent with the intent of the Water Master Plan to provide wastewater services to serve buildout of the City. However, the proposed project includes amendments to the Water Master Plan to ensure consistency between the Water Master Plan and CLSP. Because the Water Master Plan does not contain environmental policies, no conflicts related to policy inconsistency would result.

Wastewater Treatment/Disposal Offsite Alternatives

Future development within the CLSP area would require an increase in the City's physical wastewater treatment capacity, although the increase would be consistent with the City's total planned wastewater treatment capacity. This capacity increase may be provided by a new WRP located at the northeast corner of the CLSP area, as described above (WRP #2 Onsite option). Two offsite locations have been proposed as alternatives to the WRP #2 Onsite option:

(1) A new WRP (WRP #2 North) may be developed on a parcel north of the CLSP area

(2) A new WRP (WRP #2 South) could be constructed near WRP #1 on land currently being used for recycled water disposal irrigation fields.

These offsite areas are depicted in Exhibits 4.2-2 and 4.2-3.

For the purposes of environmental analysis, the environmental effects of all wastewater treatment, storage and disposal alternatives are evaluated in this DEIR. The WRP #2 Onsite option is analyzed for plan inconsistencies above under "Variable Uses in the Northeast Corner." The remaining options are evaluated below.

WRP #2 North

The County General Plan contains the following policies that pertain to the environmental effects of WRPs:

- Policy IV-D-1-7. Wastewater treatment systems shall meet the requirements and standards of the operating agency and the County.

- Policy IV-D-1-9. Sewage treatment facilities (including storage ponds) and areas for disposal of sewage effluent and sewage sludge serving uses outside of the Delta Primary Zone (as defined Public Resources Code Section 29728) shall not be located within the Delta Primary Zone.

Any WRP option would be constructed and operated in compliance with all applicable laws and regulations (consistent with Policy IV-D-1-7). The WRP #2 North site is located outside the Primary Zone of the Delta (consistent with Policy IV-D-1-9).

The WRP #2 North site is outside the City's sphere of influence (although within City General Plan Sub-Plan Area #2) and would be in the planning jurisdiction of the County. This area is designated and zoned as General Agriculture, which denotes areas generally committed to agriculture with viable commercial agricultural enterprises that require large land areas to efficiently produce their crops. According to the County General Plan, typical uses in the General Agriculture district are crop production, feed and grain storage and sales, aerial crop spraying, and animal raising and sales. Additional activities in this district include resource recovery, dairy and canning operations, stockyards, and animal feedlots. Other types of land uses are presumed to be incompatible for reasons that include adverse environmental effects on agriculture.

A WRP is not considered to be related to agricultural production and is not one of the typical land uses listed in the County General Plan for this land use district. For this reason, constructing the WRP #2 North option at the proposed location would not be consistent with County General Plan's land use designations, which are intended to minimize land use incompatibilities and other adverse environmental effects.

The City General Plan recommends that a permanent agricultural open space buffer be considered along the Bowman Road corridor, which is north of the CLSP area (Grunwald & Associates 1991). The WRP #2 North facility would occupy approximately 7 acres of existing agricultural land between the CLSP area and Bowman Road. The width of the open space buffer along Bowman Road is not specified; thus, it is not known if the proposed WRP #2 North facility would be located within the recommended open space buffer. However, if WRP #2 North were not located in the buffer, the presence of the plant could still influence conversion of agricultural lands to other uses either in, or adjacent to, the buffer. For example, there is potential for all, or part of the recycled water storage ponds (estimated maximum of 98 acres) to be located in the vicinity of the WRP #2 North site (Areas 1, 2, and 3 in Exhibit 4.2-4). In addition,

construction and operation of the WRP would require that wastewater pipelines be extended through an agricultural area and would thus remove one obstacle to urban growth in a potential open space corridor. The City General Plan also includes the following policies intended to protect agricultural land:

- **Agricultural Land Policy No. 2:** Exclusive agricultural zoning shall be continued on agricultural lands outside the boundaries of future urbanization shown on the General Plan diagram.

- **Agricultural Land Policy No. 3:** The protection of agricultural lands outside of the three sub-plan areas shall be reinforced by firm policies of the City to not permit the extension of sewerage and water service to such lands.

Policy No. 2 is to be amended as part of the proposed project to read:

- **Agricultural Land Policy No. 2:** Exclusive agricultural zoning shall be continued on agricultural lands outside the boundaries of the three sub-plan areas.

Development of the WRP #2 North location may require approval of a general plan amendment by the County to change the designation from General Agriculture, unless the property is owned by the City, which is not bound by the County's General Plan (see Gov. Code, § 53090; *Lawler v. City of Redding* (1992) 7 Cal.App.4th 778, 782-784). The WRP #2 North site is within Sub-Plan Area #2 in the City's General Plan. Therefore, this option would be consistent with City General Plan Agricultural Land policies 2 (as amended) and 3, aimed at the protection of agricultural resources. As mentioned above, the City itself could pursue the WRP#2 North project without needing to comply with the County General Plan, so long as the property is owned by the City. So the County General Plan designation for the site would not preclude a City-owned facility on the site.

Assuming the WRP #2 North site was annexed to the City, moreover, this WRP option would be consistent with San Joaquin LAFCO Guideline Standards C, E, H, and I for annexation of non-contiguous area for utilities. The City currently provides wastewater treatment service. No special service districts or new agencies to provide these services would be created with annexation of the site. As previously discussed, San Joaquin LAFCO Guideline Standards F, G, and K are intended to discourage noncontiguous, single-parcel, strip, or corridor annexations, but they do not apply to proposed annexations of noncontiguous City-owned property proposed for municipal purposes. As noted earlier, §56742 of the Government Code, allows a LAFCO to approve non-continuous annexations by cities if the annexed territory is located in the same county as the city, is owned by the city, and is used for municipal purposes. San Joaquin LAFCO has indicated that if the proposed WRP #2 North site was needed to serve the City's wastewater treatment needs and if the City were to comply with the provisions of §56742 of the Government Code, the WRP #2 North site would be eligible as a noncontiguous annexation and Guideline Standards F, G, and K would not apply (Baracco, pers. comm., 2004).

San Joaquin LAFCO Guideline Standard L states that urban encroachment into designated agricultural areas outside the sphere of influence will be opposed. This Guideline Standard, however, would not be applicable to the WRP #2 North site because a WRP is considered a municipal (i.e., utility) use rather than urban encroachment.

WRP #2 South

The WRP #2 South option, constructing a new wastewater treatment/recycling plant at a location southeast of the CLSP area but within the City limits and the City's sphere of influence, would be consistent with the City's General Plan. The area proposed for WRP #2 South is located in an agricultural area currently used

for spray disposal of recycled water generated by the City's existing WRP. The area is designated as General Industrial by the City General Plan, which includes a wide range of industrial activities whose location and operational characteristics generally involve nuisances for surrounding uses if not mitigated. Although development of the WRP would result in changes to the current land use (agricultural operations), it would not conflict with permitted uses under the City's General Plan designation for this area. Therefore, this option would have less-than-significant impacts.

Recycled Water Storage and Disposal Areas

The CLSP project includes several potential areas for storage and disposal of tertiary treated and disinfected (to Title 22 standards) recycled water (Exhibit 4.2-4). The areas considered are currently used for agricultural operations. Two types of activities could potentially occur on these sites: operation of recycled water storage ponds, and disposal of recycled water via crop irrigation. Use of recycled water storage ponds would require that up to 98 acres of agricultural land be converted to these facilities (see Chapter 3, Project Description). The water would be stored during the winter months for future use as irrigation water for crops and landscaping. Development of water storage ponds would result in a new land uses on these sites. However, disposal of recycled water through irrigation of crops would not change the existing land uses at these sites; they would remain in agricultural production. Currently, it is not known if these sites would be used for water storage ponds or spray disposal or both. Therefore, this analysis evaluates the impacts of both types of activities.

Areas 1, 2, and 3 (Exhibit 4.2-4) are north of the CLSP area and outside the City's sphere of influence although within Sub-Plan Area #2 of the City's General Plan. These areas are in the planning jurisdiction of the County, and are designated and zoned as General Agriculture. A change in land uses would occur if recycled water storage ponds are developed on these sites. Recycled water storage ponds are not considered, under the General Agriculture designation, to be related to agricultural production and are not one of the typical land uses listed in the County General Plan for this land use district. However, recycled water storage ponds in these areas, which are within City General Plan Sub-Plan Area #2, would be consistent with City General Plan Agricultural Land Policy 2 as amended (discussed above for the WRP #2 North option). Because of potential conflicts with the County General Plan, wastewater storage ponds would result in potentially significant impacts related to conflicts with existing agricultural zoning. Similar to the previous discussion regarding the WRP #2 North site, the City itself could pursue the development of recycled water storage ponds in sites 1, 2, and 3 without needing to comply with the County General Plan, so long as the property is owned by the City. Therefore, the County General Plan designation for the sites would not preclude City-owned facilities in these areas.

Assuming recycled water storage pond sites are annexed to and owned by the City, storage ponds in Areas 1, 2, or 3 would not be inconsistent with San Joaquin LAFCO Guidelines Standards C, E, H, and I, which are not intended to apply to annexation of noncontiguous city-owned land used for municipal purposes. The relevant site would be annexed to the City, a multiple-service agency, and no special service districts or new agencies to provide these services would be created with annexation. San Joaquin LAFCO has indicated that if Areas 1, 2, or 3 were the minimum size necessary to serve the City's recycled water storage needs and if the City were to comply with the provisions of §56742 of the Government Code for a noncontiguous annexation, Areas 1, 2, or 3 would be eligible for annexation and Guideline Standards F, G, and K would not apply (Baracco, pers. comm., 2004).

San Joaquin LAFCO Guideline Standard L states that urban encroachment into designated agricultural areas outside the sphere of influence will be opposed. This Guideline Standard, however, would not be applicable to Areas 1, 2, or 3 because recycled water storage is considered a municipal (i.e., utility) use rather than urban encroachment.

Disposal of recycled water through crop irrigation in Areas 1, 2, or 3 would not change existing land uses, and agricultural operations would continue in these areas. Under the General Agriculture designation, disposal would be related to agricultural production and would be consistent with the County General Plan.

Area 4 is in the CLSP project area and is north of De Lima Road and south of the CLSP area boundary. During construction of Phase 1, this area could provide temporary recycled water storage and/or disposal. Area 4 is in the planning jurisdiction of the County and is designated and zoned as A/UR, which assumes the existing agricultural land would be developed for urban uses at some point in the future. Use of this area for recycled water storage ponds or irrigation disposal would be consistent with the County General Plan. After construction of Phase 1 is generally complete, this area would be developed during construction of Phase 2. Development of this area in Phase 2 is analyzed above for consistency with relevant plans.

Area 5 is within the current Lathrop city limits. The City has planning jurisdiction over this area. Area 5 is in an industrial area and is used currently for spray disposal of recycled water generated by the City's existing WRP. Continued use of these sites for spray disposal would not result in any changes to the current land uses; therefore, this option would be considered to have no impact. However, a change in land uses would occur if water storage ponds are developed on these sites. These areas are designated as General Industrial by the City General Plan, which includes a wide range of industrial activities. Although development of water storage ponds would result in changes to the current land use, it would not conflict with permitted uses under the City General Plan designation for this area.

Area 6 is outside but adjacent to the existing City limits and within the sphere of influence of the City. The City would have planning jurisdiction over this area, because it would be annexed into the City prior to use as a recycled water storage and disposal site. Currently, Area 6 is used for agricultural operations, although a portion of Area 6 has been identified as a location for disposal, via crop irrigation, of recycled water to be generated by the planned expansion of the City's existing WRP. Use of this site for irrigation disposal of recycled water would not result in any changes to the current land uses, and agricultural operations would continue. However, a change in land uses would occur if water storage ponds are developed on this site. This area is designated as Limited Industrial by the City General Plan, which includes a wide range of industrial activities that typically have limited impacts. Although development of water storage ponds would result in changes to the current land use, it would not conflict with permitted uses under the City's General Plan designation for this area.

Conclusion

Given the proposed amendments to the City General Plan and Water Master Plan and the compliance with the laws and regulations, policies, and development standards listed above, implementation of the CLSP with the WRP #2 Onsite option or the WRP #2 South would result in no land use incompatibilities or other adverse environmental effects related to plan inconsistencies. However, the option to develop WRP #2 North or develop recycled water storage ponds in Areas 1, 2, or 3 would be inconsistent with County General Plan policies because these areas are on existing agricultural land that is outside the City's sphere of influence and is designated for agricultural uses by the County. But as discussed previously, the City itself could pursue the construction of WRP #2 and recycled water storage ponds in these areas without needing to comply with the County General Plan, so long as the property is owned by the City. Therefore, the County General Plan designation for the sites would not preclude City-owned facilities in these areas. Therefore, this impact is considered less than significant.

Impact 4.2-c

Land Use – Consistency with San Joaquin County Multi-Species Habitat Conservation and Open Space Plan. *The SJMSCP defers to city general plans and the County General Plan for land use designations. Therefore, with regard to land use and planning, the project's consistency with the City and County General Plans implies consistency with the SJMSCP. The SJMSCP does not identify the CLSP area or any of the potential WRP #2 locations or recycled water storage and disposal sites as preferred conservation sites. Therefore, development in the CLSP area and use of potential utility sites would not conflict with SJMSCP conservation goals. This impact is considered* ***less than significant****.*

Because of its location in San Joaquin County, the proposed project would be within the area covered by the SJMSCP. Specifically, the CLSP area is identified in the SJMSCP as a part of the Central Zone, which encompasses the lands surrounding each of the county's seven incorporated cities. The SJMSCP identifies the Central Zone as the area where most of the county's existing urban development is located and where proposed new development is anticipated to occur. The SJMSCP defers to city general plans and the County General Plan for land use designations. Therefore, with regard to land use and planning, the project's consistency with the city and county general plans implies consistency with the SJMSCP. The SJMSCP does not identify the CLSP area or any of the potential WRP #2 locations or potential recycled water storage and disposal sites as preferred conservation sites. Therefore, development in the CLSP area and use of potential utility sites would not conflict with SJMSCP conservation goals. Participation in the SJMSCP is voluntary; therefore, the decisions by the City and project applicant on whether or not to use the SJMSCP for this project (although each is expected to do so) does not determine consistency with the plan. Because the proposed project would not conflict with the SJMSCP, this impact is considered less than significant.

4.2.4 MITIGATION MEASURES

No significant impacts related to land use consistency and compatibility would occur under the proposed project; therefore, no mitigation measures would be required.

4.2.5 RESIDUAL SIGNIFICANT IMPACTS

All impacts associated with land use consistency and compatibility are considered less than significant. Therefore, there are no residual significant impacts.

4.3 Population, Employment, and Housing

4.3 POPULATION, EMPLOYMENT, AND HOUSING

This section documents the existing population, employment, and housing conditions in the City of Lathrop (City) and San Joaquin County (County) and presents estimates of changes to those conditions that could be created with implementation of the proposed project. This section also characterizes the population, employment, and housing changes that could trigger adverse physical effects in the City or the region.

4.3.1 REGULATORY BACKGROUND

SAN JOAQUIN COUNTY GENERAL PLAN

The San Joaquin County General Plan (County General Plan) includes the following elements related to employment and housing that are relevant to this analysis:

- **Housing Policy No. 5:** Public or private projects that displace residents or eliminate neighborhoods shall be rejected unless they would, in balance, contribute to the public's health, safety, and welfare.
- **Housing Policy No. 7:** The County shall encourage the use of development concepts and techniques designed to reduce housing costs.
- **Housing Policy No. 9:** The County shall encourage the provision of units available for sale or rent to low and moderate income households.
- **Housing Policy No. 10:** The County shall encourage the scattering of sites for affordable housing throughout the residentially designated areas of the County.
- **Housing Policy No. 11:** The County shall encourage the development of affordable housing to large families.
- **Economic Policy No. 1:** Development of diverse employment opportunities shall be encouraged.
- **Economic Policy No. 2:** The County shall work to achieve a closer balance between jobs and residents in the County.
- **Economic Policy No. 5:** The County should actively promote continued industrial growth, increased recreational development, and a regional shopping center site adequate to serve the region's future population.

CITY OF LATHROP GENERAL PLAN

The City of Lathrop General Plan (City General Plan) includes the following goals and policies related to housing that are relevant to this analysis:

- **Housing Goal No. 3:** To develop a balanced residential environment with access to employment opportunities, community facilities, and adequate services.
- **Housing Goal No. 5:** To promote efficient use of land available for housing.
- **Housing Policy No. 1:** Low and moderate income housing sites should be selected so as to avoid excessive concentrations of such housing within any of the residential neighborhoods of the City.

- **Housing Policy No. 3:** The City will support the expansion of housing opportunities for the elderly, handicapped, minority and other low income groups through the following:

  a. The promotion of housing sites for the elderly and handicapped which are within reasonable proximity to transportation services, medical facilities, recreation areas and conveniences, and shopping facilities, and where reasonable security by police and fire protection services can be assured.

  c. Encourage new housing units which are adaptable for handicapped households. This can be accomplished by City staff at the review stage by assuring the elimination of barriers and by provisions for special handicapped needs such as lowered switches and flush doorways.

- **Housing Policy No. 9:** Based upon competent community-wide housing market analysis, the City will: maintain an adequate ratio of about 70% singe-family homes to 30% non-single family, including apartments, to allow choices, affordability and availability in housing types. . . .

- **Housing Policy No. 10:** The development of single-family housing on small lots under 6,000 sq. ft. in area can be considered as an alternative to meeting affordable housing needs otherwise requiring apartment development.

DRAFT CITY OF LATHROP GENERAL PLAN HOUSING ELEMENT

Currently, the City is preparing an update to the General Plan Housing Element (updated Housing Element). The purpose of this update is to formulate a housing program that will guide the City toward preservation, improvement, and development of housing for all economic levels. It is the City's intent with the updated Housing Element to encourage varied, affordable housing development. The draft 2003-2008 Housing Element was circulated for public review in November 2003, and comments from the State, interested agencies, and the public have been received. The updated Housing Element was adopted by the City in June 2004. Final approval by the State of California was in process at the time of publication of this DEIR. The updated Housing Element includes the following goals, objectives, and policies related to housing that are relevant to this analysis:

- **Goal 1: Housing Opportunities and Accessibility.** It is the goal of the City of Lathrop to concentrate its efforts to increase the availability of permanent housing for all community residents.

- **Objective 1-3:** Encourage the development of housing and programs to assist special needs persons.

- **Policy 1-3-2:** Provide housing to single individuals, working poor, homeless, disabled, senior citizens, and others in need of basic, safe housing to prevent or reduce the incidence of homelessness in areas near service providers, public transportation, and service jobs.

- **Goal 2: Remove Constraints.** The goal of the Housing Element is to remove constraints that hinder the construction of affordable housing.

- **Objective 2-1:** Provide the citizens in the City of Lathrop with reasonably priced housing opportunities within the financial capacity of all members of the community.

- **Policy 2-1-3:** To preserve affordability, provide incentives (e.g., density bonus units, fee underwriting, fee deferral, fast-tracking, etc.) to developers of residential projects who agree to provide the specified percentage of units mandated by State law at a cost affordable to Very low

and/or Low income households. In addition, propose zoning and permit process changes to further reduce housing costs and average permit processing time.

- **Policy 2-1-4:** Encourage the development of second dwelling units to provide additional affordable housing opportunities.

- **Policy 2-1-5:** Encourage developers to employ innovative or alternative construction methods to reduce housing costs and increase housing supply.

- **Goal 3: Provide and Maintain an Adequate Supply of Sites for the Development of New Affordable Housing.** It is the goal of the City of Lathrop to provide adequate, suitable sites for residential use and development or maintenance of a range of housing that varies sufficiently in terms of cost, design, size, location, and tenure to meet the housing needs of all economic segments of the community at a level which can be supported by the infrastructure.

- **Objective 3-2:** Continue to provide opportunities for mixed use developments.

- **Policy 3-2-1:** To ensure the development of housing that has, to the extent possible, a support structure of shopping, services, and jobs within easy access.

4.3.2 EXISTING CONDITIONS

POPULATION

From 1990 to 2000, the population of the City of Lathrop increased from 6,841 to 10,445, or 53% over the 10-year period (U.S. Census Bureau 2002). The current population is estimated to be 12,427 (California Department of Finance 2004). Population growth within the City and its sphere of influence is projected to continue; however, estimates of the future population as forecast by different planning processes used by the City and County vary widely depending on the assumptions used in the projections. Projected population estimates from various sources are presented in Table 4.3-1.

Some of the variation among population projections is attributable to the age of the projections. For example, the population projections contained in the City General Plan were prepared in 1991. As projections age, unforeseen circumstances typically decrease the accuracy of the projections over time. Additional variation results from projection methods. The San Joaquin Council of Governments (SJCOG) estimates (completed in 2000 by the SJCOG Research and Forecasting Center) were based on extrapolations of historic growth trends and did not account for some of the specific projects planned in the City. Projections included in the City General Plan are based on future projects planned in the City at the time the general plan was prepared. Projections in the SB 610 Water Supply Assessment (SB 610 Report), which requires consideration of cumulative development in the City and forecasted growth over the next 20 years, reflect information from recently approved projects, such as Mossdale Landing and River Islands, as well as anticipated population growth associated with the CLSP project (Nolte Associates 2004). It is also important to note that some of the population projections presented in Table 4.3-1 are not for identical geographic areas. The population estimates provided by the City General Plan cover City Sub-Plan Areas #1 and #2 (Exhibit 4.3-1); whereas the Water Master Plan provides estimates for Sub-Plan Areas #1, #2, and #3. Also, Sub-Plan Area #2 covers a smaller area in the Water Master Plan than in the City General Plan (Exhibit 4.3-1). In the City General Plan Sub-Plan Area #2 extends north beyond Bowman Road.

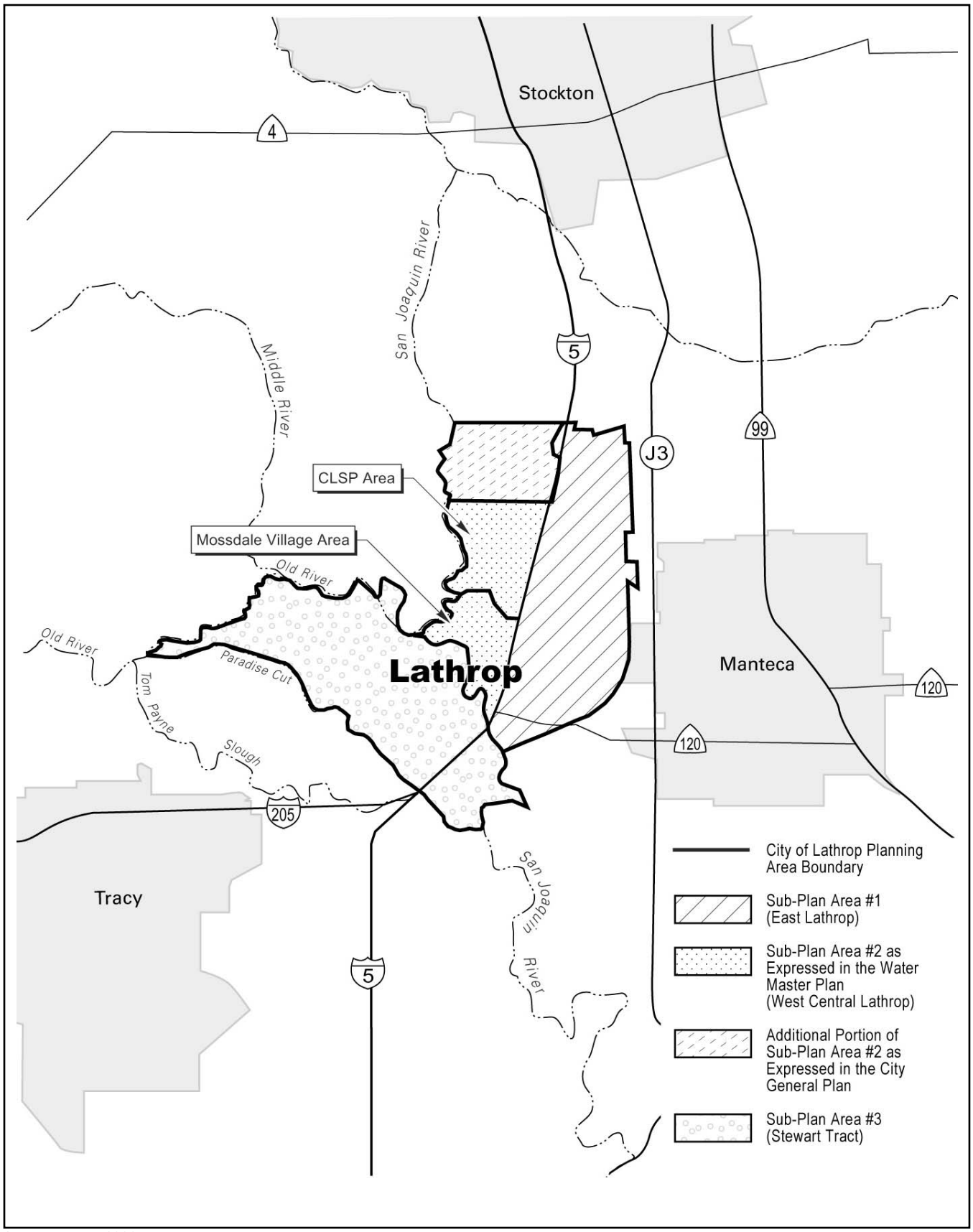
Table 4.3-1
Population Estimates for the City of Lathrop

	Projection Year					
	2005	2010	2015	2020	2025	2030
San Joaquin County General Plan	--	29,100	--	--	--	--
San Joaquin Council of Governments	12,760	15,546	18,331	20,627	--	--
City General Plan[1]	24,463	30,000	--	--	--	--
Lathrop Water, Wastewater, and Recycled Water Master Plan Study Area	30,400	47,200	55,100	60,700	63,100	65,400
Lathrop Water, Wastewater, and Recycled Water Master Plan—Sub-Plan Area #2 [2]	10,500	14,700	18,900	20,900	22,300	23,700
SB 610 Water Supply Assessment Report for Central Lathrop Specific Plan[3]	22,800	33,854	44,912	57,146	68,779	--

[1] Includes Sub-Plan Areas #1 and #2.
[2] Sub-Plan Area #2 comprises the CLSP area and the Mossdale Village area.
[3] The SB 610 report is provided in Appendix J
Sources: County of San Joaquin 1991, EDAW 2001, Nolte Associates 2001, SJCOG Research and Forecasting Center 2000, City of Lathrop 1991, Nolte Associates 2004.

The Water, Wastewater, and Recycled Water Master Plan (Water Master Plan) population projections were prepared in 2001 (Nolte Associates 2001) and cover the entire City of Lathrop and its sphere of influence (i.e., Sub-Plan Areas #1, #2, and #3 as shown in Exhibit 4.3-1). The CLSP area is in Sub-Area #2, which is comprised of the CLSP area in the north and the Mossdale Village area in the south. These projections are based on the existing City General Plan land use densities and estimated maximum demand rather than on extrapolations of past population growth trends. The Water Master Plan projections include a larger geographic area (the City's incorporated area and sphere of influence) than do the City General Plan projections. As such, the population growth projections of the Water Master Plan are higher than those of the City General Plan. The Water Master Plan also uses more current data than the City General Plan. For these reasons, the Water Master Plan projections are considered to provide more up-to-date population projections.

The SB 610 Water Quality Analysis Report (provided in Appendix J) combines two methods to establish a city wide population projection. For "East Lathrop", which encompasses Sub-Plan Area #1 (i.e., East Lathrop) (Exhibit 4.3-1), the estimated 2002 population for the area provided by City staff (12,062 persons) (Gagaza pers. comm.) was used as a baseline. From this point, population growth was projected in 5-year increments to reach the 2025 population of 14,800 in East Lathrop originally projected in the Water Master Plan. For other areas in the City, project-specific population growth estimates provided in various EIRs were used, including EIRs for the Mossdale Landing project, the River Islands project, and this CLSP project. The population projections for East Lathrop and the various EIRs were combined in the SB 610 Report to provide city-wide population projections. The city-wide population projections provided in the SB 610 report are considered among the City's most up-to-date population projections because they incorporate information on population growth associated with specific project proposals.



Source: EDAW 2000

City of Lathrop Planning Areas

EXHIBIT 4.3-1

Central Lathrop Specific Plan Draft EIR
City of Lathrop
P 3T017.01 07/04

0 1 2
MILES

NORTH

EDAW

EMPLOYMENT

According to the U.S. Census Bureau there were 4,622 employed residents in the City of Lathrop in 1990. In 1990, employment in the City included approximately 5,600 jobs, with the most prominent occupations being laborers, fabricators, and operators (City of Lathrop 1991). Since 1990, there has been a steady increase in the percentage of persons employed in managerial, professional, technical, and administrative support occupations. In San Joaquin County as a whole there were 182,237 jobs in 1990 (County of San Joaquin 1991), while in 2000, the number of jobs in the county totaled 244,277 (U.S. Census Bureau 2000).

Similar to the population projections discussed above, estimates of future employment in the City, as forecast during different City planning efforts and by the County, vary widely depending on the age of the projections and the assumptions used. Projected employment estimates from various sources are presented in Table 4.3-2. The most current employment projections for the City were prepared by the SJCOG Research and Forecasting Center in 1999. However, these SJCOG estimates are based on extrapolation of historic growth trends and do not reflect future planned projects in the City. Projections in the City General Plan are based on job generation expected from development projects included in that plan.

Table 4.3-2
Employment Estimates for the City of Lathrop

	Projection Year			
	2005	2010	2015	2020
San Joaquin County General Plan	--	12,985	--	--
SJCOG Research and Forecasting Center	3,398	3,653	3,909	4,164
City General Plan	--	22,030	--	--

Sources: County of San Joaquin 1991, SJCOG Research and Forecasting Center 2000, City of Lathrop 1991

HOUSING

The U.S. Census Bureau reports that housing units in the City have increased from 2,040 in 1990 to 2,991 in 2000. The City's housing growth rate over this 10-year period was nearly 47%. Based on the City General Plan, the number of housing units is anticipated to increase in East Lathrop and West-Central Lathrop (Exhibit 4.3-1) to approximately 10,210 by 2010 (City of Lathrop 1991). Approval of the West Lathrop Specific Plan (WLSP) in 1996 added approximately 6,560 units to the City's 2010 estimates (City of Lathrop 1996). Combining the projected housing from the areas covered in these various planning documents, the total number of housing units in the City is projected to reach approximately 16,230 by 2010 (EDAW 2001). Since approval of the WLSP, the EIRs for the Mossdale Landing and River Islands projects (both within the WLSP area) have been approved, and the WLSP was amended as necessary to accommodate these projects. A combined 12,690 housing units are proposed as part of these projects. Combining these housing units with the 10,210 units projected in East Lathrop and West-Central Lathrop by the City's General Plan would result in a projected 22,900 housing units in the City.

According to the California Department of Housing and Community Development (HCD), a housing vacancy rate of 5% is considered normal (HCD 2000). Vacancy rates below 5% indicate a housing shortage in a community. The U.S. Census Bureau reports that the City had a vacancy rate of 0.9% for owner-occupied units and 2.5% for rental units in 2000. Similarly, the County had a vacancy rate of 1.2%

for owner-occupied units and 3.8% for rental units in 2000. These vacancy rates indicate that both the City and County currently experience a tight housing market.

JOBS-HOUSING BALANCE

The concept of jobs-housing balance presumes that the environment and quality of life in a given area benefit when the area has a balance between its housing supply and employment base. An area that has too many jobs relative to its housing supply is likely (in the absence of offsetting factors) to experience relatively rapid escalations in housing prices and intensified pressure for additional residential development. Conversely, if an area has relatively few jobs in comparison to the number of employed residents, many of the workers are required to commute to jobs outside their area of residence (County of San Joaquin 1991).

The simplest measure of jobs-housing balance is an index based on the ratio of employed residents (which is influenced by the number of homes) to jobs in the area, with an index of 1.0 indicating a jobs-housing balance. An index below 1.0 indicates that the area has more jobs than employed residents and may suggest that many employees are commuting in from outside the community. An index above 1.0 indicates that the area has more employed residents than jobs and may suggest that many residents are commuting to jobs outside the community.

The anticipated trend in the jobs-housing index for San Joaquin County, based primarily on data from the County, is shown in Table 4.3-3. It should be noted that jobs-housing indices are more useful for examining the potential for "self-containment" at the regional level than in determining whether this self-sufficiency actually exists in a given community. Even if communities have a statistical balance between jobs and housing, they are still very likely to experience in-commuting and out-commuting, given the variety and dispersed nature of employment and residential opportunities elsewhere in the region and the high level of mobility offered by automobiles.

Table 4.3-3
Jobs-Housing Balance for San Joaquin County

	Year				
	1990	2000	2010	2015	2025
Employment (number of jobs)	182,237[1]	201,671[2]	234,430[2]	250,810[2]	283,569[2]
Housing units	166,274[3]	189,160[3]	236,422[2]	262,311[2]	297,019[4]
Households	158,156[3]	181,629[3]	226,965[2]	251,819[2]	309,395[4]
Employed residents	214,969[3]	244,277[3]	308,672[5]	342,474[5]	420,777[5]
Jobs-Housing Index[6]	1.18	1.22	1.32	1.37	1.48

[1] Source: County of San Joaquin 1991.
[2] Source: San Joaquin Council of Governments Research and Forecasting Center 2000.
[3] Source: U.S. Census Bureau 2002.
[4] Source: EDAW 2002.
[5] Assumes estimated number of employees per household would remain at 1.36 through 2025, as projected household size varies between 2.91 and 3.10.
[6] Jobs-Housing Index = employed residents/number of jobs.

As shown in Table 4.3-3, the jobs-housing index for the County has increased from 1.18 in 1990 to an estimated 1.22 in 2000. This indicates that the imbalance between housing (i.e., reflected as employed residents) and jobs in the County increased from 1990 to 2000, with housing growth outpacing employment growth. These indices indicate that San Joaquin County has more employed residents than

jobs, that the county supports a net out-commuting population, and that the condition is intensifying. The jobs-housing index for the County is projected to steadily increase to 1.48 in 2025, indicating an increasing imbalance between housing and employment in the future and an increased expectation of residents commuting outside the County for employment. Comparing projections in Table 4.3-3 for numbers of jobs in the County versus employed residents, by 2015 approximately 91,664 residents would be commuting out of the County for employment. This number would increase to 137,208 by 2025.

As discussed above under "Regulatory Background," the City is preparing an updated Housing Element. According to the updated Housing Element, throughout the last 20 years, the City has experienced a higher number of employed residents per household than the County. For the County as a whole, the average number of employed residents per household is estimated to be 1.36. The 1990 U.S. Census Bureau indicated that between 1980 and 1990, the City's ratio rose to 1.6. The 2000 census data showed that the ratio has remained stable from 1990 to 2000. Therefore, the updated Housing Element defines the ratio of employed residents per household as 1.6 (City of Lathrop 2004).

4.3.3 ENVIRONMENTAL IMPACTS

ANALYSIS METHODOLOGY

The examination of population, employment, and housing conditions in this section of the DEIR is based on information obtained from review of the plans for the proposed project; review of available population, employment, and housing projections from the City, the County, and the U.S. Census Bureau, and other sources; and review of applicable elements and policies from the City and County General Plans.

A project-level analysis of population, employment, and housing was conducted for Phase 1 and Phase 2 of the proposed project. It was assumed that Phase 1 would include construction of all high-density residential development (1,176 units combined in the High-Density Residential and Mixed-Use areas), 393.6 acres of variable-density residential uses (2,866 units), 191.4 acres of office/commercial (2,501,215 square feet), 12.6 acres of neighborhood commercial (164,657 square feet), 7.9 acres of specialty commercial (86,031 square feet), and 11.1 acres of public/semi-public/neighborhood commercial uses (145,055 square feet). Phase 2 would include construction of the remaining 309.5 acres of variable-density residential development (2,248 units) along with the remaining 48.3 acres of office/commercial uses and the 67 acre OC/VR/WWTP parcel (maximum of 1,068,963 or 1,506,741 square feet, depending on the development plan chosen in the OC/VR/WWTP parcel). For the purposes of this analysis, Phase 1 development is assumed to be completed in 2010, and Phase 2 (or full buildout) would be complete in 2020.

THRESHOLDS OF SIGNIFICANCE

The proposed project would result in significant population, employment, and housing impacts if it would:

- induce substantial unplanned population growth in an area, either directly (by proposed new homes and businesses) or indirectly (through the extension of roads or other infrastructure);
- generate a substantial demand for new housing, the construction of which could cause significant environmental impacts;
- displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere; or

- result in employment or housing conditions inconsistent with goals, policies, or objectives in the City General Plan.

IMPACT ANALYSIS

Impact 4.3-a

Population, Employment, and Housing – Population Growth and Housing Demand during Construction. *The proposed project would generate a temporary increase in employment in the City of approximately 300 construction jobs during the peak construction period. The number of existing construction personnel in the region is considered sufficient to meet demand associated with the proposed project; therefore, this temporary increase in employment is not expected to generate any substantial new population growth in the area or generate the need for substantial additional housing for construction workers. This impact is considered* ***less than significant****.*

Project construction activities would occur at intervals throughout the planning horizon of the proposed project. A greater number of construction workers would be employed during peak construction periods (determined by market demand and overall economic conditions), while fewer construction workers would be employed during nonpeak periods. It is estimated that on a peak construction day, up to 300 construction workers would be employed in the construction of proposed facilities. According to the latest labor data available from the U.S. Census Bureau (2000), 628 residents in the City and 16,190 residents in the County are employed in the construction industry (U.S. Census Bureau 2002). This existing number of residents in the City and County who are employed in the construction industry would likely be sufficient to meet the demand for construction workers that would be generated by the proposed project. Because construction workers serving the proposed project can be expected to come from the City itself and from nearby communities in San Joaquin County, substantial population growth or increases in housing demand in the region as a result of these jobs is not anticipated. Furthermore, even if some construction workers from outside the region were employed at the project site, construction workers typically do not change residences when assigned to a new construction site, and substantial permanent relocation of these workers to the area is not anticipated. Therefore, the proposed project would not be expected to generate the need for substantial additional housing in the City during construction. Because of these conditions, the impact related to population growth and housing demand associated with project construction is considered less than significant.

Impact 4.3-b

Population, Employment, and Housing – Population Growth. *The proposed project would develop new homes, which would result in direct increases in population. Although the project-related estimated increases in population are roughly comparable to and consistent with the increases in population that would have resulted from the planned residential growth in the project area for which provision is made in the City's 1991 General Plan, the project-related population increases exceed planned growth anticipated in the City and County General Plans and the Water Master Plan. However, inconsistencies solely between planned and anticipated population growth as described here would not cause significant environmental effects. Direct impacts that would occur with development and associated population growth are evaluated in appropriate sections of this DEIR. This impact is considered* ***less than significant.***

The proposed project includes new housing that would result in direct increases in population at the project site. In Phase 1 of the proposed project, 1,176 high-density residential units and 2,866 variable-density residential units would be developed. As shown in Table 4.3-4, these homes are estimated to

generate 10,781 new residents in the City by 2010. In Phase 2 of the proposed project, an additional 2,748 variable-density residential units would be developed by 2020. These units would generate 7,969 additional new residents in the City, for a total of 18,750 projected residents.

The City General Plan projects that by 2010, Sub-Plans Areas #1 and #2 would have a combined population of 30,000 residents (Table 4.3-1), approximately 18,500 more than in 2002. However, the City General Plan does not provide populations projections specific to Sub-Plan Area #2 or the CLSP area. A maximum population allowed in the CLSP area by the City General Plan can be estimated by calculating the maximum number of dwelling units allowed by the City General Plan in the CLSP area using land use acreages and housing densities provided in the City General Plan (see Table 4.2-1) (3,331 low density units, 2,254 medium density units, 2,328 high density units) and multiplying these results by the average persons per household provided in the City General Plan (3.2 persons per du for low density residential, 2.5 persons per du for medium density, and 2.1 persons per du for high density). Using this method, the City General Plan would allow for a maximum population of 20,950 persons in the CLSP area. Therefore, the 18,750 residents projected for the CLSP area in the CLSP would not exceed the maximum population allowed by the General Plan.

Table 4.3-4
Residential Population Projections for the CLSP

	Dwelling Units	Persons per Dwelling Unit	Residents
Phase 1 (2010)			
High-density residential	1,176	2.1[1]	2,470
Variable-density residential	2,866	2.9[2]	8,311
Phase 1 subtotal	4,042	--	10,781
Phase 2 (2020)			
Variable-density residential	2,748	2.9[2]	7,969
Phase 2 subtotal	2,748	--	7,969
Total (2020)	6,790	--	18,750

1 Data on persons per dwelling unit for high-density residential provided in the City General Plan.
2 For variable-density residential, an average between low- and medium-density residential was calculated using data on persons per dwelling unit provided in the City General Plan.
Source: EDAW 2004

The County General Plan estimates that the City of Lathrop's population would be approximately 29,100 people by 2010. The County General Plan does not provide population projections specific to Sub-Plan Area #2 or the CLSP area and there is no mechanism to use data from the County General Plan to calculate/estimate projections for these areas. In comparing population projections in the County General Plan to the CLSP, only Phase 1 of the proposed project could be considered because the County General Plan only includes population projections to 2010. Development of Phase 1 of the CLSP project would occur between 2005 and 2010, and is expected to generate 10,781 new residents during this timeframe. Therefore, development of Phase 1 of the CLSP on its own would not generate population growth exceeding projections for the City as a whole in the County General Plan (29,100 residents). However, when combined with other projected growth in the City, the CLSP would contribute to an exceedence of population projections in the County General Plan for the City of Lathrop. As shown in Table 4.3-1, each citywide population projection for 2010 generated by the City of Lathrop (City General Plan, Water Master Plan, SB 610 analysis) exceeds the County General Plan projection for the City.

The Water Master Plan does not provide populations projections specific to the CLSP area, but does include a population projection of 20,900 residents for Sub-Plan Area #2 in 2020 (Table 4.3-1).

Evaluating only the CLSP project, by full buildout of the CLSP area in 2020, the estimated project population of 18,750 would not exceed the Water Master Plan Sub-Plan Area #2 projected population of 20,900 residents (4.3-5).

However, Sub-Plan Area #2 includes additional development in the Mossdale Village area. Currently, Mossdale Landing and Mossdale Landing East are the only approved project within the Mossdale Village area. However, additional development, and hence residents, can be anticipated. Table 4.3-5 shows the Water Master Plan population projections for Sub-Plan Area #2 in 2010 and 2020 with implementation of the proposed project and the Mossdale Landing project. The proposed project and Mossdale Landing projects would generate a combined population of 15,873 people by 2010, which would exceed the Water Master Plan projected population of 14,700 (Table 4.3-5) residents for Sub-Plan Area #2. By 2020, full buildout of the proposed CLSP project and the Mossdale Landing projects would total approximately 23,842 residents and would exceed the Water Master Plan projection of 20,900 residents for Sub-Plan Area #2 (Table 4.3-5).

Table 4.3-5
Population Estimates for Water Master Plan Sub-Area #2

	2010	2020
CLSP population projections	10,781	18,750
Mossdale Landing population projections	5,092	5,092[1]
Total	15,873	23,842
Water Master Plan Sub-Plan Area #2	14,700	20,900

[1] The 2020 population estimates for the Mossdale Landing project assumes that full buildout of this project would occur in 2010, and the maximum population for 2020 would remain the same.
Source: EDAW 2004

Because the CLSP project would generate population growth that exceeds estimates in the Water Master Plan for Sub-Plan Area #2, the project would result in unanticipated population growth in the area. 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 significant environmental impacts on the environment through land conversions, commitment of resources, and other mechanisms. Direct impacts associated with development needed to accommodate increased population are evaluated in appropriate sections in this DEIR (e.g., Section 4.4, Transportation and Circulation; Section 4.10, Public Services; Section 4.11, Public Utilities; Section 4.13, Agricultural Resources; and Section 4.14, Terrestrial Biology). Potential inconsistencies with local planning documents (e.g., City General Plan, Water Master Plan) that may lead to significant environmental impacts are also evaluated in each section. However, inconsistencies solely between planned and anticipated population growth as described here would not cause significant environmental effects. Therefore, this impact is considered less than significant.

Impact 4.2-c

Population, Employment, and Housing – Housing Demand from Project Development. *Development of the proposed project would increase the number of housing units and jobs. At buildout of Phase 1, the jobs-housing index for the CLSP area would be 0.76, and at full buildout the index would be between 0.89 and 0.98 (depending on the final development plan chosen), indicating that the proposed development would be job rich and could generate demand for new housing in the region for onsite employees. However, because the existing and projected jobs-housing balance for the region is job poor, the jobs generated*

by the proposed project are expected to be filled in large part by the existing labor pool in the region. The project is not expected to induce substantial new housing demand. This impact is considered ***less than significant****.*

The CLSP provides for several varieties of commercial development, including office/commercial, neighborhood commercial, and specialty commercial uses. Development of these commercial uses is estimated to result in the creation of 9,097–9,963 jobs at full buildout. As shown in Table 4.3-6, with the 6,790 housing units anticipated in the CLSP area generating an estimate 8,864 employed residents, at full buildout the overall jobs-housing index would be between 0.89 and 0.98, depending on the final development plan chosen for the OC/VR/WWTP parcel. This indicates that at full buildout the CLSP project would range between being "jobs rich" to almost balanced between jobs and employed residents. Development of Phase 1 would result in approximately 5,757 jobs and 3,605 housing units, and the jobs-housing index would be 0.76, which indicates that Phase 1 is job rich.

During Phase 1 and at full buildout of the CLSP the proposed project is estimated to generate between approximately 220 and 1,670 more jobs than the ability of the housing on the project site to accommodate these workers (Table 4.3-6). If these workers do not currently live in the City or County or cannot be accommodated by the existing housing units in the City or County, then new housing units would be needed to meet the housing demand generated by the proposed jobs. However, as discussed previously, the CLSP area is located in a "job-poor" and "housing rich" County, and at least 10s of thousands of County residents currently commute to jobs located outside the County, with numbers expected to increase in the future. Given these conditions, jobs generated by the proposed project are expected to be filled in large part by the existing resident labor pool in the region. Because the project is anticipated to generate little to no demand for new housing this impact is considered less than significant.

Table 4.3-6
Jobs-Housing Balance for the Central Lathrop Specific Plan
Based on the San Joaquin County General Plan

	Phase 1 (2010)	Buildout (2020) – OC/VR/WWTP split between OC and another use*	Buildout (2020) – All Office/ Commercial Development
Total commercial square footage	3,474,564	4,543,526	4,981,304
Employment (number of jobs)[1]	6,949	9,087	9,963
Housing units	4,042	6,790	6,790
Households[2]	3,880	6,518	6,518
Employed residents[3]	5,277	8,864	8,864
Jobs-housing index[4]	0.76	0.98	0.89

* Addresses residential and WRP #2 Onsite options, which would have similar commercial square footage.
1 Assumes 500 square feet = 1 employee (Source: Gray, pers. comm., 2004).
2 Assumes 1 housing unit = 0.96 household (Source: U.S. Census Bureau 2000 data for San Joaquin County) to account for unoccupied housing units.
3 Based on the 2000 U.S. Census Bureau ratio of number of employees per household in San Joaquin County (1.36).
4 Jobs-housing index = employed residents/number of jobs.

Source: EDAW 2004

It should be noted that the calculations above use an average of 1.36 employed residents per household based on 2000 U.S. Census Bureau Data for San Joaquin County. As discussed above in Sections 4.3.1, Regulatory Background and Section 4.3.2, Existing Conditions, the City of Lathrop has adopted an

updated Housing Element to update the current Housing Element in the City General Plan. Final approval from the State of California was pending at the time of publication of this DEIR. The updated Housing Element identifies an average of 1.6 employed residents per household in the City of Lathrop (City of Lathrop 2004). As shown in Table 4.3-7, using the 1.6 employed residents per household estimate, the number of employed residents in the CLSP area during Phase 1 and full buildout would increase relative to the estimates provided in Table 4.3-6. With this increased number of employed residents, development of Phase 1 would result in a jobs-housing index of 0.89 (jobs rich). At full buildout, the jobs-housing index would be between 1.05 and 1.15, depending on the final development plan chosen for the OC/VR/WWTP parcel, indicating more employed residents than jobs.

As discussed above, during a jobs rich condition (i.e., Phase 1), jobs generated by the proposed project are anticipated to be filled by the existing labor pool in the region and the project would not generate substantial new housing demand. At full buildout, using the 1.6 employed residents per household figure, the proposed project would be "housing rich", with more than sufficient houses available to meet demand associated with project generated jobs. Therefore, using the 1.6 employed residents per household figure from the Updated Housing Element, the project is anticipated to generate little to no demand for new housing and this impact continues to be considered less than significant. Any impacts resulting from out-commuting traffic associated with a potential housing rich condition are evaluated in Section 4.4, Transportation and Circulation, of this DEIR.

Table 4.3-7
Jobs-Housing Balance for the Central Lathrop Specific Plan
Based on the Draft City General Plan Housing Element

	Phase 1 (2010)	Buildout (2020) – OC/VR/WWTP split between OC and another use*	Buildout (2020) – All Office/ Commercial Development
Office/commercial square footage	3,474,564	4,543,526	4,981,304
Employment (number of jobs)[1]	6,949	9,087	9,963
Housing units	4,042	6,790	6,790
Households[2]	3,880	6,518	6,518
Employed residents[3]	6,208	10,429	10,429
Jobs-housing index[4]	0.89	1.15	1.05

* Addresses residential and WRP #2 Onsite options, which would have similar commercial square footage.
1 Assumes 500 square feet = 1 employee (Source: Gray, pers. comm., 2004).
2 Assumes 1 housing unit = 0.96 household (Source: U.S. Census Bureau 2000 data for San Joaquin County) to account for unoccupied housing units.
3 Based on the draft City General Plan Housing Element (1.6).
4 Jobs-housing index = employed residents/number of jobs.
Source: EDAW 2004

Impact 4.3-d

Population, Employment, and Housing – Housing Displacement. *Dwelling units in the CLSP area consist primarily of permanent homes, although there are also some mobile homes and temporary housing units for agricultural workers. For this analysis it is assumed that all 35 existing homes would be purchased and removed, and the site would be constructed with 6,790 new homes. Construction of residential dwelling units in the CLSP area would replace the 35 units removed during project construction. This impact is considered* ***less than significant****.*

Approximately 35 dwelling units are present in the CLSP area. These consist primarily of permanent homes, although there are also some mobile homes and temporary housing units for agricultural workers. Three dwelling units are on property owned by or under contract to Richland Planned Communities (Lichliter, pers. comm., 2003). The 32 remaining dwelling units would be annexed to the City under the CLSP, if the proposed project is approved, and would be subject to proposed City zoning. It is assumed for this analysis that all 35 dwelling units would be removed during project development, resulting in housing displacement for these residences. Implementation of the proposed project would result in the construction of 6,790 high-density and variable-density residential dwelling units in the CLSP area. In addition, 5,092 units are under construction in the nearby Mossdale Landing development. Construction of these residential dwelling units in and near the CLSP area would fully replace the 35 units removed during project construction. This impact is considered less than significant.

Impact 4.3-e

Population, Employment, and Housing – Consistency with Housing Policies. *The County General Plan, City General Plan, and Updated housing element contain various goals, objectives, and policies related to the provision of affordable housing, housing for the elderly and handicapped, and non–single-family housing (e.g., apartments). Although the proposed project may not meet the desired availability and ratio of these housing types at all times, overall the project would be consistent with housing policies in these planning documents. This impact is considered* ***less than significant****.*

Housing Policies 7, 9, 10, and 11 in the County General Plan, Housing Policies 1 and 3 in the City General Plan, and Housing Policies 1-3-2, 2-1-3, 2-1-4, and 2-1-5 in the Updated housing element discuss the provision of affordable housing for low-income households and housing for the elderly and people with disabilities. Housing Policy 9 calls for maintaining a City wide ratio of 70% single-family residences to 30% non–single-family residences.

The variable-density residential designation encompasses the range of low and medium densities from the City General Plan (1-15 dwelling units per acre [du/ac]), with an average of 7.27 du/ac. This approach to residential development is intended to provide flexibility in planning and developing of neighborhoods that contain a variety of housing types, ranging from detached single-family homes to townhouses and condominiums, rather than isolating specific housing types in separate neighborhoods. Up to 5,614 dwelling units would be developed in areas zoned as variable-density residential. In addition, high-density residential uses would be developed with an average density of 16 du/ac. Approximately 1,176 dwelling units would be developed in areas zoned as high-density residential, of which 723 units could be developed above commercial space in the town center. This approach is consistent with County General Plan Housing Policies 7 and 10 and Updated housing element Policies 2-1-5, which encourage techniques to reduce housing costs and the scattering of sites for affordable housing throughout residential areas.

The proposed project would include development of single-family homes, townhouses, condominiums, and apartments. The exact range of housing densities and size of lots is unknown at this time; however, each neighborhood would be developed based on planning needs in the City and market demand. Townhouses and apartments are considered multifamily housing units that could accommodate households in the lower income range. Development of these multifamily units would be consistent with County General Plan Policies 9 and 11 and Updated housing element Policies 1-3-2 and 2-1-4, which encourage development of affordable housing for large families, disabled persons, senior citizens, and low-income households. In addition, the City General Plan Policy 10 states that single-family housing on small lots (less than 6,000 square feet) can be considered as an alternative to meeting affordable housing needs otherwise requiring apartment development. Assuming that a percentage of single-family home lots would qualify under Housing Policy 10, the proposed project would be consistent with housing

policies in the City General Plan. For these reasons, the proposed project is considered overall to be consistent with the City's housing policies, and this impact is considered less than significant.

4.3.4 MITIGATION MEASURES

No significant impacts related to population, employment, and housing would occur under the proposed project; therefore, no mitigation measures would be required.

4.3.5 RESIDUAL SIGNIFICANT IMPACTS

All impacts associated with population, employment, and housing are considered less than significant. Therefore, there are no residual significant impacts.

4.4 Transportation and Circulation

4.4 TRANSPORTATION AND CIRCULATION

This chapter is based on a traffic analysis prepared by Fehr & Peers Transportation Consultants (Fehr & Peers) and traffic modeling conducted by TJKM Transportation Consultants (TJKM). A report describing the demand forecasting methodology used by TJKM for the traffic analysis (TJKM 2004) is provided in Appendix B. Because of the enormous volume of data generated during traffic counts and modeling runs conducted in support of the traffic analysis, it would not be feasible to provide this data as an appendix to the Environmental Impact Report (EIR). However, the results of the traffic counts and modeling runs is available for review at the City of Lathrop Community Development Department/ Planning Division, 16775 Howland Road, Suite One, Lathrop, California 95330 (209/858-2860, extension 327).

Development in the Central Lathrop Specific Plan (CLSP) area would not be completed until 2020, more than 15 years from today. The CLSP, other areas of the City of Lathrop, and cities and communities throughout San Joaquin County are expected to experience significant growth over this period. Major projects have been entitled for development throughout the region, and more are expected. As projects develop, traffic would increase on local and regional roadways and freeways. As regional development proceeds, transportation system improvements would be provided through local and regional funding programs, individual project mitigation, and improvements funded by the California Department of Transportation (Caltrans). These improvement programs are discussed in the analysis in this section.

Although there is a reasonable expectation that future roadway system improvements would be provided as planned, they remain largely dependent on fees generated by the development that would affect the roadways. The likelihood that planned developments would proceed can be forecasted but not predicted with certainty. The same is true of the timing of these developments. Consequently, this traffic analysis evaluates development impacts under two conditions:

1. The CLSP is evaluated against a backdrop of existing environmental conditions; that is, the impacts and mitigation measures for the project are evaluated against the existing roadway system with existing traffic volumes. This is referred to as the existing condition scenario.

2. The project is evaluated against a backdrop that assumes an improved roadway system and increased traffic volumes, based on projected regional growth, regional traffic plans, traffic fee programs, and known network improvement commitments. This improved roadway condition is evaluated for the year 2010 (2010 Scenario), which is the year when Phase 1 of the CLSP is expected to be completed, and 2020 (2020 Scenario), which is the year when full project buildout is anticipated.

These two conditions represent the reasonably foreseeable range of possible roadway scenarios that could be in place as the project develops over time. Similar to the future improved roadway condition (Condition 2), the existing condition scenario is also evaluated at the end of Phase 1 (2010), and buildout (2020).

The traffic analysis includes a study area for surface streets and a study area for freeway segments. The study area for surface streets includes:

- 24 existing street intersections within and in the vicinity of the CLSP area,
- 14 new street intersections within and near the CLSP area, and
- 3 existing freeway ramps that would provide access to the CLSP area.

The study area for freeway segments addresses four major freeways in San Joaquin County and includes:

- 17 segments on Interstate 5 (I-5),
- 12 segments on State Route (SR) 99,
- 5 segments on SR 120, and
- 5 segments on I-205.

The specific intersections, ramps, and freeway segments included in these study areas are listed later in this chapter in Section 4.4.2, Existing Conditions, and in the analysis methodology portion of Section 4.4.3, Environmental Impacts. These study areas are referred to together as the "traffic study area."

Public comments received in response to the Notice of Preparation (NOP) raised issues related to the geographic extent of the traffic analysis and analysis methodologies. Input received as part of the NOP and scoping process are incorporated into this section. In general, the geographic scope of the area addressed herein reflects input on the NOP (especially from Caltrans), state legal requirements, and the professional judgment of the traffic engineers who prepared the analysis.

4.4.1 REGULATORY BACKGROUND

Existing transportation policies, laws, and regulations that would apply to the proposed project are summarized below. This information provides a context for the impact discussion related to the project's consistency with applicable regulatory conditions.

SAN JOAQUIN COUNTY GENERAL PLAN

The San Joaquin County General Plan (County General Plan) addresses transportation in the Community Development section, which addresses the county's development pattern, economic development, housing, and infrastructure. Several relevant goals and policies are documented below:

Roadways

Objective 1: To provide a roadway system that satisfies the needs in San Joaquin County for safe, efficient, convenient, and reliable vehicle movement of people and goods through and in the County.

Policy 1: The County shall plan for a road system of adequate capacity and design to provide reasonable and safe access by vehicles with minimum delay. The road system shall be based on functional classification and shall contain the following types of roads:

- Freeway, designed as the primary facility for intercity and regional traffic.

- Expressway, designed for high speed intercommunity traffic between important centers of activity or employment, may be a two lane undivided highway in rural areas or a multi-lane divided roadway in urban areas. Access in areas of development should be limited to freeways, arterials, and rural roads.

- Major Arterial, designed: 1) as the highest type of road carrying local traffic in urban communities; provided access routes to shopping areas, places of employment, community centers, recreational areas, and other places of assembly and freeways; and 2) as a principal carrier of traffic between communities, providing access routes to places of employment, recreation areas, and freeways. Access should be limited to that from commercial and industrial areas and should generally be no closer together than one-quarter mile.

- Minor Arterial, designed as a second type of facility carrying local through traffic to areas similar to those served by Major Arterials and feeding the Major Arterials. Access should be limited to that from commercial, industrial, and multi-family properties.

- Collector, designed to provide principal access to residential areas or to connect streets of higher classifications to permit adequate traffic circulation.

- Local residential, designed to provide access to adjacent residential lots and to feed traffic to collectors.

- Local Commercial and Industrial, designed to provide access to adjacent commercial and industrial properties and to feed to Minor Arterials.

- Rural Residential, designed to provide local access in rural residential areas.

- Rural, designed to provide access in agricultural areas.

Policy 2: The road system design shall consider the function of each road and include an adequate number of roads, properly spaced and functionally related.

Policy 3: The use of freeways for local commute traffic in communities shall be minimized.

Policy 4: Roadway improvements shall be coordinated with regional plans. Roadway improvements shall be guided by the countywide Regional Transportation Plan and Regional Transportation Improvement Plan Program, the Congestion Management Program, and the Measure K Strategic Plan Funding Program.

Policy 5: Variations in the alignment of designated roadways shall be considered in conformity with the Plan if the alignment does not result in traffic safety problems or reductions in needed capacity, does not constrain the proper development of contiguous properties, and does not conflict or preempt other Plan-specified uses or facilities; or if the alignment is in conformance with an adopted Special Purpose Plan or Specific Plan.

Policy 6: Parcels to be developed in communities shown on the General Plan Map shall have frontage on roads built to County standards.

Policy 7: Development shall provide all right-of-way and onsite road improvements necessary to serve the development and mitigate offsite traffic impacts triggered by the development.

Policy 8: On minor arterials and roadways of higher classification, the County shall maintain a Level of Service (LOS) no lower than "D" at all intersections and the following on the throughway:

- On State Highways, LOS D.

- Within a city's sphere of influence, LOS D, or LOS C when the city plans for that level of service or better.

- On Mountain House Gateways, as defined in the Master Plan, LOS D.

- On other roads, LOS C.

Transit

Objective 1: To provide a public mass transit system that satisfies the demonstrated needs in San Joaquin County for safe, efficient, convenient, economical, and reliable transit service.

Objective 2: To provide a Countywide system of rail facilities, integrated with bus service, which is integrated with transit systems in adjacent regions.

Policy 1: The County shall promote public mass transit as an alternative to the automobile.

Policy 2: The County shall advocate commuter transit service.

Policy 3: The County shall support public transit service to meet the transportation needs of non-drivers by:

- Concentrating on serving those who have no other reasonable alternatives for transportation;
- Providing access to required medical, social service, and personal business destinations;
- Encouraging the use of existing public and private transit systems to those able to use such systems; and
- Supporting and promoting accessibility in public transit to the greatest extent feasible.

Policy 4: The County shall support park and ride lots and other transit-related facilities that promote transit use.

Policy 5: All major developments shall have provision for transit.

Policy 6: Abandoned railroad rights-of-way shall be considered for acquisition by the County for use in County's circulation system.

Policy 7: Increased passenger rail service to the County shall be supported.

Policy 8: Stockton shall be promoted as a continued depot for Amtrak service.

Policy 9: The County shall support Amtrak stations in all cities of the County.

Policy 10: The County shall support the concept of developing passenger service along existing rail corridors to Sacramento and the Bay area to a capability of 79 miles-per hour in the short term. In the longer term, the County supports upgrading rail service to a capability of 125 miles-per-hour along existing or new alignments.

Policy 11: In the short-term, the County shall support the concept of development of multi-modal rail stations in Stockton, Lodi, Manteca, and Tracy which could initially be used as park and ride facilities coupled with commuter bus and express bus service. The multi-modal stations in each City of San Joaquin County should be upgraded to eventually provide cross-platform transfer capabilities.

Bicycles

Objective 1: To provide a countywide system of bicycle facilities for safe and convenient transportation and recreation.

Policy 1: The bike route system shall:

- Provide for inter- and intra-county bicycle circulation;

- Connect residential areas with commercial areas, employment centers, educational facilities, local and regional recreational facilities, and other major attractions;
- Interface with city bicycle routes;
- Be constructed to acceptable standards;
- Be physically separated from automobile traffic when warranted because of traffic or safety concerns.

Policy 2: New development shall include appropriate bicycle facilities:

- Adequate bicycle access shall be provided.
- Off-street shared pedestrian/bicycle paths shall be considered in large developments.
- Bicycle parking and/or storage facilities shall be provided in the following areas: convenience, neighborhood, and community commercial; employment centers; educational facilities; recreational facilities, and park and ride lots.

Policy 3: Bicycle use shall be included in a trail system.

Policy 4: Roads planned as part of bicycle route system shall:

- Be constructed with bicycle safety considered;
- Have bridges of adequate width for bicycles;
- Have adequate width to accommodate bicycle travel without the necessity of traveling in a gutter or on an unimproved shoulder; and
- Have traffic sensors that respond to bicycles.

Policy 5: Roads identified as scenic routes, with the exception of freeways, shall be considered part of the bicycle route system.

SAN JOAQUIN COUNTY REGIONAL TRANSPORTATION PLAN

San Joaquin County, through the San Joaquin Council of Governments (SJCOG), periodically updates the Regional Transportation Plan, which outlines countywide transportation expenditures based on funding from sources like the Federal Government, the State of California, and locally collected funds. The recently updated SJCOG Regional Transportation Plan (2001) contains several proposed improvements that would benefit the regional roadway network in the project region. These improvements include:

- Widening I-205 from four lanes to six lanes from the 11th Street Ramps (in the City of Tracy) to I-5. The widening of I-205 from six to eight lanes is not currently funded.
- Widening SR 99 from four lanes to six lanes adjacent to the City of Manteca.

SAN JOAQUIN COUNTY REGIONAL TRAFFIC IMPACT FEE

The SJCOG has investigated the implementation of a regional traffic impact fee that would be assessed on developments throughout San Joaquin County. An AB 1600 nexus study was conducted to determine the cost of needed improvements and the level of contribution required from types of development and different areas of the county. However, the Regional Traffic Impact Fee has not been adopted, and therefore is not assumed as mitigation for traffic impacts.

MEASURE K 2003 STRATEGIC PLAN

Measure K is a County measure which funds transportation projects through sales tax revenue. The planned expenditures under the measure are provided in the Measure K Strategic Plan. The latest version of this plan was published in 2003. One relevant improvement described in the plan is the widening of Lathrop Road east of I-5 to 4 lanes in the City of Lathrop.

CITY OF LATHROP GENERAL PLAN

The Transportation and Circulation Element of the City of Lathrop General Plan (City General Plan) addresses transportation through several goals and policies. The major goal regarding transportation is Goal No. 6, which states:

It is a goal of the City General Plan to guide and provide for the development of an integrated system of transportation and internal circulation, and to provide access to other parts of San Joaquin County and the region. This goal is intended to benefit all citizens of Lathrop, including the young, the elderly, and the physically handicapped, by seeking the following:

- Increased transportation safety.
- The efficient movement of people and goods.
- Lower vehicle operating costs.
- Lower vehicle miles traveled with a consequent reduction in vehicle emissions.
- Economy in street construction and maintenance.
- A circulation system correlated and consistent with the land use patterns fostered by the General Plan.
- Avoidance of the disruption of residential areas caused by through traffic on minor streets.
- Protection of rights-of-way needed for future Arterial and Collector street widening in developed areas.
- Access to boat launching and docking facilities.

The City General Plan provides multiple policies that address the roadway network. These policies can be divided into those addressing the freeway system, the expressway and arterial network, collector streets, and minor streets. Each of these policy areas, and policies relevant to the CLSP project, are described below. Several specific roadway improvements anticipated in the City General Plan are also described

Freeway Policies

Policy 1: The City should protect the through traffic functions of Interstate and State Route Freeways serving the Lathrop area by planning expressway and arterial street alignments, which would avoid the need or desire to utilize freeway sections for short, local area interval trips as if they were elements of the local expressway/arterial system.

Policy 2: Land use designations along freeway sections should take into consideration the visual and noise impacts associated with existing and future traffic levels on these major traffic carrying facilities.

Policy 3: Freeway interchanges should be improved to carry the demands of traffic generated by development in Lathrop in keeping with the principle that responsibility for improvements must reflect the fair apportionment of traffic to existing and future local regional demands vs. local demand.

The City General Plan assumes that only existing interchanges (with some improvements) would be required on I-5 where it passes through the City.

Expressways and Arterial Policies

Policy 1: Expressways constructed to boulevard standards are to be principal carriers of north-south traffic through Sub-Plan Areas #2 and #3.

The City General Plan envisioned one new north-south expressway in the CLSP area. This expressway, previously designated as Stanford Boulevard, is now known as Golden Valley Parkway. This expressway would serve as a parallel route to I-5 and would serve development areas to the west of I-5.

The City General Plan also included proposed improvements to existing expressways and arterial streets in Lathrop east of I-5. These improvements would permit east-west traffic desiring access to I-5 to be diverted around the existing developed area of Lathrop, thus reducing traffic impacts on the Lathrop Road and Louise Avenue interchanges and on freeway sections between Roth Road on the north and the I-5/SR 120 merge on the south.

- Improve Roth Road to six traffic lanes between I-5 and Airport Way, along with railroad separation structures.
- Improve Airport Way to six traffic lanes from Roth Road to SR 120.
- Improve Yosemite Avenue to six traffic lanes from SR 120 to the Manteca City limits.
- Improve Lathrop Road and Louise Avenue to four traffic lanes between I-5 and the Manteca City limits; provide railroad separation structures along Lathrop Road.
- Construct an at-grade crossing of the Southern Pacific Railroad (SPRR) (now Union Pacific Railroad [UPRR]) from the Crossroads Industrial Park along the line of Vierra Avenue and curving south to Yosemite Avenue.

Collector Street Policies

Policy 3: The high cost of converting a deficient Collector to the appropriate standards required for existing and projected traffic should be limited to only those streets where either: (a) high current and project volumes of traffic are involved; (b) joint funding is possible; (c) significant contributions of private or assessment district funds are involved as part of the cost of developing adjacent lands; or (d) where the rate of serious accidents has been high and where hazards to public safety are great.

No specific proposals to improve or modify collector streets are included in the City General Plan.

Minor Street Policies

Policy 3: In view of the deficiencies in existing Minor streets, the City should consider forms of funding which include direct public sources (e.g. through redevelopment or assessment districts) as a means of overcoming minor street deficiencies. Curb, gutter, sidewalk, and paving needs along Minor streets might

alternatively be made the responsibility of affected property owners. Under this approach, the City could assume responsibility for engineering services and additional costs.

Policy 4: Policies for Minor streets are intended to reflect options for reducing through traffic on minor streets between intersections with Arterials. This policy seeks to eliminate the use of Minor streets as thoroughfares through residential areas where they extend parallel to nearby Arterials or Collectors for many blocks and are often used as substitutes for Arterials and Collectors.

No specific proposals to improve or modify existing minor streets are included in the City General Plan.

LEVEL OF SERVICE POLICIES

The following reflects the traffic level of service (LOS) policies of relevant agencies. Criteria to define LOS conditions for intersections, freeways, and ramps are provided in the following section, 4.4.2, Existing Conditions.

Caltrans freeways and associated ramps are subject to the following minimum acceptable operations criterion:

- I-5, I-205, SR 99, and SR 120: LOS D or better

San Joaquin County surface streets are subject to the following minimum acceptable operations criterion:

- signalized, all-way-stop and side street stop sign-controlled intersections: LOS C or better.

San Joaquin County applies the following criteria to freeway segment operations:

- San Joaquin County considers LOS E or F on freeways in the County to be an unacceptable condition. The exception is I-205, which the San Joaquin County Congestion Management Program (SJCCMP) has listed as a "grandfathered" segment and set LOS F as the acceptable level of service for I-205.

City of Lathrop surface streets are subject to the following minimum acceptable operations criteria:

- signalized and all-way-stop intersections: LOS D or better
- intersections with side street stop-sign control: LOS E or better

City of Manteca surface streets are subject to the following minimum acceptable operations criterion:

- signalized and all-way-stop intersections: LOS C or better
- intersections with side street stop-sign control: LOS E or better

4.4.2 EXISTING CONDITIONS

EXISTING ROADWAY SYSTEM

Exhibit 4.4-1 shows the surface roadways in the vicinity of the CLSP area and a portion of the freeway network (all exhibits and tables are provided together at the end of this section). Existing conditions on these roadways are summarized below. Freeways discussed below, but not shown on Exhibit 4.4-1 (i.e., I-205, SR 99), are shown in Exhibit 3-1.

Interstate 5

I-5, one of the major freeways in the state of California, comprises the eastern boundary of the CLSP area. In San Joaquin County, I-5 connects Stockton to Tracy and passes through Lathrop. Given its location, I-5 would serve as one of the primary routes for traffic entering and exiting the CLSP area. Those sections adjacent to the CLSP area currently have three to four lanes in each direction. There are two freeway interchanges within/adjacent to the plan area. The first interchange, I-5/Louise Avenue, is located on the southern end of the plan area and would provide access to this project and other proposed projects in Lathrop including the Mossdale Village and the River Islands Project. The second interchange, I-5/Lathrop Road provides access to the center of the CLSP area. The I-5/Roth Road interchange could also provide access to the CLSP area from the north (Exhibit 4.4-1)

Interstate 205

I-205 lies to the south of Lathrop and provides a connection to Tracy and the San Francisco Bay Area from other areas of San Joaquin County. This roadway currently has two lanes in each direction. I-205 connects to I-5 to the south of the CLSP area in a system level interchange with directional ramps.

State Route 120

SR 120 is considered a major regional roadway in San Joaquin County and provides a connection from I-5 and I-205 to SR 99, south and east of the CLSP area. It also extends east of SR 99 to Yosemite National Park as a two-lane undivided road. SR 120 would serve as a likely access route for trips accessing the plan area from Manteca. This roadway currently has two travel lanes in each direction. The I-5/SR 120 interchange provides a connection between these two roadways through a system of ramps.

State Route 99

SR 99 is the final regional roadway in the study area for freeway segments. This roadway serves as one of the major north-south routes in San Joaquin County and provides a connection between Sacramento and Stockton in the north and Manteca, Modesto, and Merced in the south. SR 99 continues south through Stanislaus County and parallels I-5 throughout much of California.

Lathrop Road

Lathrop Road is an existing surface street in the City of Lathrop and provides access to I-5 and connects Lathrop and Manteca. The western terminus of Lathrop Road is the Lathrop Road/Manthey Road intersection, just west of the I-5/Lathrop Road interchange (Exhibit 4.4-1). Lathrop Road is signalized at various intersections and varies from one to two travel lanes in each direction.

Louise Avenue

Louise Avenue is an existing surface street in the City of Lathrop and provides access to I-5 and connects Lathrop and Manteca. Louise Avenue extends west beyond Manthey Road (Exhibit 4.4-1), abutting the southern boundary of the CLSP area for a short distance before turning to the southwest and ending before it reaches the San Joaquin River. The portion of Louise Avenue west of I-5 is currently being improved to provide access to the Mossdale Landing project, which is under construction. West of I-5 the road name will ultimately be changed to River Islands Parkway. Louise Avenue is signalized at various intersections and varies from one to three travel lanes in each direction.

Manthey Road

Manthey Road is a paved two-lane roadway that parallels I-5 from Lathrop north to Stockton. Manthey Road passes through the eastern edge of the CLSP area. This roadway has no curb and gutter with minimal shoulders.

De Lima Road

De Lima Road is a two-lane east/west roadway that passes through the northern portion of the CLSP area, extending from Manthey Road to the San Joaquin River levee. This roadway has no curb and gutters.

Dos Reis Road

Dos Reis Road is a two-lane east/west roadway that passes through the center of the CLSP area. The road extends from Manthey Road to the San Joaquin River levee and provides access to Dos Reis Regional Park, located along the San Joaquin River. Dos Reis Road has no curb and gutters.

EXISTING TRANSIT SYSTEM

There are no existing transit facilities in the CLSP area. There are several transit routes that operate in the traffic study area west of I-5 and provide service to the City of Lathrop. These routes include fixed-route regional bus service, flexible fixed route bus service, and commuter rail service. The San Joaquin Regional Transit District (SJRTD) operates the bus routes while Altamont Commuter Express (ACE) operates the commuter rail service. These transit services are described below.

SJRTD Fixed-Route Service

The SJRTD operates one fixed-route bus line (Route 20) that serves the City of Lathrop. This line connects Tracy and Stockton, with stops in Lathrop. Beginning in Stockton, Route 20 travels south on I-5, turns into Lathrop along Lathrop Road, turns south on 7th Street, returns to I-5 via Louise Avenue, and continues south towards Tracy (Exhibit 4.4-2). This route operates Monday through Friday from 5:40 AM to 7:20 PM, but does not operate on weekends and major holidays.

SJRTD Flexible Fixed-Route Service

SJRTD also operates Route 90, which is a flexible fixed-route line. A flexible fixed-route bus operation follows a general route but can deviate in limited areas to pick-up or drop-off passengers. Similar to Route 20, Route 90 connects Tracy and Stockton, with stops in Lathrop utilizing Lathrop Road and Louise Avenue. Route 90 operates on 1 hour 45 minute headways in the evenings with 2-hour headways on weekends and holidays.

SJRTD Commuter Bus Service

The SJRTD operates a number of commuter bus lines which connect cities in San Joaquin County with major employment locations in the San Francisco Bay Area, including Pleasanton, Dublin, Livermore, Mountain View, Palo Alto, and Sunnyvale. The existing Commuter Bus service in Lathrop connects Lathrop to the Dublin/Pleasanton BART station (Routes 60 and 71) and also Sunnyvale (Route 72). The pick-up times vary from 4:00 AM to 6:00 AM with drop-offs ranging from 4:00 PM to 6:00 PM. Commuters access the bus service at the Lathrop Park and Ride Lot, which is located between Lathrop Road and Louise Avenue on 5th Street.

Altamont Commuter Express (ACE) Rail Service

ACE is a passenger rail service connecting Stockton to San Jose. The closest ACE station to the CLSP area (the Lathrop/Manteca Station) is located at the northeast corner of the McKinley Avenue/Yosemite Avenue intersection. There are currently three ACE trains per day which arrive at this station between 4:00 AM and 7:00 AM. These trains then return to the Lathrop/Manteca station between 5:00 PM and 7:00 PM.

EXISTING BICYCLE AND PEDESTRIAN NETWORK

There are no existing bicycle or pedestrian facilities in the CLSP area.

EXISTING ROADWAY SYSTEM OPERATIONS

Operational traffic conditions are typically described by transportation professionals in terms of LOS. LOS is a common, qualitative measure of the effect of a number of factors on traffic operating conditions, including speed, travel time, traffic interruptions, freedom to maneuver, safety, driving comfort, and convenience. LOS typically ranges from "A" (the best) to "F" (the worst).

Intersection Operations

The following evaluation of existing intersection LOS operations is based on methodologies provided in the *2000 Highway Capacity Manual*. The *2000 Highway Capacity Manual* utilizes a methodology that assesses the average control delay at intersections. The LOS ranges for signalized intersections is provided in Table 4.4-1 (all tables and exhibits are provided together at the end of this section).

The LOS ranges for unsignalized intersections are evaluated using similar criteria (Table 4.4-2). However, for unsignalized intersections, delays are calculated for movements that operate under traffic control. Therefore, the delay at side-street stop controlled intersections (i.e., two way stop intersection) reflects only the delay experienced by vehicles that are stopping at the side street stop sign.

To determine current intersection operations, Fehr & Peers conducted traffic counts at 24 existing intersections in the project vicinity in the morning peak hour period (7:00 AM to 9:00 AM) and the evening peak hour period (4:00 PM to 6:00 PM). The intersections evaluated comprise the 24 existing intersections included in the study area for surface streets. The locations of these intersections (and hence the traffic count locations) are shown on Exhibit 4.4-3. The existing lane configurations and traffic control at each intersection are shown on Exhibits 4.4-4a and 4.4-4b. The peak hour intersection traffic counts are shown on Exhibits 4.4-5a and 4.4-5b. The current peak hour operations at these 24 existing intersection is shown in Table 4.4-3. As indicated in this table, a majority of the intersections operate at an acceptable LOS.

Based on the LOS policies described previously in Section 4.4.1, Regulatory Background, two intersections currently operate at a deficient LOS (the number preceding each intersection title below corresponds to the numbering system used in Table 4.4-3):

- 9. Lathrop Road/I-5 Northbound Ramps
- 22. Louise Avenue/Airport Way

These intersections are unsignalized and operate at a deficient LOS only during the evening peak hour period.

Freeway Ramp Operations

The following evaluation of existing freeway ramp LOS operations is based on methodologies provided in the *2000 Highway Capacity Manual*. Freeway ramp LOS is a function of the freeway mainline volumes, the ramp volumes, and the configuration of the ramp. Ramp configuration information includes the number of lanes on the ramp, the length of the ramp, and whether a ramp operates as either an on ramp or an off ramp. Table 4.4-4 details the ramp LOS standards that are documented in the *2000 Highway Capacity Manual*.

Transportation (Caltrans) (Caltrans 2002) was applied to the analysis methodologies provided in the 2000 Highway Capacity Manual. Three existing freeway ramps were evaluated, comprising the ramps included in the study area for surface streets:

- I-5/Roth Road
- I-5/Lathrop Road
- I-5/Louise Avenue

Table 4.4-5 presents the results of the LOS analysis for freeway ramps under existing conditions. Based on the LOS policies described previously in Section 4.4.1, Regulatory Background, all of the freeway ramps included in the study area for surface streets currently operate at an acceptable LOS.

Freeway Operations

The following evaluation of existing freeway LOS operations is based on a methodology provided in the 2000 Highway Capacity Manual. This methodology calculates a vehicle density for a freeway segment using input data such as the traffic volume, the number of lanes, the percentage of trucks, and the free-flow speed. Based on the calculated vehicle density, each segment of the freeway can be assigned a LOS. The 2000 Highway Capacity Manual LOS ranges for various freeway densities are provided in Table 4.4-6.

Traffic count data obtained from Caltrans (Caltrans 2002) was used to determine existing freeway segment operation conditions. Freeway operations were assessed for the following 39 freeway segments, which comprise the study area for freeway segments.

I-5

1. North of Pershing Avenue
2. Between Pershing Avenue and Route 4 Crosstown
3. Between Route 4 Crosstown and Charter Way
4. Between Charter Way and 8th Street
5. Between 8th Street and Downing Avenue
6. Between Downing Avenue and French Camp Road
7. Between French Camp Road and Matthews Road
8. Between Matthews Road and the El Dorado Ramps
9. Between the El Dorado Ramps and Roth Road
10. Between Roth Road and Lathrop Road
11. Between Lathrop Road and Louise Avenue
12. Between Louise Avenue and SR 120
13. Between SR 120 and the Manthey/Mossdale hook ramps
14. Between the Manthey/Mossdale hook ramps and I-205
15. Between I-205 and the West 11th Street ramps

16. Between the West 11th Street ramps and Kasson Road
17. South of Kasson Road

SR 99

1. North of Route 4 Crosstown
2. Between Route 4 Crosstown and Charter Way
3. Between Charter Way and Farmington Road
4. Between Farmington Road and Mariposa Road
5. Between Mariposa Road and Clark Drive
6. Between Clark Drive and Arch Road
7. Between Arch Road and French Camp Road
8. Between French Camp Road and Lathrop Road
9. Between Lathrop Road and Yosemite Avenue
10. Between Yosemite Avenue and SR 120
11. Between SR 120 and Austin Road
12. South of Austin Road

SR 120

1. Between I-5 and Yosemite Avenue
2. Between Yosemite Avenue and Airport Way
3. Between Airport Way and Union Road
4. Between Union Road and Main Street
5. Between Main Street and SR 99

I-205

1. Between I-5 and Paradise Road (site of a potential future interchange)
2. Between Paradise Road and MacArthur Drive
3. Between MacArthur Drive and Tracy Boulevard
4. Between Tracy Boulevard and Grant Line Road
5. West of Grant Line Road

Table 4.4-7 provides the existing traffic volumes for the 39 freeway segments evaluated. Table 4.4-8 provides the peak hour LOS for these segments.

Based on the LOS policies described previously in Section 4.4.1, Regulatory Background, the following freeway segments currently operate at a deficient LOS during the peak hour period indicated (the number preceding each freeway segment title corresponds to the numbering system used in the list above and in Table 4.4-7):

I-5

- 1. I-5 North of Pershing Avenue, northbound direction, PM peak
- 2. I-5 between Pershing Avenue and Route 4 Crosstown, northbound direction, PM peak

SR 99

- 1. SR 99 North of Route 4 Crosstown, northbound direction, PM peak
- 1. SR 99 North of Route 4 Crosstown, southbound direction, AM and PM peak

- 2. SR 99 between Route 4 Crosstown and Charter Way, northbound direction, AM and PM peak
- 2. SR 99 between Route 4 Crosstown and Charter Way, southbound direction, AM and PM peak
- 3. SR 99 between Charter Way and Farmington Road, northbound direction, PM peak
- 3. SR 99 between Charter Way and Farmington Road, southbound direction, AM and PM peak
- 11. SR 99 between SR 120 and Austin Road, northbound direction, AM and PM peak
- 12. SR 99 south of Austin Road, northbound direction, AM and PM peak

I-205

- 1. I-205 between I-5 and Paradise Road, eastbound direction, PM peak
- 1. I-205 between I-5 and Paradise Road, westbound direction, AM peak
- 2. I-205 between Paradise Road and MacArthur Drive, eastbound direction, PM peak
- 2. I-205 between Paradise Road and MacArthur Drive, westbound direction, AM peak
- 3. I-205 between MacArthur Drive and Tracy Boulevard, eastbound direction, PM peak
- 3. I-205 between MacArthur Drive and Tracy Boulevard, westbound direction, AM peak
- 4. I-205 between Tracy Boulevard and Grant Line Road, eastbound direction, PM peak
- 4. I-205 between Tracy Boulevard and Grant Line Road, westbound direction, AM peak
- 5. I-205 west of Grant Line Road, eastbound direction, PM peak
- 5. I-205 west of Grant Line Road, westbound direction, AM peak

EXISTING IMPROVEMENT PROGRAMS

There are two existing programs used in Lathrop for the funding roadway improvements, the City of Lathrop Capital Facility Fee (CFF) program and the West Lathrop Specific Plan Regional Transportation Fee (WLSP Regional Transportation Fee, or Regional Transportation Fee). The City also implements a Traffic Mitigation Monitoring Program to determine when planned transportation improvements in the City are needed. Each of these programs are summarized below. Complete copies of the fee and monitoring program documentation are available at the City of Lathrop Community Development Department/Planning Division, 16775 Howland Road, Suite One, Lathrop, California 95330 (209/858-2860, extension 327).

City of Lathrop Capital Facilities Fee

The City of Lathrop CFF was last updated in September 2003 (The Reed Group 2003). The program identifies 31 individual transportation improvements, including intersection widenings road widenings, new roads, traffic signals, and freeway interchange improvements. For a majority of these improvements the CFF would fully fund the project. For several regional level projects (i.e., construction of various segments of Golden Valley Parkway), moneys from the CFF in conjunction with the WLSP Regional Transportation Fee (see description below) would fully fund the activity. The estimated total cost for the improvements included in the CFF program is $154,481,310, with $88,513,926 coming from the CFF and $65,967,384 coming from the Regional Transportation Fee.

The CFF update adopted in 2003 includes the following improvements:

Roadway improvements (note that in some cases several CFF projects related to a single roadway are combined in the bullet list below):

- Golden Valley Parkway from Paradise Avenue to Roth Road
- River Island Parkway from I-5 to Broad Street
- Arbor Avenue from Macarthur Drive to Paradise Avenue
- Lathrop Road from Golden Valley Parkway to I-5

- Broad Street from River Island Parkway to South River Island Parkway
- South River Island Parkway from Golden Valley Parkway to Broad Street
- Broad Street from South River Island Parkway to Golden Valley Parkway
- Paradise Avenue from Golden Valley Parkway to Paradise Cut
- Macarthur Drive from I-205 to Arbor Avenue

Interchange improvements:

- Roth Road/I-5
- Louise Avenue/I-5
- Lathrop Road/I-5
- Macarthur Drive/I-205
- Paradise Avenue/I-205

Traffic signals:

- Golden Valley Parkway/River Island Parkway
- Golden Valley Parkway/Broad Street
- River Island Parkway/Broad Street
- South River Island Parkway/Broad Street
- Golden Valley Parkway/Paradise Avenue
- Golden Valley Parkway/Lathrop Road
- Golden Valley Parkway/South River Island Parkway
- Macarthur Drive/Arbor Avenue

The CFF is to be applied to projects in the City of Lathrop both east and west of I-5, including the CLSP area, and separate fee levels are provided for various portions of the City (i.e., East Lathrop, Central Lathrop, Mossdale Village, Stewart Tract). CFF traffic fees applicable to Central Lathrop (which encompasses the CLSP area) are as follows:

Land Use Category	**2003 Fee for Central Lathrop**
Single-family residential (per dwelling unit [DU]	$1,413
Multifamily residential (per DU)	$ 868
Commercial (per 1,000 sf)	$1,801
Industrial (per 1,000 sf)	$1,316

In an ideal situation sufficient CFF fees would be collected to fully fund needed transportation improvements before traffic conditions warrant the need for the improvement. However, because traffic infrastructure is often needed before the completion of new development, the construction of some traffic improvements are typically required before sufficient fees are collected. The CFF provides mechanisms for projects to "front" needed improvements by allowing project applicants to construct, or fund the construction of, facilities included in the CFF program before payment of CFF fees. The project applicant would then be entitled to receive credit that could later be applied against CFF fees due when building permits are issued.

West Lathrop Specific Plan Regional Transportation Impact Fee

The WLSP Regional Transportation Fee was developed in 1997 by the City of Lathrop, the San Joaquin SJCOG, and Caltrans subsequent to approval of the WLSP. This regional fee was adopted as a mitigation

program to calculate new development's fair share of regional improvements needed in San Joaquin County, including improvements to mainline freeways, freeway interchanges, regional streets, the regional bicycle system, the bus transit system, and rail corridor improvements. Caltrans determined the improvements needed in the County to provide acceptable operation of regional facilities. Caltrans and SJCOG provided cost estimates for the improvements. Mainline freeway improvements include expansion of State Routes (SR) 4, 12, 26, 88, and 99, as well as widening of SR 120 to six lanes, I-5 to eight lanes through Lathrop and to 12 lanes between SR 120 and I-205, I-205 to eight lanes and I-580 to six lanes. The Regional Transportation Fee also accounted for reasonable assumptions regarding anticipated federal and state funding, as well as local impact fee funding (e.g., combining funding with the City of Lathrop CFF as described above). The balance of approximately $508 million was divided among the development projects anticipated in the County over the next 25 years. The result was the establishment of a fee for regional improvements.

The 1997 Regional Transportation Impact Fee improvements that are also included in the City of Lathrop CFF and would be funded by both programs are:

- Golden Valley Parkway from Paradise Avenue to Roth Road
- Lathrop Road/I-5 Interchange
- Paradise Avenue Interchange

The WLSP Regional Transportation Impact Fee for various land uses is as follows:

Single family residential	$2,446 per DU
Multifamily residential	$1,600 per DU
Retail commercial (except regional)	$2,083 per 1,000 square feet of floor space
Service commercial	$1,455 per 1,000 square feet of floor space
Regional commercial	$772 per 1,00 square feet of floor space
Other non-residential	$522 per 1,000 square feet of floor space
Theme parks	$277 to $3,211 per acre

This fee was established as a mitigation measure to account for the fair share cost of the regional facilities included in the program. As such, payment of the Regional Transportation Fee into an account held by the City of Lathrop and used for construction of these regional improvements is anticipated to mitigate for the regional traffic impacts of the CLSP to these facilities. Under this program, the City of Lathrop decides the order and the timing of the construction of these facilities in its Sphere of Influence. The Regional Transportation Fee, adopted by the City of Lathrop as Ordinance No. 97-146 on September 16, 1997, currently does not apply to the CLSP area but would be applied to this area after annexation to the City as part of the proposed project.

Specific improvements in the project vicinity addressed by the Regional Transportation Fee include (note that the Regional Transportation Fee program includes numerous other improvement projects located throughout the County):

Mainline Highway Improvements

Facility	Limits	Improvement	Fee Funding	Total Funding
SR 120	I-5 to SR 99	Widen to six lanes	$8,450,000	$16,900,000
I-5	I-205 to SR 120	Widen to 12 lanes	$11,505,000	$23,010,000
I-5	I-205 to SR 120	Add southbound auxiliary lane	$6,500,000	$13,000,000
I-5	SR 120 to French Camp	Widen to eight lanes	$14,495,000	$28,990,000
I-5	At San Joaquin River	Add bridge over river	$10,000,000	$20,000,000
I-205	I-580 to I-5	Widen to eight lanes	$27,950,000	$55,900,000

Interchange Improvements

Facility	Improvement	Fee Funding	Total Funding
SR 120 westbound at I-5 northbound	Add branch connection	$7,500,000	$15,000,000
I-5 southbound to SR 120 eastbound	Add branch connection	$7,500,000	$15,000,000
I-5 at Lathrop Road	Stage I and II (interchange improvements and lane widening)	$5,100,000	$17,200,000
I-205 at Paradise/Chrisman	Add interchange	$13,440,000	$19,200,000
I-5 at Louise Avenue	Included in Golden Valley Pkwy improvements below	--	--

Regional Roadway Facilities/Street Improvements

Facility	Limits	Improvement	Fee Funding	Total Funding
E/W Expressway, along Arbor Road	Mtn. House Parkway to Paradise Road	Add six-lane road	$18,655,000	$26,650,000
Golden Valley Parkway	Paradise Road to Lathrop Road	Add six-lane road	$41,503,000	$59,290,000
Golden Valley Parkway	Lathrop Road to El Dorado	Add six-lane road	$16,443,000	$23,490,000
Lathrop Road	I-5 to east of UPRR tracks	Widen to four lanes	$91,000	$1,431,000

Bus Transit Improvements

Facility	Fee Contribution
10 Dial-a-ride buses, 36 intercity buses, and 36 interregional buses	$3,006,000

Rail Corridor Improvements

Facility	Fee Contribution
Track work and Lathrop/Manteca/Tracy multi-modal stations	$8,351,000

When the fee program was adopted in 1997, the anticipated total cost of these nearby improvements was estimated to be more than $300 million. However, the total Countywide funding from the Regional Transportation Fee was estimated to be $508 million. According to detailed estimates by Caltrans and SJCOG included in the Regional Transportation Fee program, the fee program would leverage an additional $863 million in other funds (including State STIP, federal bus and rail, Measure K, local impact fee, and other state and county transit funds) to fund $1,371,000,000 in regional improvements in San Joaquin County. In other words, if all the other cities in San Joaquin County join with Lathrop to pay this fee for all new development, and supplemental local, state, and federal funds are forthcoming, $1,371,000,000 in regional improvements would be financed. Since 1997, however, other cities in the County have chosen not to participate in the fee program and state budget considerations may result in short-term delays or reductions in anticipated funding.

City of Lathrop Traffic Mitigation Monitoring Program

In addition to the funding programs noted above, the City of Lathrop implements a Traffic Mitigation Monitoring Program (TMMP) to monitor roadway conditions, project future conditions, and schedule when planned roadway improvements should be constructed. The TMMP was first adopted as the Stewart Tract Traffic Mitigation Monitoring Program in the existing Development Agreement by and between the City of Lathrop, Califia Development Group and Rudy Dell'Osso relating to Stewart Tract (Development Agreement). Although the monitoring program was first initiated in response to planned development on Stewart Tract, roadways to be monitored are located throughout much of the City of Lathrop and the monitoring program has been expanded to include other project areas within the City. For example, the City of Lathrop requires the development of TMMPs in conjunction with all approved development within the WLSP area. The TMMP is important because it establishes performance standards and the details of how the operation of the roadway system is to be monitored, as well as how improvements are to be scheduled for construction to avoid the roadway system falling below acceptable standards. The TMMPs require that all project applicants conduct traffic monitoring at specified locations starting with each proposed final map and/or on an annual and continuing basis until all required traffic improvements have been completed. General details of the existing Stewart Tract TMMP program are found in Article 6 of the Development Agreement, "Commitments of City and Califia related to Public Improvements" and are summarized below. A TMMP would also be developed for the CLSP and would follow a similar process.

Section 6.01.02, "Basic Requirement," mandates that projects (or UDCs as applicable) include infrastructure improvements designed based on appropriate traffic studies and other relevant information to satisfy the performance standards. Compliance with these performance standards is to be monitored annually, with noncompliance triggering a "remediation plan."

Section 6.02, "Monitoring and Remediation," states, "To ensure that the design solutions reflected in the UDCs shall satisfy the Performance Standards as actual development proceeds, the parties shall cooperate to monitor compliance with the Performance Standards and take steps to remedy any non-compliance as described below." The City is required to conduct an annual evaluation of whether the project is in full compliance with the performance standards. This performance evaluation is conducted concurrently with "MMP Evaluation" and the "Development Agreement Review" as part of the "Annual Review" following procedures in Article 10. This performance evaluation includes analysis based on assumptions

determined by the City, collection of other information, evaluation of the extent to which the project may generate the need for additional traffic improvements 2 years after the date of the performance evaluation (the "Two-Year Look"), and an evaluation of the extent to which the project may generate the need for additional traffic facilities 4 years after the date of the performance evaluation (the "Four-Year Look"). Caltrans shall be provided an opportunity to participate fully in the Two-Year Look and, insofar as it is concerned with traffic-related issues, the Four-Year Look.

Section 6.02.03, "Determination of Noncompliance," mandates that if the annual performance evaluation results in identification that a performance standard is not being complied with, and if such noncompliance is attributable to a particular project, the City would notify the developer of the need for a remediation plan.

Section 6.02.04, "Preparation and Adoption of Remediation Plan," mandates that the City develop and adopt a remediation plan to address such noncompliance. The remediation plan shall identify mitigation measures to address noncompliance. It also shall specify a schedule for implementing the mitigation measures, identify the security needed to secure the performance, and identify actions to be taken by the owner of that portion of the project contributing to the noncompliance.

Section 6.02.05, "Imposition of Conditions on Subsequent Approvals," allows the City to impose conditions on the approval of discretionary subsequent approvals to ensure the implementation of any resulting remediation plan.

In summary, the existing Stewart Tract TMMP and subsequent TMMPs (and hence the CLSP TMMP which would follow the same process) forces the City to (1) provide adequate improvements with each project to mitigate traffic impacts, (2) annually monitor existing performance of the roadway network and anticipated performance of the network 2 and 4 years in the future, (3) annually identify any current or anticipated noncompliance with the performance standards, (4) prepare a remediation plan to mitigate any unanticipated impacts, and (5) impose conditions on subsequent development approvals to ensure compliance with the remediation plan. The monitoring program anticipates that any impact that was not foreseen would be identified and mitigated during these annual reviews.

SUMMARY OF MODEL RUN PROCEDURES AND ASSUMPTIONS

The traffic forecasts for the CLSP were obtained from a travel demand model developed by San Joaquin County. The following discussion summarizes the model development process and the assumed roadway improvements that were input into the model. A more detailed explanation of the model development process and the forecast results are presented in Appendix B of this DEIR (TJKM 2004).

The demand model employed for the CLSP traffic forecasts is a refinement of the adopted SJCOG regional travel demand model. The model was originally developed in 2001 to prepare forecasts for the SJCOG Regional Transportation Plan (RTP). At that time, a 1999 model data set (Base Year) and a 2025 (Forecast Year) model data set were developed, including land use data and roadway network data.

After the initial model development, the model has continued to be refined for use in traffic forecasts in the City of Lathrop and elsewhere. Refinements in Lathrop have included additional validation and calibration work based on newly collected traffic counts. The model has been employed for previous studies in Lathrop, including the EIR for the proposed River Islands Project and the City of Lathrop CFF study. As mentioned previously, the CFF identified the future roadway improvements that would be required in the City of Lathrop, based on the level of anticipated development. As part of the refinement process, several additional models have been developed for traffic forecasting purposes, including an updated Base Year Model (2003) and an interim year (2010) model.

For the CLSP analysis the model was used to characterize traffic under existing conditions (2003 Base Year Model) and six additional scenarios:

1. Existing Conditions Plus First Phase of Project (Existing Plus Phase 1) - This scenario places traffic generated by Phase 1 of the CLSP project on the existing roadway network (2003 Base Year Model) with existing traffic volumes.

2. Existing Conditions Plus Project Build-out (Existing Plus Buildout) - This scenario places traffic generated by full buildout of the CLSP project on the existing roadway network (2003 Base Year Model) with existing traffic volumes.

3. Interim (2010) Conditions without Project (2010 No Project) - This scenario characterizes the traffic volumes anticipated to be generated by regional development present in 2010 (2010 interim year model) and utilizes a roadway network anticipated to be present at the time.

4. Interim (2010) Conditions Plus First Phase of Project (2010 Plus Phase 1) - This scenario incorporates roadways and traffic generation associated with Phase 1 of the CLSP project into the 2010 interim year model.

5. Cumulative (2020) Conditions without Project (2020 No Project) - This scenario characterizes the traffic volumes anticipated to be generated by regional development present in 2025, the maximum forecasted year in the SJCOG regional model. The model utilizes a roadway network anticipated to be present at this time. Please note that the 2025 model is expressed in the 2020 scenarios in this EIR to reflect the planned 2020 buildout date for the CLSP.

6. Cumulative (2020) Conditions Plus Project Build-out (2020 Plus Buildout) – This scenario incorporates roadways and traffic generation associated with full buildout of the CLSP into the 2020 No Project model scenario.

The assumed roadway network for the 2010 and 2020 models are based on funded improvements in the City of Lathrop and other areas of San Joaquin County and planned improvements identified in the Lathrop CFF and the Regional Transportation Fee program. Some of the roadway improvements incorporated into the model assumptions include:

- Widening of Lathrop Road east of I-5 in the City of Lathrop (2020) - This improvement is funded by the Measure K Strategic Plan. This improvement is included in both of the 2020 scenarios.

- The construction of Golden Valley Parkway west of I-5 (2010 and 2020) - This improvement is funded by the City of Lathrop CFF and the Regional Transportation Fee and would be built to serve various projects in the area including River Islands, Mossdale Landing, and the CLSP. Segments of Golden Valley Parkway are included in both the 2010 and 2020 scenarios.

- Airport Way is assumed to be widened to 4-lanes north of SR-120 (2020). This improvement is partially funded by the SJCOG adopted 2001 Regional Transportation Plan and an adopted development fee program in the City of Manteca. This improvement is included in both of the 2020 scenarios.

The 2010 and 2020 models also assume several regional freeway improvements, including:

- Widening the section of I-5 between Mt. Diablo Avenue and Eight Mile Road to 8 lanes (2020).
- Widening segments of SR 99 from Arch Road to north of the Crosstown Freeway (2020).
- Widening the four lane segment of I-205 to six lanes from the Eleventh Street ramps to I-5 (2010).

All three of these improvements, as well as several other regional freeway improvements assumed in the model, are included in the Regional Transportation Fee program.

4.4.3 ENVIRONMENTAL IMPACTS

ANALYSIS METHODOLOGY

The following analysis of the CLSP project's effects on traffic conditions is based on the land uses and the internal project roadway network discussed previously in Chapter 3, Description of the Proposed Project, and as shown in Exhibit 3-4. Transportation impacts were evaluated using a variety of techniques, including the updated version of the SJCOG Regional Traffic Model described previously and various traffic operations analysis tools. Details regarding the analysis methodology are described below.

CLSP Transportation Facilities

The analysis of transportation impacts assumes the following facilities are in place in the CLSP area.

Proposed Roadway Network

The proposed project includes construction of a roadway network in the CLSP area to provide the necessary transportation access for the project. Roadways in the network, as shown in Exhibit 4.4-6, are arranged according to a functional classification system. Functional classification systems divide roadways into a hierarchy based on their ability to serve through traffic and provide access to various land uses. In the CLSP area the roadway hierarchy is divided into three categories: arterial roadways, collector streets, and local roads. Each of these categories is described below.

Arterials

Arterial roadways are intended to serve as major routes of travel. They are designed to link facilities such as freeways and expressways (which prioritize the movement of through vehicles) with lower hierarchy roadways, which provide direct access to various land uses. Arterials can provide some level of direct access to adjacent land uses with certain limitations, such as restrictions on spacing and turn movements into and out of driveway locations. Arterials can also serve as both truck routes and as bicycle and pedestrian routes. In the CLSP area the arterial roadways include Golden Valley Parkway and Lathrop Road (Exhibit 4.4-6). In general, these arterials are intended to serve those areas of the development planned for commercial and office land uses.

Golden Valley Parkway is the major north-south arterial in the CLSP area. The segment of Golden Valley Parkway extending from Louise Avenue north to Lathrop Road is planned to have six vehicle travel lanes, a landscaped median, and off-street bicycle and pedestrian facilities. The segment extending from Lathrop Road to the northern boundary of the plan area would have four travel lanes, a landscaped median, and off-street bicycle and pedestrian facilities.

Because of anticipated traffic volumes on Golden Valley Parkway, access to adjacent properties would primarily be provided at signalized intersections. Access would be supplemented in some areas with right-in/right-out driveways to serve the anticipated commercial development.

Lathrop Road is the major east-west arterial in the CLSP area. The segment of Lathrop Road between Golden Valley Parkway and I-5 is planned to have six vehicle travel lanes, a landscaped median, and off-street bicycle and pedestrian facilities. From Golden Valley Parkway west to Main Street, Lathrop Road would have four vehicle travel lanes, a paved median, and off-street bicycle and pedestrian facilities. West of Main Street, Lathrop Road includes two travel lanes and is considered a collector street. This portion of Lathrop Road is discussed further below.

Collector Streets

Collector streets are intended to serve as intermediate links between arterial roadways and local roads. They "collect" traffic from local roads and distribute it onto the arterial system. Collector roadways also provide direct access to land uses in both residential and non-residential areas. Collectors in the CLSP area generally have two lanes, though additional lanes may be included at intersections to provide sufficient intersection capacity. Unlike arterial roadways, access to adjacent land uses from collector streets need not be limited to signalized locations; access can also be provided at side-street stop sign controlled intersections and driveways directly serving adjacent properties. Six collector streets are included in the CLSP roadway network. Each of these streets is described below.

The longest collector street in the CLSP area is Street A. Street A extends north from Golden Valley Parkway to near the northern boundary of the plan area (Exhibit 4.4-6). This roadway would include two travel lanes, an eight-foot striped median, on-street parking, and off-street bicycle and pedestrian facilities. Several segments of Street A would also have on-street bicycle lanes.

Barbara Terry Drive is the southernmost collector street in the CLSP area and would connect Street A with the Mossdale Landing development to the south (Exhibit 4.4-6). Barbara Terry Drive would support 2 travel lanes, on-street bicycle lanes, on-street parking, and a sidewalk.

Grass Valley Avenue is located to the northwest of Barbara Terry Drive, and represents an extension of Lathrop Road. Grass Valley Avenue would include two travel lanes, on-street bicycle lanes, on-street parking, and a sidewalk.

Lathrop Road between Main Street and Street A would have two travel lanes and is considered a collector street in this segment. This portion of Lathrop Road would include a landscaped median, on-street parking, and off-street bicycle and pedestrian facilities.

Dos Reis Road is found to the north of Lathrop Road and would act as an east/west collector street between Golden Valley Parkway and Street A. This roadway provides two travel lanes, on-street bicycle lanes, and on-street parking.

De Lima Road also acts as an east/west collector street between Golden Valley Parkway and Street A. This two-lane roadway has a landscaped median, on-street parking, and off-street bicycle and pedestrian facilities.

Local Roads

Local roads are intended to provide direct access to properties and can connect to both collectors and arterials. Traffic volumes on local roads are intended to be very low and through traffic would be discouraged. The specific locations of many local roads would be determined as development proceeds in the CLSP area and they are not shown on Exhibit 4.4-6. The exception is Main Street, which extends between Lathrop Road and Dos Reis Road and provides north/south access through the Main Street District. Given the low volumes anticipated to use this roadway, only two travel lanes would be

provided. On-street parking would be provided in angled stalls. The sidewalks would extend to a width of 15-feet to promote a pedestrian friendly environment that is conducive to street cafes, outdoor commercial displays, and similar uses.

The local roads category also includes residential streets to serve the residential developments in the CLSP area. The prototypical residential street right-of-way would accommodate two vehicle travel lanes, on-street parking, and sidewalks on both sides of the street.

Traffic Control Devices

A variety of traffic control devices would be installed throughout the CLSP area. These traffic control devices include traffic signals, roundabout, and stop signs.

Traffic signals would be used at many of the major internal project intersections. These intersections include, but are not limited to:

- De Lima Road/Golden Valley Parkway
- Dos Reis Road/Street A
- Dos Reis Road/Golden Valley Parkway
- Lathrop Road/Golden Valley Parkway
- Lathrop Road/Main Street
- Street A/Golden Valley Parkway

Additional traffic signals would likely be added on Golden Valley Parkway to support access to specific commercial and office properties on the west side of the parkway.

Another traffic signal would likely be required on Lathrop Road or Dos Reis Road to provide access to the high school. The precise location of this traffic signal would be identified through coordination with the City and the Manteca Unified School District (MUSD).

Up to five internal project intersections are planned to operate under roundabout control (as indicated on Exhibit 3-4):

- De Lima Road and a north/south local street not yet identified
- De Lima Road/Street A
- Dos Reis Road/Main Street
- Lathrop Road/Street A
- Barbara Terry Drive/Street A

Stop signs would be placed throughout the CLSP area, as needed, to control the operations of minor streets, such as residential streets accessing collectors and driveways connecting to arterials such as Lathrop Road and Golden Valley Parkway.

Proposed Bicycle and Pedestrian Network

The CLSP includes a comprehensive and extensive system of integrated bicycle and pedestrian trails. This system connects residential neighborhoods with schools, parks, open space areas, and commercial and employment centers. Major elements of this network include both off-street and on-street facilities.

The off-street facilities include multi-use trails that range from 8–10 feet in width. The narrower trails would accommodate one-way travel while the wider facilities will permit two-way travel. These multi-use

trails would be located adjacent to major arterials and many of the collector roadways. There is also a multi-use trail proposed for the San Joaquin River levee. This trail along the river levee would serve a secondary function as an access road for Reclamation District-17 (RD-17), the agency responsible for maintaining the levee.

Other off-street facilities include dedicated sidewalks that range in width from 5-feet to 15-feet. The wider sidewalks would be found along the proposed Main Street (as described above), and narrower sidewalks would be found next to residential streets and other low volume roadways.

Three collector streets in the CLSP area are planned to include on-street bicycle lanes; Barbara Terry Drive, Grass Valley Avenue, and Dos Reis Road. Various streets in the local roads category (once designed as part of specific project developments) may also include on-street bicycle lanes.

Proposed Transit Facilities

The CLSP is anticipated to provide a transit station in the plan area (Exhibit 3-4). This transit station would serve as a boarding and transfer station for the existing and future transit service in the City of Lathrop. The precise design and configuration of the transit station will be established through coordination with the City and the SJRTD. A park and ride facility is also proposed within the CLSP area, although the location has not been determined.

The existing transit service in the City of Lathrop, as described previously, includes both intercity and regional bus service operated by the SJRTD. The existing transit lines serve those portions of the City of Lathrop east of I-5. It is anticipated that this service would be expanded to provide service to new areas of the City west of I-5. As development of various projects continues west of I-5 (e.g., Mossdale Landing, River Islands, CLSP) it is likely that intracity bus service will also be initiated.

The CLSP roadway network is designed to accommodate transit stops along project streets. On arterial roadways, such as Golden Valley Parkway, intermittent bus turn-outs would be provided at transit stops. Lower speed and volume roads, such as the collector streets, could accommodate bus stops without bus turn outs, typically in the portion of the right-of-way dedicated to off-street parking. The City of Lathrop and the SJRTD would identify the appropriate locations for various buss stops as development proceeds in the CLSP area.

Traffic Facility Operations

Analysis Scenarios

The following six scenarios, which are described above in the discussion of the model run procedures and assumptions, were analyzed to determine the impacts of the proposed project:

1. Existing Conditions Plus First Phase of Project (Existing Plus Phase 1)
2. Existing Conditions Plus Project Build-out (Existing Plus Buildout)
3. Interim (2010) Conditions without Project (2010 No Project)
4. Interim (2010) Conditions Plus First Phase of Project (2010 Plus Phase 1)
5. Cumulative (2020) Conditions without Project (2020 No Project)
6. Cumulative (2020) Conditions Plus Project Build-out (2020 Plus Buildout)

Model Calibration

A detailed description of the travel demand model used for this analysis is provided in the demand forecasting methodology report provided in Appendix B of this DEIR (TJKM 2004). The model was calibrated based on current traffic counts and other available data before the evaluation of the six analysis scenarios. Both link and turning movement traffic counts in and around the project area were used in the model calibration process. The model was used to provide freeway segment, ramp volume, and intersection turning movement data.

Intersection Operations

Existing Condition Scenarios

Table 4.4-9 details the intersection operations under existing conditions (the same data provided previously in Table 4.4-3), the Existing Plus Phase 1 scenario, and the Existing Plus Buildout scenario. The location of the study intersections for the Existing Plus Phase 1 scenario are shown on Exhibit 4.4-7, while Exhibit 4.4-8 shows the locations of study intersections for the Existing Plus Buildout scenario. Please note that in the exhibits and tables for the existing condition scenarios that the numbering system skips intersection #25. This intersection number is reflected in the 2020 scenarios (i.e., 2020 No Project and 2020 Plus Buildout) as the D'Arcy Parkway/Yosemite Avenue intersection. Also note that under the existing condition, as shown previously in Exhibits 4.4-3, 4.4-4a, 4.4-4b, 4.4-5a, and 4.4-5b, intersections 7 and 14 involve Manthey Road (Manthey Road/Lathrop Road and Manthey Road/Louise Avenue). As part of the CLSP, Golden Valley Parkway would become the primary north/south road along I-5 and Manthey Road would either be abandoned in the plan area, or used as a local roadway to serve the office and commercial facilities along I-5. Therefore, to more accurately reflect traffic conditions in the Existing Plus Phase 1 and Existing Plus Buildout scenarios, intersection 7 reflects the Golden Valley Parkway/Lathrop Road intersection, and intersection 14 reflects the Golden Valley Parkway/Louise Avenue intersection.

The lane configurations for the Existing Plus Phase 1 scenario are shown on Exhibits 4.4-9a and 4.4-9b and the corresponding traffic volumes for this scenario are shown on Exhibits 4.4-10a and 4.4-10b. Similarly, the lane configurations for the Existing Plus Buildout scenario are shown on Exhibits 4.4-11a and 4.4-11b and the corresponding traffic volumes for this scenario are shown on Exhibits 4.4-12a and 4.4-12b.

As shown in Table 4.4-9, a number of the intersections would operate at a deficient LOS under the Existing Plus Phase 1 scenario and/or Existing Plus Buildout scenario (based on LOS policies described previously in Section 4.4.1, Regulatory Background). Two of these intersections also operate at a deficient LOS under existing conditions. These intersections are:

- 2. Roth Road/I-5 Southbound Ramps (Existing Plus Phase 1, PM only; Existing Plus Buildout, AM & PM)
- 3. Roth Road/I-5 Northbound Ramps (Existing Plus Buildout, PM only)
- 4. Roth Road/Harlan Road (Existing Plus Phase 1, AM & PM; Existing Plus Buildout, AM & PM)
- 7. Lathrop Road/Golden Valley Parkway (Existing Plus Buildout, AM & PM)
- 8. Lathrop Road/I-5 Southbound Ramps (Existing Plus Phase 1, AM & PM; Existing Plus Buildout, AM & PM)

- 9. Lathrop Road/I-5 Northbound Ramps (existing condition, PM only; Existing Plus Phase 1, AM & PM; Existing Plus Buildout, AM & PM)
- 11. Lathrop Road/New Harlan (Existing Plus Phase 1, AM only; Existing Plus Buildout, AM only)
- 13. Lathrop Road/Airport Way (Existing Plus Buildout, PM only)
- 15. Louise Avenue/I-5 Southbound Ramps (Existing Plus Phase 1, PM only; Existing Plus Buildout, AM & PM)
- 16. Louise Avenue/I-5 Northbound Ramps (Existing Plus Phase 1, PM only; Existing Plus Buildout, PM only)
- 22. Louise Avenue/Airport Way (existing condition, PM only; Existing Plus Phase 1, AM & PM; Existing Plus Buildout, AM & PM)

2010 Scenarios

Table 4.4-10 details the intersection operations under the 2010 scenarios (2010 No Project and 2010 Plus Phase 1). The analysis assumes that Phase 1 of the CLSP project would be completed by 2010. The locations of the study intersections included in the 2010 Plus Phase 1 scenario are shown on Exhibit 4.4-13. The intersections included in the 2010 No Project scenario would be those shown on Exhibit 4.4-13 that are not in the CLSP area (i.e., as indicated with an N/A on Table 4.4-10). The intersection lane configurations for the 2010 No Project scenario are shown on Exhibits 4.4-14a and 4.4-14b. The traffic volumes for these same intersections are provided on Exhibits 4.4-15a and 4.4-15b. The intersection lane configurations for the 2010 Plus Phase 1 scenario are shown on Exhibits 4.4-16a and 4.4-16b. The traffic volumes for these same intersections are provided on Exhibits 4.4-17a and 4.4-17b.

Please note that in the exhibits and tables for the 2010 scenarios that the numbering system skips intersections #25 and #37. These intersection numbers are reflected in the 2020 scenarios as the D'Arcy Parkway/Yosemite Avenue intersection and the River Islands Parkway/Silvera Access intersection, respectively. Intersection numbers 26, 27, and 28 are also not shown as part of the 2010 scenarios because these intersections are located in the Phase 2 portion of the CLSP and would only occur at full project buildout (i.e., the Buildout scenarios).

Also note that the lane configurations and/or roadways for intersections 7 and 14 differ between the 2010 No Project and 2010 Plus Phase 1 scenarios based on roadway conditions under each scenario (i.e., limited use or abandonment of Manthey Road as part of the CLSP project, northern extension of Golden Valley Parkway to serve the CLSP plan area). Similarly, intersection #39, Louise Avenue/Manthey Road, is only shown in exhibits reflecting the 2010 No Project scenario because Manthey Road would no longer function as a major roadway under the proposed project.

For intersection #36, Main Street (Mossdale Landing)/Golden Valley Parkway, the referenced "Main Street" is part of the Mossdale Landing project. The name of this street is anticipated to be changed, but a new name has not been confirmed at this time.

As shown in Table 4.4-10, a number of the intersections would operate at a deficient LOS under the 2010 No Project and the 2010 Plus Phase 1 scenarios (based on LOS policies described previously in Section 4.4.1, Regulatory Background). These intersections are:

- 2. Roth Road/I-5 Southbound Ramps (2010 Plus Phase 1, AM only)
- 4. Roth Road/Old Harlan Road (2010 Plus Phase 1, AM & PM)
- 5. Roth Road/McKinley Avenue (2010 Plus Phase 1, PM only)
- 8. Lathrop Road/I-5 Southbound Ramps (2010 Plus Phase 1, AM & PM)
- 9. Lathrop Road/I-5 Northbound Ramps (2010 Plus Phase 1, PM only)
- 15. Louise Avenue/I-5 Southbound Ramps (2010 No Project, AM only)
- 16. Louise Avenue/I-5 Northbound Ramps (2010 No Project, PM only; 2010 Plus Phase 1, PM only)
- 17. Louise Avenue/Old Harlan Road (2010 Plus Phase 1, AM only)
- 18. Louise Avenue/New Harlan (2010 Plus Phase 1, AM & PM)
- 21. Louise Avenue/McKinley Avenue (2010 No Project, AM & PM; 2010 Plus Phase 1, AM & PM)
- 22, Louise Avenue/Airport Way (2010 No Project, AM & PM)
- 23. Vierra Road / McKinley Avenue (2010 No Project, PM only; 2010 Plus Phase 1, AM & PM)

2020 Scenarios

Table 4.4-11 details the intersection operations under the 2020 scenarios (2020 No Project and 2020 Plus Buildout). The 2020 Plus Buildout scenario assumes complete buildout of the CLSP project. The locations of the study intersections included in the 2020 Plus Buildout scenario are shown on Exhibit 4.4-18. The intersections included in the 2020 No Project scenario would be those shown on Exhibit 4.4-18 that are not in the CLSP area (i.e., as indicated with an N/A on Table 4.4-11). The intersection lane configurations for the 2020 No Project Scenario are shown on Exhibits 4.4-19a and 4.4-19b. The traffic volumes for these same intersections are provided on Exhibits 4.4-20a and 4.4-20b. The intersection configurations for the 2020 Plus Buildout scenario are shown on Exhibits 4.4-21a and 4.4-21b. The traffic volumes for these same intersections are provided on Exhibits 4.4-22a and 4.4-22b.

Please note that in the exhibits and tables for the 2020 scenarios that the numbering system skips intersection #23. In the previous scenarios (existing condition and 2010) intersection #23 is shown as the Vierra Road/McKinley Avenue intersection and is located just north of intersection #24 Yosemite Avenue/McKinley Avenue (see Exhibits 4.4-3 and 4.4-13). However, by 2020 it is assumed that road and intersection reconfigurations planned in this area will result in intersection #24 being the only intersection supporting traffic movements between Yosemite Avenue and McKinley Avenue. Intersection #23 would become a three way intersection only connecting the Vierra Road cul-de-sac to McKinley Avenue. Under these conditions, intersection #23 would support minimal turning movements consisting only of vehicles entering and leaving the Vierra Road cul-de-sac. Because of the negligible turning volumes at intersection #23 under the 2020 scenarios, this intersection was not included in the 2020 model reporting.

For intersection #36, Main Street (Mossdale Landing)/Golden Valley Parkway, the referenced "Main Street" is part of the Mossdale Landing project. The name of this street is anticipated to be changed, but a new name has not been confirmed at this time.

Note that in 2020 it is assumed that Golden Valley Parkway would be constructed through the CLSP area as a regional roadway whether or not the CLSP project is implemented. Therefore, Golden Valley Parkway is considered part of the 2020 No Project scenario. Consequently, with the presence of Golden Valley Parkway, Manthey Road is considered abandoned in the CLSP area, or would function only as a minor local roadway, and is not considered in the intersection analysis in the CLSP area for both the 2020 No Project scenario and the 2020 Plus Buildout scenario.

As shown in Table 4.4-11, a number of the intersections would operate at a deficient LOS under the 2020 No Project and the 2020 Plus Buildout scenarios (based on LOS policies described previously in Section 4.4.1, Regulatory Background). These intersections are:

- 3. Roth Road / I-5 SB Ramps (2020 No Project, AM only)
- 4. Roth Road / Old Harlan Road (2020 No Project, PM only)
- 5. Roth Road / McKinley Avenue (2020 Plus Buildout, AM only)
- 7. Lathrop Road/Golden Valley Parkway (2020 No Project, AM & PM)
- 8. Lathrop Road / I-5 SB Ramps (2020 No Project, AM & PM; 2020 Plus Buildout, PM only)
- 9. Lathrop Road / I-5 NB Ramps (2020 No Project, AM & PM; 2020 Plus Buildout, AM & PM)
- 10. Lathrop Road / Old Harlan Road (2020 No Project, AM & PM; 2020 Plus Buildout, AM & PM)
- 11. Lathrop Road / New Harlan Road (2020 No Project, AM & PM; 2020 Plus Buildout, AM & PM)
- 12. Lathrop Road / Fifth Street (2020 Plus Buildout, AM & PM)
- 13. Lathrop Road / Airport Way (2020 No Project, AM & PM; 2020 Plus Buildout, AM & PM)
- 17. Louise Avenue / Old Harlan Road (2020 No Project, AM only; 2020 Plus Buildout, AM only)
- 18. Louise Avenue / New Harlan Road (2020 No Project, AM only; 2020 Plus Buildout, AM only)
- 21. Louise Avenue / McKinley Avenue (2020 Plus Buildout, AM only)
- 22. Louise Avenue / Airport Way (2020 No Project, AM & PM; 2020 Plus Buildout, AM & PM)
- 24. Yosemite Avenue / McKinley Avenue (2020 Plus Buildout, AM only)
- 36. Main Street (Mossdale Landing) /Golden Valley Parkway (2020 Plus Buildout, PM only)

Ramp Operations

As described previously, the study area for surface streets includes three existing freeway ramps:

- I-5/Roth Road
- I-5/Lathrop Road
- I-5/Louise Avenue

An analysis of operating conditions at each of these ramps under the various study scenarios is presented below. To determine expected ramp operations under each scenario, traffic volumes generated by the traffic modeling were applied to analysis methodologies provided in the 2000 Highway Capacity Manual.

Existing Condition Scenarios

Operations at the three study freeway ramps under existing conditions are described in Table 4.4-5. The estimated operations of each ramp system for the Existing Plus Phase 1 scenario and the Existing Plus Buildout scenario are presented in Table 4.4-12. These results indicate that all of the ramp systems evaluated would operate at an acceptable LOS (which is defined as LOS D or better) with the addition of traffic from the CLSP.

2010 Scenarios

The estimated operation of the study ramps under the 2010 No Project scenario and the 2010 Plus Phase 1 scenario are presented in Table 4.4-13. As indicated in the table, all of the ramp elements would operate at an acceptable LOS under the 2010 No Project scenario. However, under the 2010 Plus Phase 1 scenario four of the ramp elements will operate at LOS F, which is an unacceptable level of operation. These are:

- Lathrop Road/I-5 Northbound On-Ramp (2010 Plus Phase 1, PM only)
- Louise Avenue/I-5 Southbound On-Ramp (2010 Plus Phase 1, AM only)
- Louise Avenue/I-5 Northbound On-Ramp (2010 Plus Phase 1, PM only)
- Louise Avenue/I-5 Southbound Off-Ramp (2010 Plus Phase 1, AM only)

Based on the analysis of ramp operations, it is believed that the deficient LOS of the ramp elements listed above are due primarily to high freeway segment volumes, which impede the operation of the freeway ramps.

2020 Scenarios

The estimated operation of the study ramps under the 2020 No Project scenario and the 2020 Plus Buildout scenario are presented in Table 4.4-14. As indicated in the table, several of the ramp elements under both the 2020 No Project scenario and the 2020 Plus Buildout scenario will operate at LOS F, which is an unacceptable level of operation. These are:

- Roth Road/I-5 Southbound On-Ramp (2020 Plus Buildout, AM only)
- Roth Road/I-5 Northbound On-Ramp (2020 Plus Buildout, PM only)
- Roth Road/I-5 Northbound Off-Ramp (2020 No Project, PM only; 2020 Plus Buildout, PM only)
- Lathrop Road/I-5 Southbound On-Ramp (2020 No Project, AM only; 2020 Plus Buildout, AM only)
- Lathrop Road/I-5 Northbound On-Ramp (2020 No Project, PM only; 2020 Plus Buildout, PM only)
- Lathrop Road/I-5 Southbound Off-Ramp (2020 Plus Buildout, AM only)
- Lathrop Road/I-5 Northbound Off-Ramp (2020 No Project, PM only; 2020 Plus Buildout, PM only)
- Louise Avenue/I-5 Southbound On-Ramp (2020 Plus Buildout, AM only)
- Louise Avenue/I-5 Northbound On-Ramp (2020 Plus Buildout, PM only)
- Louise Avenue/I-5 Southbound Off-Ramp (2020 No Project, AM only; 2020 Plus Buildout, AM & PM)
- Louise Avenue/I-5 Northbound Off-Ramp (2020 Plus Buildout, PM only)

Based on the analysis of ramp operations, it is believed that the deficient LOS of the ramp elements listed above are due primarily to high freeway segment volumes, which impede the operation of the freeway ramps.

Freeway Operations

Freeway segments evaluated as part of the "study area for freeway segments" are listed above in section 4.4.2, Existing Conditions. The study area includes much of I-5, SR-99, SR-120, and I-205 in and between Stockton, Lodi, Lathrop, Manteca, and Tracy. An analysis of operating conditions at each of the freeway segments under the various study scenarios is presented below. To determine expected freeway operations under each scenario, traffic volumes generated by the traffic modeling were applied to analysis methodologies provided in the 2000 Highway Capacity Manual. Traffic volumes for each freeway segment, under each traffic scenario, are provided in Appendix C of this DEIR.

Existing Condition Scenarios

Operations at the freeway study segments under existing conditions were described previously in Table 4.4-8. The estimated operations of each freeway study segment for the Existing Plus Phase 1 scenario is provided below in Table 4.4-15. Freeway segment operations under the Existing Plus Buildout scenario are presented in Table 4.4-16. Freeway traffic volumes under each of these scenarios are provided in Appendix C of this DEIR. As shown in Tables 4.4-8, 4.4-15, and 4.4-16, a number of the freeway segments will operate at a deficient level (LOS E or F) under existing conditions and after the introduction of project traffic. These segments are listed below. Note that the number preceding each freeway segment title corresponds to the numbering system used in Table 4.4-8 and elsewhere in this section:

- I-5

  1. North of Pershing Avenue, northbound direction (existing condition, PM only; Existing Plus Phase 1, PM only; Existing Plus Buildout, PM only)

  1. North of Pershing Avenue, southbound direction (Existing Plus Phase 1, AM only; Existing Plus Buildout, AM only)

  2. Between Pershing Avenue and Route 4 Crosstown, northbound direction (existing condition, PM only; Existing Plus Phase 1, PM only; Existing Plus Buildout, PM only)

  2. Between Pershing Avenue and Route 4 Crosstown, southbound direction (Existing Plus Phase 1, AM only; Existing Plus Buildout, AM only)

  3. Between Route 4 Crosstown and Charter Way, northbound direction (Existing Plus Phase 1, PM only; Existing Plus Buildout, PM only)

  3. Between Route 4 Crosstown and Charter Way, southbound direction (Existing Plus Phase 1, AM only; Existing Plus Buildout, AM only)

  4. Between Charter Way and 8th Street, northbound direction (Existing Plus Phase 1, PM only; Existing Plus Buildout, PM only)

  13. Between SR 120 and Manthey/Mossdale Hook Ramps, northbound direction (Existing Plus Phase 1, PM only; Existing Plus Buildout, PM only)

  13. Between SR 120 and Manthey/Mossdale Hook Ramps, southbound direction (Existing Plus Buildout, AM only)

  14. Between Manthey/Mossdale Hook Ramps and I-205, northbound direction (Existing Plus Phase 1, PM only; Existing Plus Buildout, PM only)

  14. Between Manthey/Mossdale Hook Ramps and I-205, southbound direction (Existing Plus Buildout, AM only)

- SR 99

  1. North of Route 4 Crosstown, northbound direction (existing condition, PM only; Existing Plus Phase 1, PM only; Existing Plus Buildout, PM only)

  1. North of Route 4 Crosstown, southbound direction (existing condition, AM & PM; Existing Plus Phase 1, AM & PM; Existing Plus Buildout, AM & PM)

  2. Between Route 4 Crosstown and Charter Way, northbound direction (existing condition, AM & PM; Existing Plus Phase 1, AM & PM; Existing Plus Buildout, AM & PM)

  2. Between Route 4 Crosstown and Charter Way, southbound direction (existing condition, AM & PM; Existing Plus Phase 1, AM & PM; Existing Plus Buildout, AM & PM)

  3. Between Charter Way and Farmington Road, northbound direction (existing condition, PM only; Existing Plus Phase 1, PM only; Existing Plus Buildout, PM only)

3. Between Charter Way and Farmington Road, southbound direction (existing condition, AM & PM; Existing Plus Phase 1, AM & PM; Existing Plus Buildout, AM & PM)

4. Between Farmington Road and Mariposa Road, northbound direction (Existing Plus Buildout, PM only)

4. Between Farmington Road and Mariposa Road, southbound direction (Existing Plus Phase 1, AM only; Existing Plus Buildout, AM only)

5. Between Mariposa Road and Clark Drive, southbound direction (Existing Plus Phase 1, AM only; Existing Plus Buildout, AM only)

6. Between Clark Drive and Arch Road, southbound direction (Existing Plus Buildout, AM only)

11. Between SR 120 and Austin Road, northbound direction (existing condition, AM & PM; Existing Plus Phase 1, AM & PM; Existing Plus Buildout, AM & PM)

12. South of Austin Road (existing condition, AM & PM; Existing Plus Phase 1, AM & PM; Existing Plus Buildout, AM & PM)

- SR 120

  1. Between I-5 and Yosemite Avenue, northbound direction (Existing Plus Phase 1, PM only; Existing Plus Buildout, PM only)

- I-205

  Under existing conditions, every segment of I-205 included in the study area operates at LOS E or F in the westbound direction during the AM peak and in the eastbound direction during the PM peak (Table 4.4-8). This same pattern occurs under the Existing Plus Phase 1 and Existing Plus Buildout scenarios; however, all segments operate at LOS F in the westbound direction during the AM peak and in the eastbound direction during the PM peak. As discussed in Section 4.4.1, Regulatory Background, the San Joaquin Congestion Management Program (SJCCMP) has listed the portion of I-205 in the County as a "grandfathered" segment and set LOS F as the acceptable level of service. Therefore, County LOS standards are not violated. However, Caltrans freeway LOS criteria of LOS D or better would not be met.

2010 Scenarios

The estimated operations of each freeway study segment for the 2010 No Project scenario is provided below in Table 4.4-17. Freeway segment operations under the 2010 Plus Phase 1 scenario are presented in Table 4.4-18. Freeway traffic volumes under each of these scenarios are provided in Appendix C. As shown in these tables, a number of freeway segments will operate at a deficient level (LOS E or F) under both scenarios. These segments are:

- I-5

  1. North of Pershing Avenue, northbound direction (2010 No Project, PM only; 2010 Plus Phase 1, PM only)

1. North of Pershing Avenue, southbound direction (2010 No Project, PM only; 2010 Plus Phase 1, AM)

2. Between Pershing Avenue and Route 4 Crosstown, northbound direction (2010 No Project, PM only; 2010 Plus Phase 1, PM only)

2. Between Pershing Avenue and Route 4 Crosstown, southbound direction (2010 No Project, AM & PM; 2010 Plus Phase 1, AM & PM)

3. Between Route 4 Crosstown and Charter Way, northbound direction (2010 No Project, PM only; 2010 Plus Phase 1, PM only)

3. Between Route 4 Crosstown and Charter Way, southbound direction (2010 No Project, AM & PM; 2010 Plus Phase 1, AM & PM)

4. Between Charter Way and 8th Street, northbound direction (2010 No Project, PM only; 2010 Plus Phase 1, PM only)

4. Between Charter Way and 8th Street, southbound direction (2010 No Project, AM & PM; 2010 Plus Phase 1, AM & PM)

5. Between 8th Street and Downing Avenue, northbound direction (2010 No Project, PM only; 2010 Plus Phase 1, PM only)

5. Between 8th Street and Downing Avenue, southbound direction (2010 No Project, AM & PM; 2010 Plus Phase 1, AM & PM)

6. Between Downing Avenue and French Camp Road, northbound direction (2010 No Project, PM only; 2010 Plus Phase 1, PM only)

6. Between Downing Avenue and French Camp Road, southbound direction (2010 No Project, AM & PM; 2010 Plus Phase 1, AM & PM)

7. Between French Camp Road and Mathews Road, northbound direction (2010 Plus Phase 1, PM only)

8. Between Mathews Road and the El Dorado Ramps, northbound direction (2010 Plus Phase 1, PM only)

9. Between the El Dorado Ramps and Roth Road, northbound direction (2010 Plus Phase 1, PM only)

10. Between Roth Road and Lathrop Road, northbound direction (2010 No Project, PM only; 2010 Plus Phase 1, PM only)

10. Between Roth Road and Lathrop Road, southbound direction (2010 Plus Phase 1, AM only)

11. Between Lathrop Road and Louise Avenue, northbound direction (2010 No Project, PM only; 2010 Plus Phase 1, PM only)

11. Between Lathrop Road and Louise Avenue, southbound direction (2010 No Project, AM only; 2010 Plus Phase 1, AM only)

12. Between Louise Avenue and SR 120, northbound direction (2010 No Project, PM only; 2010 Plus Phase 1, PM only)

12. Between Louise Avenue and SR 120, northbound direction (2010 No Project, AM only; 2010 Plus Phase 1, AM only)

13. Between SR 120 and the Manthey/Mossdale Hook Ramps, northbound direction (2010 No Project, PM only; 2010 Plus Phase 1, PM only)

13. Between SR 120 and the Manthey/Mossdale Hook Ramps, southbound direction (2010 No Project, AM only; 2010 Plus Phase 1, AM only)

14. Between the Manthey/Mossdale Hook Ramps and I-205, northbound direction (2010 No Project, PM only; 2010 Plus Phase 1, PM only)

14. Between the Manthey/Mossdale Hook Ramps and I-205, southbound direction (2010 No Project, AM only; 2010 Plus Phase 1, AM only)

- SR 99

  All segments of SR 99, between and including, Segment 1, North of Route 4 Crosstown and Segment 7, Between Arch Road and French Camp Road, would operate at unacceptable LOS levels (E or F) during both the AM and PM peak hours for both the 2010 No Project and 2010 Plus Phase 1 scenarios.

  10. Between Yosemite Avenue and SR 120, northbound direction (2010 Plus Phase 1, AM only)

  10. Between Yosemite Avenue and SR 120, southbound direction (2010 No Project, PM only; 2010 Plus Phase 1, PM only)

  11. Between SR 120 and Austin Road, northbound direction (2010 No Project, AM only; 2010 Plus Phase 1, AM only)

  11. Between SR 120 and Austin Road, southbound direction (2010 No Project, PM only; 2010 Plus Phase 1, PM only)

  12. South of Austin Road, northbound direction (2010 No Project, AM only; 2010 Plus Phase 1, AM only)

  12. South of Austin Road, southbound direction (2010 No Project, PM only; 2010 Plus Phase 1, PM only)

- SR 120

  All segments of SR 120 in the study area would operate at LOS F during the PM peak hour in the eastbound direction, and at LOS F during the AM peak hour in the westbound direction. The same traffic patterns and LOS levels would occur for both the 2010 No Project and 2010 Plus Phase 1 scenarios.

- I-205

All segments of I-205 in the study area would operate at LOS F during the PM peak hour in the eastbound direction, and at LOS F during the AM peak hour in the westbound direction. This same traffic pattern occurs for both the 2010 No Project and 2010 Plus Phase 1 scenarios. As discussed in Section 4.4.1, Regulatory Background, the SJCCMP has listed the portion of I-205 in the County as a "grandfathered" segment and set LOS F as the acceptable level of service. Therefore, County LOS standards are not violated. However, Caltrans freeway LOS criteria of LOS D or better would not be met.

2020 Scenarios

The estimated operations of each freeway study segment for the 2020 No Project scenario is provided below in Table 4.4-19. Freeway segment operations under the 2020 Plus Buildout scenario are presented in Table 4.4-19. Freeway traffic volumes under each of these scenarios are provided in Appendix C of this DEIR. As shown in these tables, a number of freeway segments will operate at a deficient level (LOS E or F) under both scenarios. These segments are:

- I-5

1. North of Pershing Avenue, northbound direction (2020 No Project, PM only; 2020 Plus Buildout, PM only)

2. Between Pershing Avenue and Route 4 Crosstown, northbound direction (2020 No Project, PM only; 2020 Plus Buildout, PM only)

2. Between Pershing Avenue and Route 4 Crosstown, southbound direction (2020 No Project, AM & PM; 2020 Plus Buildout, AM & PM)

3. Between Route 4 Crosstown and Charter Way, northbound direction (2020 No Project, PM only; 2020 Plus Buildout, PM only)

4. Between Route 4 Crosstown and Charter Way, southbound direction (2020 No Project, AM & PM; 2020 Plus Buildout, AM & PM)

4. Between Charter Way and 8th Street, northbound direction (2020 No Project, AM & PM; 2020 Plus Buildout, AM & PM)

4. Between Charter Way and 8th Street, southbound direction (2020 No Project, AM & PM; 2020 Plus Buildout, AM & PM)

5. Between 8th Street and Downing Avenue, northbound direction (2020 No Project, AM & PM; 2020 Plus Buildout, AM & PM)

5. Between 8th Street and Downing Avenue, southbound direction (2020 No Project, AM & PM; 2020 Plus Buildout, AM & PM)

6. Between Downing Avenue and French Camp Road, northbound direction (2020 No Project, AM & PM; 2020 Plus Buildout, AM & PM)

6. Between Downing Avenue and French Camp Road, southbound direction (2020 No Project, AM & PM; 2020 Plus Buildout, AM & PM)

7. Between French Camp Road and Matthews Road, northbound direction (2020 No Project, PM only; 2020 Plus Buildout, PM only)

7. Between French Camp Road and Matthews Road, southbound direction (2020 No Project, AM & PM; 2020 Plus Buildout, AM & PM)

8. Between Matthews Road and the El Dorado Ramps, northbound direction (2020 No Project, PM only; 2020 Plus Buildout, PM only)

8. Between Matthews Road and the El Dorado Ramps, southbound direction (2020 No Project, AM & PM; 2020 Plus Buildout, AM & PM)

9. Between the El Dorado Ramps and Roth Road, northbound direction (2020 No Project, PM only; 2020 Plus Buildout, PM only)

9. Between the El Dorado Ramps and Roth Road, southbound direction (2020 No Project, AM & PM; 2020 Plus Buildout, AM & PM)

10. Between Roth Road and Lathrop Road, northbound direction (2020 No Project, PM only; 2020 Plus Buildout, PM only)

10. Between Roth Road and Lathrop Road, southbound direction (2020 No Project, AM & PM; 2020 Plus Buildout, AM & PM)

11. Between Lathrop Road and Louise Avenue, northbound direction (2020 No Project, PM only; 2020 Plus Buildout, PM only)

11. Between Lathrop Road and Louise Avenue, southbound direction (2020 No Project, AM only; 2020 Plus Buildout, AM & PM)

12. Between Louise Avenue and SR 120, northbound direction (2020 No Project, PM only; 2020 Plus Buildout, PM only)

12. Between Louise Avenue and SR 120, southbound direction (2020 No Project, AM only; 2020 Plus Buildout, AM & PM)

13. Between SR 120 and the Manthey/Mossdale Hook Ramps, northbound direction (2020 No Project, PM only; 2020 Plus Buildout, PM only)

13. Between SR 120 and the Manthey/Mossdale Hook Ramps, southbound direction (2020 No Project, AM only; 2020 Plus Buildout, AM only)

14. Between the Manthey/Mossdale Hook Ramps and I-205, northbound direction (2020 No Project, PM only; 2020 Plus Buildout, PM only)

14. Between the Manthey/Mossdale Hook Ramps and I-205, southbound direction (2020 No Project, AM only; 2020 Plus Buildout, AM only)

- SR 99

  1. North of Route 4 Crosstown, northbound direction (2020 No Project, AM & PM; 2020 Plus Buildout, AM & PM)

  1. North of Route 4 Crosstown, southbound direction (2020 No Project, AM & PM; 2020 Plus Buildout, AM & PM)

  2. Between Route 4 Crosstown and Charter Way, northbound direction (2020 No Project, AM & PM; 2020 Plus Buildout, AM & PM)

  2. Between Route 4 Crosstown and Charter Way, southbound direction (2020 No Project, AM & PM; 2020 Plus Buildout, AM & PM)

  3. Between Charter Way and Farmington Road, northbound direction (2020 No Project, AM & PM; 2020 Plus Buildout, AM & PM)

  3. Between Charter Way and Farmington Road, southbound direction (2020 No Project, PM only; 2020 Plus Buildout, PM only)

  4. Between Farmington Road and Mariposa Road, northbound direction (2020 No Project, AM & PM; 2020 Plus Buildout, AM & PM)

  4. Between Farmington Road and Mariposa Road, southbound direction (2020 No Project, PM only; 2020 Plus Buildout, PM only)

  5. Between Mariposa Road and Clark Drive, northbound direction (2020 No Project, AM only; 2020 Plus Buildout, AM only)

  5. Between Mariposa Road and Clark Drive, southbound direction (2020 No Project, PM only; 2020 Plus Buildout, PM only)

  6. Between Clark Drive and Arch Road, northbound direction (2020 No Project, AM only; 2020 Plus Buildout, AM only)

  6. Between Clark Drive and Arch Road, southbound direction (2020 No Project, PM only; 2020 Plus Buildout, PM only)

  7. Between Arch Road and French Camp Road, northbound direction (2020 No Project, AM & PM; 2020 Plus Buildout, AM & PM)

  7. Between Arch Road and French Camp Road, southbound direction (2020 No Project, AM & PM; 2020 Plus Buildout, AM & PM)

  8. Between French Camp Road and Lathrop Road, northbound direction (2020 No Project, AM only; 2020 Plus Buildout, AM only)

  8. Between French Camp Road and Lathrop Road, southbound direction (2020 No Project, PM only; 2020 Plus Buildout, PM only)

9. Between Lathrop Road and Yosemite Avenue, northbound direction (2020 No Project, AM only; 2020 Plus Buildout, AM only)

9. Between Lathrop Road and Yosemite Avenue, southbound direction (2020 No Project, PM only; 2020 Plus Buildout, PM only)

10. Between Yosemite Avenue and SR 120, northbound direction (2020 No Project, AM only; 2020 Plus Buildout, AM only)

10. Between Yosemite Avenue and SR 120, southbound direction (2020 No Project, PM only; 2020 Plus Buildout, PM only)

11. Between SR 120 and Austin Road, northbound direction (2020 No Project, AM & PM; 2020 Plus Buildout, AM & PM)

11. Between SR 120 and Austin Road, southbound direction (2020 No Project, PM only; 2020 Plus Buildout, PM only)

12. South of Austin Road, northbound direction (2020 No Project, AM & PM; 2020 Plus Buildout, AM & PM)

12. South of Austin Road, southbound direction (2020 No Project, PM only; 2020 Plus Buildout, PM only)

- SR 120

  All segments of SR 120 in the study area would operate at LOS F during the PM peak hour in the eastbound direction, and at LOS F during the AM peak hour in the westbound direction. The same traffic patterns and LOS levels would occur for both the 2020 No Project and 2020 Plus Buildout scenarios.

- I-205

  All segments of I-205 in the study area would operate at LOS F during the PM peak hour in the eastbound direction, and at LOS F during the AM peak hour in the westbound direction. This same traffic pattern occurs for both the 2020 No Project and 2020 Plus Buildout scenarios. As discussed in Section 4.4.1, Regulatory Background, the SJCCMP has listed the portion of I-205 in the County as a "grandfathered" segment and set LOS F as the acceptable level of service. Therefore, County LOS standards are not violated. However, Caltrans freeway LOS criteria of LOS D or better would not be met.

THRESHOLDS OF SIGNIFICANCE

The project would result in a significant traffic impact if it would cause one or more of the following (which are based, in part, on standards established in the City General Plan or by the Lathrop Public Works Department, Caltrans, San Joaquin County, and the City of Manteca):

- Project traffic degrades interim (2010 Plus Phase 1 scenario) or cumulative condition (2020 Plus Buildout scenario) operation at a signalized or all-way stop intersection in the City of Lathrop from LOS A through LOS D to LOS E or LOS F, or degrades operation at a City of Lathrop side-street stop-sign controlled from LOS A through LOS E to LOS F.

- The project increases traffic by 1% or more during the interim or cumulative condition at signalized or all-way stop intersections in the City of Lathrop already operating at LOS E or LOS F, or at side-street stop-sign-controlled intersections in the City of Lathrop already operating at LOS F.

- Project traffic degrades interim or cumulative condition operation at a signalized or all-way stop intersection in the City of Manteca from LOS A through LOS C to LOS D, LOS E, or LOS F, or degrades operation at a City of Manteca side-street stop-sign controlled intersection from LOS A through LOS E to LOS F.

- The project increases traffic by 1% or more during the interim or cumulative condition at signalized or all-way stop intersections in the City of Manteca already operating at LOS D, LOS E or LOS F, or at side- street stop-sign-controlled intersections in the City of Manteca already operating at LOS D, E, or F.

- The project increases traffic at interim or cumulative condition unsignalized intersections such that Manual of Uniform Traffic Control Devices (MUTCD) signal warrant #11 (peak-hour volume) are exceeded.

- The project increases traffic by 1% or more at interim or cumulative condition unsignalized intersections that already exceed MUTCD peak-hour volume signal warrants.

- Project traffic degrades interim or cumulative condition operation at a signalized, all-way-stop, or side-street stop-sign-controlled intersection in San Joaquin County from LOS A through LOS C to LOS D, LOS E, or LOS F.

- The project increases traffic by 1% or more at interim or cumulative condition signalized, all-way stop, or side-street stop-sign-controlled intersection in San Joaquin County already operating at LOS D, LOS E, or LOS F.

- Project traffic under the interim or cumulative condition results in vehicle queues extending from one signalized intersection to and through an adjacent signalized intersection (or out of a turn pocket's available storage length), or if interim or cumulative condition queues without project traffic extend from one signalized intersection to an adjacent signalized intersection (or out of a turn pocket's available storage length), and the project increases traffic passing through the upstream intersection by 1% or more.

- Project traffic degrades interim or cumulative condition freeway segments or on-ramp merge/off-ramp diverge areas from LOS A through LOS D to LOS E or LOS F.

- The project increases traffic by 1% or more at interim or cumulative condition freeway segments or on-ramp merge/off-ramp diverge areas already operating at LOS E or LOS F.

- Certain project-related traffic changes or proposed designs would substantially increase auto, pedestrian, or bicycle rider safety concerns.

- The project's internal circulation does not provide for or allow flexibility to provide for public transit service along major internal streets.

- Project traffic would significantly degrade existing roadway pavement condition.

In order to avoid understating possible traffic impacts and to provide decisionmakers and the public with the best possible information, all but the last three thresholds of significance described above are compared against three different baseline conditions. The three different baseline conditions used to evaluate traffic impacts in this DEIR are the existing condition, the 2010 condition, and the 2020 condition. The "Existing Plus Phase 1" and the "Existing Plus Buildout" scenarios evaluate traffic impacts by comparing existing conditions against the existing conditions plus project traffic. This is the most basic CEQA impact evaluation approach of comparing existing conditions against post project conditions (see CEQA Guidelines, §15125(a)) to determine whether thresholds of significance are exceeded. However, this approach does not take into account additional traffic generated by other development in the region over the CLSP's 15-year buildout period, or foreseeable roadway network improvements that are very likely, if not certain, to occur over this time period.

Major projects have been entitled for development throughout the project region, and more are expected. Not all of the traffic from these projects is yet on the roads because these projects are not all fully built-out. As projects develop, traffic would increase on local and regional roadways and freeways, even, in many instances, in the absence of further discretionary approvals for these entitled projects. As regional development proceeds, moreover, transportation system improvements would also be provided through successful existing local and regional funding programs, individual project mitigation, and improvements funded by the Caltrans. The 2010 and 2020 scenarios, in projecting conditions in future years, account for these foreseeable future development and roadway conditions, using growth projections developed by SJCOG and roadway improvements identified in various plans and funding programs (the Regional Transportation Fee, the City of Lathrop CFF, the SJCOG Regional Transportation Plan). By using the 2010 and 2020 conditions as baselines for certain analyses, a reasonable comparison between the future year with no project and future year with project conditions can be made, with the result that foreseeable development and roadway improvements get fully taken into account. It should be noted that the 2010 and 2020 conditions cannot be considered a "best case scenario" that reflects unrealistic improvements to traffic conditions because (1) these scenarios include traffic from planned future development that substantially increases future traffic volumes; and (2) the traffic system improvements anticipated in these scenarios are included in existing plans and fee programs and can reasonably be expected to be funded and implemented as development proceeds. Furthermore, using only an "existing conditions" baseline would result in incomplete data that would constitute a poor basis for making informed decisions about infrastructure investments and the means of funding them.

- By using these three baseline conditions (existing, 2010, 2020), comparisons can be made between:
- Existing conditions and Phase 1 of project development added to existing traffic condition,
- Existing conditions and full project buildout added to existing traffic conditions,
- Projected 2010 conditions with no project and projected 2010 conditions with Phase 1 of project development, and
- Project 2020 conditions with no project and projected 2020 conditions with full project buildout.

Use of these three baseline conditions is considered an appropriate method to identify and describe the full range of traffic impacts generated by the CLSP project.

IMPACT ANALYSIS

Impact 4.4-a

Transportation and Circulation – Increases in Peak Hour Traffic Volumes Resulting in Unacceptable Levels of Service. *The proposed project would cause an increase in AM and/or PM peak hour traffic volumes at study intersections, resulting in unacceptable levels of service and warranting the need for improvements such as traffic signals and turn lanes. These impacts occur under all scenarios. This impact is considered* ***significant.***

Under all traffic analysis scenarios that assume development of the CLSP (Existing Plus Phase 1, Existing Plus Buildout, 2010 Plus Phase 1, and 2020 Plus Buildout), the proposed project would cause an increase in AM and/or PM peak hour traffic volumes at study intersections and affect LOS at these intersections. Impacts associated with this increased traffic were compared against the thresholds of significance identified previously. Intersections where significant impacts would occur are discussed below, and mitigation for these significant impacts is provided later in this section. Intersection numbers provided below correspond to the numbers used in Tables 4.4-9, 4.4-10, and 4.4-11. For the sake of brevity, only impacts on intersection LOS and traffic volumes that are considered significant are discussed below. Intersections that would have acceptable LOS (i.e., LOS A through D) under the various analysis scenarios as identified in Tables 4.4-9, 4.4-10, and 4.4-11 are not discussed further.

Impact 4.4-a1

Transportation and Circulation – Operation of LOS F at Intersection 2. Roth Road/I-5 Southbound Ramps Under Existing Plus Project Conditions. *Under the existing plus project scenarios, Intersection 2. Roth Road/I-5 Southbound Ramps would operate at LOS F during the AM and/or PM periods. This impact is considered* ***significant.***

The unsignalized intersection of Roth Road/I-5 Southbound Ramps (Intersection 2.) would operate at LOS F (>50 seconds of delay) during the PM period with the introduction of traffic from Phase I of the proposed project (Existing Plus Phase 1 Scenario). This intersection would operate at LOS F during the AM and PM periods with the buildout of the proposed project (Existing Plus Buildout Scenario). Without project traffic, the intersection operates at LOS A with minimal delay (4 seconds). Because project traffic degrades the LOS from A to F, this impact is considered significant.

Impact 4.4-a2

Transportation and Circulation – Operation of LOS F at Intersection 3. Roth Road/I-5 Northbound Ramps Under the Existing Plus Buildout Scenario. *Under the Existing Plus Buildout Scenario, Intersection 3. Roth Road/I-5 Northbound Ramps would operate at LOS F during the PM period. This impact is considered* ***significant.***

The unsignalized intersection of Roth Road/I-5 Northbound Ramps (Intersection 3.) would operate at an acceptable LOS under the Existing Plus Phase 1 Scenario. This intersection would operate at LOS F during the PM period with the buildout of the proposed project (Existing Plus Buildout Scenario). Without project traffic, the intersection operates at LOS A. Because the project traffic degrades the LOS from A to F, this impact is considered significant.

Impact 4.4-a3

Transportation and Circulation – Operation of LOS F at Intersection 4. Roth Road/Old Harlan Road Under Existing Plus Project Conditions. *Under the existing plus project scenarios, Intersection 4. Roth Road/Harlan Road would operate at LOS F during the AM and PM periods. This impact is considered* ***significant.***

The unsignalized intersection of Roth Road/Old Harlan Road (Intersection 4.) would operate at LOS F during both the AM and PM periods with the introduction of traffic from both Phase I of the proposed project (Existing Plus Phase 1 Scenario) and the buildout of the proposed project (Existing Plus Buildout Scenario). Without project traffic, the intersection operates at LOS A. Because project traffic degrades the LOS from A to F, this impact is considered significant.

Impact 4.4-a4

Transportation and Circulation – Operation of LOS E and F at Intersection 7. Lathrop Road/Manthey Road/Golden Valley Parkway Under the Existing Plus Buildout Scenario. *Under the Existing Plus Buildout scenario, Intersection 7. Lathrop Road/Manthey Road/Golden Valley Parkway would operate at LOS E during the AM period and LOS F during the PM period. This impact is considered* ***significant.***

Under existing conditions the Lathrop Road/Manthey Road intersection operates at LOS A. The corresponding intersection under the project buildout scenarios, Lathrop Road/Golden Valley Parkway operates at LOS C (AM) and D (PM) under the Existing Plus Phase 1 Scenario. However, under the Existing Plus Buildout Scenario, this intersection operates at LOS E during the AM period and LOS F during PM period. Because project traffic degrades the LOS from A to E/F, this impact is considered significant.

Impact 4.4-a5

Transportation and Circulation – Operation of LOS F at Intersection 8. Lathrop Road/I-5 Southbound Ramps Under Existing Plus Project Conditions. *Under the existing plus project scenarios, Intersection 8. Lathrop Road/I-5 Southbound Ramps would operate at LOS F during the AM and PM periods. This impact is considered* ***significant.***

The unsignalized intersection of Lathrop Road/I-5 Southbound Ramps (Intersection 8.) would operate at LOS F during the AM and PM periods with the introduction of traffic from both Phase I of the proposed project (Existing Plus Phase 1 Scenario) and the buildout of the proposed project (Existing Plus Buildout Scenario). Without project traffic, the intersection operates at LOS B. Because project traffic degrades the LOS from B to F, this impact is considered significant.

Impact 4.4-a6

Transportation and Circulation – Operation of LOS F at Intersection 9. Lathrop Road/I-5 Northbound Ramps Under Existing Plus Project Conditions. *Under the existing plus project scenarios, Intersection 9. Lathrop Road/I-5 Northbound Ramps would operate at LOS F during the AM and PM periods. This impact is considered* ***significant.***

Before the introduction of project traffic, Intersection 9. Lathrop Road/I-5 Northbound Ramps operates at LOS A during the AM period and LOS F during the PM period. This unsignalized intersection would operate at LOS F during the AM and PM periods with the introduction of traffic from both Phase I of the proposed project (Existing Plus Phase 1 Scenario) and the buildout of the proposed project (Existing Plus Buildout Scenario). Because project traffic degrades the LOS from A to F during the AM period this impact is considered significant. Additionally, the project traffic contributes more than 1% of the total traffic at this intersection in the PM period when the intersection already operates at LOS F, which is also considered a significant impact.

Impact 4.4-a7

Transportation and Circulation – Operation of LOS F at Intersection 11. Lathrop Road/New Harlan Road Under Existing Plus Project Conditions. *Under the existing plus project scenario, Intersection 11.Lathrop Road/New Harlan Road would operate at LOS F during the AM period. This impact is considered* ***significant.***

The signalized intersection of Lathrop Road/New Harlan Road would operate at LOS F during the AM period with the introduction of traffic from both Phase I of the proposed project (Existing Plus Phase 1 Scenario) and the buildout of the proposed project (Existing Plus Buildout Scenario). Currently, this intersection operates at LOS B. Because project traffic degrades the LOS from B to F during the AM period this impact is considered significant.

Impact 4.4-a8

Transportation and Circulation – Operation of LOS E at Intersection 13. Lathrop Road/Airport Way Under the Existing Plus Buildout Scenario. *Under the Existing Plus Buildout Scenario, Intersection 13. Lathrop Road/Airport Way would operate at LOS E during the PM period. This impact is considered* ***significant.***

The signalized intersection of Lathrop Road/Airport Way (Intersection 13.) would operate at an acceptable LOS under the Existing Plus Phase 1 Scenario. This intersection would operate at LOS E during the PM period with buildout of the proposed project (Existing Plus Buildout Scenario). Without project traffic, the intersection operates at LOS C. Because the project traffic degrades the LOS from C to E, this impact is considered significant.

Impact 4.4-a9

Transportation and Circulation – Operation of LOS F at Intersection 15. Louise Avenue/I-5 Southbound Ramps Under Existing Plus Project Conditions. *Under the existing plus project scenarios, Intersection 15. Louise Avenue/I-5 Southbound Ramps would operate at LOS E during the AM period and LOS F during the PM period. This impact is considered* ***significant.***

The signalized intersection of Louise Avenue/I-5 Southbound Ramps (Intersection 15.) would operate at LOS F during the PM period with the introduction of traffic from Phase I of the proposed project (Existing Plus Phase 1 Scenario) and would operate at LOS E during the AM period and at LOS F during the PM period with buildout of the proposed project (Existing Plus Buildout Scenario). Without project traffic this intersection operates at LOS B during the AM and PM periods. Because the addition of project degrades the LOS from B to E/F, this impact is considered significant.

Impact 4.4-a10

Transportation and Circulation – Operation of LOS F at Intersection 16. Louise Avenue/I-5 Northbound Ramps Under Existing Plus Project Conditions. *Under the existing plus project scenarios, Intersection 16. Louise Avenue/I-5 Northbound Ramps would operate at LOS E or F during the PM period. This impact is considered* ***significant.***

The signalized intersection of Louise Avenue/I-5 Northbound Ramps (Intersection 16) would operate at LOS E during the PM period with the introduction of traffic from Phase I of the proposed project (Existing Plus Phase 1 Scenario) and would operate at LOS F during the PM period with buildout of the proposed project (Existing Plus Buildout Scenario). Without project traffic this intersection operates at LOS A during the AM and PM periods. Because the addition of project traffic degrades the LOS from A to E/F, this impact is considered significant.

Impact 4.4-a11

Transportation and Circulation – Operation of LOS F at Intersection 22. Louise Avenue/Airport Way Under Existing Plus Project Conditions. *Under the existing plus project scenarios, Intersection 22. Louise Avenue/Airport Way would operate at LOS F during the AM and PM periods. This impact is considered* ***significant.***

Before the introduction of project traffic, Intersection 22. Louise Avenue/Airport Way operates at LOS C during the AM period and LOS E during the PM period. This unsignalized (all-way stop control) intersection would operate at LOS F during the AM and PM periods with the introduction of traffic from both Phase I of the proposed project (Existing Plus Phase 1 Scenario) and the buildout of the proposed project (Existing Plus Buildout Scenario). Because project traffic degrades the LOS from C to F during the AM period this impact is considered significant. Additionally, the project traffic contributes more than 1% of the total traffic at this intersection in the PM period when the intersection already operates at LOS E, which is also considered a significant impact.

Impact 4.4-a12

Transportation and Circulation – Operation of LOS F at Intersection 2. Roth Road/I-5 Southbound Ramps Under the 2010 Plus Phase 1 Scenario. *Under the 2010 Plus Phase 1 Scenario, Intersection 2. Roth Road/I-5 Southbound Ramps would operate at LOS F during the AM period. This impact is considered* ***significant.***

The signalized intersection of Roth Road/I-5 Southbound Ramps (Intersection 2.) would operate at LOS F during the AM period with the introduction of traffic from Phase I of the proposed project in 2010 (2010 Plus Phase 1 Scenario). Before the addition of project traffic, this intersection would operate at LOS D during the AM period. Because project traffic would degrade the from LOS D to F, this impact is considered significant.

Impact 4.4-a13

Transportation and Circulation – Operation of LOS E at Intersection 4. Roth Road/Old Harlan Road Under the 2010 Plus Phase 1 Scenario. *Under the 2010 Plus Phase 1 Scenario, Intersection 4. Roth Road/Old Harlan Road would operate at LOS E during the AM and PM periods. This impact is considered* ***significant.***

The signalized intersection of Roth Road/Old Harlan Road (Intersection 4) would operate at LOS E during the AM and PM periods with the introduction of traffic from Phase I of the proposed project (2010 Plus Phase 1 Scenario) in 2010. Before the addition of project traffic, this intersection would operate at LOS C during the AM and PM periods. Because project traffic would degrade the from LOS C to E, this impact is considered significant.

Impact 4.4-a14

Transportation and Circulation – Operation of LOS F at Intersection 5. Roth Road/McKinley Avenue Under the 2010 Plus Phase 1 Scenario. *Under the 2010 Plus Phase 1 Scenario, Intersection 5. Roth Road/McKinley Avenue would operate at LOS F during the PM period. This impact is considered* ***significant.***

The unsignalized intersection of Roth Road/McKinley Avenue (Intersection 5.) would operate at LOS F during the PM period with the introduction of traffic from Phase I of the proposed project (2010 Plus Phase 1 Scenario). Before the addition of project traffic, this intersection would operate at LOS C during the PM period. Because project traffic would degrade the from LOS C to F, this impact is considered significant.

Impact 4.4-a15

Transportation and Circulation – Operation of LOS E and F at Intersection 8. Lathrop Road/I-5 Southbound Ramps Under the 2010 Plus Phase 1 Scenario. *Under the 2010 Plus Phase 1 Scenario, Intersection 8. Lathrop Road/I-5 Southbound Ramps would operate at LOS F and LOS E during the AM and PM periods respectively. This impact is considered* ***significant.***

The signalized intersection of Lathrop Road/I-5 Southbound Ramps (Intersection 8) would operate at LOS F and LOS E during the AM and PM periods, respectively, with the introduction of traffic from Phase I of the proposed project (2010 Plus Phase 1 Scenario). Before the addition of project traffic, this intersection would operate at LOS C during the AM period and PM period. Because the operation at this location degrades from LOS C to LOS E or F, this impact is considered significant.

Impact 4.4-a16

Transportation and Circulation – Operation of LOS F at Intersection 9. Lathrop Road/I-5 Northbound Ramps Under the 2010 Plus Phase 1 Scenario. *Under the 2010 Plus Phase 1 Scenario, Intersection 9. Lathrop Road/I-5 Northbound Ramps would operate at LOS F during the PM period. This impact is considered* ***significant.***

The signalized intersection of Lathrop Road/I-5 Northbound Ramps (Intersection 9.) would operate at LOS F during the PM period with the introduction of traffic from Phase I of the proposed project (2010 Plus Phase 1 Scenario). Before the addition of project traffic, this intersection would operate at LOS D

during the PM period. Because project traffic would degrade the LOS from D to F, this impact is considered significant.

Impact 4.4-a17

Transportation and Circulation – Increase in Traffic of 1% or More at Intersection 16. Louise Avenue/I-5 Northbound Ramps When Operating at LOS E Under the 2010 No Project Scenario. *Under the 2010 Plus Phase 1scenario, Intersection 16. Louise Avenue/I-5 Northbound Ramps would operate at LOS E during the PM period. This would be an improvement relative to the no project condition (2010 No Project Scenario) where the intersection would operate at LOS F. The improved LOS would result from interchange improvements to be implemented as part of City and regional funding programs. Although the improvement from LOS F to LOS E occurs with the proposed project, traffic generated by the CLSP project would still result in an increase in traffic of more than 1% at an intersection operating at LOS E. This impact is considered* ***significant.***

The signalized intersection of Louise Avenue/I-5 Northbound Ramps (Intersection 16.) would operate at LOS E during the PM period with the introduction of traffic from Phase I of the proposed project (2010 Plus Phase 1 Scenario). This intersection will operate at LOS F under the 2010 No Project scenario. The improved LOS at this intersection would result from implementation of I-5/Louise Avenue interchange projects included in the City of Lathrop CFF and the Regional Transportation Fee. It is assumed that development and associated traffic generated by the CLSP would provide the final impetus for these interchange improvements. While the proposed intersection improvements will result in an improved LOS, the LOS will remain at a deficient level (LOS E) under the 2010 Plus Phase 1 Scenario. When operating at LOS E, the CLSP will contribute more than 1% of the traffic at this intersection. Because the proposed project contributes more than 1% of the traffic at an intersection operating at LOS E, this impact is considered significant.

Impact 4.4-a18

Transportation and Circulation – Operation of LOS F at Intersection 17. Louise Avenue/Old Harlan Road Under 2010 Plus Phase 1 Scenario. *Under the 2010 Plus Phase 1 scenario, Intersection 17. Louise Avenue/Old Harlan Road would operate at LOS F during the AM period. This impact is considered* ***significant.***

The unsignalized intersection (side street stop sign control) of Louise Avenue/Old Harlan Road (Intersection 17.) would operate at LOS F during the AM period with the introduction of traffic from Phase I of the proposed project (2010 Plus Phase 1 Scenario). Before the addition of project traffic, this intersection would operate at LOS D during the AM period. Because project traffic would degrade the LOS from D to F, this impact is considered significant.

Impact 4.4-a19

Transportation and Circulation – Operation of LOS E and F at Intersection 18. Louise Avenue/New Harlan Under 2010 Plus Phase 1 Scenario. *Under the 2010 Plus Phase 1 Scenario, Intersection 18. Louise Avenue/New Harlan Road would operate at LOS F during the AM period and LOS E during the PM period. This impact is considered* ***significant.***

The signalized intersection of Louise Avenue/New Harlan Road (Intersection 18.) would operate at LOS F during the AM period and LOS E during the PM period with the introduction of traffic from Phase I of the proposed project (2010 Plus Phase 1 Scenario). Before the addition of project traffic, this intersection would operate at LOS D during the AM and PM periods. Because project traffic would degrade the LOS from D to E/F, this impact is considered significant.

Impact 4.4-a20

Transportation and Circulation – Increase in Traffic of 1% or More at Intersection 21. Louise Avenue/McKinley Avenue Under When Operating at LOS E/F Under the 2010 No Project Scenario. *Under the 2010 No Project Scenario, Intersection 21. Louise Avenue/McKinley Avenue would operate at LOS F during the AM period and LOS E during the PM period. Traffic generated by the CLSP project would result in intersection operations degrading the LOS F for the AM*

*and PM period under the 2010 Plus Phase 1 Scenario, and the proposed project would increase traffic at the intersection by more than 1%. This impact is considered **significant.***

The signalized intersection of Louise Avenue/McKinley Avenue (Intersection 21.) would operate at LOS F during the AM and PM period with the introduction of traffic from Phase I of the proposed project (2010 Plus Phase 1 Scenario). Before the addition of project traffic, the intersection operates at LOS F during the AM period and LOS E during the PM period. Traffic generated by the CLSP project would contribute more than 1% of the total traffic at this intersection in the AM period when the intersection already operates at LOS F, and in the PM period when the intersection already operates at LOS E. This impact is considered significant.

Impact 4.4-a21

Transportation and Circulation – Operation of LOS E and F at Intersection 23. Vierra Road/McKinley Avenue Under the 2010 Plus Phase 1 Scenario. *Under the 2010 Plus Phase 1 Scenario, Intersection 23. Vierra Road/McKinley Avenue would operate at LOS E during the AM period and LOS F during the PM period. This impact is considered **significant.***

The signalized intersection of Vierra Road/McKinley Avenue (Intersection 23.) would operate at LOS E during the AM period and LOS F during the PM period with the introduction of traffic from Phase I of the proposed project (2010 Plus Phase 1 Scenario). Before the addition of project traffic, the intersection operates at LOS C during the AM period and LOS F during the PM period. Because the addition of project traffic causes this intersection to degrade from LOS C to E during the AM period, this is considered a significant impact. Additionally, the project traffic contributes more than 1% to the total traffic at this intersection in the PM period when the intersection already operates at LOS F, which is also considered a significant impact.

As described previously in the discussion of intersection operation conditions under the 2020 scenarios, by 2020 it is assumed that road and intersection reconfigurations planned in the area of Intersection 23. and Intersection 24. (Yosemite Avenue/McKinley Avenue) will result in Intersection 24. being the only intersection supporting traffic movements between Yosemite Avenue and McKinley Avenue. Intersection 23. would become a three way intersection only connecting the Vierra Road cul-de-sac to McKinley Avenue. Under these conditions, Intersection 23. would support minimal turning movements consisting only of vehicles entering and leaving the Vierra Road cul-de-sac. If these road and intersection reconfigurations take place before 2010 (or before impacts exceed significant levels based on the TMMP), this impact would be considered less than significant.

Impact 4.4-a22

Transportation and Circulation – Operation of LOS E at Intersection 5. Roth Road/McKinley Avenue Under the 2020 Plus Buildout Scenario. *Under the 2020 Plus Buildout Scenario, Intersection 5. Lathrop Road/McKinley Avenue would operate at LOS E during the PM period. This impact is considered **significant.***

The signalized intersection of Roth Road/McKinley Avenue (Intersection 5.) would operate at LOS E during the PM period with the introduction of traffic from the buildout of the proposed project (2020 Plus Buildout Scenario). Before the addition of project traffic, this intersection would operate at LOS D during the PM period. Because project traffic would degrade the LOS from D to E, this impact is considered significant.

Impact 4.4-a23

Transportation and Circulation – Increase in Traffic of 1% or More at Intersection 8. Lathrop Road/I-5 Southbound Ramps When Operating at LOS F Under the 2020 No Project Scenario. *Under the 2020 No Project Scenario, Intersection 8. Lathrop Road/I-5 Southbound Ramps would operate at LOS F during the PM period. Under the 2020 Plus Buildout scenario the intersection would continue to operate at LOS F, and traffic generated by the CLSP project would contribute more than 1% of the total traffic at this intersection. This impact is considered **significant.***

The signalized intersection of Lathrop Road/I-5 Southbound Ramps (Intersection 8.) would operate at LOS F during the PM period with the introduction of traffic from the buildout of the proposed project. Before the addition of project traffic, this intersection would also operate at LOS F during the PM period. Traffic generated by the CLSP project would contribute more than 1% of the total traffic at this intersection during the PM period when the intersection already operates at LOS F. This impact is considered significant.

Impact 4.4-a24

Transportation and Circulation – Increase in Traffic of 1% or More at Intersection 9. Lathrop Road/I-5 Northbound Ramps When Operating at LOS E Under the 2020 No Project Scenario. *Under the 2020 No Project Scenario, Intersection 9. Lathrop Road/I-5 Northbound Ramps would operate at LOS E during the AM and PM periods. Traffic generated by the CLSP project would result in intersection operations degrading to LOS F during the AM and PM periods under the 2020 Plus Buildout scenario, and the proposed project would increase traffic at the intersection by more than 1%. This impact is considered* ***significant.***

The signalized intersection of Lathrop Road/I-5 Northbound Ramps (Intersection 9.) would operate at LOS F during the AM and PM periods with the introduction of traffic from the buildout of the proposed project (2020 Plus Buildout Scenario). Before the addition of project traffic, the intersection would operate at LOS E during the AM and PM periods. Traffic generated by the CLSP project would contribute more than 1% of the total traffic at this intersection during the AM and PM periods when the intersection already operates at LOS E. This impact is considered significant.

Impact 4.4-a25

Transportation and Circulation – Increase in Traffic of 1% or More at Intersection 10. Lathrop Road/Old Harlan Road When Operating at LOS F Under the 2020 No Project Scenario. *Under the 2020 No Project Scenario, Intersection 10. Lathrop Road/Old Harlan would operate at LOS F during the AM and PM periods. Traffic generated by the CLSP project under the 2020 Plus Buildout Scenario would increase traffic at the intersection by more than 1%. This impact is considered* ***significant.***

The unsignalized intersection of Lathrop Road/Old Harlan (Intersection 10.) would operate at LOS F during the AM and PM periods with the introduction of traffic from the buildout of the proposed project (2020 Plus Buildout Scenario). Before the addition of project traffic, this intersection would also operate at LOS F. Traffic generated by the CLSP project would contribute more than 1% of the total traffic at this intersection during the AM and PM periods when the intersection already operates at LOS F. This impact is considered significant.

Impact 4.4-a26

Transportation and Circulation – Increase in Traffic of 1% or More at Intersection 11. Lathrop Road/New Harlan Road When Operating at LOS F Under the 2020 No Project Scenario. *Under the 2020 No Project Scenario, Intersection 11. Lathrop Road/New Harlan Road would operate at LOS F during the AM & PM periods. Traffic generated by the CLSP project under the 2020 Plus Buildout Scenario would increase traffic at the intersection by more than 1%. This impact is considered* ***significant.***

The signalized intersection of Lathrop Road/New Harlan Road (Intersection 11.) would operate at LOS F during the AM and PM periods with the introduction of traffic from buildout of the proposed project (2020 Plus Buildout Scenario). Before the addition of project traffic, this intersection would also operate at LOS F during the AM and PM periods. Traffic generated by the CLSP project would contribute more than 1% of the total traffic at this intersection during the AM and PM periods when the intersection already operates at LOS F. This impact is considered significant.

Impact 4.4-a27

Transportation and Circulation – Operation of LOS F at Intersection 12. Lathrop Road/Fifth Street Under the 2020 Plus Buildout Scenario. *Under the 2020 Plus Buildout Scenario, Intersection 12. Lathrop Road/Fifth Street would operate at LOS E during the AM and PM periods. This impact is considered* ***significant.***

The signalized intersection of Lathrop Road/Fifth Street (Intersection 12) would operate at LOS E during the AM and PM periods with the introduction of traffic from the buildout of the proposed project (2020 Plus Buildout Scenario). Before the addition of project traffic, this intersection would operate at LOS D during the AM and PM periods. Because project traffic would degrade the LOS from D to E, this impact is considered significant.

Impact 4.4-a28

Transportation and Circulation – Increase in Traffic of 1% or More at Intersection 13. Lathrop Road/Airport Way When Operating at LOS E/F Under the 2020 No Project Scenario. *Under the 2020 No Project Scenario, Intersection 13. Lathrop Road/Airport Way would operate at LOS F during the AM period and at LOS E during the PM period. Traffic generated by the CLSP project would result in intersection operations degrading to LOS F during the PM period under the 2020 Plus Buildout Scenario, and the proposed project would increase traffic at the intersection by more than 1%. This impact is considered* ***significant.***

The signalized intersection of Lathrop Road/Airport Way (Intersection 13.) would operate at LOS F during the AM and PM periods with the introduction of traffic from the buildout of the buildout of the proposed project (2020 Plus Buildout Scenario). Before the addition of project traffic, the intersection would operate at LOS during the AM period and at LOS E during the PM period. Traffic generated by the CLSP project would result in the LOS level being degraded from E to F during the PM period, and would contribute more than 1% of the total traffic at this intersection in the AM and PM periods when the intersection already operates at LOS E or F. This impact is considered significant.

Impact 4.4-a29

Transportation and Circulation – Increase in Traffic of 1% or More at Intersection 17. Louise Avenue/Old Harlan Road When Operating at LOS F Under the 2020 No Project Scenario. *Under the 2020 No Project Scenario, Intersection 17. Louise Avenue/Old Harlan Road would operate at LOS F during the AM period. Traffic generated by the CLSP project under the 2020 Plus Buildout Scenario would increase traffic at the intersection by more than 1%. This impact is considered* ***significant.***

The signalized intersection of Louise Avenue/Old Harlan Road (Intersection 17.) would operate at LOS F during the AM period with the introduction of traffic from the buildout of the proposed project (2020 Plus Buildout Scenario). Before the addition of project traffic, this intersection would also operate at LOS F during the AM period. Traffic generated by the CLSP project would contribute more than 1% of the total traffic at this intersection during the AM period when the intersection already operates at LOS F. This impact is considered significant.

Impact 4.4-a30

Transportation and Circulation – Increase in Traffic of 1% or More at Intersection 18. Louise Avenue/New Harlan Road When Operating at LOS E Under the 2020 No Project Scenario. *Under the 2020 No Project Scenario, Intersection 18. Louise Avenue/New Harlan Road would operate at LOS E during the AM period. Traffic generated by the CLSP project would result in intersection operations degrading to LOS F during the AM period under the 2020 Plus Buildout Scenario, and the proposed project would increase traffic at the intersection by more than 1%. This impact is considered* ***significant.***

The signalized intersection of Louise Avenue/New Harlan Road (Intersection 18.) would operate at LOS F during the AM period with the introduction of traffic from the buildout of the proposed project (2020 Plus Buildout Scenario). Before the addition of project traffic, this intersection would operate at LOS E

during the AM period. Traffic generated by the CLSP project would contribute more than 1% of the total traffic at this intersection during the AM period when the intersection already operates at LOS E. This impact is considered significant.

Impact 4.4-a31

Transportation and Circulation – Operation of LOS F at Intersection 21. Louise Avenue/McKinley Avenue Under the 2020 Plus Buildout Scenario. *Under the 2020 Plus Buildout Scenario, Intersection 21. Louise Avenue/McKinley Avenue would operate at LOS E during the AM period. This impact is considered* ***significant.***

The signalized intersection of Louise Avenue/McKinley Avenue (Intersection 21.) would operate at LOS E during the AM period with the introduction of traffic from the buildout of the proposed project (2020 Plus Buildout Scenario). Before the addition of the project traffic, the intersection would operate at LOS D during these same periods. Because project traffic would degrade the LOS from D to E, this impact is considered significant.

Impact 4.4-a32

Transportation and Circulation – Increase in Traffic of 1% or More at Intersection 22. Louise Avenue/Airport Way When Operating at LOS E/F Under the 2020 No Project Scenario. *Under the 2020 No Project Scenario, Intersection 22. Louise Avenue/Airport Way would operate at LOS E and LOS F during the AM and PM periods respectively. Traffic generated by the CLSP project under the 2020 Plus Buildout Scenario would increase traffic at the intersection by more than 1%. This impact is considered* ***significant.***

The signalized intersection of Louise Avenue/Airport Way (Intersection 22.) would operate at LOS E during the AM period and LOS F during the PM period with the introduction of traffic from the buildout of the proposed project (2020 Plus Buildout Scenario). Before the addition of the project traffic, the intersection would also operate at LOS E and LOS F during the same periods. Traffic generated by the CLSP project would contribute more than 1% of the total traffic at this intersection during the AM and PM periods when the intersection is already operating at an unacceptable LOS. This impact is considered significant.

Impact 4.4-a33

Transportation and Circulation – Operation of LOS F at Intersection 24. Yosemite Avenue/McKinley Avenue Under the 2020 Plus Buildout Scenario. *Under the 2020 Plus Buildout Scenario, Intersection 24. Yosemite Avenue/McKinley Avenue would operate at LOS F during the AM period. This impact is considered* ***significant.***

The signalized intersection of Yosemite Avenue/McKinley Avenue (Intersection 24.) would operate at LOS F during the AM period with the introduction of traffic from the buildout of the proposed project (2020 Plus Buildout Scenario). Before the addition of project traffic, this intersection would also operate at LOS C. Because project traffic would degrade the LOS from C to F, this impact is considered significant.

Impact 4.4-a34

Transportation and Circulation – Operation of LOS F at Intersection 36. Main Street (Mossdale Landing)/Golden Valley Parkway Under the 2020 Plus Buildout Scenario. *Under the 2020 Plus Buildout Scenario, Intersection 36. Main Street (Mossdale Landing)/Golden Valley Parkway would operate at LOS F during the PM period. This impact is considered* ***significant.***

The signalized intersection of Main Street (Mossdale Landing)/Golden Valley Parkway (Intersection 36.)would operate at LOS F during the PM period with the introduction of traffic from the buildout of the proposed project (2020 Plus Buildout Scenario). Before the addition of project traffic, this intersection would also operate at LOS D. Because project traffic would degrade the LOS from D to F, this impact is considered significant

Impact 4.4-b

Transportation and Circulation – Increased Traffic Volumes on Freeway Segments. *The proposed project would cause an increase in traffic volumes on freeway segments in the study area, contributing to or resulting in unacceptable levels of service. This impact occurs under all scenarios and is considered* ***significant****.*

Under all traffic analysis scenarios that assume development of the CLSP (Existing Plus Phase 1, Existing Plus Buildout, 2010 Plus Phase 1, and 2020 Plus Buildout), the proposed project would cause an increase in AM and/or PM peak hour traffic volumes at various freeway segments and would affect LOS at these segments. Impacts associated with this increased traffic were compared against the thresholds of significance identified previously. Freeway segments where significant impacts would occur are discussed below and mitigation for these significant impacts are provided later in this section. Freeway segment numbers provided below correspond to the numbers used in Tables 4.4-15 through 4.4-20. For the sake of brevity, only impacts on freeway segments that are considered significant are discussed below. Freeway segments that would have acceptable LOS (i.e., LOS A through D) under the various analysis scenarios as identified in Tables 4.4-15 through 4.4-20 are not discussed further. In support of the analysis of freeway segment impacts, tables providing freeway traffic volumes are provided in Appendix C.

Impact 4.4-b1

Transportation and Circulation – Operation at Deficient LOS on Segments of I-5 Under Existing Plus Project Conditions. *Under the existing plus project scenarios (Existing Plus Phase I and Existing Plus Buildout), various segments of I-5 would either operate below acceptable LOS thresholds with the addition of project traffic, or they currently operate below acceptable LOS thresholds and the proposed project would increase traffic volumes at these segments by more than 1%. This impact is considered* ***significant.***

The following segments of I-5 would either operate at LOS E or F during the AM and/or PM period with the introduction of project trips either in the Existing Plus Phase I or Existing Plus Buildout scenarios, or they currently operate below acceptable LOS thresholds and the proposed project would increase traffic volumes in these segments by more than 1%:

- 1. North of Pershing Avenue
- 2. Between Pershing Avenue and Route 4 Crosstown
- 3. Between Route 4 Crosstown and Charter Way
- 4. Between Charter Way and 8th Street
- 13. Between SR 120 and the Manthey/Mossdale Hook Ramps
- 14. Between the Manthey/Mossdale Hook Ramps and I-205

Details regarding the operations of these freeway segments are provided in Tables 4.4-15 and 4.4-16 and in the discussion of Freeway Operations, Existing Conditions Scenarios, provided previously. Impacts at these freeway segments are considered significant.

Impact 4.4-b2

Transportation and Circulation – Operation at Deficient LOS on Segments of SR 99 Under Existing Plus Project Conditions. *Under the existing plus project scenarios (Existing Plus Phase I and Existing Plus Buildout), various segments of SR 99 would either operate below acceptable LOS thresholds with the addition of project traffic, or they currently operate below acceptable LOS thresholds and the proposed project would increase traffic volumes at these segments by more than 1%. This impact is considered* ***significant.***

The following segments of SR 99 would either operate at LOS E or F during the AM and/or PM period with the introduction of project trips either in the Existing Plus Phase I or Existing Plus Buildout scenarios, or they currently operate below acceptable LOS thresholds and the proposed project would increase traffic volumes in these segments by more than 1%:

- 1. North of Route 4 Crosstown
- 2. Between Route 4 Crosstown and Charter Way
- 3. Between Charter Way and Farmington Road
- 4. Between Farmington Road and Mariposa Road
- 5. Between Mariposa Road and Clark Drive
- 6. Between Clark Drive and Arch Road
- 11. Between SR 120 and Austin Road
- 12. South of Austin Road

Details regarding the operations of these freeway segments are provided in Tables 4.4-15 and 4.4-16 and in the discussion of Freeway Operations, Existing Conditions Scenarios, provided previously. Impacts at these freeway segments are considered significant.

Impact 4.4-b3

Transportation and Circulation – Operation of LOS E on SR 120 Between I-5 and Yosemite Avenue Under Existing Plus Project Conditions. *Under the existing plus project scenarios (Existing Plus Phase 1 and Existing Plus Buildout), the segment of SR 120 between I-5 and Yosemite Avenue would operate at LOS E during the PM period. This impact is considered* ***significant.***

The segment of SR 120 between I-5 and Yosemite Avenue is projected to operate at LOS E during the PM period under the Existing Plus Phase I and Existing Plus Buildout scenario. Before the addition of project traffic, this freeway segment operates at LOS D during PM period. Because project traffic would degrade the LOS from D to E, this impact is considered significant.

Impact 4.4-b4

Transportation and Circulation – Operation of LOS F on segments of I-205 Under Existing Plus Project Conditions. *Under the existing plus project scenarios (Existing Plus Phase 1 and Existing Plus Buildout), several segments of I-205 currently operate at LOS F during the AM and PM periods and the proposed project would increase traffic volumes at these segments by more than 1%. This impact is considered* ***significant.***

The following segments of I-205 currently operate at LOS F during the AM and PM period, would continue to operate at LOS F under the Existing Plus Phase I or Existing Plus Buildout scenarios, and the proposed project would increase traffic volumes at these segments by more than 1%:

- 1. Between I-5 and Paradise Road (future interchange)
- 2. Between Paradise Road and MacArthur Drive
- 3. Between MacArthur Drive and Tracy Boulevard
- 4. Between Tracy Boulevard and Grant Line Road
- 5. West of Grant Line Road

Details regarding the operations of these freeway segments are provided in Tables 4.4-15 and 4.4-16 and in the discussion of Freeway Operations, Existing Conditions Scenarios, provided previously. Freeway segment traffic volumes for the various study scenarios are provided in Appendix C. Impacts at these freeway segments are considered significant.

Impact 4.4-b5

Transportation and Circulation – Operation at Deficient LOS on Segments of I-5 Under the 2010 Plus Phase I Scenario. *Under the 2010 Plus Phase 1scenario, several segments of I-5 would either operate below acceptable LOS thresholds with the addition of project traffic, or they would operate below acceptable LOS thresholds under the 2010 No Project scenario and the proposed project would increase traffic volumes at these segments by more than 1%. This impact is considered* ***significant.***

The following segments of I-5 would operate at LOS E or F during the AM and/or PM period with the introduction of project traffic under the 2010 Plus Phase I scenario, or they would operate below acceptable LOS thresholds under the 2010 No Project scenario and the proposed project would increase traffic volumes at these segments by more than 1%:

- 1. North of Pershing Avenue
- 2. Between Pershing Avenue and Route 4 Crosstown
- 3. Between Route 4 Crosstown and Charter Way
- 4. Between Charter Way and 8th Street
- 5. Between 8th Street and Downing Avenue
- 6. Between Downing Avenue and French Camp Road
- 7. Between French Camp Road and Matthews Road
- 8. Between Matthews Road and the El Dorado Ramps
- 9. Between the El Dorado Ramps and Roth Road
- 10. Between Roth Road and Lathrop Road
- 11. Between Lathrop Road and Louise Avenue
- 12. Between Louise Avenue and SR 120
- 13. Between SR 120 and the Manthey/Mossdale Hook Ramps
- 14. Between the Manthey/Mossdale Hook Ramps and I-205

Details regarding the operations of these freeway segments are provided in Tables 4.4-17 and 4.4-18 and in the discussion of Freeway Operations, 2010 Scenarios, provided previously. Impacts at these freeway segments are considered significant.

Impact 4.4-b6

Transportation and Circulation – Operation at Deficient LOS on Segments of SR 99 Under the 2010 Plus Phase I Scenario. *Under the 2010 Plus Phase I scenario, various segments of SR 99 would either operate below acceptable LOS thresholds with the addition of project traffic, or they would operate below acceptable LOS thresholds under the 2010 No Project scenario and the proposed project would increase traffic volumes at these segments by more than 1%. This impact is considered* ***significant.***

The following segments of SR 99 would operate at LOS E or F during the AM and/or PM period with the introduction of project traffic under the 2010 Plus Phase I scenario, or they would operate below acceptable LOS thresholds under the 2010 No Project Scenario and the proposed project would increase traffic volumes at these segments by more than 1%:

- 1. North of Route 4 Crosstown
- 2. Between Route 4 Crosstown and Charter Way
- 3. Between Charter Way and Farmington Road
- 4. Between Farmington Road and Mariposa Road
- 5. Between Mariposa Road and Clark Drive
- 6. Between Clark Drive and Arch Road
- 7. Between Arch Road and French Camp Road
- 10. Between Yosemite Avenue and SR 120
- 11. Between SR 120 and Austin Road
- 12. South of Austin Road

Details regarding the operations of these freeway segments are provided in Tables 4.4-17 and 4.4-18 and in the discussion of Freeway Operations, 2010 Scenarios, provided previously. Impacts at these freeway segments are considered significant.

Impact 4.4-b7

Transportation and Circulation – Operation at Deficient LOS on Segments of SR 120 Under the 2010 Plus Phase I Scenario. *Under the 2010 Plus Phase I scenario, various segments of SR 120 would either operate below acceptable LOS thresholds with addition of project traffic, or would operate below acceptable LOS thresholds under the 2010 No Project scenario and the proposed project would increase traffic volumes at these segments by more than 1%. This impact is considered* ***significant.***

The following segments of SR 120 would operate at LOS E or F during the AM and/or PM period with the introduction of project traffic under the 2010 Plus Phase I scenario, or they would operate below acceptable LOS thresholds under the 2010 No Project Scenario and the proposed project would increase traffic volumes at these segments by more than 1%:

- 1. Between I-5 and Yosemite Avenue
- 2. Between Yosemite Avenue Airport Way
- 3. Between Airport Way and Union Road
- 4. Between Union Road and Main Street
- 5. Between Main Street and SR 99

Details regarding the operations of these freeway segments are provided in Tables 4.4-17 and 4.4-18 and in the discussion of Freeway Operations, 2010 Scenarios, provided previously. Impacts at these freeway segments are considered significant.

Impact 4.4-b8

Transportation and Circulation – Operation of LOS F on Segments of I-205 Under the 2010 Plus Phase I Scenario. *Under the 2010 No Project scenario, several segments of I-205 would operate at LOS F during the AM and PM periods and the proposed project would increase traffic volumes at these segments by more than 1%. This impact is considered* ***significant.***

The following segments of I-205 would operate at LOS F during the AM and PM period under the 2010 No Project scenario, would continue to operate at LOS F under the 2010 Plus Phase I Scenario, and the proposed project would increase traffic volumes at these segments by more than 1%:

- 1. Between I-5 and Paradise Road (future interchange)
- 2. Between Paradise Road and MacArthur Drive
- 3. Between MacArthur Drive and Tracy Boulevard
- 4. Between Tracy Boulevard and Grant Line Road
- 5. West of Grant Line Road

Details regarding the operations of these freeway segments are provided in Tables 4.4-17 and 4.4-18 and in the discussion of Freeway Operations, Existing Conditions Scenarios, provided previously. Freeway segment traffic volumes for the various study scenarios are provided in Appendix C. Impacts at these freeway segments are considered significant.

Impact 4.4-b9

Transportation and Circulation – Operation at Deficient LOS on Segments of I-5 Under the 2020 Plus Buildout Scenario. *Under the 2020 Plus Buildout scenario, several segments of I-5 would either operate at below acceptable thresholds with the addition of project traffic, or the would operate below acceptable LOS thresholds under the 2020 No Project scenario and the proposed project would increase traffic volumes at these segments by more than 1%. This impact is considered* ***significant.***

The following segments of I-5 would operate at LOS E or F during the AM and/or PM period with the introduction of project traffic under the 2020 Plus Buildout scenario, or they would operate below

acceptable LOS thresholds under the 2020 No Project scenario and the proposed project would increase traffic volumes at these segments by more than 1%:

- 1. North of Pershing Avenue
- 2. Between Pershing Avenue and Route 4 Crosstown
- 3. Between Route 4 Crosstown and Charter Way
- 4. Between Charter Way and 8th Street
- 5. Between 8th Street and Downing Avenue
- 6. Between Downing Avenue and French Camp Road
- 7. Between French Camp Road and Matthews Road
- 8. Between Matthews Road and the El Dorado Ramps
- 9. Between the El Dorado Ramps and Roth Road
- 10. Between Roth Road and Lathrop Road
- 11. Between Lathrop Road and Louise Avenue
- 12. Between Louise Avenue and SR 120
- 13. Between SR 120 and the Manthey/Mossdale Hook Ramps
- 14. Between the Manthey/Mossdale Hook Ramps and I-205

Details regarding the operations of these freeway segments are provided in Tables 4.4-19 and 4.4-20 and in the discussion of Freeway Operations, 2010 Scenarios, provided previously. Impacts at these freeway segments are considered significant.

Impact 4.4-b10

Transportation and Circulation – Operation at Deficient LOS on Segments of SR 99 Under the 2020 Plus Buildout Scenario. *Under the 2020 Plus Buildout scenario, various segments of SR 99 would operate below acceptable LOS thresholds with the addition of project traffic, or they would operate below acceptable LOS thresholds under the 2020 No Project scenario and the proposed project would increase traffic volumes at these segments by more than 1%. This impact is considered* ***significant.***

The following segments of SR 99 would operate at LOS E or F during the AM and/or PM period with the introduction of project traffic under the 2020 Plus Buildout scenario, or they would operate below acceptable LOS thresholds under the 2020 No Project scenario and the proposed project would increase traffic volumes at these segments by more than 1%:

- 1. North of Route 4 Crosstown
- 2. Between Route 4 Crosstown and Charter Way
- 3. Between Charter Way and Farmington Road
- 4. Between Farmington Road and Mariposa Road
- 5. Between Mariposa Road and Clark Drive
- 6. Between Clark Drive and Arch Road
- 7. Between Arch Road and French Camp Road
- 8. Between French Camp Road and Lathrop Road
- 9. Between Lathrop Road and Yosemite Avenue
- 10. Between Yosemite Avenue and SR 120
- 11. Between SR 120 and Austin Road
- 12. South of Austin Road

Details regarding the operations of these freeway segments are provided in Tables 4.4-19 and 4.4-20 and in the discussion of Freeway Operations, 2010 Scenarios, provided previously. Impacts at these freeway segments are considered significant.

Impact 4.4-b11

Transportation and Circulation – Operation of LOS F on Segments of SR 120 Under the 2020 Plus Buildout Scenario. *Under the 2020 No Project Scenario, several segments of SR 120 would operate at LOS F during the AM and PM periods and the proposed project would increase traffic volumes at these segments by more than 1%. This impact is considered* ***significant.***

The following segments of SR 120 would operate at LOS F during the AM and PM period under the 2020 No Project scenario, would continue to operate at LOS F under the 2020 Plus Buildout Scenario, and the proposed project would increase traffic volumes at these segments by more than 1%:

- 1. Between I-5 and Yosemite Avenue
- 2. Between Yosemite Avenue and Airport Way
- 3. Between Airport Way and Union Road
- 4. Between Union Road and Main Street
- 5. Between Main Street and SR 99

Details regarding the operations of these freeway segments are provided in Tables 4.4-19 and 4.4-20 and in the discussion of Freeway Operations, Existing Conditions Scenarios, provided previously. Freeway segment traffic volumes for the various study scenarios are provided in Appendix C. Impacts at these freeway segments are considered significant.

Impact 4.4-b12

Transportation and Circulation – Operation of LOS F on segments of I-205 Under the 2020 Plus Buildout Scenario. *Under the 2020 No Project scenario, several segments of I-205 would operate at LOS F during the AM and PM periods and the proposed project would increase traffic volumes at these segments by more than 1%. This impact is considered* ***significant.***

The following segments of I-205 would operate at LOS F during the AM and PM period under the 2020 No Project scenario, would continue to operate at LOS F under the 2020 Plus Buildout Scenario, and the proposed project would increase traffic volumes at these segments by more than 1%:

- 1. Between I-5 and Paradise Road (future interchange)
- 2. Between Paradise Road Interchange and MacArthur Drive
- 3. Between MacArthur Drive and Tracy Boulevard
- 4. Between Tracy Boulevard and Grant Line Road
- 5. West of Grant Line Road

Details regarding the operations of these freeway segments are provided in Tables 4.4-19 and 4.4-20 and in the discussion of Freeway Operations, Existing Conditions Scenarios, provided previously. Freeway segment traffic volumes for the various study scenarios are provided in Appendix C. Impacts at these freeway segments are considered significant.

Impact 4.4-c

Transportation and Circulation – Increased Traffic Volumes on Ramp Segments in the Vicinity of the Proposed Project. *The proposed project would cause an increase in traffic volumes on ramp segments adjacent to the project, contributing to or resulting in unacceptable operations. This impact is considered* ***potentially significant.***

Under all traffic analysis scenarios that assume development of the CLSP (Existing Plus Phase 1, Existing Plus Buildout, 2010 Plus Phase 1, and 2020 Plus Buildout), the proposed project would cause an increase in AM and/or PM peak hour traffic volumes at the freeway ramps included in the study area (Roth Road/I-5, Lathrop Road/I-5, Louise Avenue/I-5) and would affect LOS at these ramps. Impacts associated with this increased traffic were compared against the thresholds of significance identified previously. Freeway ramps where significant impacts would occur are discussed below and mitigation

for these significant impacts are provided later in this section. For the sake of brevity, only impacts on freeway ramps that are considered significant are discussed below. Freeway ramps that would have acceptable LOS (i.e., LOS A through D) under the various analysis scenarios as identified in Tables 4.4-12, 4.4-13, and 4.4-14 are not discussed further. Because no significant impacts would occur under the Existing Plus Phase 1 and Existing Plus Buildout scenarios, these analysis scenarios are not discussed further.

Impact 4.4-c1

Transportation and Circulation – Operation of LOS F at the Louise Avenue/I-5 Northbound On Ramp Under the 2010 Plus Phase 1 Scenario. *Under the 2010 Plus Phase 1 scenario, the Louise Avenue/I-5 Northbound On Ramp would operate at LOS F during the PM period with the addition of project traffic. This impact is considered* ***significant.***

The Louise Avenu/I-5 Northbound On Ramp would operate at LOS F during the PM period with the introduction of project traffic from Phase 1 of the proposed project (2010 Plus Phase 1 scenario). Before the addition of project traffic, this facility would operate at LOS C during the same period. Because project traffic would degrade the LOS from C to F, this impact is considered significant.

Impact 4.4-c2

Transportation and Circulation – Operation of LOS F at the Louise Avenue/I-5 Southbound On Ramp Under the 2010 Plus Phase 1 Scenario. *Under the 2010 Plus Phase 1 scenario, the Louise Avenue/I-5 Southbound On Ramp would operate at LOS F during the AM period with the addition of project traffic. This impact is considered* ***significant.***

The Louise Avenue/I-5 Southbound On Ramp would operate at LOS F during the AM period with the introduction of project traffic from Phase 1 of the proposed project (2010 Plus Phase 1 scenario). Before the addition of project traffic, this facility would operate at LOS D during the same period. Because project traffic would degrade the LOS from D to F, this impact is considered significant.

Impact 4.4-c3

Transportation and Circulation – Operation of LOS F at the Louise Avenue/I-5 Northbound Off Ramp Under the 2010 Plus Phase 1 Scenario. *Under the 2010 Plus Phase 1 scenario, the Louise Avenue/I-5 Northbound Off Ramp would operate at LOS F during the PM period with the addition of project traffic. This impact is considered* ***significant.***

The Louise Avenue/I-5 Northbound Off Ramp would operate at LOS F during the PM period with the introduction of project traffic from Phase 1 of the proposed project (2010 Plus Phase 1 Scenario). Before the addition of project traffic, this facility would operate at LOS D during the same period. Because project traffic would degrade the LOS from D to F, this impact is considered significant.

Impact 4.4-c4

Transportation and Circulation – Operation of LOS F at the Louise Avenue/I-5 Southbound Off Ramp Under the 2010 Plus Phase 1 Scenario. *Under the 2010 Plus Phase 1 scenario, the Louise Avenue/I-5 Southbound Off Ramp would operate at LOS F during the AM period with the addition of project traffic. This impact is considered* ***significant.***

The Louise Avenue/I-5 Southbound Off Ramp would operate at LOS F during the AM period with the introduction of project traffic from Phase 1 of the proposed project (2010 Plus Phase 1 scenario). Before the addition of project traffic, this facility would operate at LOS C during the same period. Because project traffic would degrade the LOS from C to F, this impact is considered significant.

Impact 4.4-c5

Transportation and Circulation – Operation of LOS F at the Roth Road/I-5 Southbound On Ramp Under the 2020 Plus Buildout Scenario. *Under the 2020 Plus Buildout scenario, the Roth Road/I-5 Southbound On Ramp would operate at LOS F during the AM period with the addition of project traffic. This impact is considered* ***significant.***

The Roth Road/I-5 Southbound On Ramp would operate at LOS F during the AM period with the introduction of project traffic from buildout of the proposed project (2020 Plus Buildout scenario). Before the addition of project traffic, this facility would operate at LOS D during the same period. Because project traffic would degrade the LOS from D to F, this impact is considered significant.

Impact 4.4-c6

Transportation and Circulation – Operation of LOS F at the Roth Road/I-5 Northbound On Ramp Under the 2020 Plus Buildout Scenario. *Under the 2020 Plus Buildout scenario, the Roth Road/I-5 Northbound On Ramp is projected to operate at LOS F during the PM period with the addition of project traffic. This impact is considered* ***significant.***

The Roth Road/I-5 Northbound On Ramp would operate at LOS F during the PM period with the introduction of project traffic from buildout of the proposed project (2020 Plus Buildout scenario). Before the addition of project traffic, this facility would operate at LOS D during the same period. Because project traffic would degrade the LOS from D to F, this impact is considered significant.

Impact 4.4-c7

Transportation and Circulation – Increase in Traffic of 1% or More at the Roth Road/I-5 Northbound Off Ramp When Operating at LOS F Under the 2020 No Project Scenario. *Under the 2020 No Project scenario, the Roth Road/I-5 Southbound Off Ramp would operate at LOS F during the PM period. Traffic generated by the CLSP project under the 2020 Plus Buildout scenario would increase traffic at this ramp by more than 1%. This impact is considered* ***significant.***

The Roth Road/I-5 Northbound Off Ramp would operate at LOS F during the PM period with the introduction of traffic from buildout of the proposed project (2020 Plus Buildout scenario). Before the addition of project traffic, this ramp would also operate at LOS F during the PM period. Traffic generated by the CLSP project would contribute more than 1% of the total traffic at this ramp during the PM period when this ramp already operates at LOS F. This impact is considered significant.

Impact 4.4-c8

Transportation and Circulation – Increase in Traffic of 1% or More at the LathropRoad/I-5 Southbound On Ramp When Operating at LOS F Under the 2020 No Project Scenario. *Under the 2020 No Project scenario, the Lathrop Road/I-5 Southbound On Ramp would operate at LOS F during the AM period. Traffic generated by the CLSP project under the 2020 Plus Buildout scenario would increase traffic at this ramp by more than 1%. This impact is considered* ***significant.***

The Lathrop Road/I-5 Southbound On Ramp would operate at LOS F during the AM period with the introduction of traffic from buildout of the proposed project (2020 Plus Buildout scenario). Before the addition of project traffic, this ramp would also operate at LOS F during the same period. Traffic generated by the CLSP project would contribute more than 1% of the total traffic at this ramp during the AM period when this ramp already operates at LOS F. This impact is considered significant.

Impact 4.4-c9

Transportation and Circulation – Increase in Traffic of 1% or More at the LathropRoad/I-5 Northbound On Ramp When Operating at LOS F Under the 2020 No Project Scenario. *Under the 2020 No Project scenario, the Lathrop Road/I-5 Northbound On Ramp would operate at LOS F during the PM period. Traffic generated by the CLSP project under the 2020 Plus Buildout scenario would increase traffic at this ramp by more than 1%. This impact is considered* ***significant.***

The Lathrop Road/I-5 Northbound On Ramp would operate at LOS F during the PM period with the introduction of traffic from buildout of the proposed project (2020 Plus Buildout scenario). Before the addition of project traffic, this ramp would also operate at LOS F during the same period. Traffic generated by the CLSP project would contribute more than 1% of the total traffic at this ramp during the PM period when this ramp already operates at LOS F. This impact is considered significant.

Impact 4.4-c10

Transportation and Circulation –Operation of LOS F at the LathropRoad/I-5 Southbound Off Ramp Under the 2020 Plus Project Scenario. *Under the 2020Plus Project scenario, the Lathrop Road/I-5 Southbound Off Ramp would operate at LOS F during the AM period with the addition of project traffic. This impact is considered* ***significant.***

The Lathrop Road/I-5 Southbound Off Ramp would operate at LOS F during the AM period with the introduction of project traffic from buildout of the proposed project (2020 Plus Buildout scenario). Before the addition of project traffic, this facility would operate at LOS C during the same period. Because project traffic would degrade the LOS from C to F, this impact is considered significant.

Impact 4.4-c11

Transportation and Circulation – Increase in Traffic of 1% or More at the LathropRoad/I-5 Northbound Off Ramp When Operating at LOS F Under the 2020 No Project Scenario. *Under the 2020 No Project scenario, the Lathrop Road/I-5 Northbound Off Ramp would operate at LOS F during the PM period. Traffic generated by the CLSP project under the 2020 Plus Project scenario would increase traffic at this ramp by more than 1%. This impact is considered* ***significant.***

The Lathrop Road/I-5 Northbound Off Ramp would operate at LOS F during the PM period with the introduction of traffic from buildout of the proposed project (2020 Plus Buildout scenario). Before the addition of project traffic, this ramp would also operate at LOS F during the same period. Traffic generated by the CLSP project would contribute more than 1% of the total traffic at this ramp during the PM period when this ramp already operates at LOS F. This impact is considered significant.

Impact 4.4-c12

Transportation and Circulation – Operation of LOS F at the Louise Avenue/I-5 Southbound On Ramp Under the 2020 Plus Buildout Scenario. *Under the 2020 Plus Buildout scenario, the Louise Avenue/I-5 Southbound On Ramp is projected to operate at LOS F during the AM period with the addition of project traffic. This impact is considered* ***significant.***

The Louise Avenue/I-5 Southbound On Ramp would operate at LOS F during the AM period with the introduction project traffic from buildout of the proposed project (2020 Plus Buildout scenario). Before the addition of project traffic, this facility would operate at LOS B during the same period. Because project traffic would degrade the LOS from B to F, this impact is considered significant.

Impact 4.4-c13

Transportation and Circulation – Operation of LOS F at the Louise Avenue/I-5 Northbound On Ramp Under 2020 Plus Buildout Scenario. *Under the 2020 Plus Buildout scenario, the Louise Avenue/I-5 Northbound On Ramp is projected to operate at LOS F during PM period with the addition of project traffic. This impact is considered* ***significant.***

The Louise Avenue/I-5 Northbound On Ramp would operate at LOS F during the PM period with the introduction project traffic from buildout of the proposed project (2020 Plus Buildout scenario). Before the addition of project traffic, this facility would operate at LOS B during the same period. Because project traffic would degrade the LOS from B to F, this impact is considered significant.

Impact 4.4-c14

Transportation and Circulation – Increase in Traffic of 1% or More at the Louise Avenue/I-5 Southbound Off Ramp When Operating at LOS F Under the 2020 No Project Scenario. *Under the 2020 No Project scenario, the Louise Avenue/I-5 Southbound Off Ramp would operate at LOS F during the AM period. Traffic generated by the CLSP project under the 2020 Plus Buildout scenario would increase traffic at this ramp by more than 1%. In addition, during the PM period, LOS levels would be degraded from B to F. This impact is considered* ***significant.***

The Louise Avenue/I-5 Southbound Off Ramp would operate at LOS F during both the AM and PM periods with the introduction of traffic from buildout of the proposed project (2020 Plus Buildout

scenario). Before the addition of project traffic, this facility would operate at LOS F during the AM period and at LOS B during the PM period. Traffic generated by the CLSP project would contribute more than 1% of the total traffic at this ramp during the AM period when this ramp already operates at LOS F. In addition, the addition of project traffic would degrade the LOS at this ramp from B to F during the PM period. This impact is considered significant.

Impact 4.4-c15

Transportation and Circulation – Operation of LOS F at the Louise Avenue/I-5 Northbound Off Ramp Under the 2020 Plus Buildout Scenario. *Under the 2020 plus buildout scenario, the Louise Avenue/I-5 Northbound Off Ramp is projected to operate at LOS F during PM period with the addition of project traffic. This impact is considered* ***significant.***

The Louise Avenue/I-5 Northbound Off Ramp would operate at LOS F during PM period with the introduction of project traffic from the buildout of the proposed project (2020 Plus Buildout scenario). Before the addition of project traffic, this facility would operate at LOS D during the same period. Because project traffic would degrade the LOS from D to F, this impact is considered significant.

Impact 4.4-d

Transportation and Circulation – Increased Safety Concerns for Vehicles, Pedestrians, and Bicycle Riders Resulting From Proposed Design Of Roadways. *The proposed roadway network and pedestrian and bicycle trails and facilities included as part of the CLSP meet applicable safety design standards. Therefore, for the most part, the proposed project would not result in substantial increases in auto, pedestrian, or bicycle safety concerns. The exception is that the proposed use of roundabouts at up to five project intersections could result in hazardous conditions for bicyclists and pedestrians. This impact is considered* ***significant****.*

A review of the proposed CLSP roadways and bicycle and pedestrian facilities was conducted to compare the designs of these facilities against design standards developed by national and state agencies. The transportation facilities and associated design characteristics considered were those described in Chapter 3.0 of this DEIR, Description of the Proposed Project, and in the CLSP. The review evaluated lane widths, shoulder widths, parking lane widths, and bicycle and pedestrian facilities. The design standards used for the evaluation were developed, in part, to ensure safe conditions for vehicles, pedestrians, and bicyclists. If roadways and other facilities are consistent with these standards, then safety concerns would not increase beyond what would normally be associated with roadways, trails, sidewalks, and similar transportation facilities.

Applicable Standards

Several agencies publish standards that can be used for the design of roadways. Two applicable agencies include The American Association of State Highway and Transportation Officials (AASHTO) and the California Department of Transportation (Caltrans). These standards were used for the evaluation of potential safety concerns.

AASHTO

AASHTO publishes a document known as "A Policy on Geometric Design of Highways and Streets". The latest version of this document was published in 2001. This document, previously known as the "Greenbook", provides general guidance on the design of facilities ranging from interstates to local streets. The AASHTO document provides information regarding lane widths, shoulder widths, vertical curvature standards, horizontal curvature standards, median widths, sidewalk widths, and other design elements. Some applicable standards published by AASHTO include:

- Arterial Lane width: 11-12 feet
- Minor Street Lane Width: 9-12 feet
- Median Width: 4-20 feet
- Sidewalk Width: 4-10 feet
- Shoulder Width: 2-12 feet

AASHTO develops these standards based on "on established practices … supplemented by recent research." The AASHTO manual further states that:

> The intent of this policy is to provide guidance to the designer by referencing a recommended range of values for critical dimensions. It is not intended to be a detailed design manual that could supersede the need for application of sound principles by the knowledgeable design professional. Sufficient flexibility is permitted to encourage independent designs tailored to particular situations.

Based on this information, the AASHTO standards should be viewed as a compilation of the recommended "best practices" in roadway designs while retaining sufficient flexibility to allow a local jurisdictions to vary their standards to suit their needs.

Caltrans

Caltrans publishes design standards that apply to state facilities. These standards are published in a document known as the "Highway Design Manual." The latest version of these design standards was published in 2001.

The Caltrans design standards are intended to only apply to state facilities. However, local agencies often rely on these standards for guidance and sometimes adopt similar standards for use in designing their local roads. Some Caltrans cross-sectional standards include:

- Arterial Lane width: 12 feet
- Minor Street Lane Width: Use AASHTO or Local Jurisdiction Standards
- Median Width: 12+ feet
- Sidewalk Width: 5+ feet
- Shoulder Width: 8 feet

It should be noted that these standards represent the minimum standards used by Caltrans. When necessary, Caltrans has a design exceptions process that allows a design to deviate from accepted standards. For example, Caltrans has permitted facilities with 11 foot travel lanes rather than 12 foot travel lanes because the wider lanes would have resulted in right-of-way conflicts or other concerns.

Project Roadway Designs

Lane Widths

The internal roadways in the CLSP area have lane widths which vary from 11 feet to 12 feet. The widest lane widths are found on Golden Valley Parkway and Lathrop Road, which are the major roadways in the project. The narrowest lanes are found on the collectors and residential streets, which have widths of 11 feet. These lane widths are considered consistent with AASHTO and Caltrans design standards.

Shoulders

Several of the proposed roadways in the CLSP area include shoulder areas which can provide a refuge to vehicles experiencing a mechanical breakdown. As indicated above, the AASHTO standards require a minimal shoulder width (as little as 2-feet) while the Caltrans standards document a need for shoulders which are 8 feet wide. Project roadways either provide 8-foot wide shoulders, or through a combination of on-street parking and/or bicycle lanes, and designated shoulder areas, provide a corridor at least 8 feet wide that could provide the function of a shoulder (i.e., refuge to vehicles experiencing a mechanical breakdown). Therefore, roadway shoulder widths are considered consistent with AASHTO and Caltrans standards.

Parking Lanes

In the CLSP area, on-street parking is provided on the residential streets and some lower-volume internal roadways. The on-street parking lanes shown on the street cross-sections included in the CLSP are a minimum of 7-feet wide. Because there are few standards regarding the appropriate width for an on-street parking area in AASHTO or the Caltrans Design Manual, the adequacy of a parking lane should be judged by determining if a passenger vehicle could be accommodated in the proposed width. A 7-foot wide on-street parking space is considered adequate to accommodate passenger vehicles.

Bicycle and Pedestrian Facilities

The CLSP includes extensive on-street and off-street bicycle and pedestrian facilities, which are designed to meet applicable state and national design standards. The network of mixed-use off-street facilities is designed with widths that vary from 8-feet to 10-feet. The 8-foot wide facilities are designed to accommodate one-way travel while the 10-foot wide facilities are designed to accommodate two-way travel. These widths meet or exceed the design standards of the Caltrans Highway Design Manual, which specifies that the minimum width for a one-way facility is 5 feet and the minimum width for a two-way facility is 8 feet. The Highway Design Manual also recommends that 10-foot wide two-way facilities be provided when there is expected level of heavy use by bicyclists or pedestrians.

Some of the roadways in the study area include 5-foot wide on-street bicycle lanes. The minimum recommended width for an on-street bicycle lane in the Highway Design Manual is 5 feet; therefore, project facilities meet the minimum standard.

Off-street pedestrian facilities include dedicated sidewalks that range in width from 5-feet to 15-feet. The wider sidewalks would be found along the proposed Main Street, thereby creating an environment conducive to activities such as outdoor dining. Narrower sidewalks will be found next to residential streets and other low volume roadways. Since the minimum recommended width for a sidewalk is 4 feet, based on AASHTO standards, the design of the sidewalks are considered sufficient.

Based on the information above, it can be concluded that bicycle and pedestrian facilities meet or exceed applicable design standards and a significant impact related to increased safety concerns does not occur. However, the proposed use of roundabouts at up to five project intersections could result in a potential safety concern for bicyclists and pedestrians. Because most drivers, pedestrians, and bicyclists in the U.S. are not familiar with the operation of a roundabout, there is an increased potential for conflicts between these user groups where roundabouts are used. According to the Federal Highways Administration's (FHWA) informational publication on roundabouts (Roundabouts: An Informational Guide), "[t]he complexity of vehicle interactions within a roundabout leaves a cyclist vulnerable." The information guide also identifies that roundabouts can provide a hazard for pedestrians because the normal system of crosswalks and pedestrian push-buttons found at traditional signalized intersections may not be present.

Based on the above considerations, it can be concluded that the project does not increase safety concerns for vehicles, pedestrians, and bicycle riders related to lane widths, shoulder widths, parking lane widths, and bicycle and pedestrian trails. However, the proposed use of roundabouts at up to five intersections in the CLSP area could substantially increase safety concerns for pedestrians and bicyclists. Therefore, this impact is considered significant.

Impact 4.4-e

Transportation and Circulation – Accommodation of Public Transit Service on Internal Streets. *The project's internal circulation system does not specifically provide for public transit service facilities along internal streets. However, the planned design of the internal project roadways can accommodate public transit service and provide for needed facilities. This impact is considered* ***less than significant****.*

The project's internal circulation system does not specifically provide for public transit service facilities (e.g., bus stops, bus turn outs) along internal streets. However, it would be premature to identify locations for these facilities at this stage in the planning process. A review of the circulation system design does show that internal project roadways can accommodate public transit service. This conclusion is based on the following considerations:

- the project roadway lane widths vary from 11 feet to 12 feet wide, which are sufficient to accommodate a public transit vehicle;
- the major roadways in the in the plan area have sufficient right-of-way (based on shoulder and/or street parking widths) to provide bus stops/turn-outs.

In addition, the proposed project includes a transit center and park and ride facility to facilitate public transit service.

Impacts related to the project's ability to provide public transit service are considered less-than-significant.

Impact 4.4-f

Transportation and Circulation – Construction Traffic. *It is estimated that up to 300 construction workers could access the project site on a daily basis during peak construction periods. This could result in adverse effects on the operation of area roadways during the peak commute periods. In addition, construction traffic, particularly truck traffic, could degrade pavement conditions along roadways used for access. This impact is considered* ***significant****.*

As described in Section 4.3, Population, Employment, and Housing, it is estimated that implementation of the CLSP project could generate up to 300 construction jobs. Assuming a worst case scenario, all of these workers could access the project site on a daily basis during peak construction periods. In addition, material deliveries and occasional movement of heavy equipment would occur on local roadways. If a large proportion of the construction related vehicle trips were to occur during peak AM and PM commute periods, construction traffic could substantially degrade operation of local roadways. In addition, construction traffic, particularly truck traffic, could degrade pavement conditions along roadways used for access to the project site. Impacts related to construction traffic are considered significant.

4.4.4 MITIGATION MEASURES

No mitigation measures are necessary for the following less-than-significant impact.

- 4.4-e: Accommodation of Public Transit Service on Internal Streets

The following mitigation measures are provided for significant traffic impacts.

The resulting intersection lane configurations after implementation of applicable mitigation measures are shown on Exhibits 4.4-23 through 4.4-26.

- Exhibits 4.4-23a and 4.4-23b show intersection lane configurations after mitigation for the Existing Plus Phase 1 scenario. See the discussion below of Impacts 4.4-a1, 4.4-a3, 4.4-a5, 4.4-a6, 4.4-a7, 4.4-a9, 4.4-a10, and 4.4-a11 for the verbal description of the mitigation measures graphically depicted in these exhibits.

- Exhibits 4.4-24a and 4.4-24b show intersection lane configurations after mitigation for the Existing Plus Buildout scenario. See the discussion below of Impacts 4.4-a1 through 4.4-a11 for the verbal description of the mitigation measures graphically depicted in these exhibits.

- Exhibits 4.4-25a and 4.4-25b show intersection lane configurations after mitigation for the 2010 Plus Phase 1 scenario. See the discussion below of Impacts 4.4-a12 through 4.4-a21 for the verbal description of the mitigation measures graphically depicted in these exhibits.

- Exhibits 4.4-26a and 4.4-26b show intersection lane configurations after mitigation for the 2020 Plus Buildout scenario. See the discussion below of Impacts 4.4-a22 through 4.4-a34 for the verbal description of the mitigation measures graphically depicted in these exhibits.

The anticipated LOS results at each study intersection before and after implementation of applicable mitigation measures are shown in Tables 4.4-21 through 4.4-24.

- Table 4.4-21 provides intersection LOS results before and after mitigation for the Existing Plus Phase 1 scenario.

- Table 4.4-22 provides intersection LOS results before and after for the Existing Plus Buildout scenario.

- Table 4.4-23 provides intersection LOS results for the 2010 Plus Phase 1 scenario.

- Table 4.4-24 provides intersection LOS results for the 2020 Plus Buildout scenario.

These Exhibits and Tables support the mitigation discussions below. Readers are advised that where the discussion below concludes that the proposed mitigation for intersection operations will render the project's impacts less than significant, readers should examine the above referenced tables to learn what the resulting LOS will be after mitigation.

Readers are also advised that, because long-term traffic analysis inherently deals with what in other contexts under CEQA would be called "cumulative impacts", the payment of fair share fees will constitute mitigation for the project's incremental contribution to significant cumulative impacts caused by the project together with other past, present, and probable future projects. CEQA specifically authorizes the use of such fair share payments to mitigate a project's incremental contribution to such impacts to less than cumulatively considerable (i.e., less than significant) levels (CEQA Guidelines, §15130, subd. (b)(3)).

The timing for implementation of the mitigation measures discussed below would be determined through use of a TMMP similar to those in place for other projects within the City (see the discussion of Existing Improvement Programs above). Under the TMMP roadway facilities would be monitored to forecast

when traffic conditions would warrant implementation of required mitigation measures. The TMMP allows facility improvements to be tied to actual traffic conditions rather than artificial time frames that may result in improvements being constructed well before or after the impact reaches significant levels.

4.4-a1: Operation of LOS F at Intersection 2. Roth Road/I-5 Southbound Ramps Under Existing Plus Project Conditions. The mitigation for this impact would be the signalization of this intersection, which would occur in conjunction with the reconstruction of the Roth Road/I-5 interchange. This improvement is identified in the City of Lathrop CFF. The project would pay for its fair share of the cost of this improvement through payment of traffic impact fees to the City of Lathrop, as identified by the CFF document.

Implementation of Mitigation Measure 4.4-a1 would reduce impacts on the Roth Road/I-5 southbound ramps under the existing plus project scenarios to a less-than-significant level.

4.4-a2: Operation of LOS F at Intersection 3. Roth Road/I-5 Northbound Ramps Under the Existing Plus Buildout Scenario. The mitigation for this impact would be the signalization of this intersection, which would occur in conjunction with the reconstruction of the Roth Road/I-5 interchange. This improvement is identified in the City of Lathrop CFF. The project would pay for its fair share of the cost of this improvement through payment of traffic impact fees to the City of Lathrop, as identified by the CFF document.

Implementation of Mitigation Measure 4.4-a2 would reduce impacts on the Roth Road/I-5 northbound ramps under the Existing Plus Buildout scenario to a less-than-significant level.

4.4-a3: Operation of LOS F at Intersection 4. Roth Road/Old Harlan Road Under Existing Plus Project Conditions. The mitigation for this impact would be the construction of a traffic signal and widening of the intersection at this location. A traffic signal would be installed in conjunction with the proposed interchange improvements identified in Mitigation Measures 4.4-a1 and 4.4-a2. Improvements associated with these past mitigation measures are identified in the City of Lathrop CFF. The project would pay for its fair share for signalization of this intersection through payment of traffic impact fees to the City of Lathrop, as identified by the CFF document.

The intersection widening component of this mitigation measure would include converting a westbound shared right/through/left-turn lane to a left-turn lane and a shared through/right-turn lane and converting the eastbound shared through/left-turn lane to separate left-turn and through lanes. These improvements are not included in the CFF; therefore the project would contribute to this mitigation through payment of the fair share of the cost of these improvements to the City of Lathrop. A mechanism shall be created to ensure that such fair share payments, together with similar fair share payments from other projects, shall be collected and devoted to funding and construction of the identified improvements. Such a mechanism shall consist of either the creation of a new fee program or the amendment of an existing fee program.

Implementation of Mitigation Measure 4.4-a3 would reduce impacts on the Roth Road/Old Harlan Road intersection under the existing plus project scenarios to a less-than-significant level.

4.4-a4: Operation of LOS E and F at Intersection 7. Lathrop Road/Manthey Road/Golden Valley Parkway Under the Existing Plus Buildout Scenario. The mitigation for this impact would be the improvement of other access routes into the CLSP area, including the Louise Avenue and Roth Road interchanges as described in Mitigation Measures 4.4-a1, 4.4-a2,

4.4-a9, and 4.4-a10. With the improvements to these interchanges, traffic volumes would shift from Intersection 7. Lathrop Road/Manthey Road/Golden Valley Parkway, to adjacent intersections with improved capacity. As indicated in the post project conditions for the mitigated 2010 Plus Phase 1 and 2020 Plus Buildout scenarios (Tables 4.4-23 and 4.4-24), with anticipated roadway improvements Intersection 7. would operate at acceptable levels with the anticipated lane configuration.

Implementation of Mitigation Measure 4.4-a4, which in effect is implementation of Mitigation Measures 4.4-a1, 4.4-a2, 4.4-a9, and 4.4-a10, would reduce impacts on the Lathrop Road/Manthey Road/Golden Valley Parkway intersection under the Existing Plus Buildout scenario to a less-than-significant level.

4.4-a5: **Operation of LOS F at Intersection 8. Lathrop Road/I-5 Southbound Ramps Under Existing Plus Project Conditions.** The mitigation for this impact would be the construction of a traffic signal and widening of Lathrop Road from Golden Valley Parkway through the I-5 interchange. Specific improvements required to mitigate this impact include the addition of a west bound through lane, converting an eastbound shared through/right-turn lane to separate through and right-turn lanes, the addition of an eastbound through lane and right-turn lane, the conversion of a southbound shared right/through/left-turn lane to a right-turn lane and a left-turn lane, and addition of a southbound right-turn lane. These improvements are identified in the City of Lathrop CFF. The project would pay for its fair share of the cost of these improvements through payment of traffic impact fees to the City of Lathrop, as identified by the CFF document.

Implementation of Mitigation Measure 4.4-a5 would reduce impacts on the Lathrop Road/I-5 southbound ramps under the existing plus project conditions to a less-than-significant level.

4.4-a6: **Operation of LOS F at Intersection 9. Lathrop Road/I-5 Northbound Ramps Under Existing Plus Project Conditions.** The mitigation for this impact would be the construction of a traffic signal, the addition of a northbound left-turn lane, the conversion of a westbound shared through/right-turn lane to separate though and right-turn lanes, the addition of a westbound through lane and a westbound right-turn lane, and the addition of an eastbound left-turn and through lane. These improvements are identified in the City of Lathrop CFF. The project would pay for its fair share of the cost of these improvements through payment of traffic impact fees to the City of Lathrop, as identified by the CFF document.

Implementation of Mitigation Measure 4.4-a6 would reduce impacts on the Lathrop Road/I-5 northbound ramps under the existing plus project conditions to a less-than-significant level.

4.4-a7: **Operation of LOS F at Intersection 11. Lathrop Road/New Harlan Road Under Existing Plus Project Conditions.** Mitigation of this impact would be widening of Lathrop Road to add a westbound through lane. This improvement is funded in the 2003 Measure K Strategic Plan. This improvement would extend to Intersection 10. Lathrop Road/Old Harland Road.

Implementation of Mitigation Measure 4.4-a7 would reduce impacts on the Lathrop Road/New Harlan intersection under the existing plus project conditions to a less-than-significant level.

4.4-a8: **Operation of LOS E at Intersection 13. Lathrop Road/Airport Way Under the Existing Plus Buildout Scenario.** The mitigation for this impact would be the re-optimization of this

traffic signal. The project would pay for its fair share of the cost of this improvement to the City of Manteca.

If implemented, Mitigation Measure 4.4-a8 would reduce impacts on the Lathrop Road/Airport Way intersection under the Existing Plus Buildout scenario to a less-than-significant level. Implementation is uncertain, however, because to date Manteca has not established a program by which it can receive moneys from projects in Lathrop and assure that such funds will be devoted to the intended mitigation. Therefore, the City of Lathrop conservatively assumes that the impact will be significant and unavoidable.

4.4-a9: Operation of LOS F at Intersection 15. Louise Avenue/I-5 Southbound Ramps Under Existing Plus Project Conditions. The mitigation for this impact would be the proposed Louise Avenue/I-5 interchange improvements identified by the CFF. The CFF describes the interchange improvements at the Louise Avenue/I-5 interchange as consisting of widening Louise Avenue to 8 lanes in the area of the interchange and upgrading signals. The initial improvement required at Louise Avenue would consist of the addition of a westbound left-turn lane, converting a shared though/right-turn lane to separate through and right-turn lanes, and adding an eastbound through lane. The project would pay for its fair share of the costs of these improvement through payment of traffic impact fees identified by the CFF document.

Implementation of Mitigation Measure 4.4-a9 would reduce impacts on the Louise Avenue/I-5 southbound ramps under the existing plus project conditions to a less-than-significant level.

4.4-a10: Operation of LOS F at Intersection 16. Louise Avenue/I-5 Northbound Ramps Under Existing Plus Project Conditions. The mitigation for this impact would be the proposed Louise Avenue/I-5 interchange improvements identified by the CFF. The CFF describes the interchange improvements at the Louise Avenue/I-5 interchange as consisting of widening Louise Avenue to 8-lanes in the area of the interchange and upgrading signals. The initial improvements required would be to add a westbound through lane and a northbound right-turn lane on the interchange off ramp. The project would pay for its fair share of the costs of these improvements through payment of traffic impact fees identified by the CFF document.

Implementation of Mitigation Measure 4.4-a10 would reduce impacts on the Louise Avenue/I-5 northbound ramps under the existing plus project conditions to a less-than-significant level.

4.4-a11: Operation of LOS F at Intersection 22. Louise Avenue/Airport Way Under Existing Plus Project Conditions. The mitigation for this impact would require the addition of a traffic signal at this location and the conversion of shared right/through/left-turn lanes to shared through/right-turn lanes and separate left-turn lanes on each approach. The project would pay its fair share of the cost of this improvement to the City of Manteca.

If implemented, Mitigation Measure 4.4-a11 would reduce impacts on the Louise Avenue/Airport Way intersection under the Existing Plus Buildout scenario to a less-than-significant level. Implementation is uncertain, however, because to date Manteca has not established a program by which it can receive moneys from projects in Lathrop and assure that such funds will be devoted to the intended mitigation. Therefore, the City of Lathrop conservatively assumes that the impact will be significant and unavoidable.

4.4-a12: Operation of LOS F at Intersection 2. Roth Road/I-5 Southbound Ramps Under the 2010 Plus Phase 1 Scenario. Initial improvements at this intersection to mitigate Existing Plus Phase I and Existing Plus Buildout conditions are addressed above in Mitigation Measure 4.4-a1. Subsequent mitigation of deficient conditions at this location would include an

additional westbound left-turn lane and converting an eastbound shared through/right-turn lane to separate through and right-turn movements. These improvements are identified in the City of Lathrop CFF. The project would pay for its fair share of the cost of these improvements through payment of traffic impact fees to the City of Lathrop, as identified by the CFF document.

Implementation of Mitigation Measure 4.4-a12 would reduce impacts on the Roth Road/I-5 southbound ramps under the 2010 Plus Phase 1 scenario to a less-than-significant level.

4.4-a13: Operation of LOS E at Intersection 4. Roth Road/Old Harlan Road Under the 2010 Plus Phase 1 Scenario. The mitigation for this impact would be widening of Harlan Road and Roth Road at this location. Additional lanes include converting a shared northbound right/through/left-turn lane to a shared through/left-turn lane and a right-turn lane, converting a northbound shared right/though/left-turn lane to a left-turn lane and a shared through/tight-turn lane, adding a westbound through lane, and converting an eastbound shared through/right turn lane to separate through and right-turn lanes. These improvements are identified in the City of Lathrop CFF. The project would pay for its fair share of the cost of this improvement through payment of traffic impact fees to the City of Lathrop, as identified by the CFF document.

Implementation of Mitigation Measure 4.4-a13 would reduce impacts on the Roth Road/Old Harlan Road intersection under the 2010 Plus Phase 1 scenario to a less-than-significant level.

4.4-a14: Operation of LOS F at Intersection 5. Roth Road/McKinley Avenue Under the 2010 Plus Phase 1 Scenario. The mitigation for this impact would require the installation of a traffic signal at the intersection. This improvement is not included in the City of Lathrop CFF; therefore the project would contribute to this mitigation through payment of the fair share of the cost of this improvement to the City of Lathrop. A mechanism shall be created to ensure that such fair share payments, together with similar fair share payments from other projects, shall be collected and devoted to funding and construction of the identified improvements. Such a mechanism shall consist of either the creation of a new fee program or the amendment of an existing fee program.

Implementation of Mitigation Measure 4.4-a14 would reduce impacts on the Roth Road/McKinley Avenue intersection under the 2010 Plus Phase 1 scenario to a less-than-significant level.

4.4-a15: Operation of LOS E and F at Intersection 8. Lathrop Road/I-5 Southbound Ramps Under the 2010 Plus Phase 1 Scenario. Additional improvements, beyond those identified by Mitigation Measure 4.4-a5, would be required to mitigate the project impacts at this intersection. These additional improvements would include the addition of a westbound left-turn lane and a south-bound right-turn lane. These improvements are identified in the City of Lathrop CFF. The project would pay for its fair share of the cost of these improvements through payment of traffic impact fees to the City of Lathrop, as identified by the CFF document.

Implementation of Mitigation Measure 4.4-a15 would reduce impacts on the Lathrop Road/I-5 southbound ramps under the 2010 Plus Phase 1 scenario to a less-than-significant level.

4.4-a16: Operation of LOS F at Intersection 9. Lathrop Road/I-5 Northbound Ramps Under the 2010 Plus Phase 1 Scenario. Additional improvements, beyond those identified in Mitigation Measure 4.4-a6, would be required to mitigate the project impacts at this location.

The additional mitigation would require adding a north-bound right-turn lane. This improvement is identified in the City of Lathrop CFF. The project would pay for its fair share of the cost of this improvement through payment of traffic impact fees to the City of Lathrop, as identified by the CFF document.

Implementation of Mitigation Measure 4.4-a16 would reduce impacts on the Lathrop Road/I-5 northbound ramps under the 2010 Plus Phase 1 scenario to a less-than-significant level.

4.4-a17: Increase in Traffic of 1% or More at Intersection 16. Louise Avenue/I-5 Northbound Ramps When Operating at LOS E Under the 2010 No Project Scenario. The mitigation for this impact would consist of the conversion of a northbound right-turn lane into a shared right/through/left-turn lane on the northbound ramp. This improvement is identified in the City of Lathrop CFF. The project would pay its fair share of the cost for this improvement through payment of traffic fees to the City of Lathrop, as identified by the CFF document.

Implementation of Mitigation Measure 4.4-a17 would reduce impacts on the Louise Avenue/I-5 northbound ramps under the 2010 Plus Phase 1 scenario to a less-than-significant level.

4.4-a18: Operation of LOS F at Intersection 17. Louise Avenue/Old Harlan Road Under 2010 Plus Phase 1 Scenario. Given the proximity of this intersection to Intersection 18. Louise Avenue/New Harlan Road, it is not feasible to mitigate this impact by installing a traffic signal. Additionally, only right-in/right-out turns are currently allowed, therefore turn prohibitions are not available to mitigate this impact.

No feasible mitigation is available to improve LOS conditions at Intersection 17. Louise Avenue/Old Harlan Road to acceptable levels under the 2010 Plus Phase 1 scenario. Therefore, this impact is considered significant and unavoidable.

4.4-a19: Operation of LOS E and F at Intersection 18. Louise Avenue/New Harlan Road Under 2010 Plus Phase 1 Scenario. The mitigation for this impact would be the addition of a southbound right-turn lane and converting a shared through/right-turn lane to exclusive northbound right-turn and through lanes. This improvement is not included in the City of Lathrop CFF; therefore the project would contribute to this mitigation through payment of the fair share of the cost of this improvement to the City of Lathrop. A mechanism shall be created to ensure that such fair share payments, together with similar fair share payments from other projects, shall be collected and devoted to funding and construction of the identified improvement. Such a mechanism shall consist of either the creation of a new fee program or the amendment of an existing fee program.

Implementation of Mitigation Measure 4.4-a19 would reduce impacts on the Louise Avenue/New Harlan Road intersection under the 2010 Plus Phase 1 scenario to a less-than-significant level.

4.4-a20: Increase in Traffic of 1% or More at Intersection 21. Louise Avenue/McKinley Avenue Under When Operating at LOS E/F Under the 2010 No Project Scenario. The mitigation for this impact would be the addition of a westbound through lane, and an eastbound through lane at the intersection. These improvements are not included in the City of Lathrop CFF; therefore the project would contribute to this mitigation through payment of the fair share of the cost of this improvement to the City of Lathrop. A mechanism shall be created to ensure that such fair share payments, together with similar fair share payments from other projects, shall be collected and devoted to funding and construction of the identified improvements.

Such a mechanism shall consist of either the creation of a new fee program or the amendment of an existing fee program.

Implementation of Mitigation Measure 4.4-a20 would reduce impacts on the Louise Avenue/McKinley Avenue intersection under the 2010 Plus Phase 1 scenario to a less-than-significant level.

4.4-a21: Operation of LOS E and F at Intersection 23. Vierra Road/McKinley Avenue Under the 2010 Plus Phase 1 Scenario. The mitigation for this impact would include the addition of a southbound through lane, the conversion of a northbound shared through left-turn lane to exclusive left-turn and through lanes, the conversion of a westbound shared right/through/ left-turn lane to two through lanes and a right-turn lane, and the addition of an eastbound right-turn lane. Additional improvements would also be required to Intersection 24. McKinley Avenue/Yosemite Avenue, given the close proximity of these intersections. The improvements at the McKinley Avenue/Yosemite Avenue intersection would include the conversion of the shared right/through/left-turn lanes to a shared through/right-turn and a left-turn lane on the southbound and northbound approaches, the addition of a westbound shared through/left-turn lane, the conversion of an eastbound shared through/right-turn lane to exclusive through and right-turn lanes, and the conversions of an eastbound left-turn lane to a shared though/left-turn lane. The project's contributions to these improvements would be the payment of its fair share of the costs to the City of Lathrop. These improvements are not included in the City of Lathrop CFF; therefore the project would contribute to this mitigation through payment of the fair share of the cost of this improvement to the City of Lathrop. A mechanism shall be created to ensure that such fair share payments, together with similar fair share payments from other projects, shall be collected and devoted to funding and construction of the identified improvements. Such a mechanism shall consist of either the creation of a new fee program or the amendment of an existing fee program.

As noted in the discussion of Impact 4.4-a21, it is assumed that by 2020 road and intersection reconfigurations planned in the area of Intersection 23. and Intersection 24. (Yosemite Avenue/McKinley Avenue) will result in Intersection 24. being the only intersection supporting traffic movements between Yosemite Avenue and McKinley Avenue. Intersection 23. would become a three way intersection only connecting the Vierra Road cul-de-sac to McKinley Avenue. Under these conditions, Intersection 23. would support minimal turning movements consisting only of vehicles entering and leaving the Vierra Road cul-de-sac. If these road and intersection reconfigurations take place before 2010 (or before impacts exceed significant levels based on the TMMP), Mitigation Measure 4.4-21a would not be required.

Implementation of Mitigation Measure 4.4-a21 would reduce impacts on the Vierra Avenue/McKinley Avenue intersection under the 2010 Plus Phase 1 scenario to a less-than-significant level.

4.4-a22: Operation of LOS E at Intersection 5. Roth Road/McKinley Avenue Under the 2020 Plus Buildout Scenario. The mitigation for this impact would consist of the conversion of a southbound shared left/right-turn lane to exclusive left-turn and right-turn lanes, the addition of a westbound through lane, and the addition of an eastbound through lane. These improvements are not included in the City of Lathrop CFF; therefore the project would contribute to this mitigation through payment of the fair share of the cost of this improvement to the City of Lathrop. A mechanism shall be created to ensure that such fair share payments, together with similar fair share payments from other projects, shall be collected and devoted to funding and construction of the identified improvements. Such a mechanism shall consist of either the creation of a new fee program or the amendment of an existing fee program.

Implementation of Mitigation Measure 4.4-a22 would reduce impacts on the Roth Road/McKinley Avenue under the 2020 Plus Buildout scenario to a less-than-significant level.

4.4-a23: Increase in Traffic of 1% or More at Intersection 8. Lathrop Road/I-5 Southbound Ramps When Operating at LOS F Under the 2020 No Project Scenario. The mitigation for this impact would be the buildout of the Lathrop Road/I-5 interchange improvements planned for in the City of Lathrop CFF, including converting a southbound left-turn lane into a shared right/through/left-turn lane, the addition of two westbound through lanes and a westbound left-turn lane, the conversion of an eastbound shared through/right-turn lane to exclusive through and right-turn lanes, and the addition of two eastbound through lanes. These improvements are identified in the CFF. The project would pay its fair share of the cost for these improvements through payment of traffic impact fees to the City of Lathrop, as identified by the CFF document.

Implementation of Mitigation Measure 4.4-a23 would reduce impacts on the Lathrop Road/I-5 southbound ramps under the 2010 Plus Buildout scenario to a less-than-significant level.

4.4-a24: Increase in Traffic of 1% or More at Intersection 9. Lathrop Road/I-5 Northbound Ramps When Operating at LOS E Under the 2020 No Project Scenario. The mitigation for this impact would be the buildout of the Lathrop Road/I-5 interchange improvements planned for in the City of Lathrop CFF, include adding a northbound shared right/through/left-turn lane, a northbound right-turn lane, a westbound through lane, a westbound right-turn lane, an eastbound through lane, and an eastbound left-turn lane. These improvements are identified in the CFF. The project would pay its fair share of the cost for these improvements through payment of traffic fees to the City of Lathrop, as identified by the CFF document.

Implementation of Mitigation Measure 4.4-a24 would reduce impacts on the Lathrop Road/I-5 northbound ramps under the 2020 Plus Buildout scenario to a less-than-significant level.

4.4-a25: Increase in Traffic of 1% or More at Intersection 10. Lathrop Road/Old Harlan Road When Operating at LOS F Under the 2020 No Project Scenario. Mitigation for this impact would require the signalization of the intersection. However, this intersection is located too closely to the adjacent intersections to the west and east for signalization to be feasible. Because this intersection cannot be signalized, this impact cannot be mitigated.

No feasible mitigation is available to improve LOS conditions at Intersection 10. Lathrop Road/Old Harlan Road to acceptable levels under the 2020 Plus Buildout scenario. Therefore, this impact is considered significant and unavoidable.

4.4-a26: Increase in Traffic of 1% or More at Intersection 11. Lathrop Road/New Harlan Road When Operating at LOS F Under the 2020 No Project Scenario. To improve LOS conditions at this intersection under the 2020 Plus Buildout scenario would require the addition of more lanes than can be feasibly accommodated at the intersection. Although intersection improvements would be constructed consistent with the lane configurations shown in Exhibit 4.4-26a, these would not be sufficient to result in the intersection operating at an acceptable LOS during the AM and PM peak periods.

No feasible mitigation is available to improve LOS conditions at Intersection 11. Lathrop Road/New Harlan Road to acceptable levels under the 2020 Plus Buildout scenario. Therefore, this impact is considered significant and unavoidable.

4.4-a27: Operation of LOS F at Intersection 12. Lathrop Road/Fifth Street Under the 2020 Plus Buildout Scenario. The mitigation for this impact would be the conversion of a westbound shared through/right-turn lane to exclusive through and right-turn lanes. This improvement is not included in the City of Lathrop CFF; therefore the project would contribute to this mitigation through payment of the fair share of the cost of this improvement to the City of Lathrop. A mechanism shall be created to ensure that such fair share payments, together with similar fair share payments from other projects, shall be collected and devoted to funding and construction of the identified improvements. Such a mechanism shall consist of either the creation of a new fee program or the amendment of an existing fee program.

Implementation of Mitigation Measure 4.4-a27 would reduce impacts on the Lathrop Road/Fifth Street intersection under the 2020 Plus Buildout scenario to a less-than-significant level.

4.4-a28: Increase in Traffic of 1% or More at Intersection 13. Lathrop Road/Airport Way When Operating at LOS E/F Under the 2020 No Project Scenario. The mitigation for this impact would be the conversion of shared through/right-turn lanes to exclusive through and right-turn lanes on all approaches. Additionally, a second northbound left-turn lane would be required to fully mitigate the project's impacts and provide an acceptable LOS. The project would pay for its fair share of the cost of these improvements to the City of Manteca.

If implemented, Mitigation Measure 4.4-a28 would reduce impacts on the Lathrop Road/Airport Way intersection under the 2020 Plus Buildout scenario to a less-than-significant level. Implementation is uncertain, however, because to date Manteca has not established a program by which it can receive moneys from projects in Lathrop and assure that such funds will be devoted to the intended mitigation. Therefore, the City of Lathrop conservatively assumes that the impact will be significant and unavoidable.

4.4-a29: Increase in Traffic of 1% or More at Intersection 17. Louise Avenue/Old Harlan Road When Operating at LOS F Under the 2020 No Project Scenario. Given the proximity of this intersection to Intersection 18. Louise Avenue/New Harlan Road, it is not feasible to mitigate this impact by installing a traffic signal. Additionally, only right-in/right-out turns are currently allowed, so turn prohibition are not available to mitigate this impact.

No feasible mitigation is available to improve LOS conditions at Intersection 17. Louise Avenue/Old Harlan Road to acceptable levels under the 2020 Plus Buildout scenario. Therefore, this impact is considered significant and unavoidable.

4.4-a30: Increase in Traffic of 1% or More at Intersection 18. Louise Avenue/New Harlan Road When Operating at LOS E Under the 2020 No Project Scenario. The mitigation for this impact would be the conversion of a southbound shared through/right-turn lane into two right-turn lanes. This improvement is not included in the City of Lathrop CFF; therefore, the project would contribute to this mitigation through payment of the fair share of the cost of this improvement to the City of Lathrop. A mechanism shall be created to ensure that such fair share payments, together with similar fair share payments from other projects, shall be collected and devoted to funding and construction of the identified improvement. Such a mechanism shall consist of either the creation of a new fee program or the amendment of an existing fee program.

Implementation of Mitigation Measure 4.4-a30 would reduce impacts on the Louise Avenue/New Harlan Road intersection under the 2020 Plus Buildout scenario to a less-than-significant level.

4.4-a31: Operation of LOS F at Intersection 21. Louise Avenue/McKinley Avenue Under the 2020 Plus Buildout Scenario. The mitigation of this impact would be the addition of southbound and northbound through lanes. This improvement is not included in the City of Lathrop CFF; therefore the project would contribute to this mitigation through payment of the fair share of the cost of this improvement to the City of Lathrop. A mechanism shall be created to ensure that such fair share payments, together with similar fair share payments from other projects, shall be collected and devoted to funding and construction of the identified improvement. Such a mechanism shall consist of either the creation of a new fee program or the amendment of an existing fee program.

Implementation of Mitigation Measure 4.4-a31 would reduce impacts on the Louise Avenue/McKinley Avenue intersection under the 2020 Plus Buildout scenario to a less-than-significant level.

4.4-a32: Increase in Traffic of 1% or More at Intersection 22. Louise Avenue/Airport Way When Operating at LOS E/F Under the 2020 No Project Scenario. The mitigation for this impact would be the addition of a northbound left-turn lane, and the conversion of an eastbound shared through/right-turn lane to exclusive through and right-turn lanes. The project would pay for its fair share of the cost of these improvements to the City of Manteca.

If implemented, Mitigation Measure 4.4-a32 would reduce impacts on the Louise Avenue/Airport Way intersection under the 2020 Plus Buildout scenario to a less-than-significant level. Implementation is uncertain, however, because to date Manteca has not established a program by which it can receive moneys from projects in Lathrop and assure that such funds will be devoted to the intended mitigation. Therefore, the City of Lathrop conservatively assumes that the impact will be significant and unavoidable.

4.4-a33: Operation of LOS F at Intersection 24. Yosemite Avenue/McKinley Avenue Under the 2020 Plus Buildout Scenario. The mitigation for this impact would be the addition of a southbound through lane, a northbound left-turn lane, and the conversion of an eastbound shared through/left-turn lane to exclusive through and left-turn lanes. These improvements are not included in the City of Lathrop CFF; therefore the project would contribute to this mitigation through payment of the fair share of the cost of this improvement to the City of Lathrop. A mechanism shall be created to ensure that such fair share payments, together with similar fair share payments from other projects, shall be collected and devoted to funding and construction of the identified improvement. Such a mechanism shall consist of either the creation of a new fee program or the amendment of an existing fee program.

Implementation of Mitigation Measure 4.4-a33 would reduce impacts on the Yosemite Avenue/McKinley Avenue intersection under the 2020 Plus Buildout scenario to a less-than-significant level.

4.4-a34: Operation of LOS F at Intersection 36. Main Street (Mossdale Landing)/Golden Valley Parkway Under the 2020 Plus Buildout Scenario. Mitigation for this impact would be the conversion of the eastbound through lane to a through/left-turn lane. This improvement is identified in the City of Lathrop CFF as part of the construction of Golden Valley Parkway. The project would pay for its fair share of the cost of this improvement through payment of traffic impact fees to the City of Lathrop, as identified in the CFF document.

Implementation of Mitigation Measure 4.4-a34 would reduce impacts on the Main Street (Mossdale Landing)/Golden Valley Parkway intersection under the 2020 Plus Buildout scenario to a less-than-significant level.

4.4-b1: Operation at Deficient LOS on Segments of I-5 Under Existing Plus Project Conditions. The City of Lathrop shall ensure that the project applicant pays its applicable Transportation Impact Fees for its fair share contribution for I-5 freeway improvements. However, because the needed I-5 improvements are not scheduled to be completed by Caltrans by the time demand is anticipated (2010, 2020), and because the development of these improvements by the proposed project is outside the scope of the project (i.e., these are regional improvements), the CLSP project would result in significant unavoidable traffic impacts at the identified freeway segments until necessary improvements are completed.

Although implementation of Mitigation Measure 4.4-b1 would assist in reducing degradation of freeway operations on I-5, actual freeway improvements may not be implemented by Caltrans rapidly enough to reduce the impact to less than significant levels. Therefore, this impact is considered significant and unavoidable.

4.4-b2: Operation at Deficient LOS on Segments of SR 99 Under Existing Plus Project Conditions. The City of Lathrop shall ensure that the project applicant pays its applicable Transportation Impact Fees for its fair share contribution for SR 99 freeway improvements. However, because the needed SR 99 improvements are not scheduled to be completed by Caltrans by the time demand is anticipated (2010, 2020), and because the development of these improvements by the proposed project is outside the scope of the project (i.e., these are regional improvements), the CLSP project would result in significant unavoidable traffic impacts at the identified freeway segments until necessary improvements are completed.

Although implementation of Mitigation Measure 4.4-b2 would assist in reducing degradation of freeway operations on SR 99, actual freeway improvements may not be implemented by Caltrans rapidly enough to reduce the impact to less than significant levels. Therefore, this impact is considered significant and unavoidable.

4.4-b3: Operation of LOS E on SR 120 Between I-5 and Yosemite Avenue Under Existing Plus Project Conditions. The City of Lathrop shall ensure that the project applicant pays its applicable Transportation Impact Fees for its fair share contribution for improvements to this segment of SR 120. However, because the needed improvements are not scheduled to be completed by Caltrans by the time demand is anticipated (2010, 2020), and because the development of these improvements by the proposed project is outside the scope of the project (i.e., this is a regional scale improvement), the CLSP project would result in significant unavoidable traffic impacts at the identified freeway segment until necessary improvements are completed.

Although implementation of Mitigation Measure 4.4-b3 would assist in reducing degradation of freeway operations on this segment of SR 120, actual freeway improvements may not be implemented by Caltrans rapidly enough to reduce the impact to less than significant levels. Therefore, this impact is considered significant and unavoidable.

4.4-b4: Operation of LOS F on segments of I-205 Under Existing Plus Project Conditions. The City of Lathrop shall ensure that the project applicant pays its applicable Transportation Impact Fees for its fair share contribution for I-205 freeway improvements. However, because the

needed I-205 improvements are not scheduled to be completed by Caltrans by the time demand is anticipated (2010, 2020), and because the development of these improvements by the proposed project is outside the scope of the project (i.e., these are regional improvements), the CLSP project would result in significant unavoidable traffic impacts at the identified freeway segments until necessary improvements are completed.

Although implementation of Mitigation Measure 4.4-b4 would assist in reducing degradation of freeway operations on I-205, actual freeway improvements may not be implemented by Caltrans rapidly enough to reduce the impact to less than significant levels. Therefore, this impact is considered significant and unavoidable.

4.4-b5: Operation at Deficient LOS on Segments of I-5 Under the 2010 Plus Phase I Scenario. See Mitigation Measure 4.4-b1 above. The same mitigation discussion and conclusion of "significant and unavoidable" would apply.

Although implementation of Mitigation Measure 4.4-b5 would assist in reducing degradation of freeway operations on I-5, actual freeway improvements may not be implemented by Caltrans rapidly enough to reduce the impact to less than significant levels. Therefore, this impact is considered significant and unavoidable.

4.4-b6: Operation at Deficient LOS on Segments of SR 99 Under the 2010 Plus Phase I Scenario. See Mitigation Measure 4.4-b2 above. The same mitigation discussion and conclusion of "significant and unavoidable" would apply.

Although implementation of Mitigation Measure 4.4-b6 would assist in reducing degradation of freeway operations on SR 99, actual freeway improvements may not be implemented by Caltrans rapidly enough to reduce the impact to less than significant levels. Therefore, this impact is considered significant and unavoidable.

4.4-b7: Operation at Deficient LOS on Segments of SR 120 Under the 2010 Plus Phase I Scenario. The City of Lathrop shall ensure that the project applicant pays its applicable Transportation Impact Fees for its fair share contribution for SR 120 freeway improvements. However, because the needed SR 120 improvements are not scheduled to be completed by Caltrans by the time demand is anticipated (2010), and because the development of these improvements by the proposed project is outside the scope of the project (i.e., these are regional improvements), the CLSP project would result in significant unavoidable traffic impacts at the identified freeway segments until necessary improvements are completed.

Although implementation of Mitigation Measure 4.4-b7 would assist in reducing degradation of freeway operations on SR 120, actual freeway improvements may not be implemented by Caltrans rapidly enough to reduce the impact to less than significant levels. Therefore, this impact is considered significant and unavoidable.

4.4-b8: Operation of LOS F on Segments of I-205 Under the 2010 Plus Phase I Scenario. See Mitigation Measure 4.4-b4 above. The same mitigation discussion and conclusion of "significant and unavoidable" would apply.

Although implementation of Mitigation Measure 4.4-b8 would assist in reducing degradation of freeway operations on I-205, actual freeway improvements may not be implemented by Caltrans rapidly enough to

reduce the impact to less than significant levels. Therefore, this impact is considered significant and unavoidable.

4.4-b9: Operation at Deficient LOS on Segments of I-5 Under the 2020 Plus Buildout Scenario. See Mitigation Measure 4.4-b1 above. The same mitigation discussion and conclusion of "significant and unavoidable" would apply.

Although implementation of Mitigation Measure 4.4-b9 would assist in reducing degradation of freeway operations on I-5, actual freeway improvements may not be implemented by Caltrans rapidly enough to reduce the impact to less than significant levels. Therefore, this impact is considered significant and unavoidable.

4.4-b10: Operation at Deficient LOS on Segments of SR 99 Under the 2020 Plus Buildout Scenario. See Mitigation Measure 4.4-b2 above. The same mitigation discussion and conclusion of "significant and unavoidable" would apply.

Although implementation of Mitigation Measure 4.4-b6 would assist in reducing degradation of freeway operations on SR 99, actual freeway improvements may not be implemented by Caltrans rapidly enough to reduce the impact to less than significant levels. Therefore, this impact is considered significant and unavoidable.

4.4-b11: Operation of LOS F on Segments of SR 120 Under the 2020 Plus Buildout Scenario. See Mitigation Measure 4.4-b7 above. The same mitigation discussion and conclusion of "significant and unavoidable" would apply.

Although implementation of Mitigation Measure 4.4-b11 would assist in reducing degradation of freeway operations on SR-120, actual freeway improvements may not be implemented by Caltrans rapidly enough to reduce the impact to less than significant levels. Therefore, this impact is considered significant and unavoidable.

4.4-b12: Operation of LOS F on segments of I-205 Under the 2020 Plus Buildout Scenario. See Mitigation Measure 4.4-b4 above. The same mitigation discussion and conclusion of "significant and unavoidable" would apply.

Although implementation of Mitigation Measure 4.4-b12 would assist in reducing degradation of freeway operations on I-205, actual freeway improvements may not be implemented by Caltrans rapidly enough to reduce the impact to less than significant levels. Therefore, this impact is considered significant and unavoidable.

4.4-c1: Operation of LOS F at the Louise Avenue/I-5 Northbound On Ramp Under the 2010 Plus Phase 1 Scenario. There are two causes for deficient ramp segment operations. The first cause is the lack of available capacity on a ramp which directly impacts the ability of persons to utilize the ramp. The second cause is the lack of capacity on the freeway mainline segment which may indirectly impact the operation of a ramp segment. For example, when there is significant congestion on a freeway segment, persons entering a freeway on ramp may not be able to access the freeway. For the Louise Avenue/I-5 Northbound On Ramp it was determined that additional ramp capacity would improve the operation of the ramp. A supplemental analysis concluded that adding a second lane on the northbound on ramp would improve the operations within acceptable levels. The LOS improves from LOS F to LOS B with the addition of a second lane on the on ramp. This additional lane is included in the

proposed interchange improvements at Louise Avenue as documented by the City of Lathrop CFF. The project would pay for its fair share of the cost of this improvement through payment of traffic impact fees to the City of Lathrop, as identified by the CFF documents.

Implementation of Mitigation Measure 4.4-c1 would reduce impacts on the Louise Avenue/I-5 Northbound On Ramp under the 2010 Plus Phase 1 scenario to a less-than-significant level.

4.4-c2: Operation of LOS F at the Louise Avenue/I-5 Southbound On Ramp Under the 2010 Plus Phase 1 Scenario. For the Louise Avenue/I-5 Southbound On Ramp it was determined that additional ramp capacity would improve the operation of the ramp. A supplemental analysis concluded that adding a second lane on the southbound on ramp would improve the operations within acceptable levels. The LOS improves from LOS F to LOS B with the addition of a second lane on the on ramp. This additional lane is included in the proposed interchange improvements at Louise Avenue as documented by the City of Lathrop CFF. The project would pay for its fair share of the cost of this improvement through payment of traffic impact fees to the City of Lathrop, as identified by the CFF documents.

Implementation of Mitigation Measure 4.4-c2 would reduce impacts on the Louise Avenue/I-5 Southbound On Ramp under the 2010 Plus Phase 1 scenario to a less-than-significant level.

4.4-c3: Operation of LOS F at the Louise Avenue/I-5 Northbound Off Ramp Under the 2010 Plus Phase 1 Scenario. For the Louise Avenue/I-5 Northbound Off Ramp it was determined that additional ramp capacity would improve the operation of the ramp. A supplemental analysis concluded that adding a second lane on the southbound on ramp would improve the operations within acceptable levels. The LOS improves from LOS F to LOS B with the addition of a second lane on the off ramp. This additional lane is included in the proposed interchange improvements at Louise Avenue as documented by the City of Lathrop CFF, The project would pay for its fair share of the cost of this improvement through payment of traffic impact fees to the City of Lathrop, as identified by the CFF documents.

Implementation of Mitigation Measure 4.4-c3 would reduce impacts on the Louise Avenue/I-5 Northbound Off Ramp under the 2010 Plus Phase 1 scenario to a less-than-significant level.

4.4-c4: Operation of LOS F at the Louise Avenue/I-5 Southbound Off Ramp Under the 2010 Plus Phase 1 Scenario. For the Louise Avenue/I-5 Southbound Off Ramp it was determined that this facility operates at a deficient LOS because of the deficient operations on the mainline freeway segments adjacent to the ramp. A supplemental analysis concluded that a second lane to the off ramp would not produce improved operations; therefore it can be concluded that the operations of the freeway segment is negatively impacting the operations of the ramp. Although addition of a second lane at this ramp is included in the City of Lathrop CFF, and therefore the project would pay for its fair share of the cost of this improvement through the payment of traffic impact fees to the City of Lathrop (as identified by the CFF documents), provision of this extra lane would not reduce this impact to a less than significant level.

The segments of I-5 north and south of this interchange are projected to operate at LOS F during various times under the 2010 Plus Phase 1 scenario. Therefore, mitigation for deficient LOS at the Louise Avenue/I-5 Southbound Off Ramp could be provided by improving I-5 adjacent to the ramp area. However, as described above in the discussions of Mitigation Measures 4.4-b1 and 4.4-b5, although proposed mitigation to improve operations on I-5 would assist in reducing degradation of freeway operations, actual freeway improvements may not be

implemented by Caltrans rapidly enough to reduce the impact to less than significant levels. Therefore, because freeway operations may not be improved, operation of the Louise Avenue/I-5 Southbound Off Ramp also would not be improved and this impact would remain at a significant level.

Although implementation of Mitigation Measure 4.4-c4, in conjunction with Mitigation Measures 4.4-b1 and 4.4-b5, would improve operation of the Louise Avenue/I-5 Southbound Off Ramp under the 2010 Plus Phase 1 scenario, actual freeway improvements may not be implemented by Caltrans rapidly enough to reduce the impact to less than significant levels. Therefore, this impact is considered significant and unavoidable until Caltrans implements the freeway improvements.

4.4-c5: Operation of LOS F at the Roth Road/I-5 Southbound On Ramp Under the 2020 Plus Buildout Scenario. The deficient operations at this ramp can be attributed to the congestion on I-5. The segments of I-5 north and south of Roth Road operates at LOS F during various times under the 2010 Plus Phase 1 scenario. Because of the congestion on I-5, traffic is unable to access the freeway from the ramp and the ramp operates at a deficient level. Mitigation for this impact would be improving I-5 adjacent to the ramp area. However, as described above in the discussions of Mitigation Measures 4.4-b1 and 4.4-b9, although proposed mitigation to improve operations on I-5 would assist in reducing degradation of freeway operations, actual freeway improvements may not be implemented by Caltrans rapidly enough to reduce the impact to less than significant levels. Therefore, because freeway operations may not be improved, operation of the Roth Road/I-5 Southbound On Ramp also would not be improved and this impact would remain at a significant level.

Although implementation of Mitigation Measures 4.4-b1 and 4.4-b9, would improve operation of the Roth Road/I-5 Southbound On Ramp under the 2020 Plus Buildout scenario, actual freeway improvements may not be implemented by Caltrans rapidly enough to reduce the impact to less than significant levels. Therefore, this impact is considered significant and unavoidable until Caltrans implements the freeway improvements.

4.4-c6: Operation of LOS F at the Roth Road/I-5 Northbound On Ramp Under the 2020 Plus Buildout Scenario. The discussion and conclusion for this Mitigation Measure are the same as for Mitigation Measure 4.4-c5 above.

Although implementation of Mitigation Measures 4.4-b1 and 4.4-b9, would improve operation of the Roth Road/I-5 Northbound On Ramp under the 2020 Plus Buildout scenario, actual freeway improvements may not be implemented by Caltrans rapidly enough to reduce the impact to less than significant levels. Therefore, this impact is considered significant and unavoidable until Caltrans implements the improvements.

4.4-c7: Increase in Traffic of 1% or More at the Roth Road/I-5 Northbound Off Ramp When Operating at LOS F Under the 2020 No Project Scenario. The discussion and conclusion for this Mitigation Measure are the same as for Mitigation Measure 4.4-c5 above.

Although implementation of Mitigation Measures 4.4-b1 and 4.4-b9, would improve operation of the Roth Road/I-5 Northbound Off Ramp under the 2020 Plus Buildout scenario, actual freeway improvements may not be implemented by Caltrans rapidly enough to reduce the impact to less than significant levels. Therefore, this impact is considered significant and unavoidable until Caltrans implements the improvements.

4.4-c8: Increase in Traffic of 1%or More at the LathropRoad/I-5 Southbound On Ramp When Operating at LOS F Under the 2020 No Project Scenario. The deficient operations at this ramp can be attributed to the congestion on I-5. The segments of I-5 north and south of Lathrop Road operate at LOS F during various times under the 2020 Plus Buildout scenario. Because of the congestion on I-5, traffic is unable to access the freeway from the ramp and the ramp operates at a deficient level. Mitigation for this impact would be improving I-5 adjacent to the ramp area. However, as described above in the discussions of Mitigation Measures 4.4-b1 and 4.4-b9, although proposed mitigation to improve operations on I-5 would assist in reducing degradation of freeway operations, actual freeway improvements may not be implemented by Caltrans rapidly enough to reduce the impact to less than significant levels. Therefore, because freeway operations may not be improved, operation of the Roth Road/I-5 Southbound On Ramp also would not be improved and this impact would remain at a significant level.

Although implementation of Mitigation Measures 4.4-b1 and 4.4-b9, would improve operation of the Lathrop Road/I-5 Southbound On Ramp under the 2020 Plus Buildout scenario, actual freeway improvements may not be implemented by Caltrans rapidly enough to reduce the impact to less than significant levels. Therefore, this impact is considered significant and unavoidable until Caltrans implements the improvements.

4.4-c9: Increase in Traffic of 1% or More at the Lathrop Road/I-5 Northbound On Ramp When Operating at LOS F Under the 2020 No Project Scenario. The discussion and conclusion for this Mitigation Measure are the same as for Mitigation Measure 4.4-c8 above.

Although implementation of Mitigation Measures 4.4-b1 and 4.4-b9, would improve operation of the Lathrop Road/I-5 Northbound On Ramp under the 2020 Plus Buildout scenario, actual freeway improvements may not be implemented by Caltrans rapidly enough to reduce the impact to less than significant levels. Therefore, this impact is considered significant and unavoidable until Caltrans implements the improvements.

4.4-c10: Operation of LOS F at the LathropRoad/I-5 Southbound Off Ramp Under the 2020 Plus Project Scenario. The discussion and conclusion for this Mitigation Measure are the same as for Mitigation Measure 4.4-c8 above.

Although implementation of Mitigation Measures 4.4-b1 and 4.4-b9, would improve operation of the Lathrop Road/I-5 Southbound Off Ramp under the 2020 Plus Buildout scenario, actual freeway improvements may not be implemented by Caltrans rapidly enough to reduce the impact to less than significant levels. Therefore, this impact is considered significant and unavoidable until Caltrans implements the improvements.

4.4-c11: Increase in Traffic of 1% or More at the LathropRoad/I-5 Northbound Off Ramp When Operating at LOS F Under the 2020 No Project Scenario. The discussion and conclusion for this Mitigation Measure are the same as for Mitigation Measure 4.4-c8 above.

Although implementation of Mitigation Measures 4.4-b1 and 4.4-b9, would improve operation of the Lathrop Road/I-5 Northbound Off Ramp under the 2020 Plus Buildout scenario, actual freeway improvements may not be implemented by Caltrans rapidly enough to reduce the impact to less than significant levels. Therefore, this impact is considered significant and unavoidable until Caltrans implements the improvements.

4.4-c12: Operation of LOS F at the Louise Avenue/I-5 Southbound On Ramp Under the 2020 Plus Buildout Scenario. The deficient operations at this ramp can be attributed to the congestion on I-5. The segments of I-5 north and south of Louise Avenue operate at LOS F during various times under the 2020 Plus Buildout scenario. Because of the congestion on I-5, traffic is unable to access the freeway from the ramp and the ramp operates at a deficient level. Mitigation for this impact would be improving I-5 adjacent to the ramp area. However, as described above in the discussions of Mitigation Measures 4.4-b1 and 4.4-b9, although proposed mitigation to improve operations on I-5 would assist in reducing degradation of freeway operations, actual freeway improvements may not be implemented by Caltrans rapidly enough to reduce the impact to less than significant levels. Therefore, because freeway operations may not be improved, operation of the Roth Road/I-5 Southbound On Ramp also would not be improved and this impact would remain at a significant level.

Although implementation of Mitigation Measures 4.4-b1 and 4.4-b9 would improve operation of the Louise Avenue/I-5 Southbound On Ramp under the 2020 Plus Buildout scenario, actual freeway improvements may not be implemented by Caltrans rapidly enough to reduce the impact to less than significant levels. Therefore, this impact is considered significant and unavoidable until Caltrans implements the improvements.

4.4-c13: Operation of LOS F at the Louise Avenue/I-5 Northbound On Ramp Under the 2020 Plus Buildout Scenario. The discussion and conclusion for this Mitigation Measure are the same as for Mitigation Measure 4.4-c12 above.

Although implementation of Mitigation Measures 4.4-b1 and 4.4-b9 would improve operation of the Louise Avenue/I-5 Northbound On Ramp under the 2020 Plus Buildout scenario, actual freeway improvements may not be implemented by Caltrans rapidly enough to reduce the impact to less than significant levels. Therefore, this impact is considered significant and unavoidable until Caltrans implements the improvements.

4.4-c14: Increase in Traffic of 1% or More at the Louise Avenue/I-5 Southbound Off Ramp When Operating at LOS F Under the 2020 No Project Scenario. The discussion and conclusion for this Mitigation Measure are the same as for Mitigation Measure 4.4-c12 above.

Although implementation of Mitigation Measures 4.4-b1 and 4.4-b9 would improve operation of the Louise Avenue/I-5 Southbound Off Ramp under the 2020 Plus Buildout scenario, actual freeway improvements may not be implemented by Caltrans rapidly enough to reduce the impact to less than significant levels. Therefore, this impact is considered significant and unavoidable until Caltrans implements the improvements.

4.4-c15: Operation of LOS F at the Louise Avenue/I-5 Northbound Off Ramp Under the 2020 Plus Buildout Scenario. The discussion and conclusion for this Mitigation Measure are the same as for Mitigation Measure 4.4-c12 above.

Although implementation of Mitigation Measures 4.4-b1 and 4.4-b9 would improve operation of the Louise Avenue/I-5 Northbound Off Ramp under the 2020 Plus Buildout scenario, actual freeway improvements may not be implemented by Caltrans rapidly enough to reduce the impact to less than significant levels. Therefore, this impact is considered significant and unavoidable until Caltrans implements the improvements.

4.4-d: **Increased Safety Concerns for Vehicles, Pedestrians, and Bicycle Riders Resulting From Proposed Design Of Roadways.** Crosswalks shall be provided at the roadway crossings at intersections with roundabouts. Signage shall be provided at all roundabouts to indicate the proper flow of vehicle traffic, speed limits through the roundabout, and the appropriate method for bicyclists to cross the intersection.

Implementation of Mitigation Measure 4.4-d would reduce the impact related to increased safety concerns for bicyclists and pedestrians at roundabouts to a less-than-significant level.

4.4-f: **Construction Traffic.** Before project construction activities begin the project applicant shall prepare a construction traffic control plan that shall be applied to all construction activities associated with the CLSP project. The plan shall include, at a minimum, the following conditions:

- No construction delivery truck traffic shall be allowed on the local roadway network before 8:00 AM or after 4:30 PM.
- No construction worker traffic shall be allowed on the local roadway network between 7:00 and 8:00 AM and between 4:30 and 6:00 PM.
- Local roadways will be jointly monitored by the City and project applicant every six months to determine whether project related construction traffic is degrading roadway conditions. Roadways with potential to be damaged by construction traffic and included in the monitoring effort shall be agreed to by the City and the project applicant. All degradation of pavement conditions because of CLSP related construction traffic will be fully repaired by the project applicant to the satisfaction of the City of Lathrop.

4.4.5 RESIDUAL SIGNIFICANT IMPACTS

Impacts related to intersection operations at Intersection 13. Lathrop Road/Airport Way and Intersection 22. Louise Avenue/Airport Way under the Existing Plus Buildout and 2020 Plus Buildout scenarios are considered significant and unavoidable because these intersections are located in the City of Manteca, and to date Manteca has not established a program by which it can receive moneys from projects in Lathrop and assure that such funds will be devoted to the intended mitigation.

Impacts related to intersection operations at Intersection 11. Lathrop Road/New Harlan Road under the 2020 Plus Buildout scenario are considered significant and sufficient feasible mitigation is not available to reduce this impact to a less than significant level. Therefore, this impact is considered significant and unavoidable.

Impacts related to intersection operations at Intersection 10. Lathrop Road/Old Harlan Road and Intersection 17. Louise Avenue/Old Harlan Road under the 2010 Plus Phase 1 and/or the 2020 Plus Buildout scenarios are considered significant and no feasible mitigation is available for these impacts. Therefore, these impacts are considered significant and unavoidable.

All significant impacts related to freeway segment operations cannot be fully mitigated and are considered significant and unavoidable for one or both of the following reasons:

- Projects to be funded by the Transportation Impact Fees may not be completed by Caltrans by the time demand for these facilities would occur.

- Development of needed improvements are outside the scope of the proposed project (i.e., regional improvements) and cannot realistically be implemented by the project applicant.

Mitigation for impacts related to operations of various freeway ramps require that improvements to nearby segments of I-5 be implemented. However, such improvements may not be completed by Caltrans by the time demand for these facilities would occur and such improvements cannot realistically be implemented by the project applicant. Therefore, these impacts are considered significant and unavoidable. Freeway ramps where significant and unavoidable impacts occur are:

- Louise Avenue/I-5 Southbound Off Ramp under the 2010 Plus Phase 1 scenario.
- Roth Road/I-5 Southbound On Ramp under the 2020 Plus Buildout scenario.
- Roth Road/I-5 Northbound On Ramp under the 2020 Plus Buildout scenario.
- Roth Road/I-5 Northbound Off Ramp under the 2020 Plus Buildout scenario
- LathropRoad/I-5 Southbound On Ramp under the 2020 Plus Buildout scenario.
- Lathrop Road/I-5 Northbound On Ramp under the 2020 Plus Buildout scenario.
- Lathrop Road/I-5 Southbound Off Ramp under the 2020 Plus Buildout scenario.
- LathropRoad/I-5 Northbound Off Ramp under the 2020 Plus Buildout scenario.
- Louise Avenue/I-5 Southbound On Ramp under the 2020 Plus Buildout scenario.
- Louise Avenue/I-5 Northbound On Ramp under the 2020 Plus Buildout scenario.
- Louise Avenue/I-5 Southbound Off Ramp under the 2020 Plus Buildout scenario.
- Louise Avenue/I-5 Northbound Off Ramp under the 2020 Plus Buildout scenario.

Table 4.4-1 Signalized Intersection LOS Criteria		
Level of Service	Description	Average Control Delay (Seconds)
A	Operations with very low delay occurring with favorable progression and/or short cycle length.	≤ 10.0
B	Operations with low delay occurring with good progression and/or short cycle lengths.	> 10.0 to 20.0
C	Operations with average delays resulting from fair progression and/or longer cycle lengths. Individual cycle failures begin to appear.	> 20.0 to 35.0
D	Operations with longer delays due to a combination of unfavorable progression, long cycle lengths, or high V/C ratios. Many vehicles stop and individual cycle failures are noticeable.	> 35.0 to 55.0
E	Operations with high delay values indicating poor progression, long cycle lengths, and high V/C ratios. Individual cycle failures are frequent occurrences. This is considered to be the limit of acceptable delay.	> 55.0 to 80.0
F	Operation with delays unacceptable to most drivers occurring due to over saturation, poor progression, or very long cycle lengths.	> 80.0
Source: *Highway Capacity Manual*, Transportation Research Board 2000		

Table 4.4-2 Unsignalized Intersection LOS Criteria		
Level of Service	Description	Average Control Per Vehicle (Seconds)[1]
A	Little or no delays	≤ 10.0
B	Short traffic delays	> 10.0 to 15.0
C	Average traffic delays	> 15.0 to 25.0
D	Long traffic delays	> 25.0 to 35.0
E	Very long traffic delays	> 35.0 to 50.0
F	Extreme traffic delays with intersection capacity exceeded	> 50.0
Source: *Highway Capacity Manual*, Transportation Research Board 2000		

Table 4.4-3 Study Area for Surface Streets Existing Intersection Operation				
Location	Control[1]	Peak Hour	Delay[2]	LOS
1. Roth Road / Manthey Road	SSS	AM PM	2 2	A A
2. Roth Road / I-5 SB Ramps	SSS	AM PM	4 4	A A
3. Roth Road / I-5 NB Ramps	SSS	AM PM	3 3	A A
4. Roth Road / Old Harlan Road	SSS	AM PM	3 4	A A
5. Roth Road / McKinley Avenue	SSS	AM PM	3 3	A A
6. Roth Road / Airport Way	Signal	AM PM	13 12	B B
7. Lathrop Road / Manthey Road	SSS	AM PM	2 3	A A
8. Lathrop Road / I-5 SB Ramps	SSS	AM PM	11 11	B B
9. Lathrop Road / I-5 NB Ramps	SSS	AM **PM**	5 **52**	A **F**
10. Lathrop Road / Old Harlan Road	SSS	AM PM	6 3	A A
11. Lathrop Road / New Harlan Road	Signal	AM PM	17 17	B B
12. Lathrop Road / Fifth Street	Signal	AM PM	10 10	B B
13. Lathrop Road / Airport Way	Signal	AM PM	24 32	C C
14. Louise Avenue / Manthey Road	SSS	AM PM	2 3	A A
15. Louise Avenue / I-5 SB Ramps	Signal	AM PM	17 14	B B
16. Louise Avenue / I-5 NB Ramps	Signal	AM PM	7 9	A A
17. Louise Avenue / Old Harlan Road	SSS	AM PM	4 3	A A
18. Louise Avenue / New Harlan Road	Signal	AM PM	14 17	B B
19. Louise Avenue / Cambridge Drive	Signal	AM PM	7 7	A A
20. Louise Avenue / Fifth Street	Signal	AM PM	6 8	A A
21. Louise Avenue / McKinley Avenue	Signal	AM PM	19 20	B B
22. Louise Avenue / Airport Way	AWS	AM **PM**	19 **50**	C **E**

Table 4.4-3
Study Area for Surface Streets Existing Intersection Operation

Location	Control[1]	Peak Hour	Delay[2]	LOS
23. Vierra Road / McKinley Avenue	AWS	AM PM	11 13	B B
24. Yosemite Avenue / McKinley Avenue	AWS	AM PM	5 9	A B

Notes: Deficient Intersections Indicated in Bold

[1]- Signal = Traffic signal control, AWS= All-way stop sign control, and SSS= Side-street stop sign control

[2]- Delay calculated using methodologies provided in *Highway Capacity Manual*, Transportation Research Board, 2000

Source: Fehr & Peers 2004

Table 4.4-4
Freeway Ramp LOS Criteria

Level of Service	Maximum Density (Passenger Cars/Mile/Lane)
A	<=10
B	>10–20
C	>20–28
D	>28–35
E	>35
F	Demand Exceeds Capacity

Source: *Highway Capacity Manual*, Transportation Research Board 2000

Table 4.4-5
Study Area for Surface Streets Existing Freeway Ramp Operations

Interchange	Ramp		NB		SB	
			Delay	LOS	Delay	LOS
I-5/Roth Road	On Ramp	AM PM	6 18	A B	17 8	B A
	Off Ramp	AM PM	4 18	A B	14 4	B A
I-5/Lathrop Road	On Ramp	AM PM	7 18	A B	16 7	B A
	Off Ramp	AM PM	1 13	A B	12 3	B A
I-5/Louise Avenue	On Ramp	AM PM	6 18	A B	17 8	B A
	Off Ramp	AM PM	3 16	A B	12 3	B A

Source: Fehr & Peers 2004

Table 4.4-6 Freeway Segment LOS Criteria	
Level of Service	Maximum Density (Passenger Cars/Mile/Lane)
A	0–11
B	>11–18
C	>18–26
D	>26–35
E	>35–45
F	>45
Source: *Highway Capacity Manual*, Transportation Research Board 2000	

Table 4.4-7 Study Area for Freeway Segments Existing Freeway Segment Volumes				
Freeway Segment	Traffic Volumes (vehicles per peak hour)			
	AM		PM	
	NB/EB	SB/WB	NB/EB	SB/WB
I-5				
1. North of Pershing Avenue	2080	5235	5479	2735
2. Between Pershing Avenue and Route 4 Crosstown	2118	5329	5577	2785
3. Between Route 4 Crosstown and Charter Way	1968	4952	5183	2587
4. Between Charter Way and 8th Street	1874	4716	4936	2464
5. Between 8th Street and Downing Avenue	1706	4291	4492	2242
6. Between Downing Avenue and French Camp Road	1706	4291	4492	2242
7. Between French Camp Road and Matthews Road	1312	3301	3455	1725
8. Between Matthews Road and the El Dorado Ramps	1274	3207	3356	1676
9. Between the El Dorado Ramps and Roth Road	1368	3443	3603	1799
10. Between Roth Road and Lathrop Road	1368	3443	3603	1799
11. Between Lathrop Road and Louise Avenue	1274	3207	3356	1676
12. Between Louise Avenue and SR 120	1274	3207	3356	1676
13. Between SR 120 and the Manthey/Mossdale hook ramps	2680	6744	7058	3524
14. Between the Manthey/Mossdale hook ramps and I-205	2680	6744	7058	3524
15. Between I-205 and the West 11th Street ramps	1870	2138	2630	2117
16. Between the West 11th Street ramps and Kasson Road	935	1069	1315	1058
17. South of Kasson Road	904	1034	1272	1024
SR 99				
1. North of Route 4 Crosstown	3625	4293	4148	4124

Table 4.4-7 Study Area for Freeway Segments Existing Freeway Segment Volumes				
Freeway Segment	Traffic Volumes (vehicles per peak hour)			
	AM		PM	
	NB/EB	SB/WB	NB/EB	SB/WB
2. Between Route 4 Crosstown and Charter Way	3733	4421	4272	4246
3. Between Charter Way and Farmington Road	3266	3868	3738	3715
4. Between Farmington Road and Mariposa Road	3051	3613	3491	3470
5. Between Mariposa Road and Clark Drive	3051	3613	3491	3470
6. Between Clark Drive and Arch Road	3051	3613	3491	3470
7. Between Arch Road and French Camp Road	3051	3613	3491	3470
8. Between French Camp Road and Lathrop Road	2477	2933	2834	2817
9. Between Lathrop Road and Yosemite Avenue	2405	2848	2752	2735
10. Between Yosemite Avenue and SR 120	3087	3656	3532	3511
11. Between SR 120 and Austin Road	5227	2343	4451	3193
12. South of Austin Road	5227	2343	4451	3193
SR 120				
1. Between I-5 and Yosemite Avenue	1364	3165	3430	1701
2. Between Yosemite Avenue and Airport Way	1130	2622	2842	1410
3. Between Airport Way and Union Road	1130	2622	2842	1410
4. Between Union Road and Main Street	1091	2532	2744	1361
5. Between Main Street and SR 99	1091	2532	2744	1361
I-205				
1. Between I-5 and Paradise Road (potential future interchange)	406	3946	4834	1955
2. Between Paradise Road and MacArthur Drive	406	3946	4834	1955
3. Between MacArthur Drive and Tracy Boulevard	406	3946	4834	1955
4. Between Tracy Boulevard and Grant Line Road	406	3946	4834	1955
5. West of Grant Line Road	406	3946	4834	1955

Table 4.4-8
Freeway Segment Level of Service (LOS) Existing Conditions

Freeway Segment	Period	NB/EB		SB/WB	
		Density (pc/mi/ln)	LOS	Density (pc/mi/ln)	LOS
I-5					
1. North of Pershing Avenue	AM PM	11.7 **35.1**	B **E**	32.3 15.4	D B
2. Between Pershing Avenue and Route 4 Crosstown	AM PM	11.9 **36.3**	B **E**	33.3 15.6	D B
3. Between Route 4 Crosstown and Charter Way	AM PM	11.0 31.8	B D	29.6 14.5	D B
4. Between Charter Way and 8th Street	AM PM	10.6 29.6	A D	27.8 13.9	D B
5. Between 8th Street and Downing Avenue	AM PM	9.6 26.0	A D	24.6 12.6	C B
6. Between Downing Avenue and French Camp Road	AM PM	9.6 26.0	A D	24.6 12.6	C B
7. Between French Camp Road and Matthews Road	AM PM	7.4 19.5	A C	18.6 9.7	C A
8. Between Matthews Road and the El Dorado Ramps	AM PM	7.2 18.9	A C	18.1 9.5	C A
9. Between the El Dorado Ramps and Roth Road	AM PM	7.7 20.3	A C	19.4 10.1	C A
10. Between Roth Road and Lathrop Road	AM PM	7.7 20.3	A C	19.4 10.1	C A
11. Between Lathrop Road and Louise Avenue	AM PM	7.2 18.9	A C	18.1 9.5	C A
12. Between Louise Avenue and SR 120	AM PM	7.2 18.9	A C	18.1 9.5	C A
13. Between SR 120 and the Manthey/Mossdale hook ramps	AM PM	11.3 33.2	B D	30.8 14.9	D B
14. Between the Manthey/Mossdale hook ramps and I-205	AM PM	11.3 33.2	B D	30.8 14.9	D B
15. Between I-205 and the West 11th Street ramps	AM PM	10.5 14.8	A B	12.1 11.9	B B
16. Between the West 11th Street ramps and Kasson Road	AM PM	5.3 7.4	A A	6.0 6.0	A A
17. South of Kasson Road	AM PM	5.1 7.2	A A	5.8 5.8	A A
SR 99					
1. North of Route 4 Crosstown	AM PM	33.5 **N/A**	D **F**	**N/A** **44.4**	**F** **E**
2. Between Route 4 Crosstown and Charter Way	AM PM	**35.3** **N/A**	**E** **F**	**N/A** **N/A**	**F** **F**
3. Between Charter Way and Farmington Road	AM PM	28.4 **N/A**	D **F**	**38.0** **35.0**	**E** **E**

Table 4.4-8
Freeway Segment Level of Service (LOS) Existing Conditions

Freeway Segment	Period	NB/EB		SB/WB	
		Density (pc/mi/ln)	LOS	Density (pc/mi/ln)	LOS
4. Between Farmington Road and Mariposa Road	AM PM	25.9 31.4	C D	33.3 31.1	D D
5. Between Mariposa Road and Clark Drive	AM PM	25.9 31.4	C D	33.3 31.1	D D
6. Between Clark Drive and Arch Road	AM PM	25.9 31.4	C D	33.3 31.1	D D
7. Between Arch Road and French Camp Road	AM PM	25.9 31.4	C D	33.3 31.1	D D
8. Between French Camp Road and Lathrop Road	AM PM	20.5 23.7	C C	24.7 23.5	C C
9. Between Lathrop Road and Yosemite Avenue	AM PM	19.9 22.9	C C	23.8 22.8	C C
10. Between Yosemite Avenue and SR 120	AM PM	26.3 32.0	D D	34.0 31.7	D D
11. Between SR 120 and Austin Road	AM PM	N/A N/A	**F** **F**	19.4 27.5	C D
12. South of Austin Road	AM PM	N/A N/A	**F** **F**	19.4 27.5	C D
SR 120					
1. Between I-5 and Yosemite Avenue	AM PM	11.2 30.1	B D	26.8 13.9	D B
2. Between Yosemite Avenue and Airport Way	AM PM	9.3 23.5	A C	21.5 11.6	C B
3. Between Airport Way and Union Road	AM PM	8.9 22.6	A C	20.8 11.2	C B
4. Between Union Road and Main Street	AM PM	8.9 22.6	A C	20.8 11.2	C B
5. Between Main Street and SR 99	AM PM	7.7 19.3	A C	17.8 9.6	B A
I-205					
1. Between I-5 and Paradise Road (site of potential future interchange)	AM PM	3.2 **N/A**	A **F**	**36.3** 15.5	**E** B
2. Between Paradise Road and MacArthur Drive	AM PM	3.2 **N/A**	A **F**	**36.3** 15.5	**E** B
3. Between MacArthur Drive and Tracy Boulevard	AM PM	3.2 **N/A**	A **F**	**36.3** 15.5	**E** B
4. Between Tracy Boulevard and Grant Line Road	AM PM	3.2 **N/A**	A **F**	**36.3** 15.5	**E** B
5. West of Grant Line Road	AM PM	3.2 **N/A**	A **F**	**36.3** 15.5	**E** B

Deficient LOS Condition Indicated in Bold

Note: LOS Calculations performed using the 2000 Highway Capacity Manual, Basic Freeway Segments
N/A – The Highway Capacity Software (HCS) will not compute density result when LOS is F

Table 4.4-9
Existing, Existing Plus Phase I, Existing Plus Buildout Peak Hour Level of Service

Location	Control[1]	Peak Hour	Existing		Existing Plus Phase I		Existing Plus Buildout	
			Delay[2]	LOS	Delay[2]	LOS	Delay[2]	LOS
1. Roth Road / Manthey Road	SSS	AM PM	2 2	A A	9 10	A A	11 19	A C
2. Roth Road / I-5 SB Ramps	SSS	AM PM	4 4	A A	33 **>50**	D **F**	**>50** **>50**	**F** **F**
3. Roth Road / I-5 NB Ramps	SSS	AM PM	3 3	A A	15 15	B C	13 **> 50**	B **F**
4. Roth Road / Harlan Road	SSS	AM PM	3 4	A A	**>50** **>50**	**F** **F**	**>50** **>50**	**F** **F**
5. Roth Road / McKinley Avenue	SSS	AM PM	3 3	A A	11 14	B B	11 31	B C
6. Roth Road / Airport Way	Signal	AM PM	13 12	B B	9 14	A B	10 19	A B
7. Lathrop Road / Manthey Road / Golden Valley Parkway[3]	Signal	AM PM	2 3	A A	31 52	C D	**59** **>80**	**E** **F**
8. Lathrop Road / I-5 SB Ramps	SSS	AM PM	11 11	B B	**>50** **>50**	**F** **F**	**>50** **>50**	**F** **F**
9. Lathrop Road / I-5 NB Ramps	SSS	AM PM	5 **52**	A **F**	**>50** **>50**	**F** **F**	**>50** **>50**	**F** **F**
10. Lathrop Road / Old Harlan Road	SSS[5]	AM PM	6 3	A A	37 27	E D	48 32	E D
11. Lathrop Road / New Harlan Road	Signal	AM PM	17 17	B B	**>80** 35	**F** D	**>80** 44	**F** D
12. Lathrop Road / Fifth Street	Signal	AM PM	10 11	B B	18 21	B C	22 24	C C
13. Lathrop Road / Airport Way	Signal	AM PM	24 32	C C	33 45	C D	39 **63**	D **E**
14. Louise Avenue / Manthey Road / Golden Valley Parkway[4]	Signal	AM PM	2 3	A A	23 30	C C	14 11	C C
15. Louise Avenue / I-5 SB Ramps	Signal	AM PM	17 14	B B	52 **>80**	D **F**	**64** **>80**	**E** **F**
16. Louise Avenue / I-5 NB Ramps	Signal	AM PM	7 9	A A	26 **69**	C **E**	38 **>80**	D **F**
17. Louise Avenue / Old Harlan Road	SSS[5]	AM PM	4 3	A A	17 17	C C	41 18	E C
18. Louise Avenue / New Harlan Road	Signal	AM PM	14 17	B B	21 32	C C	22 31	C C
19. Louise Avenue / Cambridge Drive	Signal	AM PM	7 7	A A	11 16	B B	11 17	B B
20. Louise Avenue / Fifth Street	Signal	AM PM	6 8	A A	11 14	B B	11 14	B B
21. Louise Avenue / McKinley Avenue	Signal	AM PM	19 20	B B	29 34	C C	31 40	C D
22. Louise Avenue / Airport Way	AWS	AM PM	19 **50**	C **E**	**>80** **>80**	**F** **F**	**>80** **>80**	**F** **F**
23. Vierra Road / McKinley Avenue	AWS	AM PM	11 13	B B	11 18	B C	11 21	B C

Table 4.4-9
Existing, Existing Plus Phase I, Existing Plus Buildout Peak Hour Level of Service

Location	Control[1]	Peak Hour	Existing		Existing Plus Phase I		Existing Plus Buildout	
			Delay[2]	LOS	Delay[2]	LOS	Delay[2]	LOS
24. Yosemite Avenue / McKinley Avenue	AWS	AM PM	5 9	A B	11 25	B C	11 31	B D
25. *Intersection only applies to 2020 scenarios*	--	--	--	--	--	--	--	--
26. De Lima Road / Street A	RA	AM PM	N/A N/A	N/A N/A	N/A N/A	N/A N/A	6 6	A A
27. De Lima Road / Main Street	RA	AM PM	N/A N/A	N/A N/A	N/A N/A	N/A N/A	5 7	A A
28. De Lima Road / Golden Valley Parkway	Signal	AM PM	N/A N/A	N/A N/A	N/A N/A	N/A N/A	33 31	C C
29. Dos Reis Road / Street A	SSS	AM PM	N/A N/A	N/A N/A	0 0	A A	12 13	B B
30. Dos Reis Road / Main Street	RA	AM PM	N/A N/A	N/A N/A	5 5	A A	5 6	A A
31. Dos Reis Road / Golden Valley Parkway	Signal	AM PM	N/A N/A	N/A N/A	30 39	C D	26 35	C D
32. Lathrop Road / Street A	RA	AM PM	N/A N/A	N/A N/A	4 4	A A	5 7	A A
33. Lathrop Road / Main Street	Signal	AM PM	N/A N/A	N/A N/A	15 31	B C	28 49	C D
34. Street A / Barbara Terry Drive	RA	AM PM	N/A N/A	N/A N/A	4 4	A A	4 5	A A
35. Street A / Golden Valley Parkway	Signal	AM PM	N/A N/A	N/A N/A	13 16	B B	20 24	C C

Notes: **Deficient Intersections Indicated in Bold**
N/A = Intersection not present under existing conditions or the Existing Plus Phase 1 scenario.
[1] Signal = Traffic signal control, AWS= All-way stop sign control, RA= roundabout, and SSS= Side-street stop sign control
[2] Delays expressed in minutes and calculated using methodologies provided in *Highway Capacity Manual*, Transportation Research Board, 2000
[3] Lathrop Road/Manthey Road intersection for existing condition and Lathrop Road/Golden Valley Parkway intersection for Existing Plus Phase 1 and Existing Plus Buildout Scenarios
[4] Louise Avenue/Manthey Road intersection for existing condition and Louise Avenue/Golden Valley Parkway intersection for Existing Plus Phase 1 and Existing Plus Buildout Scenarios
[5] Note that at SSS intersections in the City of Lathrop LOS E is acceptable
Source: Fehr & Peers 2004

Table 4.4-10
2010 No Project and 2010 Plus Phase I Peak Hour Level of Service

Location	Control[1]	Peak Hour	2010 No Project		2010 Plus Phase I of Project	
			Delay[2]	LOS	Delay[2]	LOS
1. Roth Road / Manthey Road	Signal	AM PM	27 18	C B	7[3] 32	A C
2. Roth Road / I-5 SB Ramps	Signal	AM PM	36 32	D C	**>80** 28	**F** C
3. Roth Road / I-5 NB Ramps	Signal	AM PM	8 23	A C	20 35	C D
4. Roth Road / Old Harlan Road	Signal	AM PM	34 30	C C	**58** **63**	**E** **E**
5. Roth Road / McKinley Avenue	SSS	AM PM	14 19	B C	30 **>50**	D **F**
6. Roth Road / Airport Way	Signal	AM PM	10 17	B B	15 18	B B
7. Lathrop Road / Manthey Road / Golden Valley Parkway[4]	Signal	AM PM	15 17	B B	30 43	C D
8. Lathrop Road / I-5 SB Ramps	Signal	AM PM	33 30	C C	**>80** **56[3]**	**F** **E**
9. Lathrop Road / I-5 NB Ramps	Signal	AM PM	14 41	B D	19 **>80**	B **F**
10. Lathrop Road / Old Harlan Road	SSS	AM PM	17 16	C C	28 19	D C
11. Lathrop Road / New Harlan Road	Signal	AM PM	26 19	C B	41 42	D D
12. Lathrop Road / Fifth Street	Signal	AM PM	26 25	C C	29 30	C C
13. Lathrop Road / Airport Way	Signal	AM PM	26 25	C C	32 29	C C
14. Louise Avenue / Golden Valley Parkway	Signal	AM PM	19 14	B B	22 36	C D
15. Louise Avenue / I-5 SB Ramps	Signal	AM PM	**>80** 40	**F** D	53[3] 25[3]	D C
16. Louise Avenue / I-5 NB Ramps	Signal	AM PM	16 **>80**	B **F**	23 **59**	C **E**
17. Louise Avenue / Old Harlan Road	SSS	AM PM	34 17	D C	**>50** 25	**F** D
18. Louise Avenue / New Harlan Road	Signal	AM PM	49 46	D D	**>80** **62**	**F** **E**
19. Louise Avenue / Cambridge Drive	Signal	AM PM	11 16	B B	14 21	B C
20. Louise Avenue / Fifth Street	Signal	AM PM	17 16	B B	19 21	B C
21. Louise Avenue / McKinley Avenue	Signal	AM PM	**>80** **77**	**F** **E**	**>80** **>80**	**F** **F**
22. Louise Avenue / Airport Way	AWS/ Signal	AM PM	**>80** **>80**	**F** **F**	14 51	B D
23. Vierra Road / McKinley Avenue	Signal	AM PM	35 **>80**	C **F**	**56** **>80**	**E** **F**
24. Yosemite Avenue / McKinley Avenue	Signal	AM PM	29 28	C C	38 50	D D

Table 4.4-10
2010 No Project and 2010 Plus Phase I Peak Hour Level of Service

Location	Control[1]	Peak Hour	2010 No Project		2010 Plus Phase I of Project	
			Delay[2]	LOS	Delay[2]	LOS
25.-28. *Intersections only applies to other scenarios*	--	--	--	--	--	--
29. Dos Reis Road / Street A	Signal	AM PM	N/A N/A	N/A N/A	9 9	A A
30. Dos Reis Road / Main Street	RA	AM PM	N/A N/A	N/A N/A	5 6	A A
31. Dos Reis Road / Golden Valley Parkway	Signal	AM PM	N/A N/A	N/A N/A	36 39	D D
32. Lathrop Road / Street A	RA	AM PM	N/A N/A	N/A N/A	4 4	A A
33. Lathrop Road / Main Street	Signal	AM PM	N/A N/A	N/A N/A	14 27	B C
34. Street A / Barbara Terry Drive	RA	AM PM	N/A N/A	N/A N/A	4 4	A A
35. Street A / Golden Valley Parkway	Signal	AM PM	N/A N/A	N/A N/A	21 19	C B
36. Main Street (Mossdale Landing)/Golden Valley Parkway	Signal	AM PM	7 8	A A	8 8	A A
37. *Intersection only applies to 2020 scenarios*	--	--	--	--	--	--
38. River Islands Parkway / McKee Boulevard	Signal	AM PM	7 8	A A	8 8	A A
39. Louise Avenue / Manthey Road	AWS	AM PM	30 24	C C	N/A N/A	N/A N/A

Notes: **Deficient Intersections Indicated in Bold**

[1] Signal = Traffic signal control, AWS= All-way stop sign control, RA=Roundabout and SSS= Side-street stop sign control

[2] Delay calculated using methodologies provided in *Highway Capacity Manual*, Transportation Research Board, 2000

[3] Intersection operation improved through the implementation of project mitigation measures identified for the Existing Plus Phase I and Existing Plus Buildout Scenarios

[4] Lathrop Road/Manthey Road intersection for the 2010 No Project Scenario and Lathrop Road/Golden Valley Parkway for the 2010 Plus Phase 1 scenario

Source: Fehr & Peers 2004

Table 4.4-11
2020 No Project and 2020 Plus Buildout Peak Hour Level of Service

Location	Control[1]	Peak Hour	2025 No Project		2025 Plus Buildout of Project	
			Delay[2]	LOS	Delay[2]	LOS
1. Roth Road / Manthey Road	Signal	AM PM	22 31	C C	22 24	C D
2. Roth Road / I-5 SB Ramps	Signal	AM PM	15 21	B C	12 28	B C
3. Roth Road / I-5 NB Ramps	Signal	AM PM	**70** 13	**E** B	12 18	B B
4. Roth Road / Old Harlan Road	Signal	AM PM	40 **58**	D **E**	38 48	D D
5. Roth Road / McKinley Avenue	Signal	AM PM	42 19	D B	**73** 37	**E** D
6. Roth Road / Airport Way	Signal	AM PM	17 39	B D	23 39	C D
7. Lathrop Road / Golden Valley Parkway	Signal	AM PM	**>80** **>80**	**F** **F**	34 51	C D
8. Lathrop Road / I-5 SB Ramps	Signal	AM PM	**>80** **>80**	**F** **F**	48 **>80**	D **F**
9. Lathrop Road / I-5 NB Ramps	Signal	AM PM	**77** **77**	**E** **E**	**>80** **>80**	**F** **F**
10. Lathrop Road / Old Harlan Road	SSS	AM PM	**>50** **>50**	**F** **F**	**>50** **>50**	**F** **F**
11. Lathrop Road / New Harlan Road	Signal	AM PM	**>80** **>80**	**F** **F**	**>80** **>80**	**F** **F**
12. Lathrop Road / Fifth Street	Signal	AM PM	35 44	D D	**65** **74**	**E** **E**
13. Lathrop Road / Airport Way	Signal	AM PM	**>80** **77**	**F** **E**	**>80** **>80**	**F** **F**
14. Louise Avenue / Golden Valley Parkway	Signal	AM PM	52 30	D C	46 55	D D
15. Louise Avenue / I-5 SB Ramps	Signal	AM PM	34 21	C C	50 26	D C
16. Louise Avenue / I-5 NB Ramps	Signal	AM PM	21 23	C C	22 39	C D
17. Louise Avenue / Old Harlan Road	SSS	AM PM	**>50** 30	**F** D	**>50** 34	**F** D
18. Louise Avenue / New Harlan Road	Signal	AM PM	**71** 50	**E** D	**>80** 49	**F** D
19. Louise Avenue / Cambridge Drive	Signal	AM PM	16 14	B B	18 15	B B
20. Louise Avenue / Fifth Street	Signal	AM PM	27 27	C C	30 42	C D
21. Louise Avenue / McKinley Avenue	Signal	AM PM	53 31	D C	**63** 43	**E** D
22. Louise Avenue / Airport Way	Signal	AM PM	**74** **>80**	**E** **F**	**75** **>80**	**E** **F**
23. *Intersection only applies to previous scenarios*	--	--	--	--	--	--
24. Yosemite Avenue / McKinley Avenue	Signal	AM PM	33 30	C C	**>80** 40	**F** D
25. Yosemite Avenue / D'Arcy Parkway	Signal	AM PM	22 30	C D	24 32	C C
26. De Lima Road / Street A	RA	AM PM	N/A N/A	N/A N/A	5 5	A A

Table 4.4-11
2020 No Project and 2020 Plus Buildout Peak Hour Level of Service

Location	Control[1]	Peak Hour	2025 No Project		2025 Plus Buildout of Project	
			Delay[2]	LOS	Delay[2]	LOS
27. De Lima Road / Main Street	RA	AM PM	N/A N/A	N/A N/A	5 7	A A
28. De Lima Road / Golden Valley Parkway	Signal	AM PM	N/A N/A	N/A N/A	29 27	C C
29. Dos Reis Road / Street A	Signal	AM PM	N/A N/A	N/A N/A	15 17	B C
30. Dos Reis Road / Main Street	RA	AM PM	N/A N/A	N/A N/A	5 6	A A
31. Dos Reis Road / Golden Valley Parkway	Signal	AM PM	N/A N/A	N/A N/A	24 27	C C
32. Lathrop Road / Street A	RA	AM PM	N/A N/A	N/A N/A	5 7	A A
33. Lathrop Road / Main Street	Signal	AM PM	N/A N/A	N/A N/A	21 33	C C
34. Street A / Barbara Terry Drive	RA	AM PM	N/A N/A	N/A N/A	5 5	A A
35. Street A / Golden Valley Parkway	Signal	AM PM	N/A N/A	N/A N/A	25 20	C C
36. Main Street (Mossdale Landing)/Golden Valley Parkway	Signal	AM PM	30 52	C D	52 **>80**	D **F**
37. River Islands Parkway / Silvera Access	Signal	AM PM	9 9	A A	31 16	A A
38. River Islands Parkway / McKee Boulevard	Signal	AM PM	21 29	C C	54 49	C B

Notes: **Deficient Intersections Indicated in Bold**
[1] Signal = Traffic signal control, AWS= All-way stop sign control, RA= roundabout and SSS= Side-street stop sign control
[2] Delay calculated using methodologies provided in *Highway Capacity Manual*, Transportation Research Board, 2000
Source: Fehr & Peers 2004

Table 4.4-12
Existing Plus Phase 1 and Existing Plus Buildout Freeway Ramp Operations

Interchange	Ramp		Existing Plus Phase 1				Existing Plus Build out			
			NB		SB		NB		SB	
			Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
Roth Road	On Ramp	AM PM	6 21	A C	23 11	C B	7 23	A C	23 12	C B
	Off Ramp	AM PM	7 23	A C	17 7	B A	7 23	A C	18 8	B A
Lathrop Road	On Ramp	AM PM	9 26	A C	18 14	B B	11 26	B C	20 15	B B
	Off Ramp	AM PM	5 20	A B	19 7	B A	6 22	A C	20 9	C A
Louise Avenue	On Ramp	AM PM	9 22	A C	19 13	B B	11 24	B C	21 14	C B
	Off Ramp	AM PM	7 19	A B	17 12	B B	9 21	A C	20 15	C B

Source: Fehr & Peers 2004

Table 4.4-13
2010 No Project and 2010 Plus Phase 1 Freeway Ramp Operations

Interchange	Ramp		2010 No Project				2010 Plus Phase 1			
			NB		SB		NB		SB	
			Density	LOS	Density	LOS	Density	LOS	Density	LOS
Roth Road	On Ramp	AM	17	B	25	C	18	B	30	D
		PM	23	C	21	C	26	C	22	C
	Off Ramp	AM	16	B	18	B	17	B	21	C
		PM	26	C	18	B	30	D	20	B
Lathrop Road	On Ramp	AM	17	B	28	C	19	B	29	D
		PM	28	C	20	B	**34**[1]	**F**	25	C
	Off Ramp	AM	11	B	19	B	13	B	24	C
		PM	29	D	17	B	26	C	19	B
Louise Avenue	On Ramp	AM	16	B	32	D	18	B	**34**[1]	**F**
		PM	31	D	11	B	**35**[1]	**F**	25	C
	Off Ramp	AM	14	B	28	C	16	B	**>35**	**F**
		PM	29	D	17	B	31	D	25	C

Note: **Deficient ramp elements shown in Bold**
[1] Ramp LOS calculations address both the anticipated vehicle density and ramp operation characteristics. Ramps with a vehicle density that approaches, but does not exceed the LOS F threshold (see Table 4.4-4) may still be identified as operating at LOS F. This inconsistency can be attributed to high freeway mainline volumes, which negatively impact the operation of freeway ramps.
Source: Fehr & Peers 2004

Table 4.4-14
2020 No Project and 2020 Plus Buildout Freeway Ramp Operations

Interchange	Ramp		2020 No Project				2020 Plus Build Out			
			NB		SB		NB		SB	
			Density	LOS	Density	LOS	Density	LOS	Density	LOS
Roth Road	On Ramp	AM	15	B	33	D	26	C	**>35**	**F**
		PM	29	D	17	B	**>35**	**F**	28	C
	Off Ramp	AM	9	A	24	C	20	C	26	C
		PM	**>35**	**F**	15	B	**>35**	**F**	25	C
Lathrop Road	On Ramp	AM	12	B	**>35**	**F**	23	C	**>35**	**F**
		PM	**>35**	**F**	15	B	**>35**	**F**	29	D
	Off Ramp	AM	5	A	26	C	17	B	**>35**	**F**
		PM	**>35**	**F**	13	B	**>35**	**F**	24	C
Louise Avenue	On Ramp	AM	10	A	12	B	20	C	**>35**	**F**
		PM	19	B	14	B	**>35**	**F**	28	C
	Off Ramp	AM	6	A	**>35**	**F**	17	B	**>35**	**F**
		PM	28	D	12	B	**>35**	**F**	**>35**	**F**
	Loop On Ramp	AM	N/A	N/A	32	D	N/A	N/A	34	D
		PM	N/A	N/A	14	B	N/A	N/A	24	C

Note: **Deficient ramp elements shown in Bold**
Source: Fehr & Peers 2004

Table 4.4-15
Existing Plus Phase 1 Scenario Freeway Segment Operations

Freeway Segment	Period	NB/EB		SB/WB	
		Density (pc/mi/ln)	LOS	Density (pc/mi/ln)	LOS
I-5					
1. North of Pershing Avenue	AM	12.0	B	**35.1**	**E**
	PM	**38.7**	**E**	16.0	B
2. Between Pershing Avenue and Route 4 Crosstown	AM	12.3	B	**36.9**	**E**
	PM	**41.3**	**E**	16.4	B
3. Between Route 4 Crosstown and Charter Way	AM	12.0	B	**35.1**	**E**
	PM	**38.5**	**E**	16.2	B
4. Between Charter Way and 8th Street	AM	11.7	B	33.2	D
	PM	**36.0**	**E**	15.9	B
5. Between 8th Street and Downing Avenue	AM	10.9	A	29.6	D
	PM	31.9	D	14.8	B
6. Between Downing Avenue and French Camp Road	AM	10.9	A	29.6	D
	PM	31.9	D	14.8	B
7. Between French Camp Road and Matthews Road	AM	8.0	A	22.4	C
	PM	23.4	C	11.7	B
8. Between Matthews Road and El Dorado Ramps	AM	7.7	A	21.9	C
	PM	22.6	C	11.5	B
9. Between El Dorado Ramps and Roth Road	AM	8.3	A	23.4	C
	PM	24.2	C	12.1	B
10. Between Roth Road and Lathrop Road	AM	9.4	A	25.2	C
	PM	26.5	D	12.4	B
11. Between Lathrop Road and Louise Avenue	AM	9.4	A	19.3	C
	PM	21.1	C	13.8	B
12. Between Louise Avenue and State Route 120 (SR 120)	AM	10.3	A	20.2	C
	PM	21.3	C	14.1	B
13. Between SR 120 and Manthey / Mossdale hook ramps	AM	12.2	B	33.7	D
	PM	**36.2**	**E**	16.3	B
14. Between Manthey / Mossdale hook ramps and Interstate 205 (I-205)	AM	12.2	B	33.6	D
	PM	**36.1**	**E**	16.2	B
15. Between I-205 and West 11th Street ramps	AM	10.5	A	12.1	B
	PM	14.8	B	12.6	B
16. Between West 11th Street ramps and Kasson Road	AM	5.5	A	6.1	A
	PM	7.4	A	6.2	A
17. South of Kasson Road	AM	5.2	A	5.9	A
	PM	7.2	A	6.0	A
SR 99					
1. North of Route 4 Crosstown	AM	33.8	D	**N/A**	**F**
	PM	**N/A**	**F**	**N/A**	**F**
2. Between Route 4 Crosstown and Charter Way	AM	**35.3**	**E**	**N/A**	**F**
	PM	**N/A**	**F**	**N/A**	**F**
3. Between Charter Way and Farmington Road	AM	28.4	D	**38.5**	**E**
	PM	**37.8**	**E**	**35.5**	**E**
4. Between Farmington Road and Mariposa Road	AM	25.9	C	**35.0**	**E**
	PM	34.5	D	31.5	D

Table 4.4-15
Existing Plus Phase 1 Scenario Freeway Segment Operations

Freeway Segment	Period	NB/EB		SB/WB	
		Density (pc/mi/ln)	LOS	Density (pc/mi/ln)	LOS
5. Between Mariposa Road and Clark Drive	AM	25.9	C	**35.1**	**E**
	PM	33.9	D	31.4	D
6. Between Clark Drive and Arch Road	AM	25.9	C	**35.1**	**E**
	PM	33.9	D	31.4	D
7. Between Arch Road and French Camp Road	AM	25.9	C	33.7	D
	PM	32.5	D	31.4	D
8. Between French Camp Road and Lathrop Road	AM	20.5	C	24.9	C
	PM	24.5	C	23.8	C
9. Between Lathrop Road and Yosemite Avenue	AM	20.3	C	24.2	C
	PM	23.6	C	22.8	C
10. Between Yosemite Avenue and SR 120	AM	26.3	D	34.0	D
	PM	33.4	D	31.7	D
11. Between SR 120 and Austin Road	AM	**N/A**	**F**	19.8	C
	PM	**N/A**	**F**	31.1	D
12. South of Austin Road	AM	**N/A**	**F**	19.9	C
	PM	**N/A**	**F**	30.9	D
SR 120					
1. Between I-5 and Yosemite Avenue	AM	11.4	B	31.6	D
	PM	**38.6**	**E**	14.7	B
2. Between Yosemite Avenue and Airport Way	AM	9.5	A	25.0	C
	PM	28.8	D	12.3	B
3. Between Airport Way and Union Road	AM	9.7	A	24.8	C
	PM	28.8	D	12.3	B
4. Between Union Road and Main Street	AM	9.4	A	23.8	C
	PM	27.0	D	11.7	B
5. Between Main Street and SR 99	AM	9.3	A	23.6	C
	PM	26.9	D	11.7	B
I-205					
1. Between I-5 and Paradise Road (future interchange)	AM	4.9	A	**N/A**	**F**
	PM	**N/A**	**F**	17.1	B
2. Between Paradise Road and MacArthur Drive	AM	4.9	A	**N/A**	**F**
	PM	**N/A**	**F**	17.1	B
3. Between MacArthur Drive and Tracy Boulevard	AM	4.9	A	**44.7**	**E**
	PM	**N/A**	**F**	17.0	B
4. Between Tracy Boulevard and Grant Line Road	AM	3.7	A	**42.1**	**E**
	PM	**N/A**	**F**	16.5	B
5. West of Grant Line Road	AM	3.5	A	**41.8**	**E**
	PM	**N/A**	**F**	16.3	B

Note: **Deficient Segments shown in Bold**
LOS Calculations performed using the 2000 Highway Capacity Manual, Basic Freeway Segments
N/A – The Highway Capacity Software (HCS) will not compute density result when LOS is F

Table 4.4-16
Existing Plus Buildout Scenario Freeway Segment Operations

Freeway Segment	Period	NB/EB		SB/WB	
		Density (pc/mi/ln)	LOS	Density (pc/mi/ln)	LOS
I-5					
1. North of Pershing Avenue	AM PM	12.1 **39.7**	B **E**	**35.7** 16.3	**E** B
2. Between Pershing Avenue and Route 4 Crosstown	AM PM	12.5 **42.7**	B **E**	**37.8** 16.8	**E** B
3. Between Route 4 Crosstown and Charter Way	AM PM	12.5 **41.1**	B **E**	**36.6** 17.0	**E** B
4. Between Charter Way and 8th Street	AM PM	12.2 **38.3**	B **E**	34.6 16.8	D B
5. Between 8th Street and Downing Avenue	AM PM	11.5 33.9	B D	30.9 15.8	D B
6. Between Downing Avenue and French Camp Road	AM PM	11.5 33.9	B D	31.0 15.8	D B
7. Between French Camp Road and Matthews Road	AM PM	8.4 24.6	A C	23.3 12.7	C B
8. Between Matthews Road and El Dorado Ramps	AM PM	8.1 23.8	A C	22.8 12.4	C B
9. Between El Dorado Ramps and Roth Road	AM PM	8.7 25.5	A C	24.3 13.1	C B
10. Between Roth Road and Lathrop Road	AM PM	10.0 26.4	A D	25.9 13.4	C B
11. Between Lathrop Road and Louise Avenue	AM PM	10.2 22.3	A C	20.6 14.9	C B
12. Between Louise Avenue and State Route 120 (SR 120)	AM PM	11.3 23.3	B C	21.9 15.0	C B
13. Between SR 120 and Manthey / Mossdale hook ramps	AM PM	12.5 **38.8**	B **E**	**35.9** 16.7	**E** B
14. Between Manthey / Mossdale hook ramps and Interstate 205 (I-205)	AM PM	12.5 **38.7**	B **E**	**35.8** 16.6	**E** B
15. Between I-205 and West 11th Street ramps	AM PM	10.6 14.8	A B	12.3 12.8	B B
16. Between West 11th Street ramps and Kasson Road	AM PM	5.5 7.4	A A	6.1 6.3	A A
17. Between South of Kasson Road	AM PM	5.3 7.2	A A	5.9 6.0	A A
SR 99					
1. North of Route 4 Crosstown	AM PM	34.5 **N/A**	D **F**	**N/A** **N/A**	**F** **F**
2. Between Route 4 Crosstown and Charter Way	AM PM	**35.3** **N/A**	**E** **F**	**N/A** **N/A**	**F** **F**
3. Between Charter Way and Farmington Road	AM PM	28.4 **38.3**	D **E**	**38.7** **35.6**	**E** **E**
4. Between Farmington Road and Mariposa Road	AM PM	26.1 **35.6**	D **E**	**36.1** 31.6	**E** D
5. Between Mariposa Road and Clark Drive	AM PM	26.0 34.7	C D	**36.1** 31.4	**E** D

Table 4.4-16
Existing Plus Buildout Scenario Freeway Segment Operations

Freeway Segment	Period	NB/EB		SB/WB	
		Density (pc/mi/ln)	LOS	Density (pc/mi/ln)	LOS
6. Between Clark Drive and Arch Road	AM PM	26.0 34.7	C D	**36.1** 31.4	**E** D
7. Between Arch Road and French Camp Road	AM PM	25.9 32.6	C D	33.9 31.4	D D
8. Between French Camp Road and Lathrop Road	AM PM	20.5 24.5	C C	25.0 23.9	C C
9. Between Lathrop Road and Yosemite Avenue	AM PM	20.7 23.9	C C	24.4 22.8	C C
10. Between Yosemite Avenue and SR 120	AM PM	26.3 34.1	D D	34.0 31.7	D D
11. Between SR 120 and Austin Road	AM PM	**N/A** **N/A**	**F** **F**	20.0 31.8	C D
12. South of Austin Road	AM PM	**N/A** **N/A**	**F** **F**	20.0 31.6	C D
SR 120					
1. Between I-5 and Yosemite Avenue	AM PM	11.6 **40.0**	B **E**	33.0 15.2	D B
2. Between Yosemite Avenue and Airport Way	AM PM	9.7 29.5	A D	25.8 12.8	C B
3. Between Airport Way and Union Road	AM PM	10.0 29.8	A D	25.7 12.7	C B
4. Between Union Road and Main Street	AM PM	9.6 27.8	A D	24.7 12.2	C B
5. Between Main Street and SR 99	AM PM	9.8 27.7	A D	24.4 12.1	C B
I-205					
1. Between I-5 and Paradise Road (future interchange)	AM PM	5.2 **N/A**	A **F**	**N/A** 17.6	**F** B
2. Between Paradise Road and MacArthur Drive	AM PM	5.2 **N/A**	A **F**	**N/A** 17.6	**F** B
3. Between MacArthur Drive and Tracy Boulevard	AM PM	5.0 **N/A**	A **F**	**N/A** 17.3	**F** B
4. Between Tracy Boulevard and Grant Line Road	AM PM	3.8 **N/A**	A **F**	**N/A** 16.8	**F** B
5. West of Grant Line Road	AM PM	3.7 **N/A**	A **F**	**N/A** 16.5	**F** B

Note: **Deficient Segments shown in Bold**
LOS Calculations performed using the 2000 Highway Capacity Manual, Basic Freeway Segments
N/A – The Highway Capacity Software (HCS) will not compute density result when LOS is F

Table 4.4-17
2010 No Project Scenario Freeway Segment Operations

Freeway Segment	Period	NB/EB		SB/WB	
		Density (pc/mi/ln)	LOS	Density (pc/mi/ln)	LOS
I -5					
1. North of Pershing Avenue	AM	22.6	C	22.9	C
	PM	**N/A**	**F**	**N/A**	**F**
2. Between Pershing Avenue and Route 4 Crosstown	AM	23.4	C	**N/A**	**F**
	PM	**N/A**	**F**	**37.6**	**E**
3. Between Route 4 Crosstown and Charter Way	AM	22.3	C	**N/A**	**F**
	PM	**39.9**	**E**	**N/A**	**F**
4. Between Charter Way and 8th Street	AM	22.8	C	**N/A**	**F**
	PM	**N/A**	**F**	**39.2**	**E**
5. Between 8th Street and Downing Avenue	AM	25.3	C	**43.1**	**E**
	PM	**N/A**	**F**	**42.1**	**E**
6. Between Downing Avenue and French Camp Road	AM	23.8	C	**42.7**	**E**
	PM	**N/A**	**F**	**37.8**	**E**
7. Between French Camp Road and Matthews Road	AM	19.3	C	26.4	D
	PM	30.9	D	26.8	D
8. Between Matthews Road and the El Dorado Ramps	AM	21.4	C	28.5	D
	PM	30.4	D	28.4	D
9. Between the El Dorado Ramps and Roth Road	AM	21.4	C	28.5	D
	PM	30.4	D	28.4	D
10. Between Roth Road and Lathrop Road	AM	20.6	C	32.1	D
	PM	**37.9**	**E**	27.0	D
11. Between Lathrop Road and Louise Avenue	AM	19.6	C	**37.8**	**E**
	PM	**N/A**	**F**	25.8	C
12. Between Louise Avenue and SR 120	AM	19.1	C	**N/A**	**F**
	PM	**N/A**	**F**	25.3	C
13. Between SR 120 and the Manthey / Mossdale hook ramps	AM	20.1	C	**N/A**	**F**
	PM	**N/A**	**F**	29.0	D
14. Between the Manthey / Mossdale hook ramps and I-205	AM	16.0	B	**N/A**	**F**
	PM	**N/A**	**F**	22.0	C
15. Between I-205 and the West 11th Street ramps	AM	12.1	B	18.4	C
	PM	21.4	C	13.3	B
16. Between the West 11th Street ramps and Kasson Road	AM	9.6	A	14.2	B
	PM	17.4	B	7.5	A
17. South of Kasson Road	AM	8.8	A	10.1	A
	PM	12.4	B	10.2	A
SR 99					
1. North of Route 4 Crosstown	AM	**N/A**	**F**	**N/A**	**F**
	PM	**N/A**	**F**	**N/A**	**F**
2. Between Route 4 Crosstown and Charter Way	AM	**N/A**	**F**	**N/A**	**F**
	PM	**N/A**	**F**	**N/A**	**F**
3. Between Charter Way and Farmington Road	AM	**N/A**	**F**	**N/A**	**F**
	PM	**N/A**	**F**	**N/A**	**F**
4. Between Farmington Road and Mariposa Road	AM	**N/A**	**F**	**N/A**	**F**
	PM	**N/A**	**F**	**N/A**	**F**
5. Between Mariposa Road and Clark Drive	AM	**N/A**	**F**	**N/A**	**F**
	PM	**N/A**	**F**	**N/A**	**F**
6. Between Clark Drive and Arch Road	AM	**N/A**	**F**	**N/A**	**F**
	PM	**N/A**	**F**	**N/A**	**F**
7. Between Arch Road and French Camp Road	AM	**N/A**	**F**	**37.9**	**E**
	PM	**38.7**	**E**	**N/A**	**F**

Table 4.4-17
2010 No Project Scenario Freeway Segment Operations

Freeway Segment	Period	NB/EB		SB/WB	
		Density (pc/mi/ln)	LOS	Density (pc/mi/ln)	LOS
8. Between French Camp Road and Lathrop Road	AM PM	24.3 20.1	C C	18.0 27.8	C D
9. Between Lathrop Road and Yosemite Avenue	AM PM	24.2 18.1	C C	16.7 28.4	B D
10. Between Yosemite Avenue and SR 120	AM PM	33.6 25.2	D C	24.1 **40.8**	C **E**
11. Between SR 120 and Austin Road	AM PM	**N/A** **N/A**	**F** **F**	15.8 **N/A**	B **F**
12. South of Austin Road	AM PM	**N/A** **N/A**	**F** **F**	15.6 **N/A**	B **F**
SR 120					
1. Between I-5 and Yosemite Avenue	AM PM	18.1 **N/A**	C **F**	**N/A** 23.7	**F** C
2. Between Yosemite Avenue and Airport Way	AM PM	16.4 **N/A**	B **F**	**N/A** 22.0	**F** C
3. Between Airport Way and Union Road	AM PM	16.4 **N/A**	B **F**	**N/A** 22.0	**F** C
4. Between Union Road and Main Street	AM PM	14.1 **N/A**	B **F**	**N/A** 19.8	**F** C
5. Between Main Street and SR 99	AM PM	12.7 **N/A**	B **F**	**N/A** 19.7	**F** C
I-205					
1. Between I-5 and Paradise Road (future interchange)	AM PM	17.8 **N/A**	B **F**	**N/A** 21.9	**F** C
2. Between Paradise Road and MacArthur Drive	AM PM	17.5 **N/A**	B **F**	**N/A** 22.2	**F** C
3. Between MacArthur Drive and Tracy Boulevard	AM PM	15.5 **N/A**	B **F**	**N/A** 37.1	**F** E
4. Between Tracy Boulevard and Grant Line Road	AM PM	15.7 **N/A**	B **F**	**N/A** 21.1	**F** C
5. West of Grant Line Road	AM PM	14.7 **N/A**	B **F**	**N/A** 20.8	**F** C

Note: **Deficient Segments shown in Bold**
LOS Calculations performed using the 2000 Highway Capacity Manual, Basic Freeway Segments
N/A – The Highway Capacity Software (HCS) will not compute density result when LOS is F

Table 4.4-18
2010 Plus Phase 1 Scenario Freeway Segment Operations

Freeway Segment	Period	NB/EB		SB/WB	
		Density (pc/mi/ln)	LOS	Density (pc/mi/ln)	LOS
I-5					
1. North of Pershing Avenue	AM PM	22.9 **N/A**	B **F**	**N/A** 31.6	**F** D
2. Between Pershing Avenue and Route 4 Crosstown	AM PM	23.6 **N/A**	C **F**	**N/A** **38.6**	**F** **E**

Table 4.4-18
2010 Plus Phase 1 Scenario Freeway Segment Operations

Freeway Segment	Period	NB/EB		SB/WB	
		Density (pc/mi/ln)	LOS	Density (pc/mi/ln)	LOS
3. Between Route 4 Crosstown and Charter Way	AM	22.6	C	**N/A**	**F**
	PM	**N/A**	**F**	**N/A**	**F**
4. Between Charter Way and 8th Street	AM	23.3	C	**N/A**	**F**
	PM	**42.5**	**E**	**N/A**	**F**
5. Between 8th Street and Downing Avenue	AM	26.0	D	**N/A**	**F**
	PM	**N/A**	**F**	**N/A**	**F**
6. Between Downing Avenue and French Camp Road	AM	24.5	C	**N/A**	**F**
	PM	**N/A**	**F**	**41.5**	**E**
7. Between French Camp Road and Matthews Road	AM	19.9	C	31.3	D
	PM	**39.0**	**E**	28.8	D
8. Between Matthews Road and the El Dorado Ramps	AM	22.4	C	33.7	D
	PM	**37.4**	**E**	30.4	D
9. Between the El Dorado Ramps and Roth Road	AM	22.4	C	33.7	D
	PM	**37.4**	**E**	30.4	D
10. Between Roth Road and Lathrop Road	AM	21.7	C	**N/A**	**F**
	PM	**N/A**	**F**	29.1	D
11. Between Lathrop Road and Louise Avenue	AM	20.9	C	**37.8**	**E**
	PM	**N/A**	**F**	31.6	D
12. Between Louise Avenue and SR 120	AM	21.4	C	**N/A**	**F**
	PM	**N/A**	**F**	30.9	D
13. Between SR 120 and the Manthey / Mossdale hook ramps	AM	21.1	C	**N/A**	**F**
	PM	**N/A**	**F**	31.1	D
14. Between hte Manthey / Mossdale hook ramps and I-205	AM	16.4	B	**N/A**	**F**
	PM	**N/A**	**F**	23.1	C
15. Between I-205 and the West 11th Street ramps	AM	12.8	B	19.0	C
	PM	22.1	C	14.4	B
16. Between the West 11th Street ramps and Kasson Road	AM	10.1	A	15.0	B
	PM	18.2	C	11.9	B
17. South of Kasson Road	AM	9.1	A	6.8	A
	PM	12.5	B	10.6	A
SR 99					
1. North of Route 4 Crosstown	AM	**N/A**	**F**	**N/A**	**F**
	PM	**N/A**	**F**	**N/A**	**F**
2. Between Route 4 Crosstown and Charter Way	AM	**N/A**	**F**	**N/A**	**F**
	PM	**N/A**	**F**	**N/A**	**F**
3. Between Charter Way and Farmington Road	AM	**N/A**	**F**	**N/A**	**F**
	PM	**N/A**	**F**	**N/A**	**F**
4. Between Farmington Road and Mariposa Road	AM	**N/A**	**F**	**N/A**	**F**
	PM	**N/A**	**F**	**N/A**	**F**
5. Between Mariposa Road and Clark Drive	AM	**N/A**	**F**	**N/A**	**F**
	PM	**N/A**	**F**	**N/A**	**F**
6. Between Clark Drive and Arch Road	AM	**N/A**	**F**	**N/A**	**F**
	PM	**N/A**	**F**	**N/A**	**F**
7. Between Arch Road and French Camp Road	AM	**N/A**	**F**	**38.7**	**E**
	PM	**38.7**	**E**	**N/A**	**F**
8. Between French Camp Road and Lathrop Road	AM	24.7	C	18.1	C
	PM	20.1	C	27.8	D
9. Between Lathrop Road and Yosemite Avenue	AM	26.0	D	16.9	B
	PM	18.1	C	28.4	D

Table 4.4-18
2010 Plus Phase 1 Scenario Freeway Segment Operations

Freeway Segment	Period	NB/EB		SB/WB	
		Density (pc/mi/ln)	LOS	Density (pc/mi/ln)	LOS
10. Between Yosemite Avenue and SR 120	AM	**36.4**	**E**	24.9	C
	PM	28.2	C	**40.8**	**E**
11. Between SR 120 and Austin Road	AM	**N/A**	**F**	15.9	B
	PM	34.4	D	**N/A**	**F**
12. South of Austin Road	AM	**N/A**	**F**	15.7	B
	PM	34.9	D	**N/A**	**F**
SR 120					
1. Between I-5 and Yosemite Avenue	AM	18.3	C	**N/A**	**F**
	PM	**N/A**	**F**	24.4	C
2. Between Yosemite Avenue and Airport Way	AM	16.6	B	**N/A**	**F**
	PM	**N/A**	**F**	22.6	C
3. Between Airport Way and Union Road	AM	16.6	B	**N/A**	**F**
	PM	**N/A**	**F**	22.6	C
4. Between Union Road and Main Street	AM	**N/A**	**F**	**N/A**	**F**
	PM	**N/A**	**F**	20.6	C
5. Between Main Street and SR 99	AM	**N/A**	**F**	**N/A**	**F**
	PM	**N/A**	**F**	20.4	C
I-205					
1. Between I-5 and Paradise Road (future interchange)	AM	18.4	B	**N/A**	**F**
	PM	**N/A**	**F**	22.5	C
2. Between Paradise Road and MacArthur Drive	AM	17.9	B	**N/A**	**F**
	PM	**N/A**	**F**	22.7	C
3. Between MacArthur Drive and Tracy Boulevard	AM	15.8	B	**N/A**	**F**
	PM	**N/A**	**F**	21.4	C
4. Between Tracy Boulevard and Grant Line Road	AM	15.8	B	**N/A**	**F**
	PM	**N/A**	**F**	21.4	C
5. West of Grant Line Road	AM	14.8	B	**N/A**	**F**
	PM	**N/A**	**F**	20.8	C

Note: **Deficient Segments shown in Bold**
LOS Calculations performed using the 2000 Highway Capacity Manual, Basic Freeway Segments
N/A – The Highway Capacity Software (HCS) will not compute density result when LOS is F

Table 4.4-19
2020 No Project Scenario Freeway Segment Operations

Segment	Period	NB/EB		SB/WB	
		Density (pc/mi/ln)	LOS	Density (pc/mi/ln)	LOS
I-5					
1. North of Pershing Avenue	AM	25.2	C	33.5	D
	PM	**N/A**	**F**	33.4	D
2. Between Pershing Avenue and Route 4 Crosstown	AM	26.6	D	**35.9**	**E**
	PM	**N/A**	**F**	**39.2**	**E**
3. Between Route 4 Crosstown and Charter Way	AM	24.5	C	**N/A**	**F**
	PM	**N/A**	**F**	**N/A**	**F**
4. Between Charter Way and 8th Street	AM	**37.1**	**E**	**N/A**	**F**
	PM	**N/A**	**F**	**N/A**	**F**

Table 4.4-19
2020 No Project Scenario Freeway Segment Operations

Segment	Period	NB/EB		SB/WB	
		Density (pc/mi/ln)	LOS	Density (pc/mi/ln)	LOS
5. Between 8th Street and Downing Avenue	AM	**42.0**	**E**	**N/A**	**F**
	PM	**N/A**	**F**	**N/A**	**F**
6. Between Downing Avenue and French Camp Road	AM	**38.9**	**E**	**N/A**	**F**
	PM	**N/A**	**F**	**N/A**	**F**
7. Between French Camp Road and Matthews Road	AM	27.8	C	**40.0**	**E**
	PM	**N/A**	**F**	**42.4**	**E**
8. Between Matthews Road and the El Dorado Ramps	AM	30.0	D	**N/A**	**F**
	PM	**N/A**	**F**	**44.9**	**E**
9. Between the El Dorado Ramps and Roth Road	AM	30.0	D	**N/A**	**F**
	PM	**N/A**	**F**	**44.9**	**E**
10. Between Roth Road and Lathrop Road	AM	24.5	C	**N/A**	**F**
	PM	**N/A**	**F**	**39.0**	**E**
11. Between Lathrop Road and Louise Avenue	AM	21.5	C	**N/A**	**F**
	PM	**N/A**	**F**	32.7	D
12. Between Louise Avenue and SR 120	AM	20.1	C	**N/A**	**F**
	PM	**N/A**	**F**	30.8	D
13. Between SR 120 and the Manthey / Mossdale hook ramps	AM	17.1	B	**N/A**	**F**
	PM	**N/A**	**F**	25.0	C
14. Between the Manthey / Mossdale hook ramps and I-205	AM	18.0	B	**N/A**	**F**
	PM	**N/A**	**F**	24.4	C
15. Between I-205 and the West 11th Street ramps	AM	11.6	B	23.9	C
	PM	27.8	D	23.9	B
16. Between the West 11th Street ramps and Kasson Road	AM	15.3	B	15.6	B
	PM	18.3	C	17.9	B
17. South of Kasson Road	AM	12.9	B	10.1	A
	PM	13.7	B	16.1	B
SR 99					
1. North of Route 4 Crosstown	AM	**N/A**	**F**	**N/A**	**F**
	PM	**N/A**	**F**	**N/A**	**F**
2. Between Route 4 Crosstown and Charter Way	AM	**N/A**	**F**	**N/A**	**F**
	PM	**N/A**	**F**	**N/A**	**F**
3. Between Charter Way and Farmington Road	AM	**N/A**	**F**	29.3	D
	PM	**37.5**	**E**	**N/A**	**F**
4. Between Farmington Road and Mariposa Road	AM	**N/A**	**F**	**32.3**	D
	PM	**41.1**	**E**	**N/A**	**F**
5. Between Mariposa Road and Clark Drive	AM	**N/A**	**F**	29.2	D
	PM	33.4	D	**N/A**	**F**
6. Between Clark Drive and Arch Road	AM	**N/A**	**F**	29.2	D
	PM	33.4	D	**N/A**	**F**
7. Between Arch Road and French Camp Road	AM	**N/A**	**F**	**N/A**	**F**
	PM	**N/A**	**F**	**N/A**	**F**
8. Between French Camp Road and Lathrop Road	AM	**N/A**	**F**	34.4	D
	PM	24.7	C	**N/A**	**F**
9. Between Lathrop Road and Yosemite Avenue	AM	**N/A**	**F**	18.1	C
	PM	21.2	C	**N/A**	**F**
10. Between Yosemite Avenue and SR 120	AM	**N/A**	**F**	24.5	C
	PM	27.9	D	**N/A**	**F**
11. Between SR 120 and Austin Road	AM	**N/A**	**F**	17.1	B
	PM	**44.0**	**E**	**N/A**	**F**

Table 4.4-19
2020 No Project Scenario Freeway Segment Operations

Segment	Period	NB/EB		SB/WB	
		Density (pc/mi/ln)	LOS	Density (pc/mi/ln)	LOS
12. South of Austin Road	AM	**N/A**	**F**	17.4	B
	PM	**N/A**	**F**	**N/A**	**F**
SR 120					
1. Between I-5 and Yosemite Avenue	AM	18.1	C	**N/A**	**F**
	PM	**N/A**	**F**	23.7	C
2. Between Yosemite Avenue and Airport Way	AM	16.4	B	**N/A**	**F**
	PM	**N/A**	**F**	22.0	C
3. Between Airport Way and Union Road	AM	16.4	B	**N/A**	**F**
	PM	**N/A**	**F**	22.0	C
4. Between Union Road and Main Street	AM	15.5	B	**N/A**	**F**
	PM	**N/A**	**F**	21.9	C
5. Between Main Street and SR 99	AM	14.1	B	**N/A**	**F**
	PM	**N/A**	**F**	22.4	C
I-205					
1. Between I-5 and Paradise Road (future interchange)	AM	17.3	B	**N/A**	**F**
	PM	**N/A**	**F**	20.8	C
2. Between Paradise Road and MacArthur Drive	AM	17.7	B	**N/A**	**F**
	PM	**N/A**	**F**	21.8	C
3. Between MacArthur Drive and Tracy Boulevard	AM	17.0	B	**N/A**	**F**
	PM	**N/A**	**F**	21.8	C
4. Between Tracy Boulevard and Grant Line Road	AM	16.0	B	**N/A**	**F**
	PM	**N/A**	**F**	20.4	C
5. West of Grant Line Road	AM	15.7	B	**N/A**	**F**
	PM	**N/A**	**F**	20.8	C

Note: **Deficient Segments shown in Bold**
LOS Calculations performed using the 2000 Highway Capacity Manual, Basic Freeway Segments
N/A – The Highway Capacity Software (HCS) will not compute density result when LOS is F

Table 4.4-20
2020 Plus Buildout Scenario Freeway Segment Operations

Freeway Segment	Period	NB/EB		SB/WB	
		Density (pc/mi/ln)	LOS	Density (pc/mi/ln)	LOS
I-5					
1. North of Pershing Avenue	AM	25.5	C	34.5	D
	PM	**N/A**	**F**	34.1	D
2. Between Pershing Avenue and Route 4 Crosstown	AM	27.1	D	**37.3**	**E**
	PM	**N/A**	**F**	**40.4**	**E**
3. Between Route 4 Crosstown and Charter Way	AM	25.7	C	**N/A**	**F**
	PM	**N/A**	**F**	**N/A**	**F**
4. Between Charter Way and 8th Street	AM	**40.9**	**E**	**N/A**	**F**
	PM	**N/A**	**F**	**N/A**	**F**
5. Between 8th Street and Downing Avenue	AM	**N/A**	**F**	**N/A**	**F**
	PM	**N/A**	**F**	**N/A**	**F**
6. Between Downing Avenue and French Camp Road	AM	**43.4**	**E**	**N/A**	**F**
	PM	**N/A**	**F**	**N/A**	**F**

Table 4.4-20
2020 Plus Buildout Scenario Freeway Segment Operations

Freeway Segment	Period	NB/EB		SB/WB	
		Density (pc/mi/ln)	LOS	Density (pc/mi/ln)	LOS
7. Between French Camp Road and Matthews Road	AM	29.3	D	**45.0**	**E**
	PM	**N/A**	**F**	**N/A**	**F**
8. Between Matthews Road and the El Dorado Ramps	AM	32.2	D	**N/A**	**F**
	PM	**N/A**	**F**	**N/A**	**F**
9. Between the El Dorado Ramps and Roth Road	AM	32.2	D	**N/A**	**F**
	PM	**N/A**	**F**	**N/A**	**F**
10. Between Roth Road and Lathrop Road	AM	26.5	D	**N/A**	**F**
	PM	**N/A**	**F**	**43.4**	**E**
11. Between Lathrop Road and Louise Avenue	AM	22.9	C	**N/A**	**F**
	PM	**N/A**	**F**	**36.0**	**E**
12. Between Louise Avenue and SR 120	AM	22.5	C	**N/A**	**F**
	PM	**N/A**	**F**	**38.5**	**E**
13. Between SR 120 and the Manthey / Mossdale hook ramps	AM	18.3	C	**N/A**	**F**
	PM	**N/A**	**F**	26.5	D
14. Between the Manthey / Mossdale hook ramps and I-205	AM	19.0	C	**N/A**	**F**
	PM	**N/A**	**F**	25.6	C
15. Between I-205 and the West 11th Street ramps	AM	12.6	B	24.6	C
	PM	28.4	D	19.0	C
16. Between the West 11th Street ramps and Kasson Road	AM	15.8	B	15.6	B
	PM	18.4	C	18.7	C
17. South of Kasson Road	AM	13.6	B	10.3	A
	PM	13.7	B	16.9	B
SR 99					
1. North of Route 4 Crosstown	AM	**N/A**	**F**	**N/A**	**F**
	PM	**N/A**	**F**	**N/A**	**F**
2. Between Route 4 Crosstown and Charter Way	AM	**N/A**	**F**	**N/A**	**F**
	PM	**N/A**	**F**	**N/A**	**F**
3. Between Charter Way and Farmington Road	AM	**N/A**	**F**	29.6	D
	PM	**38.3**	**E**	**N/A**	**F**
4. Between Farmington Road and Mariposa Road	AM	**N/A**	**F**	33.1	D
	PM	**42.9**	**E**	**N/A**	**F**
5. Between Mariposa Road and Clark Drive	AM	**N/A**	**F**	29.7	D
	PM	34.8	D	**N/A**	**F**
6. Between Clark Drive and Arch Road	AM	**N/A**	**F**	29.7	D
	PM	34.8	D	**N/A**	**F**
7. Between Arch Road and French Camp Road	AM	**N/A**	**F**	**N/A**	**F**
	PM	**N/A**	**F**	**N/A**	**F**
8. Between French Camp Road and Lathrop Road	AM	**42.5**	**E**	20.4	C
	PM	25.2	C	**N/A**	**F**
9. Between Lathrop Road and Yosemite Avenue	AM	**N/A**	**F**	18.4	C
	PM	21.9	C	**N/A**	**F**
10. Between Yosemite Avenue and SR 120	AM	**N/A**	**F**	24.5	C
	PM	28.5	D	**N/A**	**F**
11. Between SR 120 and Austin Road	AM	**N/A**	**F**	17.4	B
	PM	**N/A**	**F**	**N/A**	**F**
12. South of Austin Road	AM	**N/A**	**F**	17.7	B
	PM	**N/A**	**F**	**N/A**	**F**
SR 120					
1. Between I-5 and Yosemite Avenue	AM	18.3	C	**N/A**	**F**
	PM	**N/A**	**F**	24.1	C

Table 4.4-20
2020 Plus Buildout Scenario Freeway Segment Operations

Freeway Segment	Period	NB/EB		SB/WB	
		Density (pc/mi/ln)	LOS	Density (pc/mi/ln)	LOS
2. Between Yosemite Avenue and Airport Way	AM PM	18.3 **N/A**	B **F**	**N/A** 22.3	**F** C
3. Between Airport Way and Union Road	AM PM	18.3 **N/A**	B **F**	**N/A** 22.3	**F** C
4. Between Union Road and Main Street	AM PM	18.3 **N/A**	B **F**	**N/A** 22.8	**F** C
5. Between Main Street and SR 99	AM PM	18.3 **N/A**	B **F**	**N/A** 22.8	**F** C
I-205					
1. Between I-5 and Paradise Road (future interchange)	AM PM	17.9 **N/A**	C **F**	**N/A** 21.3	**F** C
2. Between Paradise Road and MacArthur Drive	AM PM	18.2 **N/A**	C **F**	**N/A** 22.2	**F** C
3. Between MacArthur Drive and Tracy Boulevard	AM PM	17.5 **N/A**	B **F**	**N/A** 22.2	**F** C
4. Between Tracy Boulevard and Grant Line Road	AM PM	16.2 **N/A**	C **F**	**N/A** 20.5	**F** C
5. West of Grant Line Road	AM PM	15.7 **N/A**	C **F**	**N/A** 20.9	**F** C

Note: Deficient Segments shown in Bold
LOS Calculations performed using the 2000 Highway Capacity Manual, Basic Freeway Segments
N/A – The Highway Capacity Software (HCS) will not compute density result when LOS is F

Table 4.4-21
Existing, Existing Plus Phase I, Existing Plus Phase I Mitigated Peak Hour Level of Service

Location	Control[1]	Peak Hour	Existing		Existing Plus Phase I		Existing Plus Phase 1 Mitigated	
			Delay[2]	LOS	Delay[2]	LOS	Delay[2]	LOS
1. Roth Road / Manthey Road	SSS	AM PM	2 2	A A	9 11	A B	9 10	A C
2. Roth Road / I-5 SB Ramps	SSS/Signal	AM PM	4 4	A A	33 **>50**	D **F**	9 10	A A
3. Roth Road / I-5 NB Ramps	SSS	AM PM	3 3	A A	15 15	B B	15 15	B B
4. Roth Road / Harlan Road	SSS/Signal	AM PM	3 4	A A	**>50** **>50**	**F** **F**	9 11	A B
5. Roth Road / McKinley Avenue	SSS	AM PM	3 3	A A	11 14	B B	11 14	B B
6. Roth Road / Airport Way	Signal	AM PM	13 12	B B	9 14	A B	9 14	A B
7. Lathrop Road / Golden Valley Parkway	Signal	AM PM	2 3	A A	31 52	C D	31 52	C D
8. Lathrop Road / I-5 SB Ramps	SSS	AM PM	11 11	B B	**>50** **>50**	**F** **F**	36 40	D D
9. Lathrop Road / I-5 NB Ramps	SSS	AM PM	5 **52**	A **F**	**>50** **>50**	**F** **F**	17 46	B D
10. Lathrop Road / Old Harlan	SSS	AM PM	6 3	A A	**37** 27	**E** D	18 17	C C

Table 4.4-21
Existing, Existing Plus Phase I, Existing Plus Phase I Mitigated Peak Hour Level of Service

Location	Control[1]	Peak Hour	Existing		Existing Plus Phase I		Existing Plus Phase 1 Mitigated	
			Delay[2]	LOS	Delay[2]	LOS	Delay[2]	LOS
11. Lathrop Road / New Harlan	Signal	AM	17	B	**>80**	**F**	31	C
		PM	17	B	35	D	33	C
12. Lathrop Road / Fifth Street	Signal	AM	10	B	18	B	18	B
		PM	11	B	21	C	21	C
13. Lathrop Road / Airport Way	Signal	AM	24	C	33	C	33	C
		PM	32	C	45	D	45	D
14. Louise Avenue / Golden Valley Parkway	Signal	AM	2	A	23	C	23	C
		PM	3	A	30	C	30	C
15. Louise Avenue / I-5 SB Ramps	Signal	AM	17	B	52	D	29	B
		PM	14	B	**>80**	**F**	30	C
16. Louise Avenue / I-5 NB Ramps	Signal	AM	7	A	26	C	18	B
		PM	9	A	**69**	**E**	30	C
17. Louise Avenue / Old Harlan	SSS	AM	4	A	17	C	17	C
		PM	3	A	17	C	17	C
18. Louise Avenue / New Harlan	Signal	AM	14	B	21	C	26	C
		PM	17	B	32	C	31	C
19. Louise Avenue / Cambridge	Signal	AM	7	A	11	B	11	B
		PM	7	A	16	B	16	B
20. Louise Avenue / Fifth Street	Signal	AM	6	A	11	B	11	B
		PM	7	A	14	B	14	B
21. Louise Avenue / McKinley Avenue	Signal	AM	19	B	29	C	29	C
		PM	20	B	34	C	34	C
22. Louise Avenue / Airport Way	AWS	AM	19	C	**>80**	**F**	9	A
		PM	**50**	**E**	**>80**	**F**	16	B
23. Vierra Avenue / McKinley Avenue	AWS	AM	11	B	11	B	11	B
		PM	13	B	18	C	18	C
24. Yosemite Avenue / McKinley Avenue	AWS	AM	5	A	11	B	11	B
		PM	9	B	25	C	25	C
25.-28. *Intersections only apply to other scenarios*	--	--	--	--	--	--	--	--
29. Dos Reis Road / Street A	SSS	AM	N/A	N/A	9	A	9	A
		PM	N/A	N/A	9	A	9	A
30. Dos Reis Road / Main Street	RA	AM	N/A	N/A	5	A	5	A
		PM	N/A	N/A	5	A	5	A
31. Dos Reis Road / Golden Valley Parkway	Signal	AM	N/A	N/A	30	C	30	C
		PM	N/A	N/A	39	D	39	D
32. Lathrop Road / Street A	RA	AM	N/A	N/A	4	A	4	A
		PM	N/A	N/A	4	A	4	A
33. Lathrop Road / Main Street	Signal	AM	N/A	N/A	15	B	15	B
		PM	N/A	N/A	31	C	31	C
34. Street A / Barbara Terry	RA	AM	N/A	N/A	4	A	4	A
		PM	N/A	N/A	4	A	4	A
35. Street A / Golden Valley Parkway	Signal	AM	N/A	N/A	13	B	13	B
		PM	N/A	N/A	16	B	16	B

Notes: **Deficient Intersections Indicated in Bold**

[1]- Signal = Traffic signal control, AWS= All-way stop sign control, and SSS= Side-street stop sign control
[2]- Delay calculated using methodologies provided in *Highway Capacity Manual*, Transportation Research Board, 2000
Source: Fehr & Peers 2004

Table 4.4-22
Existing, Existing Plus Buildout, Existing Plus Buildout Mitigated Peak Hour Level of Service

Location	Control[1]	Peak Hour	Existing		Existing Plus Buildout		Existing Plus Buildout Mitigated	
			Delay[2]	LOS	Delay[2]	LOS	Delay[2]	LOS
1. Roth Road / Manthey Road	SSS	AM	2	A	11	B	11	B
		PM	2	A	19	C	19	C
2. Roth Road / I-5 SB Ramps	SSS/ Signal	AM	4	A	**>50**	**F**	11	B
		PM	4	A	**>50**	**F**	22	C
3. Roth Road / I-5 NB Ramps	SSS/ Signal	AM	3	A	13	B	9	A
		PM	3	A	**>50**	**F**	18	B
4. Roth Road / Harlan Road	SSS/ Signal	AM	3	A	**>50**	**F**	33	C
		PM	4	A	**>50**	**F**	46	D
5. Roth Road / McKinley Avenue	SSS	AM	3	A	11	B	11	B
		PM	3	A	31	C	31	C
6. Roth Road / Airport Way	Signal	AM	13	B	10	A	10	A
		PM	12	B	19	B	19	B
7. Lathrop Road / Golden Valley Parkway	Signal	AM	2	A	**59**	**E**	**59**	**E**
		PM	3	A	**>80**	**F**	**>80**	**F**
8. Lathrop Road / I-5 SB Ramps	SSS/ Signal	AM	11	B	**>50**	**F**	24	C
		PM	11	B	**>50**	**F**	41	D
9. Lathrop Road / I-5 NB Ramps	SSS/ Signal	AM	5	A	**>50**	**F**	19	B
		PM	**52**	**F**	**>50**	**F**	25	C
10. Lathrop Road / Old Harlan	SSS	AM	6	A	48	E	17	C
		PM	3	A	32	D	16	C
11. Lathrop Road / New Harlan	Signal	AM	17	B	**>80**	**F**	33	C
		PM	17	B	44	D	32	C
12. Lathrop Road / Fifth Street	Signal	AM	10	B	22	C	22	C
		PM	11	B	24	C	24	C
13. Lathrop Road / Airport Way	Signal	AM	24	C	39	D	37	D
		PM	32	C	**63**	**E**	47	D
14. Louise Avenue / Golden Valley Parkway	Signal	AM	2	A	14	B	14	B
		PM	3	A	11	B	11	B
15. Louise Avenue / I-5 SB Ramps	Signal	AM	17	B	**64**	**E**	15	B
		PM	14	B	**>80**	**F**	21	C
16. Louise Avenue / I-5 NB Ramps	Signal	AM	7	A	38	D	21	C
		PM	9	A	**>80**	**F**	27	C
17. Louise Avenue / Old Harlan	SSS	AM	4	A	41	E	26	D
		PM	3	A	18	C	16	C
18. Louise Avenue / New Harlan	Signal	AM	14	B	22	C	27	C
		PM	17	B	31	C	43	C
19. Louise Avenue / Cambridge	Signal	AM	7	A	11	B	11	B
		PM	7	A	17	B	17	B
20. Louise Avenue / Fifth Street	Signal	AM	6	A	11	B	11	B
		PM	7	A	14	B	14	B
21. Louise Avenue / McKinley Avenue	Signal	AM	19	B	31	C	31	C
		PM	20	B	40	D	40	D
22. Louise Avenue / Airport Way	AWS/ Signal	AM	19	C	**>80**	**F**	10	A
		PM	50	E	**>80**	**F**	17	B
23. Vierra Avenue / McKinley Avenue	AWS	AM	11	B	11	B	11	B
		PM	13	B	21	C	21	C
24. Yosemite Avenue / McKinley Avenue	AWS	AM	5	A	11	B	11	B
		PM	9	B	31	D	31	D
26. De Lima Road / Street A	RA	AM	N/A	N/A	6	A	6	A
		PM	N/A	N/A	6	A	6	A

Table 4.4-22
Existing, Existing Plus Buildout, Existing Plus Buildout Mitigated Peak Hour Level of Service

Location	Control[1]	Peak Hour	Existing		Existing Plus Buildout		Existing Plus Buildout Mitigated	
			Delay[2]	LOS	Delay[2]	LOS	Delay[2]	LOS
27. De Lima Road / Main Street	RA	AM	N/A	N/A	5	A	5	A
		PM	N/A	N/A	7	A	7	A
28. De Lima Road / Golden Valley Parkway	Signal	AM	N/A	N/A	33	C	33	C
		PM	N/A	N/A	31	C	31	C
29. Dos Reis Road / Street A	SSS	AM	N/A	N/A	12	B	12	B
		PM	N/A	N/A	13	B	13	B
30. Dos Reis Road / Main Street	RA	AM	N/A	N/A	5	A	5	A
		PM	N/A	N/A	6	A	6	A
31. Dos Reis Road / Golden Valley Parkway	Signal	AM	N/A	N/A	26	C	26	C
		PM	N/A	N/A	35	D	35	D
32. Lathrop Road / Street A	RA	AM	N/A	N/A	5	A	5	A
		PM	N/A	N/A	7	A	7	A
33. Lathrop Road / Main Street	Signal	AM	N/A	N/A	28	C	28	C
		PM	N/A	N/A	49	D	49	D
34. Street A / Barbara Terry	RA	AM	N/A	N/A	4	A	4	A
		PM	N/A	N/A	5	A	5	A
35. Street A / Golden Valley Parkway	Signal	AM	N/A	N/A	21	C	21	C
		PM	N/A	N/A	24	C	24	C
36.-39. *Intersections only apply to other scenarios*	--	--	--	--	--	--		

Notes: **Deficient Intersections Indicated in Bold**
1- Signal = Traffic signal control, AWS= All-way stop sign control, and SSS= Side-street stop sign control
2- Delay calculated using methodologies provided in *Highway Capacity Manual*, Transportation Research Board, 2000

Source: Fehr & Peers, 2004

Table 4.4-23
2010 Plus Phase I of Project and 2010 Plus Phase 1 of Project Mitigated Peak Hour Level of Service

Location	Control[1]	Peak Hour	2010 Phase 1 of Project		2010 Plus Phase I of Project Mitigated	
			Delay[2]	LOS	Delay[2]	LOS
1. Roth Road / Manthey Road	Signal	AM	7[3]	A	9	A
		PM	32	C	16	B
2. Roth Road / I-5 SB Ramps	Signal	AM	**>80**	**F**	37	D
		PM	28	C	13	B
3. Roth Road / I-5 NB Ramps	Signal	AM	20	C	8	A
		PM	35	D	37	D
4. Roth Road / Harlan Road	Signal	AM	**58**	**E**	20	B
		PM	**63**	**E**	32	C
5. Roth Road / McKinley Avenue	SSS/Signal	AM	30	D	10	B
		PM	**>50**	**F**	13	B
6. Roth Road / Airport Way	Signal	AM	15	B	15	B
		PM	18	B	18	B
7. Lathrop Road / Golden Valley Parkway	Signal	AM	30	C	30	C
		PM	43	D	43	D
8. Lathrop Road / I-5 SB Ramps	Signal	AM	**>80**	**F**	15	B
		PM	**56**[3]	**E**	21	C

Table 4.4-23
2010 Plus Phase I of Project and 2010 Plus Phase 1 of Project Mitigated
Peak Hour Level of Service

Location	Control[1]	Peak Hour	2010 Phase 1 of Project		2010 Plus Phase I of Project Mitigated	
			Delay[2]	LOS	Delay[2]	LOS
9. Lathrop Road / I-5 NB Ramps	Signal	AM	19	B	17	B
		PM	**>80**	**F**	28	C
10. Lathrop Road / Old Harlan	SSS	AM	28	D	28	D
		PM	19	C	19	C
11. Lathrop Road / New Harlan	Signal	AM	41	D	38	D
		PM	42	D	28	D
12. Lathrop Road / Fifth Street	Signal	AM	29	C	29	C
		PM	30	C	30	C
13. Lathrop Road / Airport Way	Signal	AM	32	C	32	C
		PM	29	C	30	C
14. Louise Avenue / Golden Valley Parkway	Signal	AM	22	C	22	C
		PM	36	D	36	D
15. Louise Avenue / I-5 SB Ramps	Signal	AM	53	D	53	D
		PM	25	C	21	C
16. Louise Avenue / I-5 NB Ramps	Signal	AM	23	C	18	B
		PM	**59**	**E**	22	C
17. Louise Avenue / Old Harlan	SSS	AM	**>50**	**F**	**>50**	**F**
		PM	25	D	21	C
18. Louise Avenue / New Harlan	Signal	AM	**>80**	**F**	37	D
		PM	**58**	**E**	47	D
19. Louise Avenue / Cambridge	Signal	AM	14	B	14	B
		PM	21	C	21	C
20. Louise Avenue / Fifth Street	Signal	AM	19	B	19	B
		PM	21	C	21	C
21. Louise Avenue / McKinley Avenue	Signal	AM	**>80**	**F**	47	D
		PM	**>80**	**F**	54	D
22. Louise Avenue / Airport Way	Signal	AM	14	B	14	B
		PM	51	D	51	D
23. Vierra Avenue / McKinley Avenue	Signal	AM	**56**	**E**	39	D
		PM	**>80**	**F**	55	D
24. Yosemite Avenue / McKinley Avenue	Signal	AM	38	D	25	C
		PM	50	D	22	C
25.-28. *Intersections only apply to other scenarios*	--	--	--	--	--	--
29. Dos Reis Road / Street A	SSS	AM	8	A	9	A
		PM	8	A	9	A
30. Dos Reis Road / Main Street	RA	AM	9	A	5	A
		PM	9	A	6	A
31. Dos Reis Road / Golden Valley Parkway	Signal	AM	5	A	36	D
		PM	6	A	39	D
32. Lathrop Road / Street A	RA	AM	36	D	4	A
		PM	39	D	4	A
33. Lathrop Road / Main Street	Signal	AM	4	A	14	B
		PM	4	A	27	C
34. Street A / Barbara Terry	RA	AM	14	B	4	A
		PM	27	C	4	A
35. Street A / Golden Valley Parkway	Signal	AM	4	A	21	C
		PM	4	A	19	B
36. Main Street / Golden Valley Parkway	Signal	AM	N/A	N/A	8	A
		PM	N/A	N/A	8	A

Table 4.4-23
2010 Plus Phase I of Project and 2010 Plus Phase 1 of Project Mitigated
Peak Hour Level of Service

Location	Control[1]	Peak Hour	2010 Phase 1 of Project		2010 Plus Phase I of Project Mitigated	
			Delay[2]	LOS	Delay[2]	LOS
37. *Intersection only applies to 2020 scenarios*	--	--	--	--	--	--
38. River Islands Parkway / McKee Boulevard	Signal	AM PM	8 8	A A	8 8	A A

Notes: **Deficient Intersections Indicated in Bold**

[1]- Signal = Traffic signal control, AWS= All-way stop sign control, RA= Roundabout and SSS= Side-street stop sign control
[2]- Delay calculated using methodologies provided in *Highway Capacity Manual*, Transportation Research Board, 2000
Source: Fehr & Peers 2004

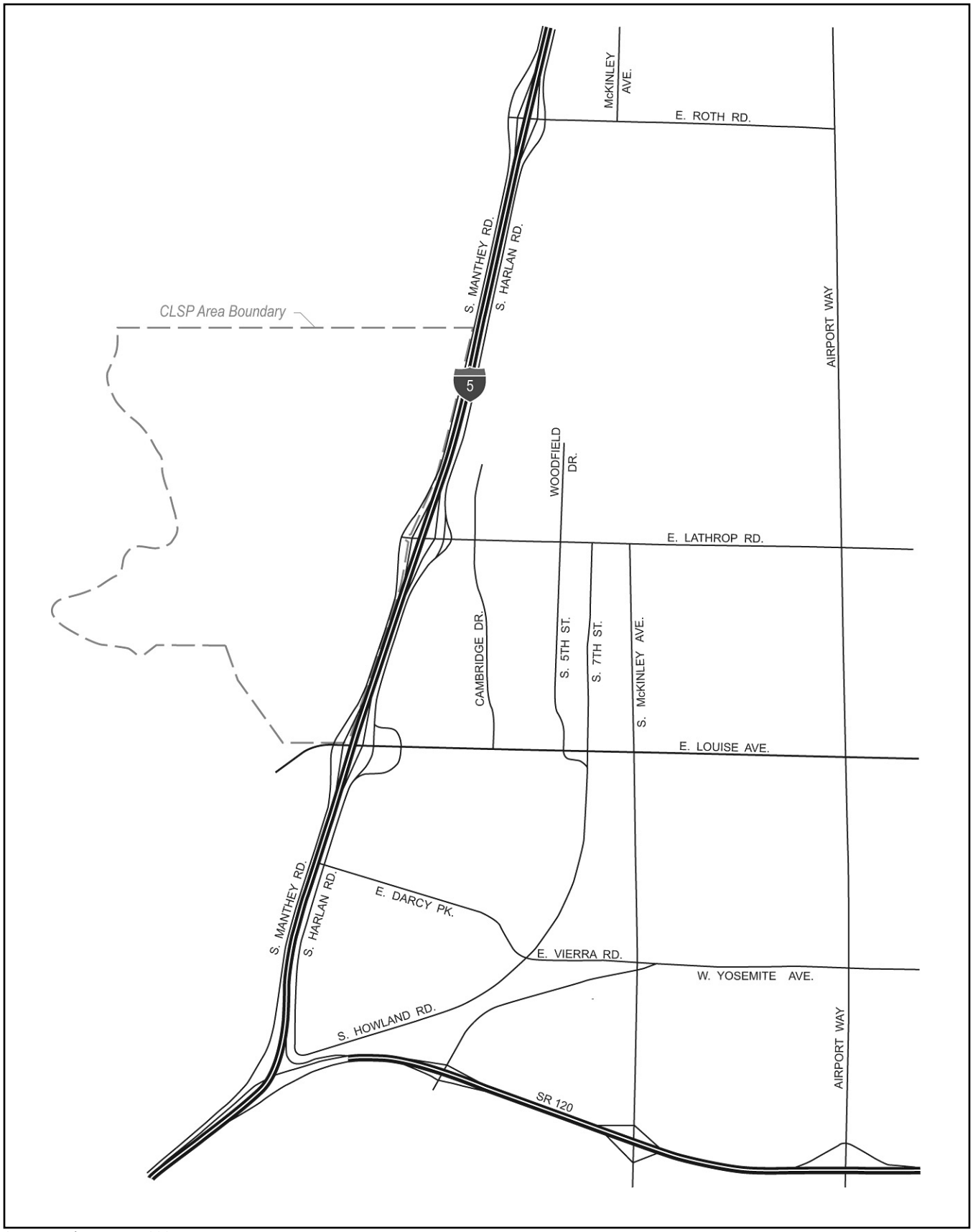
Table 4.4-24
2020 Plus Buildout of Project and 2020 Plus Buildout of Project Mitigated
Peak Hour Level of Service

Location	Control[1]	Peak Hour	2020 Buildout of Project		2020 Plus Buildout of Project Mitigated	
			Delay[2]	LOS	Delay[2]	LOS
1. Roth Road / Manthey Road	Signal	AM PM	22 24	C D	22 24	C D
2. Roth Road / I-5 SB Ramps	Signal	AM PM	12 28	B C	12 28	B C
3. Roth Road / I-5 NB Ramps	Signal	AM PM	12 18	B B	12 18	B B
4. Roth Road / Harlan Road	Signal	AM PM	38 48	D D	38 48	D D
5. Roth Road / McKinley Avenue	Signal	AM PM	**73** 37	**E** D	25 25	C C
6. Roth Road / Airport Way	Signal	AM PM	23 39	C D	24 39	C D
7. Lathrop Road / Golden Valley Parkway	Signal	AM PM	34 51	C D	34 51	C D
8. Lathrop Road / I-5 SB Ramps	Signal	AM PM	48 **>80**	D **F**	18 41	B D
9. Lathrop Road / I-5 NB Ramps	Signal	AM PM	**>80** **>80**	**F** **F**	31 14	C B
10.Lathrop Road / Old Harlan	SSS	AM PM	**>50** **>50**	**F** **F**	**>50** **>50**	**F** **F**
11. Lathrop Road / New Harlan	Signal	AM PM	**>80** **>80**	**F** **F**	**>80** **>80**	**F** **F**
12. Lathrop Road / Fifth Street	Signal	AM PM	**65** **74**	**E** **E**	54 54	D D
13. Lathrop Road / Airport Way	Signal	AM PM	**>80** **>80**	**F** **F**	54 55	D D
14. Louise Avenue / Golden Valley Parkway	Signal	AM PM	46 55	D D	46 55	D D
15. Louise Avenue / I-5 SB Ramps	Signal	AM PM	50 26	D C	46 30	D C
16. Louise Avenue / I-5 NB Ramps	Signal	AM PM	22 39	C D	39 27	D C

Table 4.4-24
2020 Plus Buildout of Project and 2020 Plus Buildout of Project Mitigated
Peak Hour Level of Service

Location	Control[1]	Peak Hour	2020 Buildout of Project		2020 Plus Buildout of Project Mitigated	
			Delay[2]	LOS	Delay[2]	LOS
17. Louise Avenue / Old Harlan	SSS	AM PM	**>50** 34	**F** D	**>50** 34	**F** C
18. Louise Avenue / New Harlan	Signal	AM PM	**>80** 49	**F** D	55 38	D D
19. Louise Avenue / Cambridge	Signal	AM PM	18 15	B B	18 15	B B
20. Louise Avenue / Fifth Street	Signal	AM PM	30 42	C D	30 42	C D
21. Louise Avenue / McKinley	Signal	AM PM	**63** 43	**E** D	48 32	D C
22. Louise Avenue / Airport	Signal	AM PM	**75** **>80**	**E** **F**	30 45	C D
23. *Intersection only applies to previous scenarios*	--	--	--	--	--	--
24. Yosemite Avenue / McKinley	Signal	AM PM	**>80** 40	**F** D	48 34	D C
25. Yosemite Avenue / Darcy Parkway	Signal	AM PM	24 32	C C	24 32	C C
26. De Lima Road / Street A	RA	AM PM	5 5	A A	5 5	A A
27. De Lima Road / Main Street	RA	AM PM	5 7	A A	5 7	A A
28. De Lima Road / Golden Valley Parkway	Signal	AM PM	29 27	C C	29 27	C C
29. Dos Reis Road / Street A	SSS	AM PM	15 17	B C	15 17	B C
30. Dos Reis Road / Main Street	RA	AM PM	5 6	A A	5 6	A A
31. Dos Reis Road / Golden Valley Parkway	Signal	AM PM	24 27	C C	24 27	C C
32. Lathrop Road / Street A	RA	AM PM	5 7	A A	5 7	A A
33. Lathrop Road / Main Street	Signal	AM PM	21 33	C C	21 33	C C
34. Street A / Barbara Terry	RA	AM PM	5 5	A A	5 5	A A
35. Street A / Golden Valley Parkway	Signal	AM PM	25 20	C C	25 20	C C
36. Main Street / Golden Valley Parkway	Signal	AM PM	52 **>80**	D **F**	20 21	B C
37. River Islands Parkway / Silvera Access	Signal	AM PM	5 6	A A	5 6	A A
38. River Islands Parkway / McKee Boulevard	Signal	AM PM	54 49	D D	38 49	D D
39. *Intersection only applies to 2010 No Project scenario*	--	--	--	--	--	--

Notes: Deficient Intersections Indicated in Bold
1- Signal = Traffic signal control, AWS= All-way stop sign control, and SSS= Side-street stop sign control
2- Delay calculated using methodologies provided in *Highway Capacity Manual*, Transportation Research Board, 2000
Source: Fehr & Peers 2004



Source: Fehr & Peers 2004

Existing Roadway Network

EXHIBIT 4.4-1

Central Lathrop Specific Plan EIR
City of Lathrop
P 3T017.01 07/04

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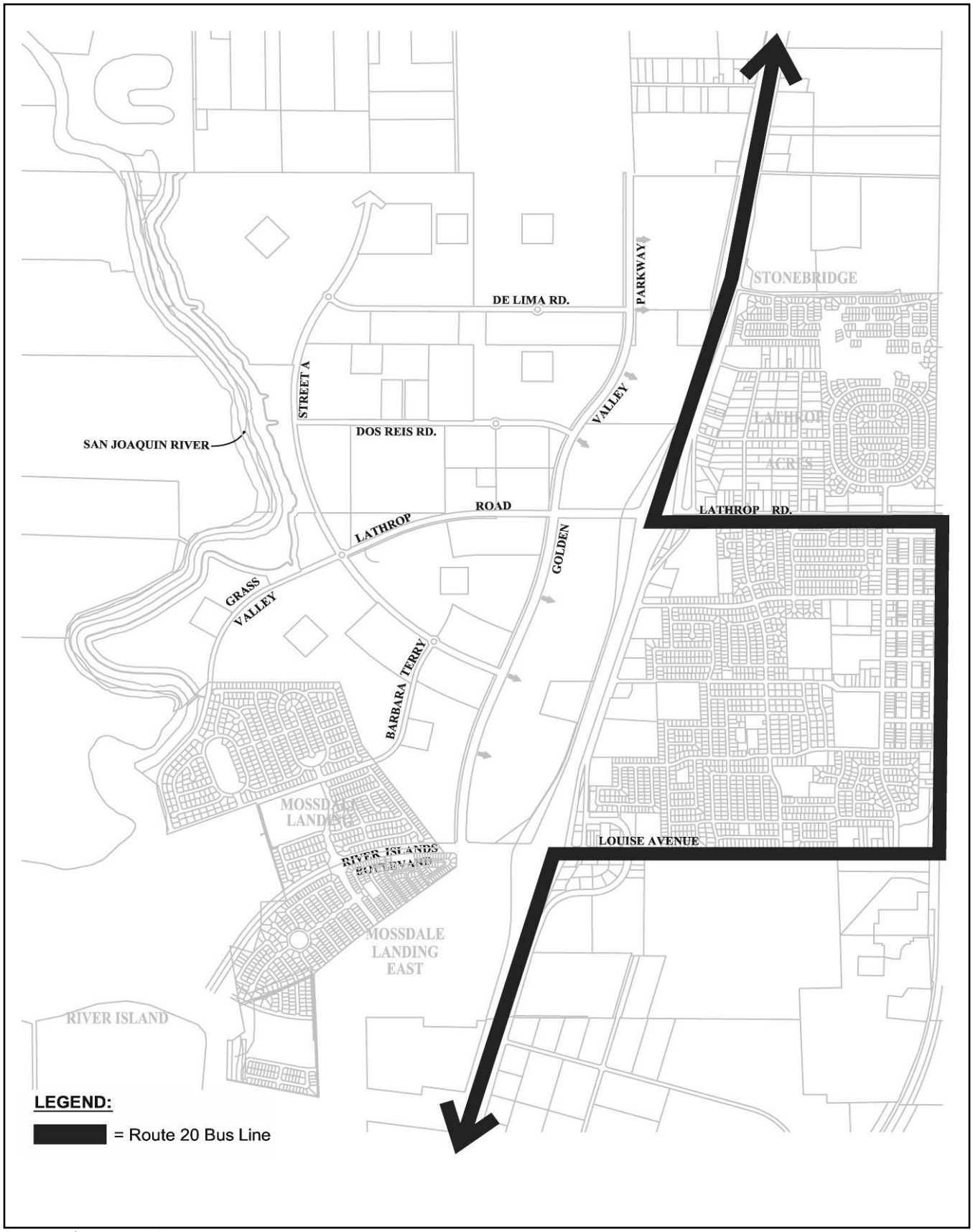

Source: Fehr & Peers 2004

Route 20 Bus Route in the City of Lathrop

EXHIBIT 4.4-2

Central Lathrop Specific Plan EIR
City of Lathrop
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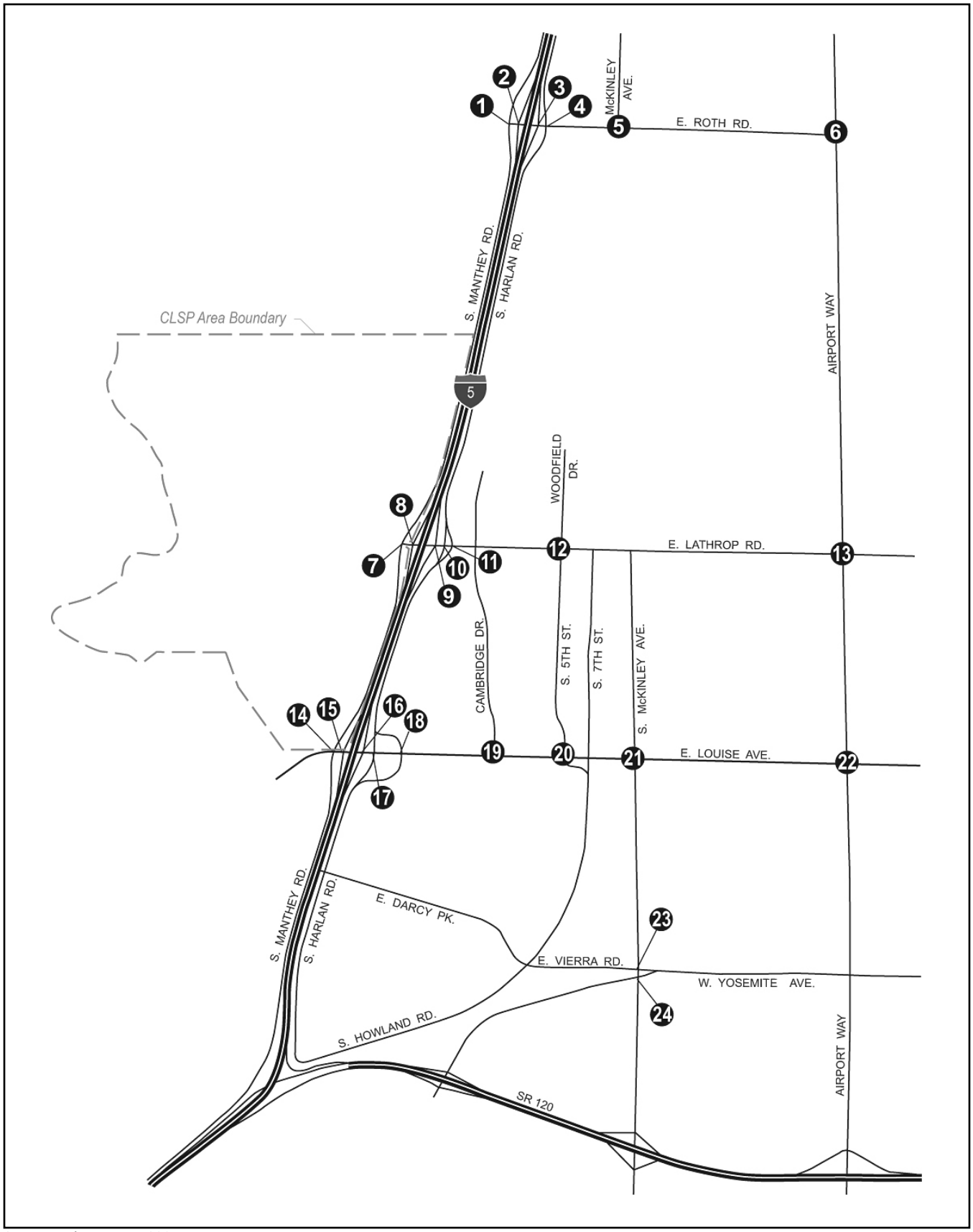

Source: Fehr & Peers 2004

Study Area for Surface Streets ñ Existing Intersection Configurations

EXHIBIT 4.4-3

Central Lathrop Specific Plan EIR
City of Lathrop
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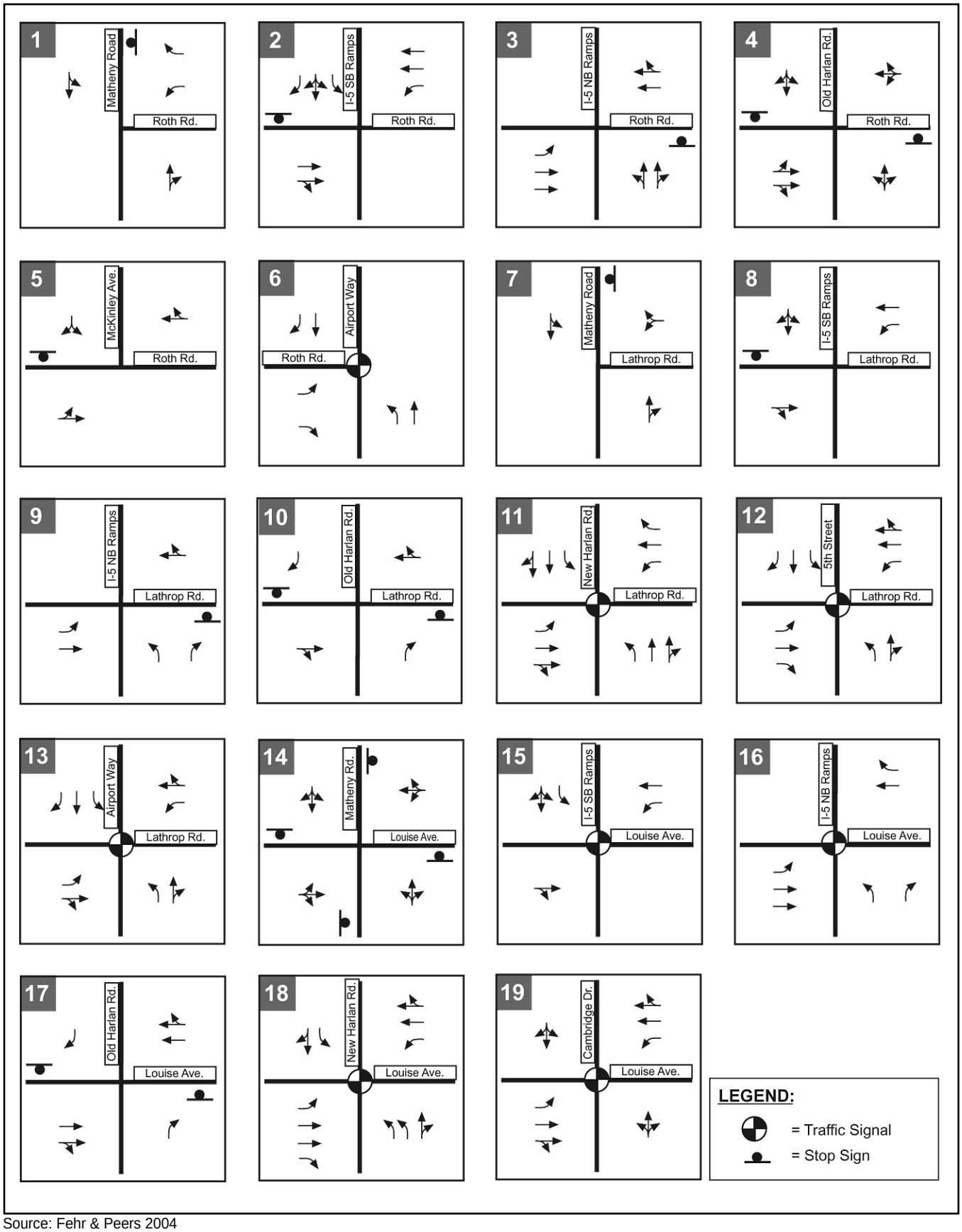

Source: Fehr & Peers 2004

Study Area for Surface Streets ñ Existing Intersection Lane Configurations

EXHIBIT 4.4-4a

Central Lathrop Specific Plan EIR
City of Lathrop
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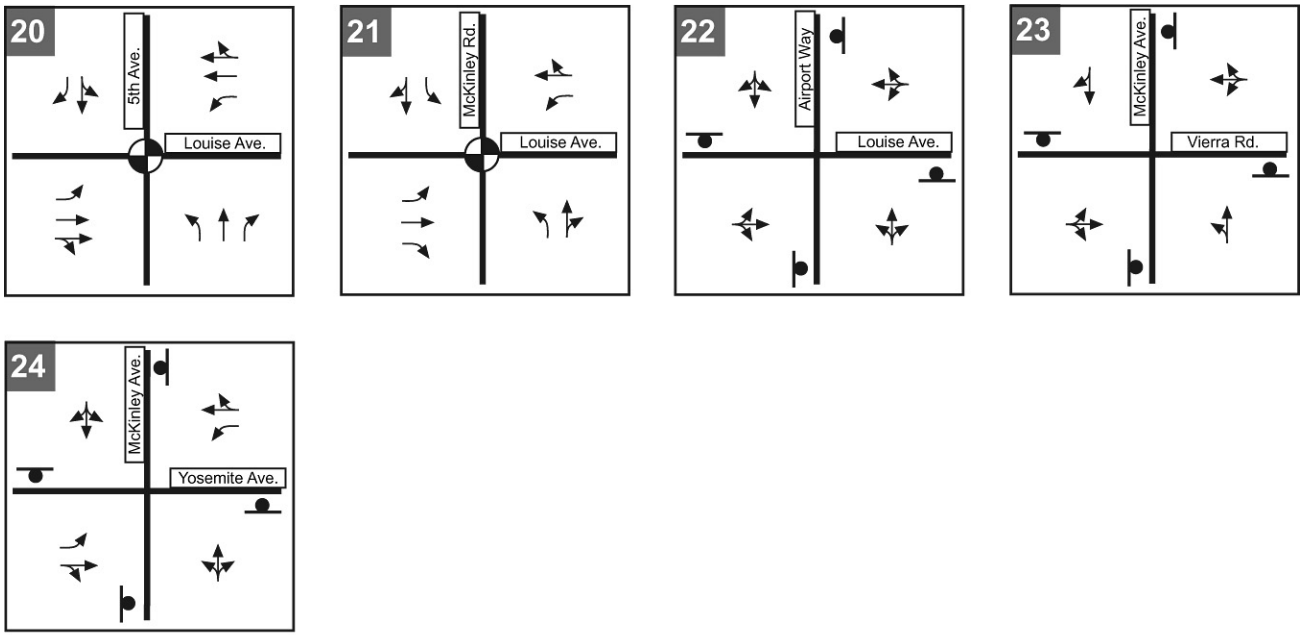

Source: Fehr & Peers 2004

Study Area for Surface Streets ñ Existing Intersection Lane Configurations

EXHIBIT 4.4-4b

Central Lathrop Specific Plan EIR
City of Lathrop
P 3T017.01 07/04

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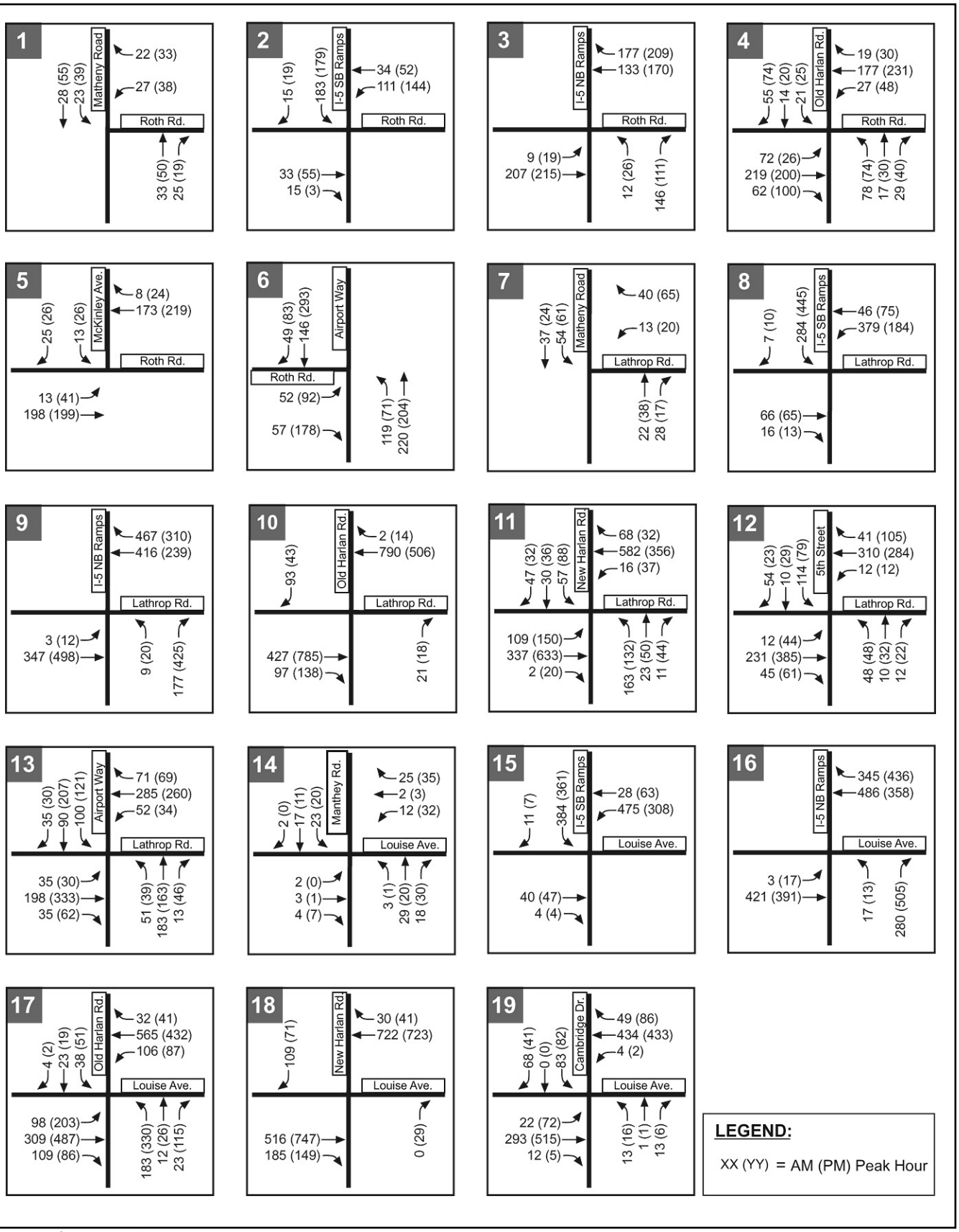

Source: Fehr & Peers 2004

Study Area for Surface Streets ñ Existing Intersection Traffic Volumes

EXHIBIT 4.4-5a

Central Lathrop Specific Plan EIR
City of Lathrop
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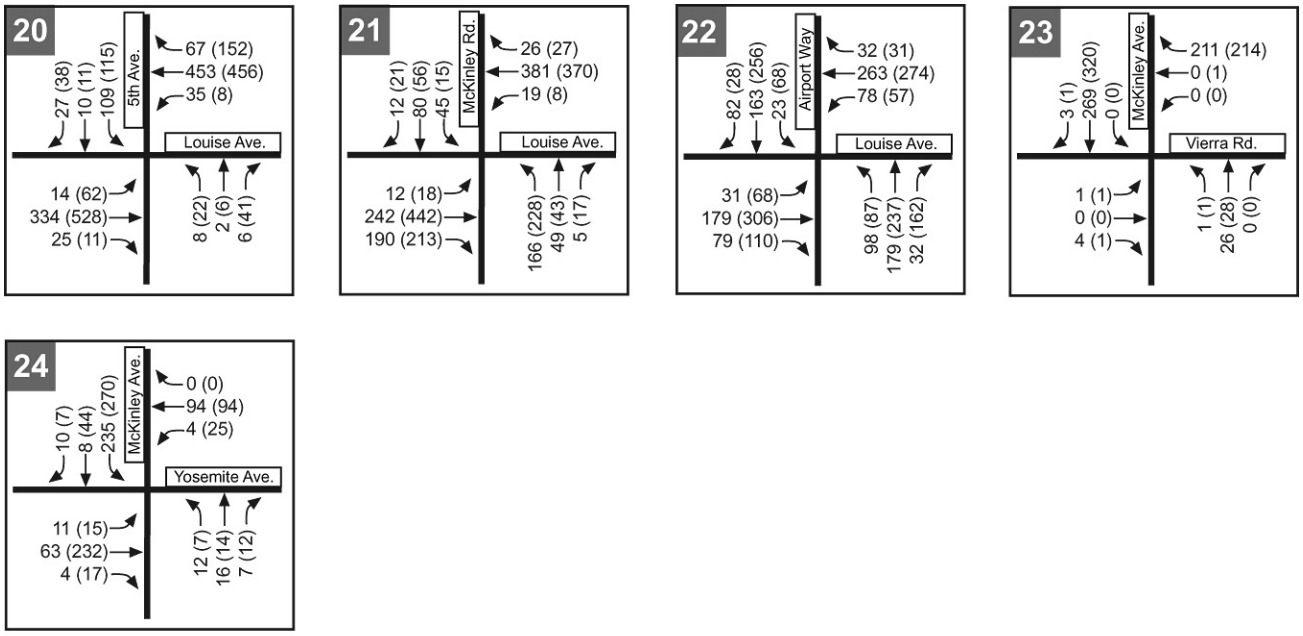

Source: Fehr & Peers 2004

Study Area for Surface Streets ñ Existing Intersection Traffic Volumes

EXHIBIT 4.4-5b

Central Lathrop Specific Plan EIR
City of Lathrop
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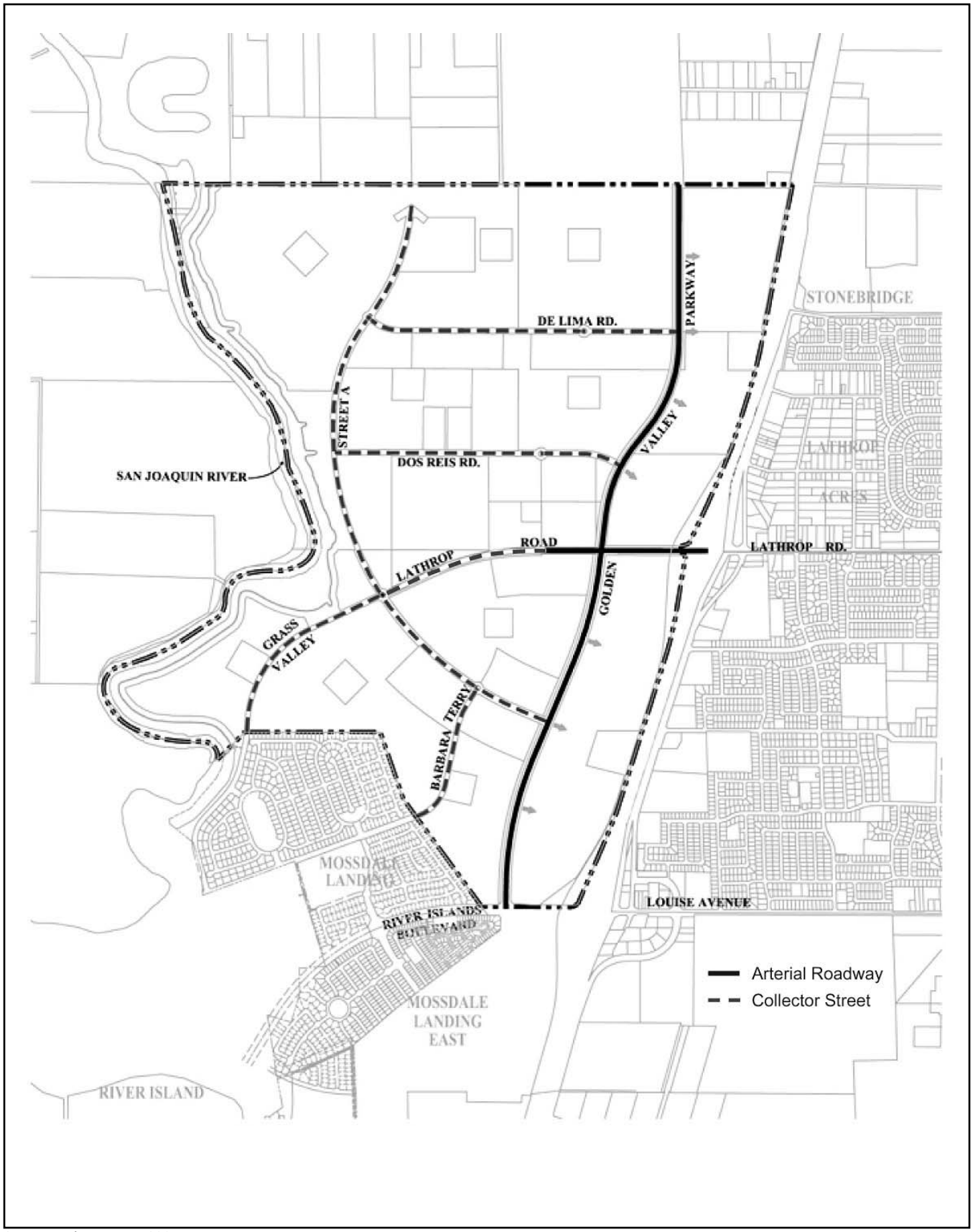

Source: Fehr & Peers 2004

CLSP Internal Roadway Network

EXHIBIT 4.4-6

Central Lathrop Specific Plan EIR
City of Lathrop
P 3T017.01 07/04

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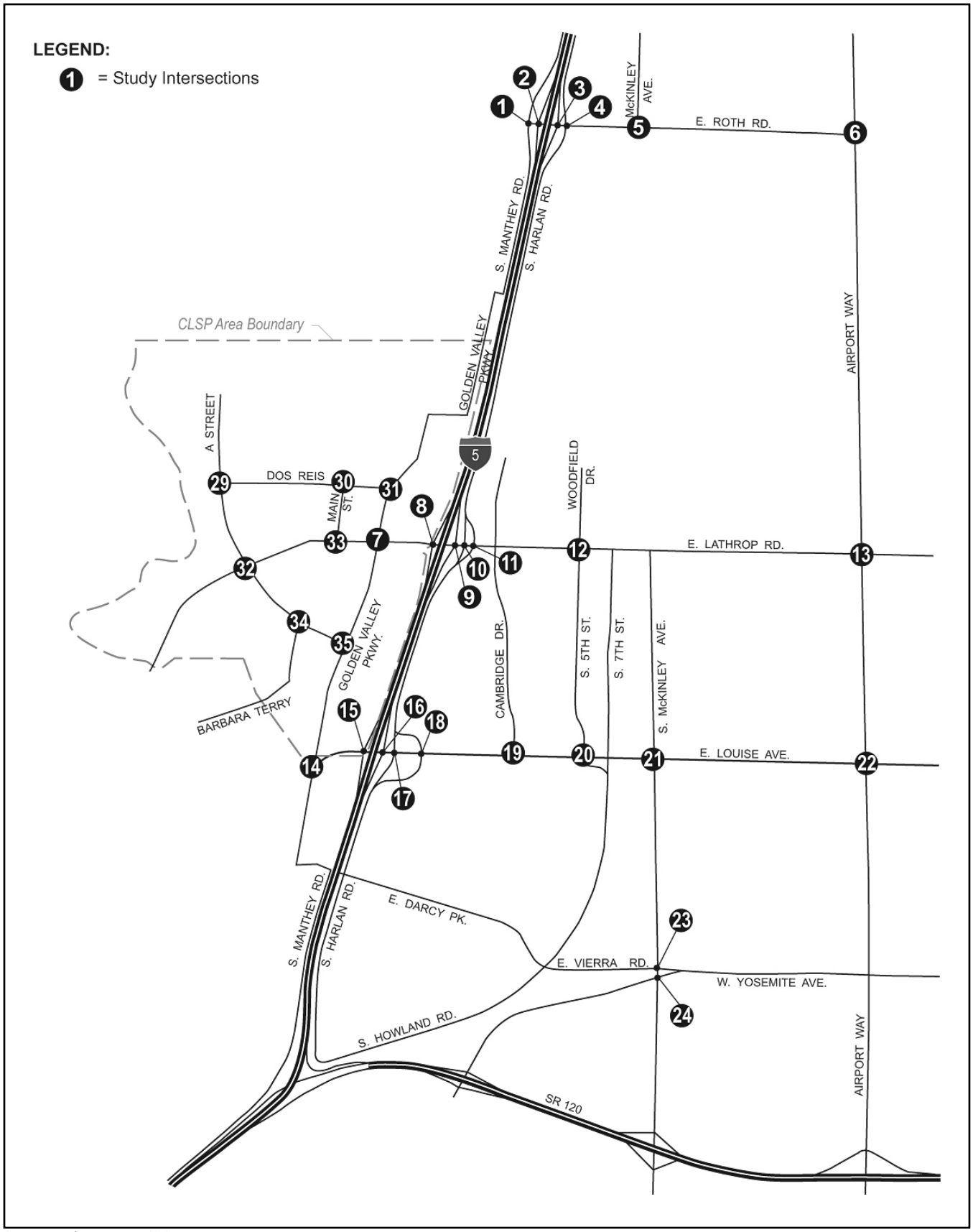
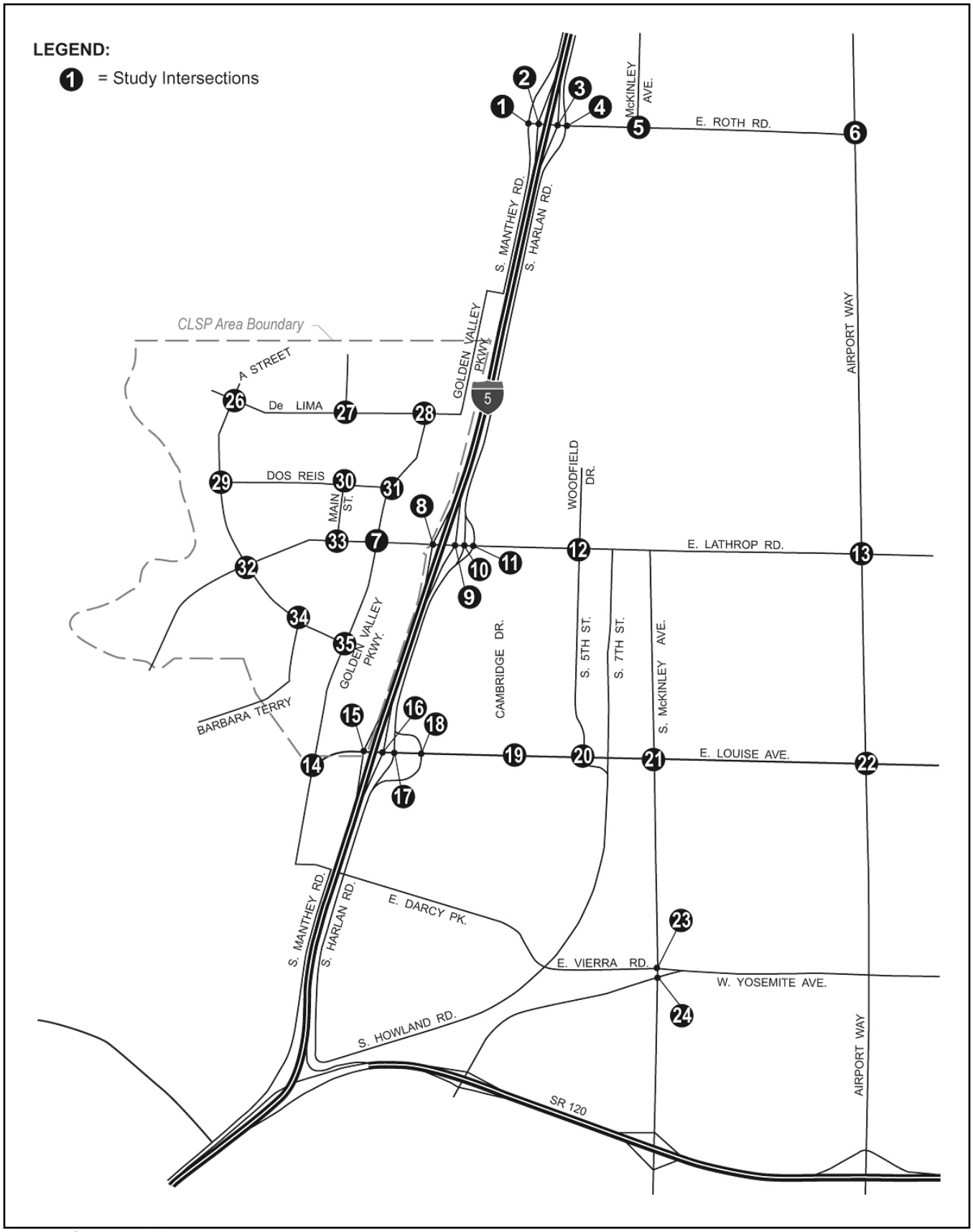


Source: Fehr & Peers 2004

Existing Plus Phase 1 Scenario Study Intersection Locations

EXHIBIT 4.4-7



Source: Fehr & Peers 2004

Existing Plus Buildout Scenario Study Intersection Locations

EXHIBIT 4.4-8

Central Lathrop Specific Plan EIR
City of Lathrop
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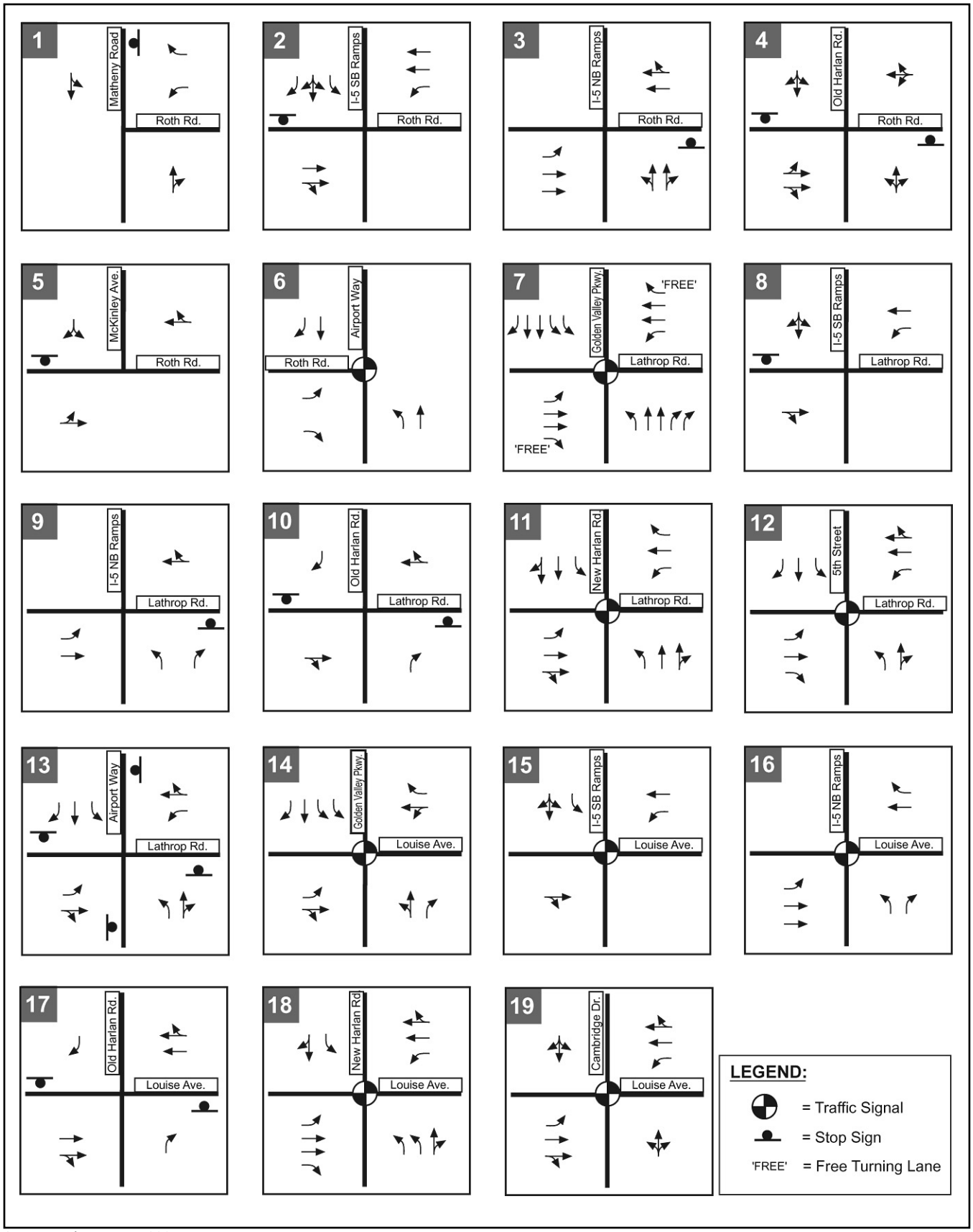

Source: Fehr & Peers 2004

Existing Plus Phase 1 Scenario Lane Configurations

EXHIBIT 4.4-9a

Central Lathrop Specific Plan EIR
City of Lathrop
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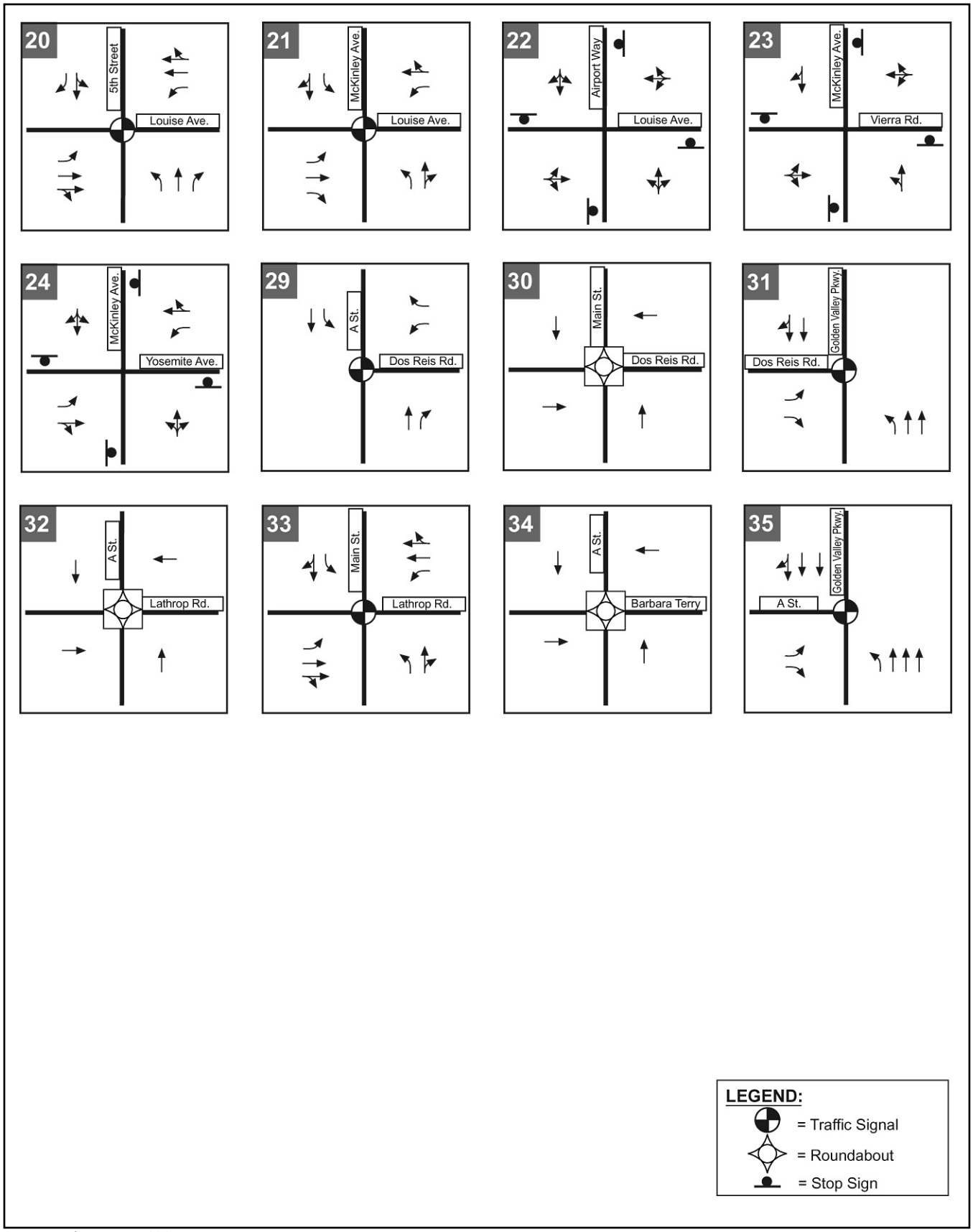

Source: Fehr & Peers 2004

Existing Plus Phase 1 Scenario Lane Configurations

EXHIBIT 4.4-9b

Central Lathrop Specific Plan EIR
City of Lathrop
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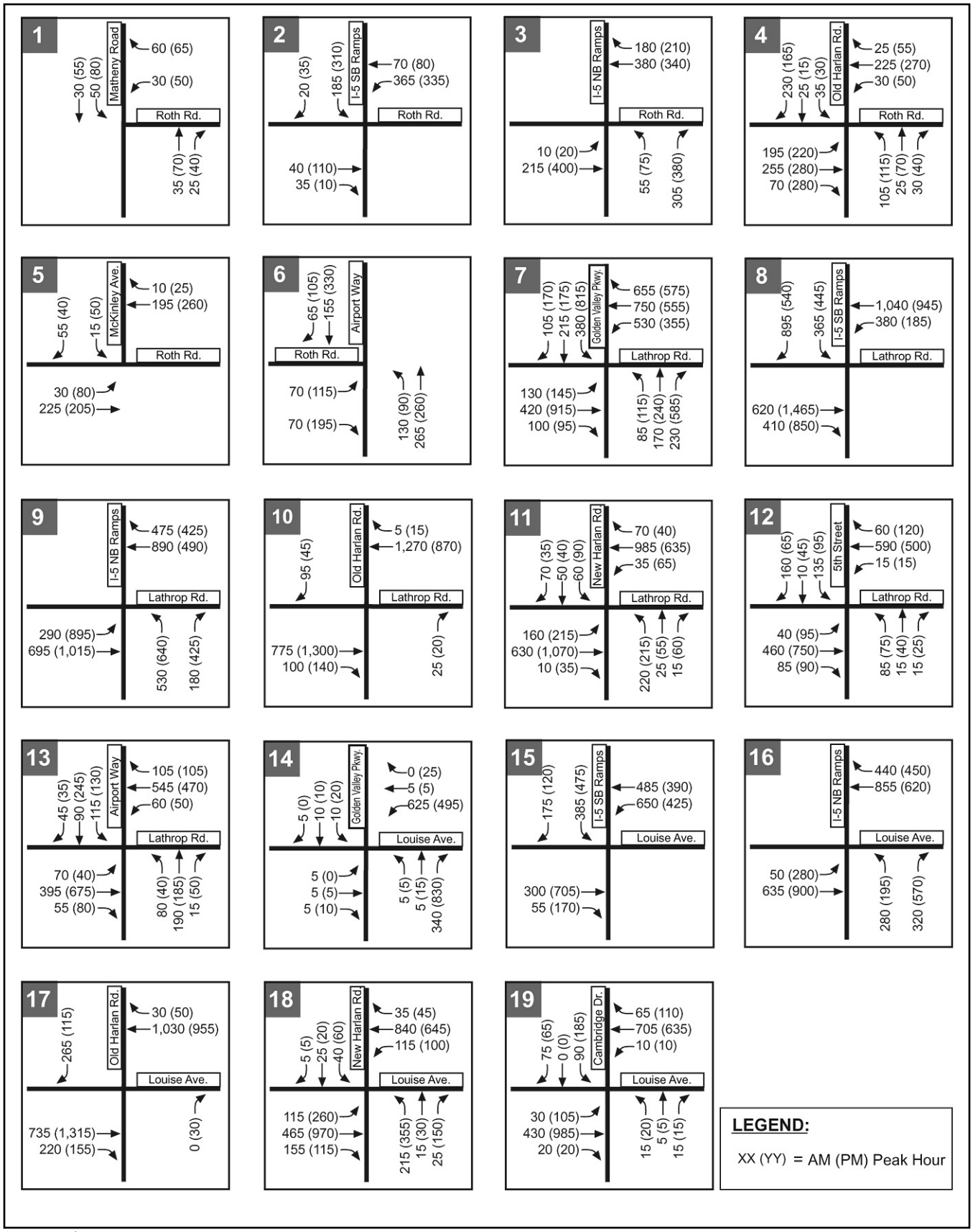

Source: Fehr & Peers 2004

Existing Plus Phase 1 Scenario Traffic Volumes

EXHIBIT 4.4-10a

Central Lathrop Specific Plan EIR
City of Lathrop
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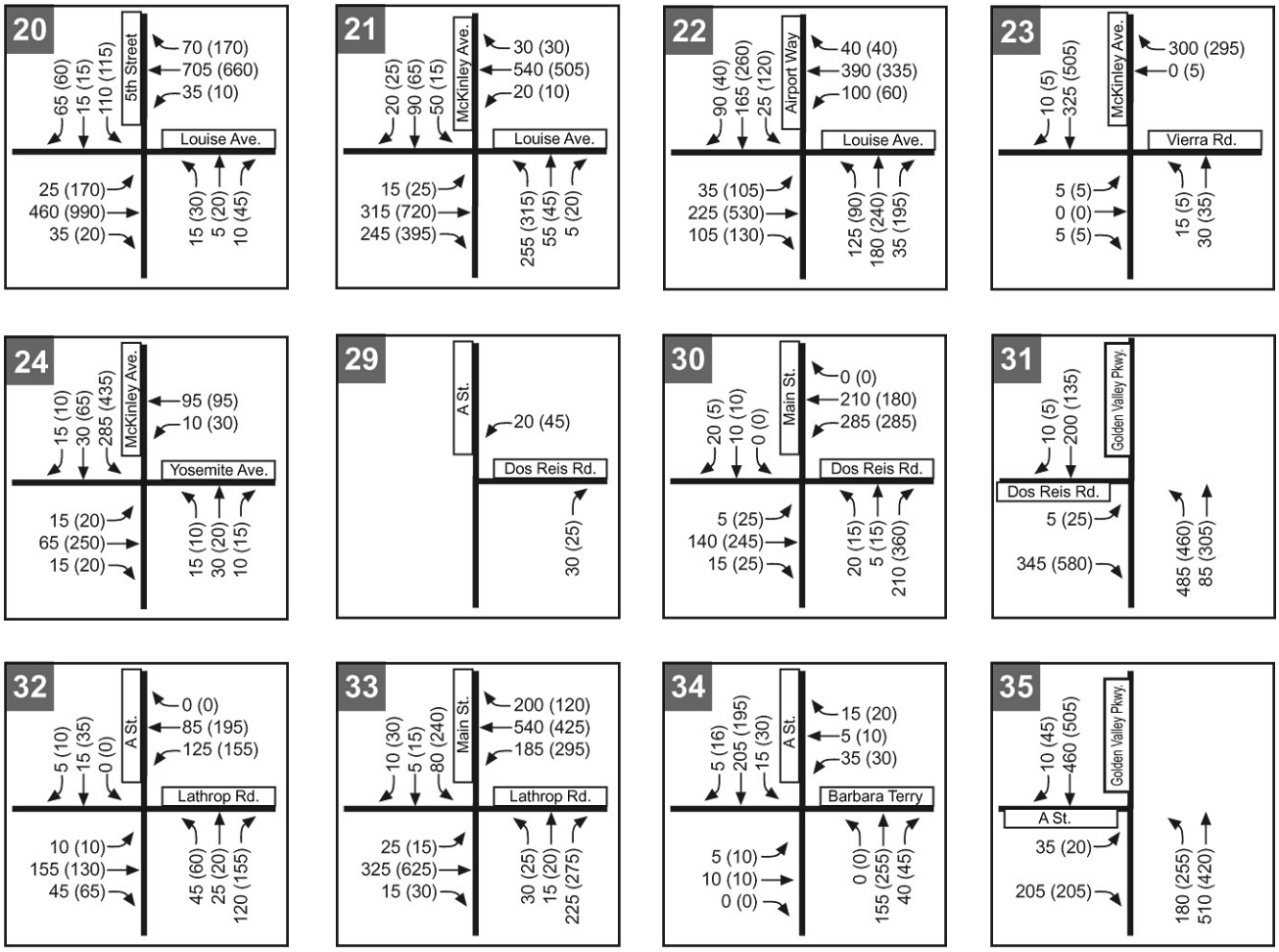

Source: Fehr & Peers 2004

Existing Plus Phase 1 Scenario Traffic Volumes

EXHIBIT 4.4-10b

Central Lathrop Specific Plan EIR
City of Lathrop
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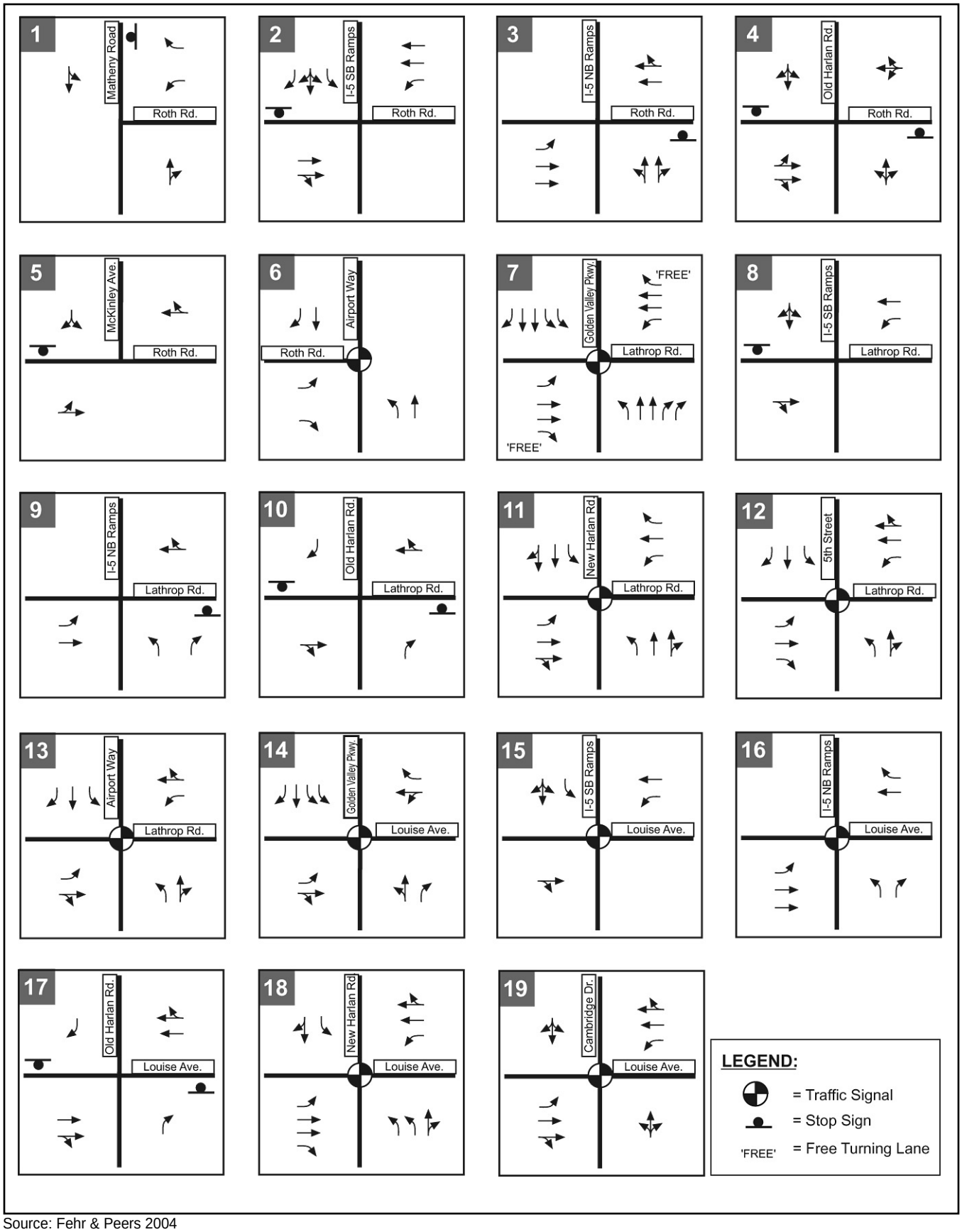

Source: Fehr & Peers 2004

Existing Plus Buildout Scenario Lane Configurations

EXHIBIT 4.4-11a

Central Lathrop Specific Plan EIR
City of Lathrop
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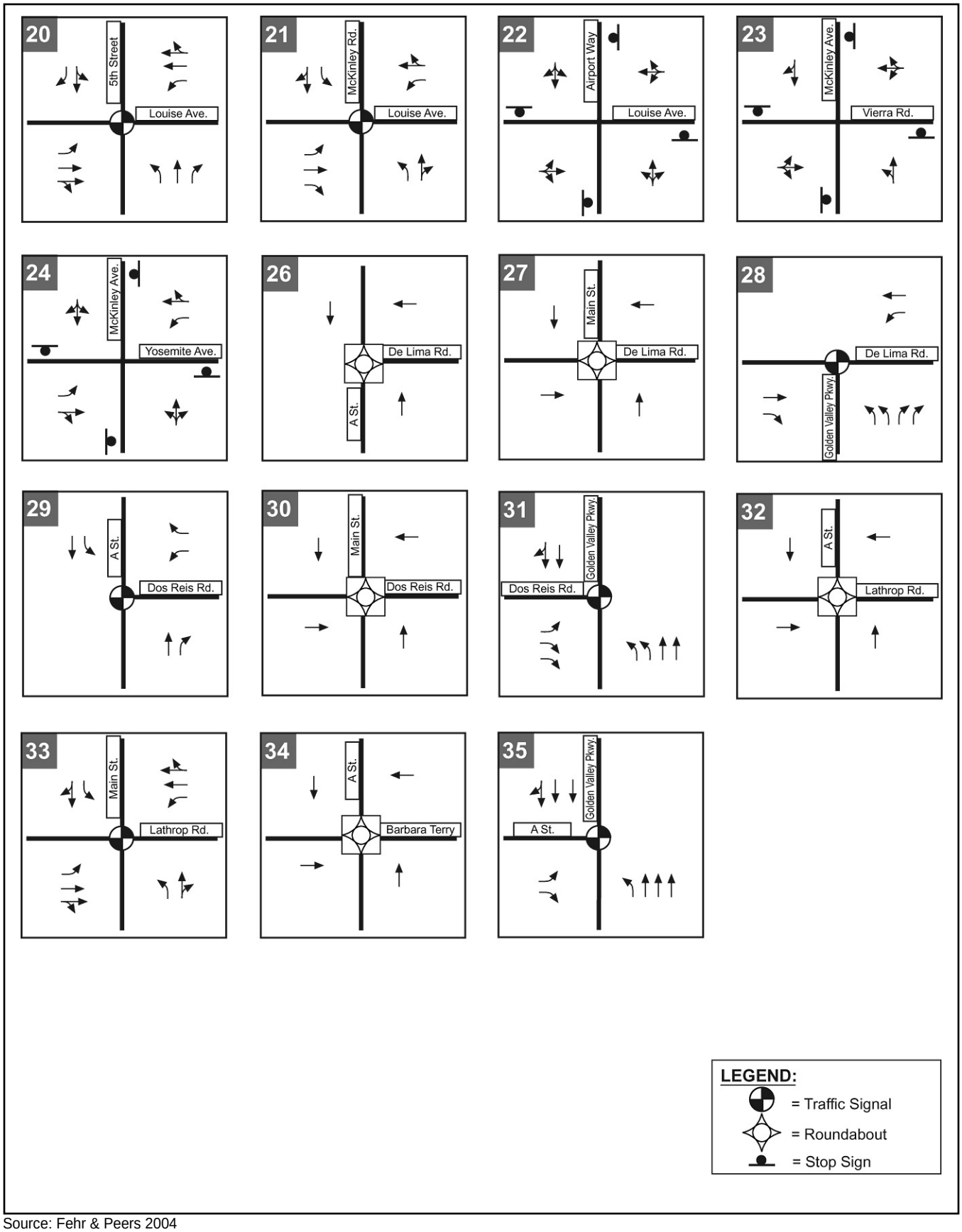

Source: Fehr & Peers 2004

Existing Plus Buildout Scenario Lane Configurations

EXHIBIT 4.4-11b

Central Lathrop Specific Plan EIR
City of Lathrop
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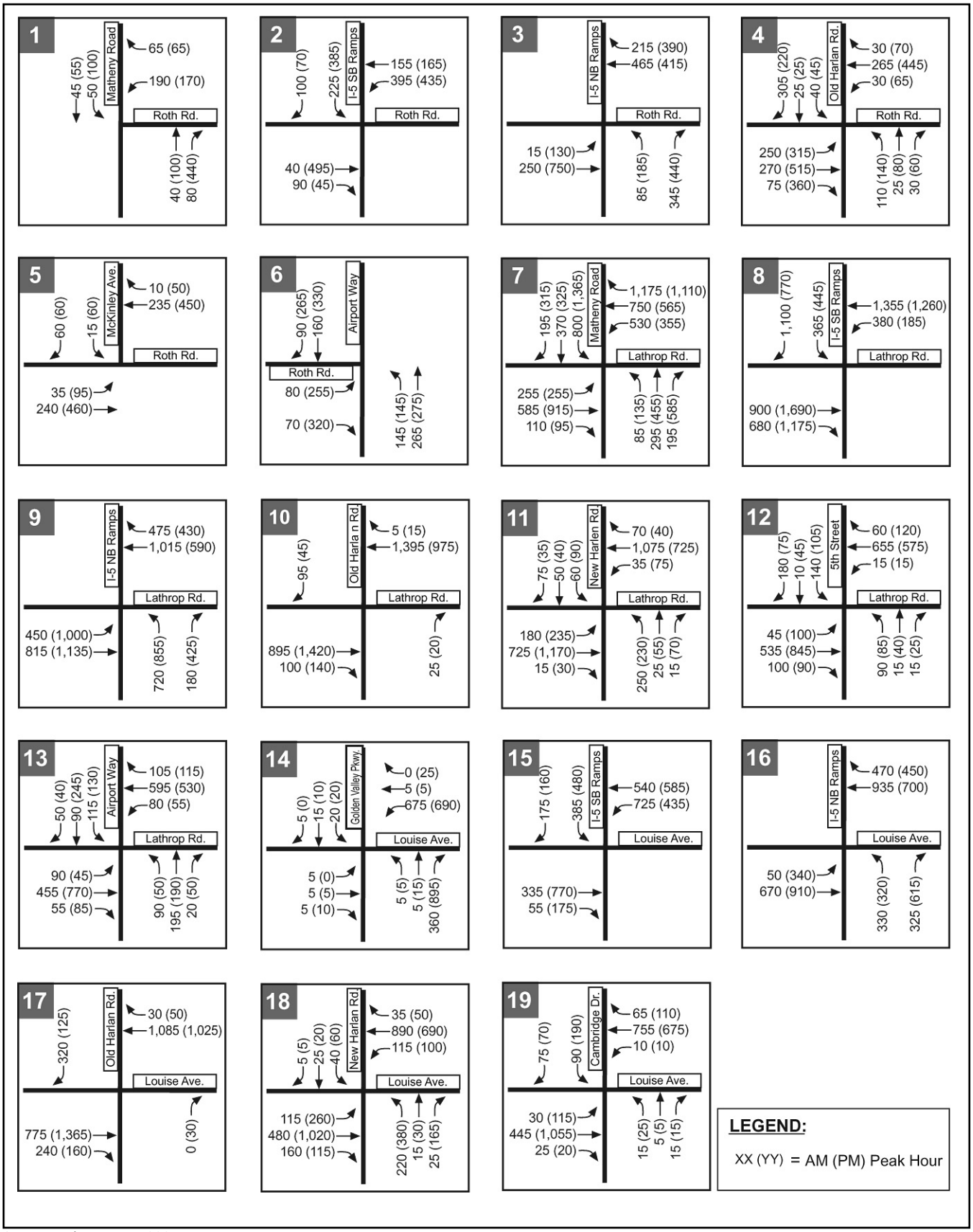

Source: Fehr & Peers 2004

Existing Plus Buildout Scenario Traffic Volumes

EXHIBIT 4.4-12a

Central Lathrop Specific Plan EIR
City of Lathrop
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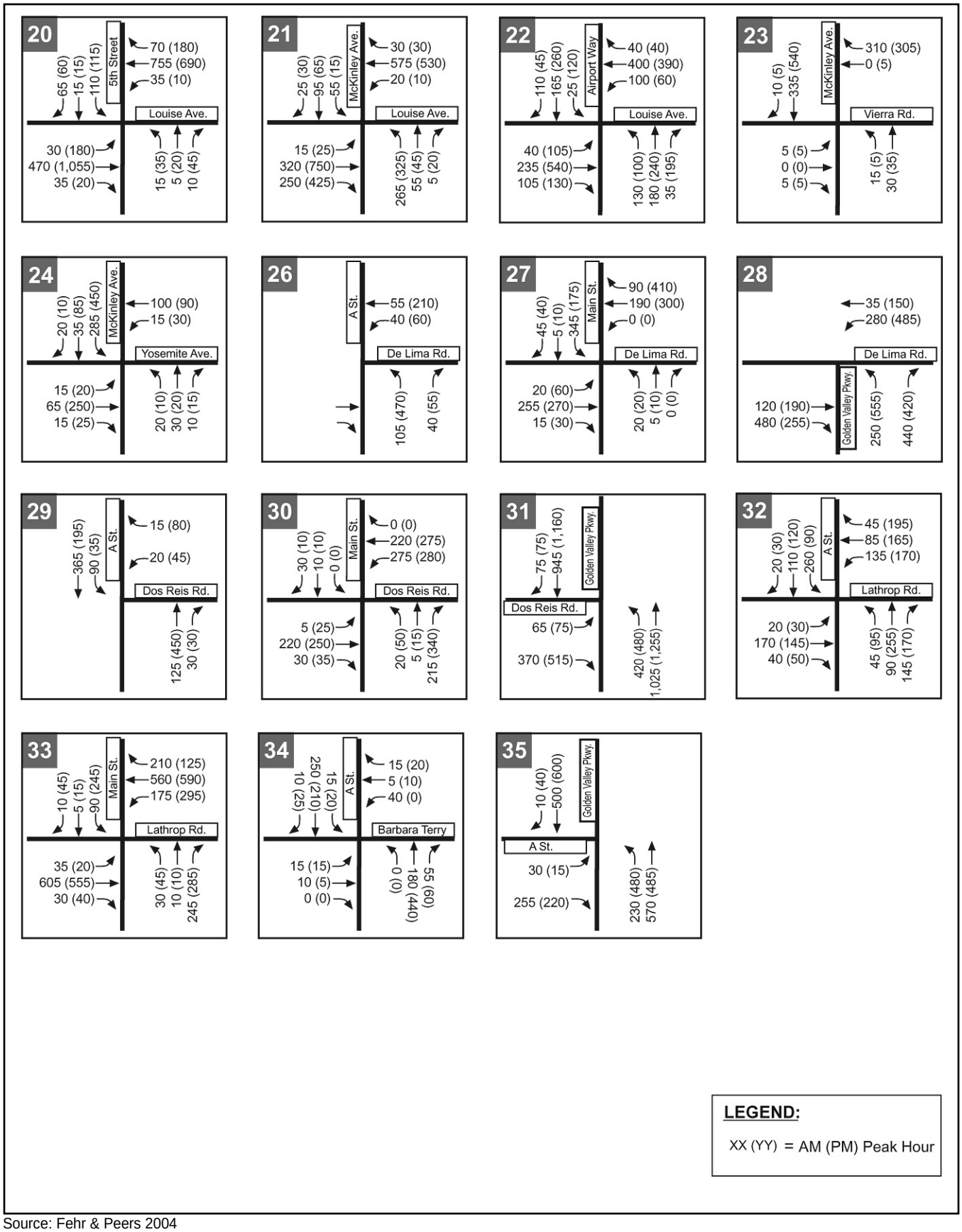

Source: Fehr & Peers 2004

Existing Plus Buildout Scenario Traffic Volumes

EXHIBIT 4.4-12b

Central Lathrop Specific Plan EIR
City of Lathrop
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4.5 Air Quality

4.5 AIR QUALITY

This section includes a summary of local and regional air quality conditions and an analysis of potential air quality impacts associated with the Central Lathrop Specific Plan (CLSP) project. Mitigation measures are recommended, as necessary, to reduce potentially significant adverse air quality impacts. The information contained in this section is based, in part, on documents prepared by the San Joaquin Valley Air Pollution Control District (SJVAPCD), U.S. Environmental Protection Agency (EPA), California Air Resources Board (ARB), and National Oceanographic and Atmospheric Administration (NOAA). The air quality modeling output for operational air emissions is provided in Appendix D of this draft environmental impact report (DEIR).

4.5.1 REGULATORY BACKGROUND

Air quality at the CLSP project site is regulated by several jurisdictions, including the EPA, ARB, SJVAPCD, San Joaquin County (County), and City of Lathrop (City). State, regional, and local jurisdictions develop rules, regulations, policies, and/or plans to achieve the goals and directives imposed through legislation, which shall not supercede those developed by the EPA but may be more stringent.

NATIONAL AND STATE AMBIENT AIR QUALITY STANDARDS

Ambient air quality is described in terms of compliance with state and national standards. Ambient air quality standards indicate the air pollutant concentration considered safe for the protection of public health and welfare. These standards are designed to protect people who are sensitive to respiratory distress, such as people with asthma, the elderly, children, people already weakened by other disease or illness, and persons engaged in strenuous work or exercise. National Ambient Air Quality Standards (NAAQS) were originally established by the EPA in 1971 for six air pollution constituents. The NAAQS have been revised periodically since 1971. Each individual state or district has the authority to add other pollutants, to require more stringent compliance, or to include different exposure periods. California Ambient Air Quality Standards (CAAQS) and NAAQS are listed in Table 4.5-1.

SAN JOAQUIN VALLEY AIR POLLUTION CONTROL DISTRICT REGULATIONS

The SJVAPCD is the agency primarily responsible for ensuring that NAAQS and CAAQS are not exceeded and that air quality conditions are maintained in the San Joaquin Valley Air Basin (SJVAB), which includes the CLSP area. Responsibilities of the SJVAPCD include, but are not limited to, preparing plans for the attainment of ambient air quality standards, adopting and enforcing rules and regulations concerning sources of air pollution, issuing permits for stationary sources of air pollution, inspecting stationary sources of air pollution and responding to citizen complaints, monitoring ambient air quality and meteorological conditions, and implementing programs and regulations required by the federal Clean Air Act (CAA) and the California Clean Air Act (CCAA). In an attempt to achieve NAAQS and CAAQS and maintain air quality, the SJVAPCD has completed the following air quality attainment plans and reports: *1994 Ozone Attainment Demonstration Plan* (amended in 2001), *1997 PM_{10} Attainment Demonstration Plan, 1997-1999 PM_{10} Progress Report, 2000 Ozone Rate of Progress* Report, 2000 Annual Progress Report, and the 2000 Triennial Plan (SJVAPCD 2002).

SJVAPCD Rule 4901

SJVAPCD Rule 4901 addresses wood-burning fire place inserts and freestanding stoves in San Joaquin Valley homes. It restricts the number and type of wood-burning devices that can be installed in new residential developments. For example, in developments with a density greater than two dwelling units per acre, up to two EPA Phase II-certified stoves are allowed per acre but no open-hearth fireplaces are

allowed. These restrictions apply to any single or multi-family housing unit that starts construction on or after January 1, 2004 (SVAPCD 2003).

Table 4.5-1
Ambient Air Quality Standards

California [1]		National [2]	
Air Pollutant	Concentration	Primary[3]	Secondary[4]
Ozone	0.09 ppm, 1-hour average	0.12 ppm, 1-hour average 0.08 ppm, 8-hour average	0.12 ppm, 1-hour average 0.08 ppm, 8-hour average
Carbon Monoxide	9 ppm, 8-hour average 20 ppm, 1-hour average	9 ppm, 8-hour average 35 ppm, 1-hour average	9 ppm, 8-hour average 35 ppm, 1-hour average
Nitrogen Dioxide	0.25 ppm, 1-hour average	100 $\mu g/m^3$ annual	100 $\mu g/m^3$ annual
Sulfur Dioxide	0.04 ppm, 24-hour average 0.25 ppm, 1-hour average	0.03 ppm, annual average 0.14 ppm, 24-hour average	0.5 ppm, 3-hr average
Suspended Particulate Matter (PM_{10})	20 $\mu g/m^3$ annual geometric mean 50 $\mu g/m^3$, 24-hour average	50 $\mu g/m^3$ annual arithmetic mean 150 $\mu g/m^3$, 24-hour average	50 $\mu g/m^3$ annual arithmetic mean 150 $\mu g/m^3$, 24-hour average
Suspended Particulate Matter ($PM_{2.5}$)	12 $\mu g/m^3$ annual geometric mean	15 $\mu g/m^3$ annual arithmetic mean 65 $\mu g/m^3$, 24-hour average	15 $\mu g/m^3$ annual arithmetic mean 65 $\mu g/m^3$, 24-hour average
Lead	1.5 $\mu g/m^3$, 30-day average	1.5 $\mu g/m^3$ calendar quarter	1.5 $\mu g/m^3$ calendar quarter
Sulfates	25 $\mu g/m^3$, 24-hour average	--	--
Hydrogen Sulfide	0.03 ppm, 1-hour average	--	--
Vinyl Chloride	0.01 ppm, 24-hour average	--	--
Visibility Reducing Particles	In sufficient amount to produce an extinction coefficient of 0.23 per kilometer-visibility of ten miles or more (0.07-30 miles or more for Lake Tahoe) due to particles when the relative humidity is less than 70%.	--	--

[1] California standards for ozone, carbon monoxide (except Lake Tahoe), sulfur dioxide (1 and 24 hour), nitrogen dioxide, suspended particulate matter (PM_{10}), and visibility reducing particles are values that are not to be exceeded. All others are not to be equaled or exceeded.

[2] National standards (other than ozone, PM_{10}, 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. For PM_{10}, the 24-hour standard is attained when 99% of the daily concentrations, averaged over 3 years, are equal to or less than the standard. For $PM_{2.5}$, the 24-hour standard is attained when 98% of the daily concentrations, averaged over 3 years, are equal to or less than the standard.

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

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

ppm = parts per million by volume
$\mu g/m^3$ = micrograms per cubic meter

Source: California Air Resources Board 2003

CRITERIA AIR POLLUTANTS

The ARB and the EPA currently focus on five "criteria pollutants" as indicators of air quality: ozone, carbon monoxide, nitrogen dioxide, sulfur dioxide, and particulate matter. A brief description of each criteria air pollutant, including adverse health effects and formation processes, is provided below.

Ozone

Ozone is a photochemical oxidant and the primary component of smog. Ozone is not directly emitted into the air, but is formed through complex chemical reactions between precursor emissions of organic compounds and oxides of nitrogen in the presence of sunlight. Both organic compounds and oxides of nitrogen are emitted by mobile (transportation) and stationary (industrial) sources. Ozone located in the upper atmosphere (stratosphere) acts in a beneficial manner by shielding the Earth from harmful ultraviolet radiation that is emitted by the sun. However, ozone located in the lower atmosphere (troposphere) is a major health and environmental concern. Because sunlight and heat serve as catalysts for the reactions between ozone precursors, peak ozone concentrations typically occur during summer in the northern hemisphere (EPA 2002). In general, ozone concentrations over or near urban and rural areas reflect an interplay of emissions of ozone precursors, transport meteorology, and atmospheric chemistry (Godish 1991).

The adverse health effects associated with exposure to ozone pertain primarily to the respiratory system. Scientific evidence indicates that ambient levels of ozone affect not only sensitive receptors, such as people with asthma and children, but healthy adults as well. Exposure to ambient levels of ozone ranging from 0.10 to 0.40 part per million (ppm) for 1–2 hours has been found to significantly alter lung functions by increasing respiratory rates and pulmonary resistance, decreasing breath volumes, and impairing respiratory mechanics. Ambient levels of ozone above 0.12 ppm are linked to symptomatic responses such as throat dryness, chest tightness, shortness of breath, headache, and nausea. In addition to the above adverse health effects, evidence also exists relating ozone exposure to an increase in the permeability of respiratory epithelia, leading to an increase in responsiveness of the respiratory system to bronchoconstrictive challenges and the interference or inhibition of the immune system's ability to defend against infection (Godish 1991). The CAAQS and NAAQS for ozone range from 0.08 ppm to 0.12 ppm (Table 4.5-1).

Carbon Monoxide

Carbon monoxide (CO) is a colorless, odorless, and poisonous gas produced by incomplete burning of carbon in fuels, principally from mobile sources of pollution (e.g., cars, trucks). It is estimated that up to 78% of nationwide CO emissions are from mobile sources. The other 22% consist primarily of CO emissions from forest fires, wood-burning stoves, incinerators, and industrial sources. Peak CO levels are often localized near areas with high concentrations of mobile sources and occur typically during calm conditions in the winter months. The CAAQS and NAAQS for CO range from 9 ppm to 35 ppm (Table 4.5-1).

Carbon monoxide enters the bloodstream through the lungs by combining with hemoglobin, which normally supplies oxygen to the cells. However, CO combines with hemoglobin much more readily than oxygen does, resulting in a drastic reduction in the amount of oxygen available to the cells. Adverse health effects associated with exposure to CO concentrations include dizziness, headaches, slow reflexes, and fatigue. CO exposure is especially harmful to individuals who suffer from cardiovascular and respiratory diseases (EPA 2002).

Nitrogen Dioxide

Nitrogen dioxide (NO_2) is a brownish, highly reactive gas that is present in all urban environments. The major anthropogenic (human-made) sources of NO_2 are combustion devices, such as boilers, gas turbines, and mobile and stationary reciprocating internal combustion engines. Combustion devices primarily emit nitric oxide (NO), which reacts oxidatively in the atmosphere to form NO_2 (EPA 2002). The combined emissions of NO and NO_2 are referred to as oxides of nitrogen (NO_X), which are reported as equivalent NO_2. Because NO_2 is formed and depleted by reactions associated with photochemical smog, the NO_2 concentration in a particular geographical area may not be representative of the local NO_X emission sources.

Inhalation is the most common route of exposure to NO_2. The severity of the adverse health effects depends primarily on the concentration inhaled rather than the duration of exposure. An individual may experience a variety of acute symptoms, including cough, difficulty with breathing, vomiting, headache, and eye irritation during or shortly after exposure. After a period of approximately 4–12 hours, an exposed individual may experience chemical pneumonitis or pulmonary edema with breathing abnormalities, cough, hemoptysis, cyanosis, chest pain, and rapid heartbeat. Severe, symptomatic NO_2 intoxication after acute exposure has on occasion been linked with prolonged respiratory impairment with such symptoms as chronic bronchitis and decreased lung functions. The CAAQS for NO_2 is a 1-hour average of 0.25 ppm. The NAAQS is expressed as an annual total of 100 micrograms per cubic meter ($\mu g/m^3$) (Table 4.5-1).

Sulfur Dioxide

Sulfur dioxide (SO_2) is produced by such stationary sources as coal and oil combustion, steel mills, refineries, pulp and paper mills, and nonferrous smelters. The major adverse health effects associated with SO_2 exposure pertain to the upper respiratory tract. Sulfur dioxide is a respiratory irritant, with bronchoconstriction occurring with inhalation of SO_2 at 5 ppm or more. On contact with the moist mucous membranes, SO_2 produces sulfurous acid, which is a direct irritant. Concentration rather than duration of the exposure is an important determinant of respiratory effects. Exposure to high concentrations of SO_2 may result in edema of the lungs and respiratory paralysis. The CAAQS and NAAQS for SO_2 range from 0.03 ppm to 0.5 ppm (Table 4.5-1).

Particulate Matter

Respirable particulate matter of 10 micrometers or less in diameter is referred to as PM_{10}. (One micrometer is equal to one millionth of a meter.) PM_{10} consists of particulates directly emitted into the air, such as fugitive dust, soot, and smoke from mobile and stationary sources, construction operations, fires, natural windblown dust, and particulates formed in the atmosphere by condensation and/or transformation of SO_2 and reactive organic gases (EPA 2002). PM_{10} includes a subgroup of finer particles called $PM_{2.5}$, which have an aerodynamic diameter of 2.5 micrometers or less (ARB 2002).

The adverse health effects associated with PM_{10} depend on the specific composition of the particulate matter. For example, health effects may be associated with metals, polycyclic aromatic hydrocarbons, and other toxic substances carried by fine particulates. Generally, adverse health effects associated with PM_{10} may result from both short- and long-term exposure to elevated PM_{10} concentrations and may include breathing and respiratory symptoms, aggravation of existing respiratory and cardiovascular diseases, alterations in the body's immune system, carcinogenesis, and premature death (EPA 2002). $PM_{2.5}$ poses an increased health risk because it can be deposited deep in the lung and can contain substances that are particularly harmful to human health. As a result, the EPA promulgated national $PM_{2.5}$ standards in 1997; however, these standards have yet to be implemented (ARB 2002). The

CAAQS and NAAQS for PM_{10} range from 20 $\mu g/m^3$ to 150 $\mu g/m^3$ (Table 4.5-1). $PM_{2.5}$ standards range from 12 $\mu g/m^3$ to 65 $\mu g/m^3$.

TOXIC AIR CONTAMINANTS

Toxic air contaminants (TACs) are regulated through implementation of federal and state laws. Federal law uses the term "hazardous air pollutants" (HAPs) to refer to the same types of compounds considered as TACs under state law. Both terms encompass essentially the same compounds. For purposes of this report, the term "TACs" will be used when referring to these pollutants. It is important to note that TACs are not considered criteria pollutants in that the federal and California Clean Air Acts do not address them specifically through the setting of NAAQS or CAAQS. However, enforcement of the NAAQS and CAAQS for the control of criteria pollutants, such as ozone and PM, can result in reducing airborne emissions of TACs. For example, controls on volatile organic compound emissions to attain the ozone standard can significantly reduce emissions of TACs from stationary sources. The following is a summary of the major current federal and state regulations and programs for controlling TACs.

Federal HAP/TAC Program

Title III of the CAA requires the EPA to promulgate National Emissions Standards for Hazardous Air Pollutants (NESHAP) for certain categories of sources that emit one or more pollutants identified as HAPs/TACs. Emission standards may differ between "major sources" and "area sources" of TACs. Major sources are defined as stationary sources with potential to emit more than 10 tons per year [TPY] of any TAC or more than 25 TPY of any combination of TACs; all other sources are considered area sources. Promulgation of the emission standards involves two phases. In the first phase (1992–2000), the 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. For area sources, the standards may be different, based on generally available control technology. In the second phase (2001–2008), the EPA is required to promulgate health risk–based emissions standards where such standards are deemed necessary to address risks remaining after implementation of the technology-based NESHAP standards.

The 1990 amendments to the CAA required the EPA to promulgate vehicle or fuel standards containing reasonable requirements to control toxic emissions, applying at a minimum to benzene and formaldehyde. Performance criteria were established to limit mobile-source emissions of toxics, including benzene, formaldehyde, and 1,3-butadiene. In addition, Section 219 of the CAA also required the use of reformulated gasolines in selected U.S. cities (those with the most severe ozone nonattainment conditions) to further reduce mobile-source emissions, including toxics.

State and Local TAC Programs

The ARB works in partnership with the local air districts to enforce regulations that reduce TACs in the state. It has authority for motor vehicles, fuels, and consumer products. The ARB identifies the TACs, researches prevention or reduction methods, adopts standards for control, and enforces the standards. The local air districts have the authority over stationary or industrial type sources. SJVAPCD Rule 2010 requires permits for all source operations that may emit TACs. All projects that require air quality permits from the SJVAPCD are evaluated for TAC emissions (SJVAPCD 1998). 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. It requires a comprehensive health risk assessment for facilities that

are put in the significant risk category under the Assembly Bill (AB) 2588 Program (Air Toxics "Hot Spot" Information and Assessment Act of 1987).

The ARB identified particulate emissions from diesel-fueled engines (diesel PM) as a TAC in August 1998. Diesel PM is currently the ARB's primary TAC of concern for mobile sources, in part because, of all controlled TACs, diesel PM emissions are estimated to be responsible for approximately 70% of the total ambient TAC risk (ARB 2000). In 2000, the ARB developed and approved the *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles* and the *Risk Management Guidance for the Permitting of New Stationary Diesel-Fueled Engines*. The ARB is now implementing an aggressive plan to require cleaner diesel fuel and cleaner diesel engines and vehicles (ARB 2002) and is currently developing regulations designed to reduce diesel PM emissions from diesel-fueled engines and vehicles. The goal of each regulation is to make diesel engines as clean as possible by establishing state-of-the-art technology requirements or emission standards to reduce diesel PM emissions. These regulations require substantial reductions in diesel PM emissions beginning with the 2004 model year. Additional more stringent standards will apply to engines starting in the 2007 model year. Off-road vehicles will come under more stringent regulation beginning with the 2005 model year. Each of these sets of regulations will serve to significantly reduce diesel PM emissions and long-term human health risks attributable to diesel-fueled vehicles and equipment.

The California State Legislature has also examined TAC hazards and has adopted several bills to control TACs. Implementation of state-adopted legislation pertaining to the control of TACs is the responsibility of the ARB and local air pollution control districts. The most important legislation applicable to the proposed project is summarized below.

The Tanner Toxics Act

The Tanner Toxics Act established the California toxic air contaminant control program (AB 1807, Health and Safety Code Section 39666 et seq.) to identify and control TACs. Under the act, the ARB is required to identify a substance as a TAC based on the review of the scientific data and the recommendations by both the Office of Environmental and Health Hazard Assessment and the Scientific Review Panel. After designation, the ARB investigates appropriate measures to limit emissions of the TACs. These measures may include emission limitations, control technologies, operation and maintenance requirements, closed-system engineering, cost, or substitution of compounds. The ARB then prepares a report on the appropriate degree of regulation and adopts Air Toxics Control Measures. These control measures are the minimum regulations that must be imposed by each of the local air districts in the form of regulations. Districts must adopt rules that are at least as stringent as those of the state.

Air Toxics "Hot Spots" Information and Assessment Act

The Air Toxics "Hot Spots" Information and Assessment Act (AB 2588) is a state law enacted in 1987. The law requires certain facilities to submit information regarding emissions of more than 550 TACs to their local air pollution control districts. The act addresses public concerns that emissions from individual facilities might cause local concentration of air toxics "hot spots" at a level where individuals may be exposed to an excess risk of adverse health effects. The program requires facilities to notify all exposed persons if it is determined that there is a significant health risk. AB 2588 was amended in 1993 by Senate Bill (SB) 1731, the Facility Toxic Air Contaminant Risk Reduction Audit and Plan. In accordance with SB 1731, local air districts are required to establish a program to reduce risks from existing facilities that are deemed to pose a significant health risk.

Toxic Emissions near Schools Program/Waters Bill

AB 3205 (Health and Safety Code Sections 42301.6–42301.9) addresses stationary sources of hazardous air pollutants near schools. It requires public notice to the parents or guardians of children enrolled in any school located within one-quarter mile of the source and to each address within a 1,000-foot radius of a TAC source. SB 352 (Education Code Section 17213, Public Resources Code Section 21151.8) expands previous requirements to review sources of TACs near school sites. SB 352 directs school districts to include in the school site analysis any emissions sources, including, but not limited to, freeways and other busy traffic corridors, large agricultural operations, and rail yards within one-quarter mile of a school site. SB 352 requires that any school site located within 500 feet of the edge of the closest travel lane of a freeway or other busy traffic corridor be reviewed for potential health risks.

ODORS

Although offensive odors rarely cause any physical harm, they can be very unpleasant, leading to considerable stress among the public and often generating citizen complaints to local governments and the SJVAPCD. The SJVAPCD has determined some common types of facilities that have been known to produce odors, including 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 state or federal air quality regulations, the SJVAPCD has no rules or standards related to odor emissions other than its nuisance rule. Any actions related to odors are based on citizen complaints to local governments and the SJVAPCD. According to the SJVAPCD, significant odor problems occur when there is more than one confirmed complaint per year averaged over a 3-year period or when there are three unconfirmed complaints per year averaged over a 3-year period (SJVAPCD 1998).

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. In the first situation, the SJVAPCD recommends operational changes, add-on controls, process changes, or buffer zones where feasible to address odor complaints. In the second situation, the potential conflict is considered significant if the project site is at least as close as any other site that has already experienced significant odor problems related to the odor source. For projects locating near a source of odors where there is no nearby development that may have filed complaints, and for odor sources locating near existing sensitive receptors, the SJVAPCD requires the determination of potential conflict to be based on the distance and frequency at which odor complaints from the public have occurred in the vicinity of a similar facility (SJVAPCD 1998).

SAN JOAQUIN COUNTY GENERAL PLAN 2010

The San Joaquin County General Plan 2010 (County General Plan) includes several policies specifically related to air quality in the "Air Quality" section of the Resources Element. These include the following:

- **Policy 1:** San Joaquin County shall meet and maintain all State and national standards for air quality.
- **Policy 2:** Motor vehicle emissions shall be minimized through land use and transportation strategies, as well as by promotion of alternative fuels.
- **Policy 3:** Projects shall be designed to minimize concentrations of carbon monoxide (hot spots).

- **Policy 4:** Air quality hazards from pesticides shall be minimized.

- **Policy 5:** The elimination of chlorofluorocarbons shall be supported.

CITY OF LATHROP GENERAL PLAN

The City of Lathrop General Plan (City General Plan) includes several policies specifically related to air quality. The following policies from the "Air Quality and Solid Waste Management Policies" section of the City General Plan would apply to the proposed project:

- **Policy 1:** Mitigation of air quality impacts is to be achieved in part through the design and construction of an efficient system of arterial and collector streets and interchange and freeway improvements that will assure high levels of traffic service and the avoidance of unmanageable levels of traffic congestion.

- **Policy 3:** The City shall adopt standards which require industrial process analysis before the fact of site and building permit approval to assure compliance with State air quality and water quality standards. Standards shall provide for periodic monitoring of industrial processes which could have an adverse impact on water or air quality. Industrial process review that may be required should be conducted as part of environmental assessment by an engineer licensed in California having demonstrated experience in the industrial process involved.

- **Policy 4:** The City shall require positive control of dust particles during project construction activities, including watering or use of emulsions, parking of heavy equipment on paved surfaces, prohibition of land grading operation during days of high wind (beginning at 10 mph, with gusts exceeding 20 mph), and prohibitions of burning on vacant parcels. The City should seek the cooperation of agricultural operators to refrain from the plowing of fields on windy days, and to keep loose soils under control to the extent reasonable to avoid heavy wind erosion of soils.

4.5.2 EXISTING CONDITIONS

The CLSP site is located in the SJVAB, which is under the jurisdiction of the SJVAPCD. Existing air quality conditions in the SJVAB and the factors affecting air quality conditions in the basin are discussed below.

TOPOGRAPHY, METEOROLOGY, AND DISPERSION

The dispersion of air pollution in an area is determined by such natural factors as topography, meteorology, and climate, coupled with atmospheric stability conditions and the presence of inversions. The factors affecting the dispersion of air pollution with respect to the SJVAB are discussed below.

Topography

The SJVAB, which occupies the southern half of the Central Valley, is approximately 250 miles long and, on average, 35 miles wide. The Coast Ranges, which have an average elevation of 3,000 feet, are located on the western border 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 is basically flat with a downward gradient in terrain to the northwest.

Meteorology and Climate

The climate of the SJVAB is strongly influenced by the presence of mountain ranges. The mountain ranges to the west and south induce winter storms from the Pacific Ocean to release precipitation on the western slopes producing a partial rain shadow over the valley. In addition, the mountain ranges block the free circulation of air to the east, trapping stable air in the valley for extended periods during the cooler half of the year.

Winter in the SJVAB is characterized as mild and fairly humid, and the summer is hot, dry, and cloudless. The climate is a result of the topography and the strength and location of a semipermanent, 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. In winter, the Pacific high-pressure cell weakens and shifts southward, resulting in wind flow offshore, the absence of upwelling, and the occurrence of storms.

The annual temperature, humidity, precipitation, and wind patterns reflect the topography of the SJVAB and the strength and location of the semipermanent, subtropical high-pressure cell. Summer temperatures that often exceed 100°F and clear sky conditions are favorable to ozone formation. Most of the precipitation in the valley occurs as rainfall during winter storms. The winds and unstable atmospheric conditions associated with the passage of winter storms result in periods of low air pollution and excellent visibility. However, between winter storms, high pressure and light winds lead to the creation of low-level temperature inversions and stable atmospheric conditions resulting in high CO concentrations and PM accumulation. The orientation of the wind flow pattern in the SJVAB is parallel to the valley and mountain ranges. Summer wind conditions promote the transport of ozone and precursors from the San Francisco Bay Area through the Carquinez Strait, a gap in the Coast Ranges, and low mountain passes such as Altamont Pass and Pacheco Pass.

With respect to the CLSP area, San Joaquin County is located in the northern portion of the SJVAB. The climate is semi-arid, with an annual normal precipitation of approximately 14 inches. January temperatures range from a normal minimum of 37°F to a normal maximum of 53°F. July temperatures range from a normal minimum of 61°F to a normal maximum of 95°F (NOAA 1992). The wind is predominantly from the north-northwest at 10 mph (ARB 1994).

Atmospheric Stability and Inversions

Stability describes the resistance of the atmosphere to vertical motion. The stability of the atmosphere is dependent on the vertical distribution of temperature with height. When the temperature decreases vertically at 10°C per 1,000 meters, the atmosphere is "neutral." When the lapse rate (change in temperature with respect to height) is greater than 10°C per 1,000 meters, the atmosphere is "unstable." When the lapse rate is less than 10°C per 1,000 meters, the atmosphere is "stable." Stability categories range from "Extremely Unstable" (Class A), through Neutral (Class D), to "Stable" (Class F). Unstable conditions often occur during daytime hours when solar heating warms the lower atmospheric layers sufficiently. Under Class A stability conditions, large fluctuations in horizontal wind direction occur coupled with large vertical mixing depths. Under Class B stability conditions, wind direction fluctuations and the vertical mixing depth are less pronounced because of a decrease in the amount of solar heating. Under Class C stability conditions, solar heating is weak along with horizontal and vertical fluctuations because of a combination of thermal and mechanical turbulence. Under Class D stability conditions, vertical motions are primarily generated by mechanical turbulence. Under Class E and Class F stability conditions, air pollution emitted into the atmosphere travels downwind with poor dispersion. The dispersive power of the atmosphere decreases with progression through the categories from A to F.

With respect to the SJVAB, Classes D through F are predominant during the late fall and winter because of cool temperatures and entrapment of cold air near the surface. March and August are transition months with equally occurring percentages of Class F and Class A. During the spring months of April and May and the summer months of June and July, Class A is predominant. The fall months of September, October, and November have comparable percentages of Class A and Class F.

An inversion is a layer of warmer air over a layer of cooler air. Inversions influence the mixing depth of the atmosphere, which is the vertical depth available for diluting air pollution near the ground, thus significantly affecting air quality conditions. The SJVAB experiences both surface-based and elevated inversions. The shallow surface-based inversions are present in the morning but are often broken by daytime heating of the air layers near the ground. The deep elevated inversions occur less frequently than the surface-based inversions but generally result in more severe stagnation. The surface-based inversions occur more frequently in the fall, and the stronger elevated inversions usually occur during December and January.

AMBIENT AIR QUALITY

Air pollutant concentrations are measured at several monitoring stations in San Joaquin County. The Stockton–East Mariposa, –Hazelton, and –Wagner-Holt School and the Tracy-Patterson Pass air quality monitoring stations are the closest to the proposed CLSP project site with sufficient data to meet EPA and/or ARB criteria for quality assurance. In general, the ambient air quality measurements from the stations are representative of the air quality in the vicinity of the proposed project site.

Table 4.5-2 summarizes the air quality data from 2000 to 2003 for monitoring stations located in the vicinity of the project site. Adequate data are not necessarily available from each station for all pollutants; therefore, data for each pollutant are provided for a subset of the four stations in the project vicinity. Table 4.5-2 shows that the state (1-hour) and federal (1-hour/8-hour) ozone standards were exceeded several times during the past 4 years. The suspended PM_{10} national standard (24-hour average, 150 $\mu g/m^3$) was not exceeded; however, the state standard (24–hour average, 50 $\mu g/m^3$) was exceeded an average of eight times per year from 2000 to 2003. With respect to CO and NO_2, neither the state nor the national standard was exceeded from 2000 to 2003.

ATTAINMENT STATUS

Under the CCAA, the ARB is required to designate areas of the state as attainment, nonattainment, or unclassified with respect to applicable standards. An "attainment" designation for an area signifies that pollutant concentrations did not violate the applicable standard in that area. A "nonattainment" designation indicates that a pollutant concentration violated the applicable standard at least once, excluding those occasions when a violation was caused by an exceptional event, as defined in the criteria. Depending on the frequency and severity of pollutants exceeding applicable standards, the nonattainment designation can be further classified as serious nonattainment, severe nonattainment, or extreme nonattainment, with extreme nonattainment being the most severe of the classifications. An "unclassified" designation signifies that the data do not support either an attainment or nonattainment status. The CCAA divides districts into moderate, serious, and severe air pollution categories, with increasingly stringent control requirements mandated for each category.

The EPA designates areas for ozone, CO, and NO_2 as "does not meet the primary standards," "cannot be classified," or "better than national standards." For SO_2, areas are designated as "does not meet the primary standards," "does not meet the secondary standards," "cannot be classified," or "better than national standards." However, the ARB terminology of attainment, nonattainment, and unclassified is

Table 4.5-2
Summary of Annual Air Quality Data

	2000	2001	2002	2003
OZONE				
State standard: 1-hour average, 0.09 ppm National standard: 1-hour/8-hour average, 0.12/0.08 ppm				
Stockton–East Mariposa Air Quality Monitoring Station				
Maximum concentration (1-hour/8-hour average)	0.11/0.08	0.11/0.09	0.11/0.09	—
Number of days state standard exceeded	4	5	5	—
Number of days national 1-hour/8-hour standard exceeded	0/0	0/1	0/1	—
Stockton–Hazelton Air Quality Monitoring Station				
Maximum concentration (1-hour/8-hour average)	0.11/0.08	0.10/0.09	0.10/0.08	0.10/0.09
Number of days state standard exceeded	4	5	2	3
number of days national 1-hour/8-hour standard exceeded	0/0	0/1	0/0	0/1
Tracy – 24371 Patterson Pass Road Monitoring Station				
Maximum concentration (1-hour/8-hour average)	0.12/0.09	0.11/0.09	0.11/0.10	0.10/0.09
Number of days state standard exceeded	7	4	11	5
Number of days national 1-hour/8-hour standard exceeded	0/3	0/1	0/3	0/2
CARBON MONOXIDE (CO)				
State standard: 1-hour/8-hour average, 20/9.1 ppm National standard: 1-hour/8-hour average, 35/9.5 ppm				
Stockton–Hazelton Air Quality Monitoring Station				
Maximum concentration (1-hour/8-hour average)	6.5/3.9	8.4/6.0	6.0/3.2	5.8/3.1
Number of days state standard exceeded (8-hour only)	0	0	0	0
Number of days national 1-hour/8-hour standard exceeded	0/0	0/0	0/0	0/0
NITROGEN DIOXIDE (NO_2)				
Stockton–Hazelton Air Quality Monitoring Station				
Maximum concentration (1-hour average)	0.099	0.084	0.076	0.088
Number of days state standard exceeded	0	0	0	0
Annual average (ppm)	0.021	0.019	0.021	0.018
Tracy – 24371 Patterson Pass Road Air Quality Monitoring Station				
Maximum concentration (1-hour average)	0.068	0.087	0.077	0.071
Number of days state standard exceeded	0	0	0	0
Annual average (ppm)	0.014	0.013	0.014	0.012
SUSPENDED PARTICULATE MATTER (PM_{10})				
State standard: 24-hour average, 50μg/m^3 National standard: 24-hour average, 150μg/m^3				
Stockton–Hazelton Air Quality Monitoring Station				
Maximum concentration	91	140	87	39
Number of days state standard exceeded (measured/calculated[1])	9/52	11/64	10/58	3/17
Number of days national standard exceeded (measured/calculated[1])	0/0	0/0	0/0	0/0
Stockton–Wagner-Holt School Air Quality Monitoring Station				
Maximum concentration	104	119	80	50
Number of days state standard exceeded (measured/calculated[1])	10/60	6/–	6/39	3/20
Number of days national standard exceeded (measured/calculated[1])	0/0	0/0	0/0	0/0

Table 4.5-2
Summary of Annual Air Quality Data

	2000	2001	2002	2003
SUSPENDED PARTICULATE MATTER ($PM_{2.5}$)				
No separate state standard National standard: 24-hour average, 65 $\mu g/m^3$				
Stockton–Hazelton Air Quality Monitoring Station				
Maximum concentration (µg/m3)	78.0	76.0	64.0	45.0
Number of days national standard exceeded (measured[2])	1	2	0	0

Notes:
ppm = parts per million by volume
µg/m3 = micrograms per cubic meter
– = not available
[1] Measured days are those days that an actual measurement was greater than the level of the state daily standard or the national daily standard. Measurements are typically collected every six days. Calculated days are the estimated number of days that a measurement would have been greater than the level of the standard had measurements been collected every day. The number of days above the standard is not necessarily the number of violations of the standard for the year.
[2] The number of days a measurement was greater than the level of the national daily standard. Measurements are collected every day, every 3 days, or every 6 days, depending on the time of year and the site's monitoring schedule. The number of days above the standards is not directly related to the number of violations of the standard for the year.

Sources: California Air Resources Board 2004; EPA 2004b

more frequently used. The sub-categories for nonattainment status; serious, severe, and extreme; are also used by EPA. In 1991, new nonattainment designations were assigned to areas that had previously been classified as Group I, II, or III for PM_{10} based on the likelihood that they would violate national PM_{10} standards. All other areas are designated "unclassified." The state and national attainment status designations pertaining to the SJVAB are summarized in Table 4.5-3. The SJVAB is currently designated as a nonattainment area with respect to the state and national PM_{10} and 1-hour ozone standards. The SJVAB was recently designated nonattainment for the federal 8-hour ozone standard. The attainment designations with respect to $PM_{2.5}$ have not yet been determined (EPA 2004a).

Despite noteworthy air quality improvements over the past decade, the San Joaquin Valley failed to meet the previous federal ozone standard deadline and thus was downgraded from serious nonattainment to severe nonattainment designation by the EPA. The SJVAPCD is now required to submit a plan to the ARB that demonstrates that the valley will meet the ozone standards by 2005, which would involve reducing the total emissions inventory by an additional 30% or 300 tons per day. To avoid being faced with sanctions, the SJVAPCD voluntarily requested an additional downgrade from severe nonattainment to extreme nonattainment, the federal government's worst air quality designation for ground-level ozone. This request has been approved by the EPA but has not been fully adopted by all parties. Therefore, the San Joaquin Valley remains at the severe nonattainment level for ozone. If the extreme nonattainment designation is adopted, the new attainment date for the San Joaquin Valley would be 2010. An extreme nonattainment designation is not a delay in implementing air pollution controls, but allows the valley the opportunity to benefit from improved pollution controls for industry, as well as mobile-source controls being implemented by other agencies, without incurring immediate sanctions. The SJVAPCD will continue to work aggressively with business and industrial sources to improve air quality. However, if designated as extreme nonattainment, jurisdictions within the air basin could face the stigma of being the only other region other than the Los Angeles area to have this air quality designation. This could negatively affect economic development because of a lower threshold required of businesses that participate in a federal permitting program, stricter offset requirements, and required installation of advanced emission control devices (SJVAPCD 2004a).

Table 4.5-3 SJVAB Attainment Status Designations for San Joaquin County		
Pollutant	National Designation	State Designation
Ozone, 1 hour	Nonattainment/Severe	Nonattainment/Severe
Ozone, 8 hour	Designation to be determined; nonattainment recommended[1]	No state standard
PM_{10}	Nonattainment/Serious	Nonattainment
$PM_{2.5}$	Designation to be determined; nonattainment recommended[1]	Designation to be determined; nonattainment proposed [2]
CO – San Joaquin	Unclassified/Attainment[1]	Attainment
Nitrogen dioxide	Unclassified/Attainment	Attainment
Sulfur dioxide – San Joaquin	Unclassified	Attainment
Lead (particulate)	No designation	Attainment
Hydrogen sulfide	No federal standard	Unclassified
Sulfates	No federal standard	Attainment
Visibility-reducing particulates	No federal standard	Unclassified

1 Source: California Air Resources Board 2004c
2 Source: California Air Resources Board 2003b

Sources: California Air Resources Board 2004a; EPA 2004a

EXISTING TAC SOURCES

A records search was conducted for stationary sources of TACs near the project site monitored by the SJVAPCD. No stationary sources of TACS were found within one-quarter mile of the project site (ARB 2004b, San Joaquin County 1991, EPA 2004c). Mobile-source emissions associated with heavy-duty diesel vehicles, including those traveling on I-5 and I-205, are considered sources of TACs within the project region.

EXISTING ODOR SOURCES

Some odor complaints near the CLSP project site have been filed with the SJVAPCD and the San Joaquin County Environmental Health Department during the past few years. These complaints have concerned odors generated by gas stations, a fertilizer manufacturer, a glass manufacturing plant, septic tank sewage, a poultry farm, and an egg ranch. All of these sources are either located east of I-5 or are no longer in operation. Because the existing sources east of I-5 are located downwind of the CLSP plan area, odors from these sources are unlikely to be noticeable in the plan area (Mirchandani, pers. comm., 2004; Oliviera, pers. comm., 2004). Although the City has received occasional complaints, no odor complaints have been filed with the SJVAPCD concerning the City's existing wastewater treatment/water recycling plant (WRP #1) near Howland Road, despite the fact that residences are located downwind.

SENSITIVE RECEPTORS

Commonly identified sensitive population groups with regard to air pollutants and odors are children, the elderly, and acutely ill and chronically ill persons. Commonly identified sensitive land uses are residences, schools, playgrounds, childcare centers, retirement homes or convalescent homes, hospitals, and clinics. Existing sensitive receptors on and near the project site consist primarily of rural residential dwellings.

4.5.3 ENVIRONMENTAL IMPACTS

ANALYSIS METHODOLOGY

The SJVAPCD does not require the quantitative analysis of air pollutant emissions generated by construction activities if SJVAPCD-recommended mitigation measures are implemented by the project. These mitigation measures would be implemented during project construction; therefore, consistent with SJVAPCD guidance, a qualitative evaluation of construction emissions was conducted. Operational air pollutant emissions were calculated using URBEMIS2002, which incorporated data from the traffic study prepared for the CLSP project (see Section 4.4, Traffic). Operational emissions were compared to the thresholds established by the SJVAPCD to determine the significance of the impacts before and after the implementation of the recommended mitigation measures. Each impact evaluation either analyzes conditions during both Phase 1 and at project buildout, or only focuses on full project buildout because this condition would provide a worst-case scenario regarding potential emission levels.

THRESHOLDS OF SIGNIFICANCE

For the purpose of this analysis, the following applicable thresholds of significance, as identified in the SJVAPCD's *Guide for Assessing and Mitigating Air Quality Impacts* (SJVAPCD 1998), and based on environmental checklist questions in Appendix G of the State CEQA Guidelines, are used to determine whether implementing the CLSP project would result in a significant air quality impact:

- short-term increases in regional criteria pollutants—Construction impacts associated with the proposed project would be considered significant if the feasible control measures for construction in compliance with Regulation VIII as listed in the SJVAPCD guidelines are not incorporated or implemented.

- violation of standards—Air quality impacts from any emissions source associated with the proposed project would be considered significant if an applicable air quality standard would be violated, or if project emissions would contribute substantially to an existing or projected air quality violation.

- increases in toxic air contaminants—TAC impacts associated with the proposed project would be considered significant if the project would expose the public to substantial levels of TACs so that the probability of contracting cancer for the Maximally Exposed Individual would exceed 10 in 1 million and/or so that ground-level concentrations of non-carcinogenic TACs would result in a Hazard Index greater than 1 for the Maximally Exposed Individual.

- increases in odorous emissions—Odor impacts associated with the proposed project would be considered significant if the project has the potential to frequently expose members of the public to objectionable odors.

- increases in local mobile-source CO concentrations—Local mobile source impacts associated with the proposed project would be considered significant if the project contributes to CO concentrations that exceed the CAAQS of 9.0 ppm for 8 hours or 20 ppm for 1 hour.

- long-term increases in regional criteria pollutants—Regional (operational) impacts associated with the proposed project would be considered significant if the project generates emissions of reactive organic gases (ROG) and NO_X that exceed 10 TPY.

IMPACT ANALYSIS

Impact 4.5-a

Air Quality – Increases in Regional Criteria Pollutants during Construction.

Construction associated with the CLSP (under both Phase 1 and Phase 2 development) would result in the generation of NO_X, ROG, and PM_{10} emissions in addition to the potential airborne entrainment of asbestos associated with demolition of existing structures. Sufficient emissions could be generated during project construction that applicable air quality standards could be violated, or emissions would contribute substantially to an existing or projected air quality violation. This is considered a ***significant*** *impact.*

The SJVAPCD does not require a quantitative analysis of air pollutant emissions generated by construction activities if mitigation measures recommended by the SJVAPCD (i.e., Regulation VIII) are implemented as part of the project. Although implementation of the SJVAPCD mitigation measures is not included as part of the CLSP project description, it is assumed that the City of Lathrop would require adherence to these measures, and they are recommended as a formal mitigation measure later in this chapter. Therefore, a qualitative rather than quantitative evaluation of construction emissions is provided below.

Although construction-generated emissions are typically short term and temporary in duration, they still have the potential to represent a significant air quality impact, particularly for PM_{10} emissions. In addition, the proposed project is planned for a 20-year buildout period, with some level of construction likely occurring at all times. Therefore, construction emissions associated with the proposed project would be considered more than short term or temporary.

Construction emissions may potentially result in substantial increases in localized PM_{10} concentrations; adverse health effects; and nuisance concerns, such as reduced visibility and soiling of exposed surfaces. With respect to the proposed project, the construction and development of residential, commercial, public, and utility uses in the 1,521-acre CLSP area and related offsite utility areas could result in the generation of NO_X, ROG, and PM_{10} emissions attributable to site grading and excavation, road paving, application of architectural coatings, motor vehicle exhaust associated with construction equipment and worker trips, and movement of construction equipment, especially on unpaved surfaces. In addition, the demolition of up to 35 existing residential units and agricultural facilities in the CLSP area would potentially result in the airborne entrainment of asbestos from the disturbance of asbestos-containing materials that may be present in these older buildings (see Section 4.9, Hazardous Materials and Public Health). Asbestos is listed as a TAC by the ARB and as a HAP by the EPA. The risk of disease depends on the intensity and duration of exposure. Asbestos fibers when inhaled may remain in the lungs and are linked to such diseases as asbestosis, lung cancer, and mesothelioma (ARB 2001).

Construction emissions would also be generated from the development of recycled water storage ponds and pipelines to transport recycled water and/or solids among the different water treatment alternatives. The amount of ground disturbance associated with the development of various configurations of recycled water storage ponds, pipelines, and solids force mains would vary among the water treatment alternatives based on the necessary pipeline distances and adaptive use of existing pipelines. Construction emissions would be greater if recycled water storage/disposal Area 4 is built for temporary use while Phase 1 of the CLSP is developed, followed by the removal of temporary storage ponds in Area 4 and the development of other areas off site for recycled water storage when Phase 2 is developed. Under all other scenarios, a given recycled water storage pond would be constructed only once.

Emissions of fugitive dust generated during construction may also result in the transmission of dust to nearby agricultural crops. The accumulation of dust on the leaves of nearby agricultural plants may result in reduced crop yields from decreased rates of plant photosynthesis. In addition, a repeated or long-term accumulation of dust on the leaves of plants may encourage the development or increased activity of spider mites and other pests or diseases. A report entitled *Evaluation of Potential Effects of the Carmel River Dam and Reservoir Project on Cachagua Valley Vineyards* (Ballanti and Kasimatis 1997), prepared for the Monterey Peninsula Water Management District, analyzed dust impacts on vineyards. The report found that increased spider mite activity is most noticeable within approximately 100 feet downwind of dust-generating activities.

Construction activities associated with the proposed project would result in the generation of NO_X, ROG, and PM_{10} emissions; the potential airborne entrainment of asbestos from demolition of existing buildings; and potential adverse effects on nearby crops from emission of fugitive dust. Violations of air pollutant standards for PM_{10} and ozone are regularly recorded at monitoring stations in the project region (see Table 4.5-2). Because of the size of the project (over 1,600 acres of total ground disturbance), and the extent of the construction period (2005-2020), if feasible control measures to minimize construction emissions are not implemented, sufficient emissions could be generated during project construction that applicable air quality standards could be violated, or emissions would contribute substantially to an existing or projected air quality violation. This impact is considered significant.

Impact 4.5-b

Air Quality – Increases in Stationary and Mobile-Source Toxic Air Contaminants. *Commercial and Office land uses proposed under the CLSP would have the potential to house facilities that may involve the use of TACs. Although these facilities would be subject to stringent regulations, because the locations of these facilities in relation to sensitive receptors is not known at this time, there is a theoretical potential that sensitive receptors could be located in proximity to stationary TAC emissions sources, and elements of the public could be exposed to TAC emissions in excess of SJVAPCD significance thresholds. Construction and/or operational activities related to both Phase I development and full buildout would require use of diesel-fueled vehicles. Regular localized use of diesel trucks in some commercial areas could result in the generation of diesel PM emissions that would exceed SJVAPCD significance thresholds. This is considered a* ***potentially significant*** *impact.*

Commercial and Office land uses proposed under the CLSP would have the potential to house light manufacturing operations that may involve the use of TACs. The CLSP would also develop facilities that would accommodate sensitive receptors. Pursuant to SJVAPCD Rule 2010, all sources having the potential to emit TACs are required to obtain permits from the SJVAPCD. Permits may be granted to these operations if they are constructed and operated in accordance with applicable regulations, including Rule 2201 (New and Modified Stationary Source Review Rule), Rule 4001 (New Source Performance Standards), and Rule 4002 (National Emissions Standards for Hazardous Air Pollutants). Given that compliance with applicable standards and regulations are required for the development and operation of facilities that may emit TACs, TAC emissions from stationary sources both on and off the project site are considered highly unlikely to result in significant impacts in the CLSP area. However, the precise type and location of potential stationary TAC emissions sources in the CLSP area are not known at this time. The location of stationary TAC sources relative to sensitive receptors also cannot be confirmed. Therefore, although stringent permitting conditions will be applied to stationary TAC sources, there is a theoretical potential that elements of the public could be exposed to levels of TACs that would exceed SJVAPCD significance thresholds (i.e., the probability of contracting cancer for the Maximally Exposed Individual would exceed 10 in 1 million and/or ground-level concentrations of non-carcinogenic TACs

would result in a Hazard Index greater than 1 for the Maximally Exposed Individual). Therefore, impacts associated with stationary source TAC emissions are considered potentially significant.

As discussed previously, particulate exhaust emissions from diesel-fueled engines (diesel PM) were identified as a TAC by the ARB in 1998. Implementation of Phase 1 and full buildout of the CLSP project would result in the generation of diesel PM emissions during construction from the use of off-road diesel equipment for site grading and excavation, paving, demolition, and other construction activities and during project operation from heavy-duty trucks used in commercial areas (e.g., delivery trucks).

Generation of diesel PM from construction projects typically occurs in a single area for a short period. Although construction associated with the CLSP would occur over an extended period (15 years), activities would be spread over a large area. Use of diesel-powered construction equipment in any one area would be short term and episodic and would cease when construction is completed in that area. Therefore, diesel PM generated by project construction is not expected to create conditions where the probability is greater than 10 in 1 million of contracting cancer for the Maximally Exposed Individual, or generate ground-level concentrations of non-carcinogenic toxic air contaminants that exceed a Hazard Index greater than 1 for the Maximally Exposed Individual.

Operational activities that require the use of diesel-fueled vehicles for extended periods, such as commercial trucking facilities or delivery/distribution areas, may generate diesel PM emissions that could exceed the SJVAPCD's significance thresholds. Although the specific commercial uses that would be developed under the CLSP have not been identified, both phases would permit commercial uses that would require large delivery and shipping trucks that use diesel fuel. The diesel PM emissions generated by these uses would be produced primarily at single locations on a regular basis. Idling trucks, including transport refrigeration units, increase diesel PM levels at these locations. Diesel PM emissions may be blown to nearby sensitive receptors, including nearby residential units and schools. This impact is considered potentially significant because it is unknown at this time whether the concentration of diesel PM at any sensitive receptor locations might exceed the threshold for acceptable cancer risk for the Maximally Exposed Individual. It is also unclear what effect the ARB's new diesel engine emission standards and diesel PM regulations would have on the level of emissions from any one facility. Consequently, this impact is considered potentially significant.

Impact 4.5-c

Air Quality – Increases in Odorous Emissions. *The wastewater treatment/water recycling facility and recycled water storage ponds included in the proposed project would potentially result in increased odor generation that could affect nearby residences. This is considered a* ***potentially significant*** *impact.*

Potential emissions of odorous compounds associated with the proposed CLSP project would be primarily associated with the operation of WRP #2. Odors from domestic wastewater are typically a result of anaerobic biological activity in the sewer collection and wastewater treatment systems. Odors are most prevalent during warm weather (approximately 70°F and above), which favors a more rapid multiplication of the anaerobic bacteria. In addition, in sewage containing industrial wastes, odor problems may be compounded by organic gases from waste chemicals added to the sewer system. The anaerobic decomposition of compounds containing nitrogen and sulfur results in various gases, including hydrogen sulfide, ammonia, carbon dioxide, methane, nitrogen, oxygen, and hydrogen. Although many different combinations of gases can occur at any given time, the most offensive odors associated with domestic wastewater are typically the result of emissions of hydrogen sulfide gas.

The elements of a wastewater treatment facility most likely to generate odors typically include storage areas in which wastewater influent (i.e., untreated wastewater) or solids are open to the air and/or stored

for extended periods. Major sources of odors typically include the influent pump stations, mechanical screens, and grit removal chambers. Additional sources of odors would include sludge handling activities, as well as stockpiled materials from the mechanical screen and grit removal chambers.

Storage ponds and disposal areas for recycled water would have little potential to generate odors because the recycled water being stored and disposed of has been treated to tertiary levels and disinfected to meet Title 22 standards. Poor management of the recycled water storage ponds, allowing stagnation and eutrophication, is the only mechanism by which storage and disposal of recycled water would be anticipated to generate odors.

During high winds, odors generated at wastewater treatment plants are usually dispersed. However, during light or calm wind conditions, the potential for odor impacts is increased because dispersal is minimized. When these odors are strong, or when a slight breeze exists, odors can be transmitted over long distances. Potential increases in odors may be offset by design and/or operational procedures, including the use of chemicals and incorporation of additional treatment technologies.

As discussed in Section 3.4.4 of this DEIR, three alternative locations are being considered for the construction of WRP #2 and several locations are being considered for recycled water storage ponds (Exhibit 3-6). All of the potential WRP #2 and recycled water storage sites are located within 1 mile of existing or proposed residential dwellings. Therefore, if odors were generated by these facilities, they could be detectable at the residences and could result in increased nuisance complaints. Consequently, the potential increase in odorous emissions associated with the operation of the proposed wastewater facilities is considered a potentially significant impact.

Impact 4.5-d

Air Quality – Increases in Local Mobile-Source CO Concentrations.

Implementation of the proposed project would result in the generation of CO at nearby intersections from increased vehicular traffic on the local transportation network. However, the proposed project would not contribute to CO concentrations that exceed the CAAQS of 9.0 ppm for 8 hours or 20 ppm for 1 hour. Therefore, the proposed project's contribution to localized mobile- source CO concentrations at sensitive receptors is considered a ***less-than-significant*** *impact.*

The primary mobile-source pollutant of localized concern is CO. Local mobile-source CO emissions near roadway intersections are a direct function of traffic volume, speed, and delay. Transport of CO is extremely limited because it disperses rapidly with distance from the source under normal meteorological conditions. Under specific meteorological conditions, CO concentrations near roadways and/or intersections may reach unhealthy levels with respect to local sensitive land uses, such as residential units, hospitals, schools, and childcare facilities. Modeling of CO concentrations is typically recommended for areas located near signalized roadway intersections that are projected to operate at an unacceptable LOS (i.e., LOS E or F) (Garza et al. 1997).

With respect to Phase 1 of the proposed project, 1-hour and 8-hour CO concentrations were estimated using the CALINE4 model as recommended by the SJVAPCD. (Modeling results are provided in Appendix D.) CO concentrations were estimated for six intersections that are projected to operate at LOS E or F during the p.m. peak hour, based on the traffic analysis prepared for this project (Fehr & Peers 2004). Intersections located within 1,000 feet of each other were modeled together to account for the possibility of exposure of the same receptor to potentially high CO concentrations from more than one location. One-hour and 8-hour CO concentrations were estimated based on worst-case meteorological conditions and 2010 composite emission factors modeled using the EMFAC2002 V2.2 computer model.

As indicated in Table 4.5-4, all of the estimated maximum 1-hour and 8-hour CO concentrations for the 2010 base year plus Phase 1 would be below their respective significance thresholds; therefore, local mobile-source CO impacts would be less than significant.

Table 4.5-4
Localized Mobile-Source CO Concentrations for 2010 Base Year plus Phase 1

Intersection(s) [1]	Predicted CO Concentrations (ppm) [2]	
	1 Hour	8 Hour
Significance thresholds [3]	*20.0*	*9.0*
Lathrop Road + I-5 northbound ramps + I-5 southbound ramps	10.5	7.5
Louise Avenue + I-5 northbound ramps + New Harlan Road	10.5	7.5
Roth Road and Harlan Road	10.1	7.2
Vierra Road and McKinley Avenue	9.3	6.6

[1] Intersections located within 1,000 feet of each other were modeled together to account for the possibility of exposure of the same receptor to potentially high CO concentrations from more than one location.
[2] 1-hour and 8-hour CO concentrations were estimated using the CALINE4 model based on the assumptions outlined above, 2010 composite emission factors from EMFAC2002, a persistence factor of 0.7, and 1-hour and 8-hour CO background concentrations of 8.4 ppm and 6.0 ppm (the highest background concentrations from the Stockton-Hazelton air quality monitoring station data between 2000 and 2003, as shown in Table 4.5-2).
[3] Based on the more stringent CAAQS.
Source: EDAW 2004

CO concentrations generated after full buildout of the CLSP in the year 2020 would also be below the 1-hour and 8-hour significance thresholds (Table 4.5-5), based on an evaluation of seven intersections expected to operation at LOS E or F during the p.m. peak hour. Although more traffic would be anticipated in 2020 due to buildout of the proposed project and cumulative development in the region, CO concentrations are expected to be lower in this buildout year than in 2010. This reduction in CO concentrations occurs in part because composite emission factors modeled using the EMFAC2002 V2.2 computer model for 2020 are considerably smaller than composite emission factors for the year 2010. The emission factor reduction is incorporated into the model because the future overall automobile fleet is anticipated to operate more efficiently with lower CO emissions. Moreover, ambient CO concentrations are expected to be lower in the future than they are today, further reducing total CO concentrations at the study intersections.

Table 4.5-5
Cumulative Localized Mobile-Source CO Concentrations for 2020 Base Year plus Full CLSP Buildout

Intersection(s)	Maximum CO Concentrations (ppm) [1]	
	1-Hr	8-Hr
Significance Thresholds [2]	***20.0***	***9.0***
Lathrop Rd. + Airport Way	9.1	6.5
Lathrop Rd. + Fifth St.	9.0	6.4
Lathrop Rd. + I-5 Southbound Ramps + I-5 Northbound Ramps + New Harlan Rd.	9.5	6.8
Louise Ave./River Islands Blvd. + Golden Valley Pkwy.	9.1	6.5
Main St. + Golden Valley Pkwy.	9.1	6.5

[1] 1-hour and 8-hour CO concentrations were estimated using the CALINE4 model based on the assumptions outlined above, 2025 composite emission factors from EMFAC2002, a persistence factor of 0.7, and 1-hour and 8-hour CO background concentrations of 8.4 ppm and 6.0 ppm (the highest background concentrations from the Stockton-Hazelton air quality monitoring station data between 2000 and 2003).
[2] Based on the more stringent California Ambient Air Quality Standards.
Source: EDAW 2004

Because the proposed project would not result in, or contribute to local CO concentrations above CAAQS standards, this impact is considered less than significant.

Impact 4.5-e

Air Quality – Increases in Long-term Regional Emissions. *Implementation of the proposed project would result in increases in long-term regional emissions, primarily associated with mobile sources, that would exceed the SJVAPCD's recommended significant thresholds of 10 TPY for ozone precursor pollutants ROG and NO_X. This impact is considered* ***significant****.*

Regional area- and mobile-source emissions of ROG, NO_X, and PM_{10} associated with the proposed CLSP project were estimated using the ARB-approved URBEMIS2002 computer program, which is designed to model emissions for land use development projects. Separate emission levels were estimated for Phase 1 and for full buildout of the CLSP area, and these are summarized in Table 4.5-6. URBEMIS2002 allows land use selections that include project location specifics and trip generation rates along with a "double counting" option that is designed to minimize double counting of internal vehicle trips between residential and nonresidential land uses and a "pass-by trips" option that estimates vehicle-trip emissions based on the percentage of primary trips, diverted linked trips, and pass-by trips assumed for specific land uses. The default settings for the SJVAB contained in the model were used for this analysis, based on 2010 emission rates for Phase 1, 2020 emission rates for full buildout, and trip generation rates obtained from the transportation analysis prepared for this project (see Section 4.4, Transportation and Circulation). Modeling results are provided in Appendix D.

Table 4.5-6
Regional Emissions Associated with Phase 1 and Full Buildout of the CLSP [1]

Sources	Emissions Generated (TPY) [2]		
	ROG	NO_x	PM_{10}
Phase 1 development (estimated completion in 2010) [1]			
Area sources, except fireplaces	37.21	12.61	0.03
Mobile source	212.72	277.68	289.34
Total	249.92	290.30	289.37
Full Buildout of the CLSP (2020) [1]			
Area sources, except fireplaces	66.92	18.62	0.04
Mobile source	84.68	92.06	231.34
Total	151.59	110.68	231.38
SJVAPCD thresholds (TPY)	10	10	–

[1] Area-source emissions associated with landscaping, natural gas, and consumer products were estimated based on default model settings. Mobile-source emissions were estimated based on default model settings and trip generation rates obtained from the traffic analysis prepared for this project under buildout conditions for 2010 and 2020.

[2] Emission rates for 2020 are considerably lower than for 2010 for mobile sources because of assumed vehicle turnover, which results in markedly lower emission levels despite additional development.

Source: EDAW 2004

Based on the modeling conducted, Phase 1 of the CLSP would potentially result in long-term regional emissions of approximately 250 TPY of ROG, 290 TPY of NO_X, and approximately 289 TPY of PM_{10}. Because long-term regional emissions would exceed the SJVAPCD's recommended significance thresholds of 10 TPY for ROG and 10 TPY for NO_X, development of Phase 1 would result in a significant air quality impact with respect to long-term regional emissions.

Full buildout of the CLSP in 2020 would potentially result in long-term regional emissions of approximately 152 TPY of ROG, 111 TPY of NO_X, and approximately 232 TPY of PM_{10}. Please note that mobile-source emissions of ROG and NO_X shown in Table 4.5-6 are far less for Phase 2 (2020) than for Phase 1 (2010), even though a greater volume of traffic would be generated from the proposed project and cumulative development in the region. This reduction is due primarily to the URBEMIS2002 model assuming a gradual replacement of older vehicles with cleaner burning vehicles in the future and an overall reduction in emissions from the composite vehicle fleet. Nonetheless, long-term regional emissions in 2020 from full buildout of the CLSP would exceed the SJVAPCD's recommended significance thresholds of 10 TPY for ROG and 10 TPY for NO_X; therefore, full buildout of the CLSP would result in a significant air quality impact with respect to long-term regional emissions.

In addition, because San Joaquin County is currently designated as a nonattainment area for PM_{10} and $PM_{2.5}$, project-generated PM emissions could contribute to or result in exceedances of the CAAQS or NAAQS.

4.5.4 MITIGATION MEASURES

No mitigation measures are required for the following less-than-significant impacts:

- 4.5-d: Increases in Local Mobile-Source CO Concentrations

The following mitigation measures are provided for significant impacts:

4.5-a: Increases in Regional Criteria Pollutants during Construction. The SJVAPCD emphasizes implementation of effective and comprehensive control measures rather than requiring a detailed quantification of construction emissions. The SJVAPCD requires that all feasible control measures (dependent on the size of the construction area and the nature of the construction operations) shall be incorporated and implemented.

Based on available information, it appears that the application of standard construction mitigation measures for the control of fugitive dust (i.e., the application of water or soil stabilizers) are effective methods of reducing dust-related impacts on agricultural crops.

In accordance with SJVAPCD guidelines (SJVAPCD 1998), the following mitigation measures, which includes SJVAPCD Basic, Enhanced, and Additional Control Measures, shall be incorporated and implemented. In addition to the mitigation measures identified below, construction of the proposed project is required to comply with applicable SJVAPCD rules and regulations, including the requirement of a California Occupational Safety and Health Administration–qualified asbestos survey before demolition.

It is recognized that SJVAPCD Regulation VIII, upon which the following control measures are based, has recently undergone revision and that these control measures are subject to future periodic revision. Therefore, the project applicant shall annually contact the SJVAPCD to identify the most recent fugitive dust control measures required to be implemented by the proposed project and implement them accordingly during project construction.

- All disturbed areas, including storage piles, which are not being actively utilized for construction purposes, shall be effectively stabilized of dust emissions using water, chemical stabilizer/suppressant, or vegetative ground cover.

- All onsite unpaved construction roads and offsite unpaved construction access roads shall be effectively stabilized of dust emissions using water or chemical stabilizer/suppressant.

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

- During demolition of buildings all exterior surfaces of the building shall be wetted.

- When materials are transported offsite, all material shall be covered, effectively wetted to limit visible dust emissions, or at least 6 inches of freeboard space from the top of the container shall be maintained.

- All operations shall limit or expeditiously remove the accumulation of mud or dirt from adjacent public streets at least once every 24 hours when operations are occurring. (The use of dry rotary brushes is expressly prohibited except where preceded or accompanied by sufficient wetting to limit the visible dust emissions. Use of blower devices is expressly forbidden.)

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

- Onsite vehicle speeds on unpaved roads shall be limited to 15 mph.

- Sandbags or other erosion control measures shall be installed to prevent silt runoff to public roadways from adjacent project areas with a slope greater than 1 percent.

- Wheel washers shall be installed for all exiting trucks and equipment, or wheels shall be washed to remove accumulated dirt prior to leaving the site.

- Excavation and grading activities shall be suspended when winds exceed 20 mph.

- The overall area subject to excavation and grading at any one time shall be limited to the fullest extent possible.

- Onsite equipment shall be maintained and properly tuned in accordance with manufacturers' specifications.

- When not in use, onsite equipment shall not be left idling.

In addition to the measures identified above, the following measures from Table 6-3 of the *Guide for Assessing and Mitigating Air Quality Impacts* shall be implemented:

- Install wind breaks at windward sides of construction areas. (This measure will be implemented if the City, in coordination the SJVAPCD, determines that the fugitive dust control measures described above are not sufficiently effective.)

- Comply with the NESHAPS during the renovation/demolition of any existing buildings on the project site with the potential to contain asbestos. Consult the SJVAPCD's *Asbestos-*

Compliance Assistance Bulletin, dated December 1994, to ascertain whether individual structures on the project site are subject to NESHAPS.

The City, after consultation with the applicant, shall require all feasible additional measures to control construction emissions. Such measures may include, but are not limited to the following items from Table 6-4 of the *Guide for Assessing and Mitigating Air Quality Impacts* and other sources:

- Use alternative-fueled construction equipment, where reasonably available, such as equipment capable of using biodiesel or emulsified fuel.
- Limit the hours of operation of heavy-duty equipment and/or the amount of equipment in use at any one time.
- Replace fossil-fueled equipment with electrically driven equivalents (provided they are not run via a portable generator set).
- Curtail construction during periods of high ambient pollutant concentration; this may include ceasing of construction activity during the peak hour of vehicular traffic on adjacent roadways (or ceasing/reducing heavy-duty equipment usage on Spare the Air Days).
- Before construction contracts are issued, the project applicant would perform a review of new technology, as it relates to heavy-duty equipment, to determine what (if any) advances in emissions reduction are available for use and are economically feasible. Construction contracts/bid specifications shall require contractors to utilize the available and economically feasible technology on an established percentage of the equipment fleet. It is anticipated that in the near future both NO_X and PM_{10} control equipment will be available. The SJVAPCD shall be consulted with on this process.

Implementation of Mitigation Measure 4.5-a would substantially lessen impacts resulting from emissions associated with construction activities. All actions required by the SJVAPCD shall be implemented, which would be considered the extent of available feasible mitigation measures. Under most circumstances this would be sufficient to reduce impacts related to construction emissions to less than significant levels. However, the SJVAB is currently in nonattainment for PM_{10} (serious nonattainment for federal standards) and ozone (severe nonattainment for state and federal standards), and may soon be classified as extreme nonattainment for ozone. Therefore, even with implementation of the mitigation measures described above, construction emissions associated with a project the size of the CLSP (over 1,600 acres for all components, 15-year buildout period) could be sufficient to result in violations of applicable air quality standards, or could contribute substantially to an existing or projected air quality violation. Impact 4.5-a is considered a significant and unavoidable impact.

4.5-b: <u>Increases in Stationary and Mobile-Source Toxic Air Contaminants.</u> As indicated in the discussion of Impact 4.5-b, implementation of the proposed project would result in potentially significant increases in stationary-source and mobile-source TACs associated with Commercial and Office land use areas. The SJVAPCD shall impose various permitting conditions for stationary TAC sources. These conditions reflect the stringent application of air quality laws and substantially lessen the severity of potential impacts. However, as discussed above, even with implementation of permit conditions there is a theoretical potential that elements of the public could be exposed to levels of TACs that would exceed SJVAPCD significance thresholds. The only available mitigation to ensure no exposure of sensitive receptors to significant levels of TACs would be to completely separate emission sources from all sensitive receptor. However,

many stationary TAC sources (gas stations, dry cleaners, auto repair facilities) are typically integrated with land uses containing sensitive receptors. Restricting the locations of all TAC generating facilities to specific areas would not be practical or economically feasible. Thus, implementing the proposed project would result in a significant and unavoidable adverse impact with respect to stationary-source TACs.

Mobile-source TACs are a relatively new concern for the ARB, so specific guidelines and practices regarding assessing impacts and providing mitigation are not available. It is also unclear what effects the ARB's new diesel engine emission standards and diesel particulate matter regulations would have on the level of impact and the necessity for, or type of, mitigation. Therefore, the specific conditions of mobile-source TAC impacts cannot be determined at this time. The only available mitigation—completely separating emission sources (diesel vehicles) from all sensitive receptor—is not feasible. Therefore, no feasible mitigation is available for Impact 4.5-b to reduce the impact to a less-than-significant level. Thus, implementing the proposed project would result in a significant and unavoidable adverse impact with respect to mobile-source TACs. The project applicant shall coordinate with the SJVAPCD as the project proceeds to assess situations in which toxic risk from diesel PM may occur and to review methodologies that may become available to estimate the risk.

No feasible mitigation is available at this time to reduce potential impacts associated with increased stationary-source and mobile-source TAC emissions to a less-than-significant level. Therefore, potential impacts related to increases in stationary-source and mobile-source TAC emissions are considered significant and unavoidable.

4.5-c: Increases in Odorous Emissions. The following mitigation measures shall be incorporated into the design and operation of the WRP #2 facility and recycled water storage ponds to reduce potential emissions of airborne odors:

- Before final design, the City shall ensure that appropriate engineering controls have been incorporated into the design and construction of the proposed WRP #2 to minimize the production of unpleasant odors. Engineering controls to diminish odors could include, but would not be limited to, covering the headworks and/or perchlorinating at the headworks, using chemical additives to mask odors, installing systems (e.g., air scrubbers) to collect odorous air and remove unpleasant odors, and locating storage facilities (e.g., tanks, vaults, pipes, detention mechanisms) underground. Appropriate engineering controls to minimize odors shall also be incorporated into the design and construction of the recycled water storage ponds, such as aeration equipment and water circulation systems.

- During operation of WRP #2 and the recycled water storage ponds, the City shall ensure that engineering controls designed to avoid/suppress odors are functioning properly by periodically evaluating odor levels adjacent to the facilities. Should offensive odors be identified, the City shall take appropriate action to correct them to the extent practical.

Use of engineering controls and periodic monitoring would keep odors to a minimum. Detectable levels of odorous emissions at nearby residences would be expected to be similar to conditions near the existing WRP #1, for which some odor complaints have been received by the City but none have been filed with the SJVAPCD. Therefore, with implementation of Mitigation Measure 4.5-c, odorous emissions generated by WRP #2 and the recycled water storage ponds is considered a less-than-significant impact.

4.5-e: Increases in Long-term Regional Emissions. The City, after consultation with the applicant, shall require that all feasible emission control measures be incorporated into project design and

operation. Such measures may include, but are not limited to, the following items recommended in the SJVAPCD Guide for Assessing and Mitigating Air Quality Impacts (SJVAPCD 1998) and other sources. It should be noted that many of these measures are already included in the proposed project design (as indicated in parenthetical notes below); however, they are repeated here to allow a complete listing of the SJVAPCD guidelines.

- Provide transit enhancing infrastructure that includes transit shelters, benches, street lightening, route signs and displays, and/or bus turnouts/bulbs (already incorporated into project design).

- Provide park and ride lots (one park and ride lot is already included in the project design).

- Provide pedestrian enhancing infrastructure that includes sidewalks and pedestrian paths, direct pedestrian connections, street trees to shade sidewalks, pedestrian safety designs/infrastructure, street furniture and artwork, street lightening, and/or pedestrian signalization and signs (already incorporated into the project design).

- Provide bicycle enhancing infrastructure that includes bikeways/paths connecting to a bikeway system, secure bicycle parking, and/or employee lockers and showers (bicycle lanes and trails already incorporated into the project design).

- Use solar, low-emissions, central, or tankless water heaters (residential and commercial), increase wall and attic insulation beyond Title 24 requirements (residential and commercial), orient buildings to take advantage of solar heating and natural cooling and use passive solar designs (residential, commercial, and industrial), replace wood-burning stoves and fireplaces with gas-fired fireplaces or inserts.

- Deciduous trees should be planted on the south-facing and west-facing sides of buildings.

- Natural gas lines and electrical outlets should be installed in patio areas to encourage the use of gas and/or electric barbecues.

- Businesses or individuals shall be allowed, through the zoning and building permit process, the option of installing electric/natural gas fuel hookups.

- If a gasoline service station is developed as part of the proposed project, it is encouraged that natural gas fueling be incorporated as part of the station.

- The project applicant shall develop and implement a program to encourage employers to promote the use of low-emission vehicles, thus providing emission reductions. The program may include financial incentives, preferred parking, or other benefits for employees and businesses that use low-emission vehicles.

- The City shall encourage the project applicant to develop/participate in a program to provide, or subsidize the purchase cost of electric lawnmowers and electric edgers for project homeowners.

With implementation of Mitigation Measure 4.5-e, significant impacts relating to long-term regional emissions would be substantially lessened, but not mitigated to less-than-significant levels (i.e., mitigated to levels below the SJVAPCD's recommended significant threshold of 10 TPY for ROG and 10 TPY for

NO_X [Table 4.5-5]). Thus, increases in long-term regional emissions attributable to the proposed project would be considered a significant and unavoidable impact.

4.5.5 RESIDUAL SIGNIFICANT IMPACTS

Impacts related to stationary and mobile-source TACs are considered significant, and no feasible mitigation is available for this impact. Therefore, this impact is considered significant and unavoidable. Impacts related to increases in long-term regional emissions would be substantially lessened after implementing available mitigation measures, but would not be mitigated to a less-than-significant level. Therefore, this impact is also considered significant and unavoidable.

4.6 Noise

4.6 NOISE

This section includes a summary of applicable noise regulations and a description of ambient noise conditions in the Central Lathrop Specific Plan (CLSP) project area. It also includes an analysis of noise impacts associated with the implementation of the CLSP in terms of (1) short-term construction noise, (2) long-term operational stationary-source noise, (3) long-term operational mobile-source noise, and (4) compatibility of proposed land uses with onsite noise levels. This section also recommends mitigation measures, as necessary, to reduce potentially significant noise impacts. Noise modeling data are available in Appendix D of this draft environmental impact report (DEIR).

4.6.1 REGULATORY BACKGROUND

STATE OF CALIFORNIA

Title 24 of the California Code of Regulations establishes standards governing interior noise levels that apply to all new multifamily residential units in California. These standards require that acoustical studies be performed before construction begins at building locations where the existing day-night average noise level (L_{dn}) exceeds 60 A-weighted decibels (dBA). (See Section 4.6.2, Existing Setting, for explanations of L_{dn}, dBA, and other noise fundamentals.) Such acoustical studies are required to establish mitigation measures that will limit maximum L_{dn} to 45 dBA in any inhabitable room. Although there are no generally applicable interior noise standards pertinent to all uses, many communities in California have adopted an L_{dn} of 45 dBA as an upper limit on interior noise in all residential units.

SAN JOAQUIN COUNTY GENERAL PLAN 2010

The Noise Element of the San Joaquin County General Plan 2010 (County General Plan) establishes specific policies to ensure an acceptable noise environment for each land use. Applicable policies include the following:

- **Policy 1.** The following exterior noise levels shall be considered acceptable:

  (a) 65 dBA L_{dn} or less for residential development.

  (b) 60 dBA L_{dn} or less for schools, group care facilities, and hospitals.

- **Policy 4.** Development shall be planned and designed to minimize noise impacts on neighboring noise sensitive areas and to minimize noise interference from outside noise sources.

- **Policy 6.** The county shall seek to alleviate existing community noise problems.

- **Implementation Measure 8** – Setbacks. Setbacks should be established along the major noise sources that would assure that noise-sensitive land uses are outside the 60 L_{dn} contour.

The noise standards for residential land uses in the County General Plan Noise Element are the same as the noise limits of the development title, which are discussed in more detail below.

SAN JOAQUIN COUNTY DEVELOPMENT TITLE

Chapter 9 of the County Development Title includes many provisions related to noise. Section 1025.9 establishes maximum allowable noise exposure levels for transportation and stationary sources, as shown in Table 4.6-1.

Table 4.6-1
San Joaquin County Standards for Maximum Allowable Noise Exposure

Part I: Transportation Noise Sources		
Noise Sensitive Land Use (Use Types)	Outdoor Activity Areas[1] ($dBA L_{dn}$)	Interior Spaces ($dBA L_{dn}$)
Residential	65	45
Administrative Office	–	45
Child Care Services, Child Care Centers	–	45
Community Assembly	65	45
Cultural and Library Services	–	45
Educational Services, General	–	45
Funeral and Interment Services, Undertaking	65	45
Lodging Services	65	45
Medical Services	65	45
Professional Services	–	45
Public Services (excluding Hospitals)	–	45
Hospitals	65	45
Recreation, Indoor Spectator	–	45
Part II: Stationary Noise Sources		
	Outdoor Activity Areas	
Sound Measurement	Daytime[1] (7 a.m. to 10 p.m.)	Nighttime[2] (10 p.m. to 7 a.m.)
Hourly Equivalent Sound Level (L_{eq}), dBA	50	45
Maximum Sound Level (L_{max}), dBA	70	65

[1] Where the location of outdoor activity areas is unknown or is not applicable, the noise standard shall be applied at the property line of the receiving land use. When determining the effectiveness of noise mitigation measures, the standards shall be applied on the receiving side of noise barriers or to the property line.

[2] Each of the noise level standards specified shall be reduced by 5 dBA for impulsive noise, single tone noise, or noise consisting primarily of speech or music.

Source: San Joaquin County Development Title, Chapter 9-1025.9 Noise

Section 1025.9 also includes the following provisions that are potentially relevant to this project:

(a) Transportation Noise Sources

(1) Excluding proposed noise sensitive land uses on infill lots, proposed noise sensitive land uses that will be impacted by existing or planned transportation noise sources shall be required to mitigate the noise levels from these transportation noise sources so that the resulting noise levels on said proposed noise sensitive land uses do not exceed the standards specified in Table [4.6-1], Part I.

(2) Private development projects that include the development of new transportation facilities or the expansion of existing transportation facilities shall be required to mitigate the noise levels from these transportation facilities so that the resulting noise levels on noise sensitive land uses within and adjacent to said development projects do not exceed the standards specified in Table [4.6-1], Part I.

(b) Stationary Noise Sources.

(1) Excluding proposed noise sensitive land uses on infill lots, proposed noise sensitive land uses that will be impacted by stationary noise sources shall be required to mitigate the noise levels from these stationary noise sources so that the resulting noise levels on said proposed noise sensitive land uses do not exceed the standards specified in Table [4.6-1], Part II.

(2) Proposed projects that will create new stationary noise sources or expand existing stationary noise sources shall be required to mitigate the noise levels from these stationary noise sources so as not to exceed the noise level standards specified in Table [4.6-1], Part II.

(c) Exemptions. The following shall be exempt from the provisions of 9-1025.9 Noise.

(1) Activities conducted in public parks, public playgrounds and public or private school grounds, including but not limited to school athletic and school entertainment events;

(3) Noise sources associated with construction, provided such activities do not take place before 6:00 a.m. or after 9:00 p.m. on any day;

(4) Noise sources associated with the maintenance of residential property located in a residential zone, provided such activities shall take place between the hours of 8:00 a.m. and 9:00 p.m. on any day;

(5) Noise sources emanating from any agricultural operation, including activities associated with the processing or transportation of crops when such activities are conducted on agriculturally zoned lands;

(6) Noise sources associated with residential air conditioning equipment, provided such equipment is in good repair.

(d) Acoustical Study. The Review Authority [of San Joaquin County] shall require the preparation of an acoustical study in instances where it has determined that a project may expose existing or proposed noise sensitive land uses to noise levels exceeding the noise standards specified in Table [4.6-1]. This determination shall be based on the existing or future sixty-five (65) dBA L_{dn} noise contour, the proximity of new noise sensitive land uses to known noise sources, or the knowledge that a potential for adverse noise impacts exists.

(2) (B) For traffic noise studies, the computer models, SOUND32 or other proprietary models based on the 1978 "Federal Highway Administration (FHWA) Highway Traffic Noise Prediction Model (FHWA-RD-77-108)" shall be used.

Section 1022.5 concerns noise attenuation walls. Walls, fences, berms, and/or landscaping for the purpose of noise attenuation may be required in any zone when adjacent to a high noise generator, such as a major roadway or railroad. Noise attenuation requirements shall be developed in response to the noise level and source affecting specific property. Where noise attenuation walls are required, height and yard restrictions for walls may be waived by the Community Development Director as required for effective noise reduction.

CITY OF LATHROP GENERAL PLAN

The Noise Element of the City of Lathrop General Plan (City General Plan) identifies goals, standards, and policies designed to ensure that City residents are not subjected to noise beyond acceptable levels. A general objective of the Noise Element is to protect existing noise-sensitive development (e.g., hospitals, schools, churches, and residences) from new uses that would generate noise levels incompatible with those uses and, conversely, discourage noise-sensitive uses from locating near sources of high noise levels. The Noise Element identifies exterior noise performance standards for various land uses potentially affected by nontransportation noise sources (Table 4.6-2). In each land use category, the standard varies by time of day and whether the ambient environment is rural suburban, suburban, or

urban. The Noise Element also establishes noise criteria for determining land use compatibility for new land uses. The City's land use compatibility criteria are summarized in Exhibit 4.6-1.

Several goals and policies in the City General Plan Noise Element specifically address noise issues. Those relevant to the proposed project are listed below.

- **Goal 9, Noise Hazards:** It is a goal of the General Plan to protect citizens from the harmful effects of exposure to excessive noise, and to protect the economic base of the City by preventing the encroachment of noise-sensitive land uses by such sources of adverse noise as vehicular freeway and street traffic, railroad traffic and industrial operations.

- **Interstate and State Route Freeways Policy 2:** Land use designations along freeway sections should take into consideration the visual and noise impacts associated with existing and future traffic levels on these major traffic carrying facilities.

- **Noise Policy 1:** Areas within the City shall be designated as noise-impacted if exposed to existing or projected future noise levels exterior to buildings exceeding 60 dBA CNEL [Community Noise Equivalent Level] or the performance standards prescribed in Table VI-1 [reproduced as Table 4.6-2 in this DEIR].

Table 4.6-2
City of Lathrop Maximum Allowable Exterior Noise Level Standards – Nontransportation Sources (dBA)

Land Use	Nighttime (10 p.m. to 7 a.m.)			Daytime (7 a.m. to 10 p.m.)		
	Rural Suburban	Suburban	Urban	Rural Suburban	Suburban	Urban
One- and two-family residential	40	45	50	50	55	60
Multifamily residential	45	50	55	50	55	60
Public space	50	55	60	50	55	60
Limited commercial	–	55	–	–	60	–
Commercial	–	60	–	–	65	–
Light industrial	–	70	–	–	70	–
Heavy industrial	–	75	–	–	75	–

Notes: This table applies to noise exposure as a result of nontransportation noise sources. Noise standards are applied at the residential or other noise-sensitive land use and not on the property of the noise-generating land use.

dBA = A-weighted decibel
– = not permitted

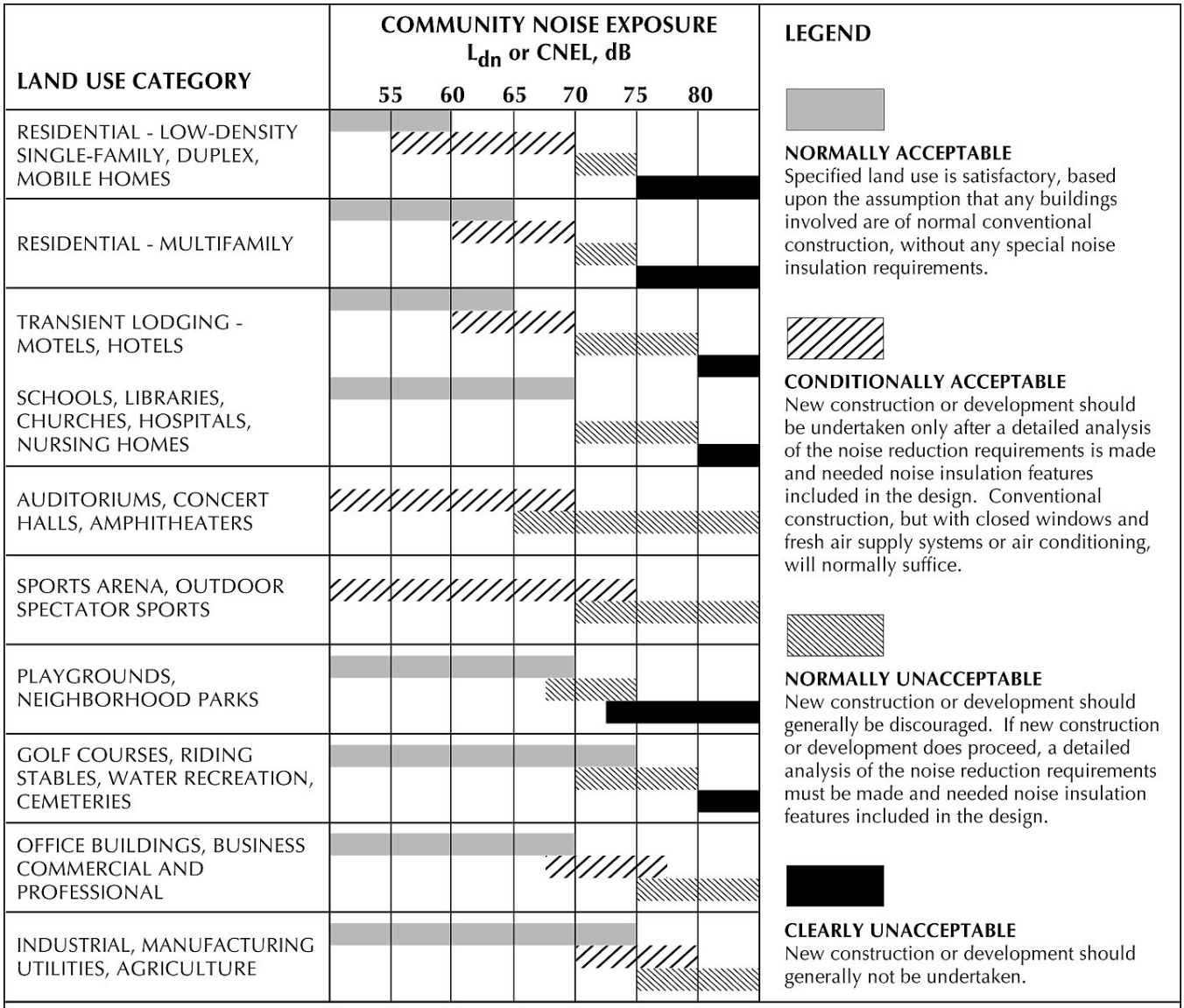
Source: City of Lathrop 1991

- **Noise Policy 2:** New development of residential or other noise sensitive land uses will not be permitted in noise-impacted areas unless effective mitigation measures are incorporated into project designs to reduce noise to the following levels:

  a. Noise sources preempted from local control, such as railroad and highway traffic:

  – 60 dBA CNEL or less in outdoor activity areas;

  – 45 dBA CNEL within interior living spaces or other noise-sensitive interior spaces.



CONSIDERATIONS IN DETERMINATION OF NOISE-COMPATIBLE LAND USE

A. NORMALIZED NOISE EXPOSURE INFORMATION DESIRED

Where sufficient data exist, evaluate land use suitability with respect to a "normalized" value of CNEL or L_{dn}.

B. NOISE SOURCE CHARACTERISTICS

The land use-noise compatibility recommendations should be viewed in relation to the specific source of the noise. For example, aircraft and railroad noise is normally made up of higher single noise events than auto traffic but occurs less frequently. Therefore, different sources yielding the same composite noise exposure do not necessarily create the same noise environment. The State Aeronautics Act uses 65-dB CNEL as the criterion that airports must eventually meet to protect existing residential communities from unacceptable exposure to aircraft noise. To facilitate the purposes of the act, one of which is to encourage land uses compatible with the 65-dB-CNEL criterion wherever possible, and to facilitate the ability of airports to comply with the act, residential uses located in Community Noise Exposure Areas greater than 65 dB should be discouraged and considered located within normally unacceptable areas.

C. SUITABLE INTERIOR ENVIRONMENTS

One objective of locating residential units relative to a known noise source is to maintain a suitable interior noise environment at no greater than 45-dB CNEL of L_{dn}. This requirement, coupled with the measured or calculated noise reduction performance of the type of structure under consideration, should govern the minimum acceptable distance to a noise source.

D. ACCEPTABLE OUTDOOR ENVIRONMENTS

Another consideration, which in some communities is an overriding factor, is the desire for an acceptable outdoor noise environment. When this is the case, more restrictive standards for land use compatibility, typically below the maximum considered "normally acceptable" for that land use category, may be appropriate.

Source: City of Lathrop 1991

City of Lathrop Guidelines for Noise-Compatible Land Uses

EXHIBIT 4.6-1

- Where it is not possible to achieve reductions of exterior noise to 60 dBA CNEL or less by using the best available and practical noise reduction technology, an exterior noise level of up to 65 dBA CNEL will be allowed.

- Under no circumstances will interior noise levels be allowed to exceed 45 dBA CNEL with windows and doors closed.

b. For noise from other sources, such as local industries:

- 60 dBA CNEL or less in outdoor activity areas;

- 45 dBA CNEL or less within interior living spaces, plus the performance standards contained in Table [4.6-2].

- **Noise Policy 3:** New development of industrial, commercial or other noise generating land uses will not be permitted if resulting exterior noise levels will exceed 60 dBA CNEL in areas containing residential or other noise-sensitive land uses. Additionally, new noise generating land uses which are not preempted from local noise regulation by the State of California will not be permitted if resulting noise levels will exceed the performance standards contained in Table [4.6-2] in areas containing residential or other noise-sensitive land uses.

- **Noise Policy 4:** Noise level criteria applied to land uses other than residential or other noise-sensitive uses shall be consistent with the recommendations of the California Office of Noise Control.

CITY OF LATHROP NOISE ORDINANCE

Noise regulations for the City are presented in Chapter 8.20 of the municipal code, the Noise Ordinance. Section 8.20.100 prohibits the operation of machinery, equipment, fans, air conditioning, and similar devices so as to create noise that would cause the noise level at the property line of any property to exceed the "ambient base noise level" by more than 5 dBA. The ambient base noise level for a given development type is the greater of the "ambient noise" or the value shown in Table 4.6-3. Ambient noise is the noise level obtained when the noise level is averaged over 15 minutes without the inclusion of noise from isolated identifiable sources.

Noise Ordinance Section 8.20.110 prohibits, unless a permit has been obtained, construction work in a residential zone, or within 500 feet of a residential zone, between 10 p.m. and 7 a.m. on Sunday through Thursday and between 11 p.m. and 9 a.m. on Friday, Saturday, and legal holidays.

The City does not specifically exempt construction noise from the dBA limits of Section 8.20.100 and those presented in Table 4.6-3, which are established to regulate sources of long-term noise. Such an exemption is typically stated in the noise ordinances of most jurisdictions. However, discussion with members of the City's staff indicated that the dBA limits of Section 8.20.100 are not intended to be applied to construction activities.

4.6.2 EXISTING SETTING

ACOUSTIC FUNDAMENTALS

Noise is often defined as unwanted sound. Sound is a mechanical form of radiant energy transmitted by pressure waves in the air. It is characterized by two parameters: amplitude (loudness) and frequency (tone).

Table 4.6-3
City of Lathrop Ambient Base Noise Level Standards (dBA)

Zone	Time	Community Environment Classification		
		Very Quiet (rural, suburban)	Slightly Quiet (suburban, urban)	Noisy (urban)
One- and two-family residential	10 p.m. to 7 a.m.	40	45	50
	7 a.m. to 7 p.m.	50	55	60
	7 p.m. to 10 p.m.	45	50	55
Multifamily residential	10 p.m. to 7 a.m.	45	50	55
	7 a.m. to 10 p.m.	50	55	60
Commercial	10 p.m. to 7 a.m.	50	55	60
Commercial	7 a.m. to 10 p.m.	55	60	65
Light industrial	Anytime	70	70	70
Heavy industrial	Anytime	75	75	75

Note: dBA = A-weighted decibel
Source: City of Lathrop 1991

Amplitude

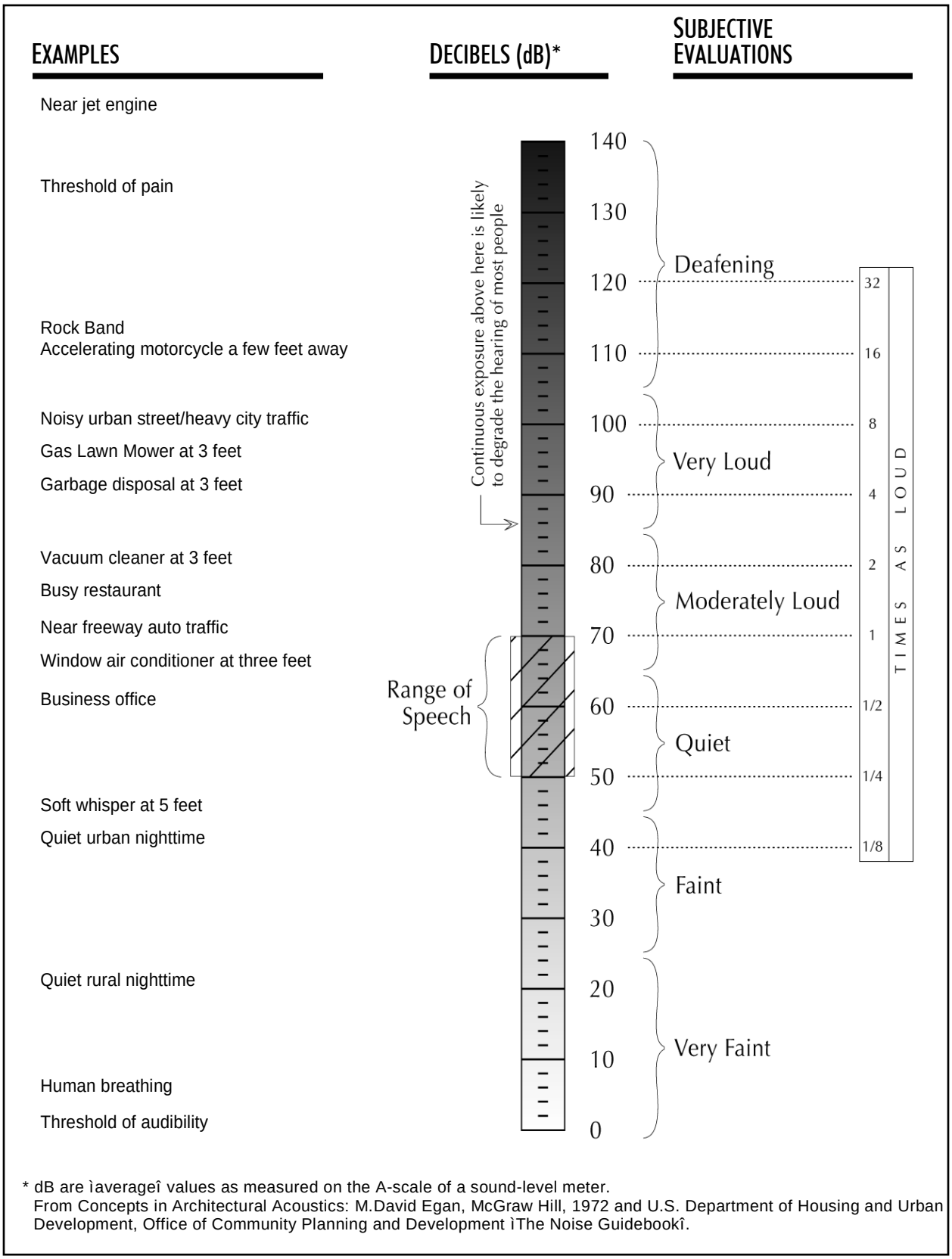
Amplitude is the difference between ambient air pressure and the peak pressure of the sound wave. It is measured in decibels (dB) on a logarithmic scale. For example, a 10-dB sound is 10 times the pressure difference of a 1-dB sound; a 20-dB sound is 100 times the pressure difference of a 1-dB sound. Another feature of the decibel scale is the way in which sound amplitudes from multiple sources add together. A 65-dB source of sound, when joined by another identical 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). Amplitude is interpreted by the ear as corresponding to loudness. Laboratory measurements correlate a 10-dB increase in amplitude with a perceived doubling of loudness and establish a 3-dB change in amplitude as the minimum audible difference perceptible to the average person.

Frequency

Frequency is the number of fluctuations of the pressure wave per second. The unit of frequency is the Hertz (Hz). One Hz equals one cycle per second. The human ear is not equally sensitive to sounds of different frequencies. Sound waves below 16 Hz or above 20,000 Hz cannot be heard at all, and the ear is more sensitive to sound in the higher portion of the audible range than in the lower. To approximate human sensitivity to sound, environmental sound is usually measured in A-weighted decibels (dBA). On this scale, the normal range of human hearing extends from approximately 10 dBA to approximately 140 dBA. Listed in Exhibit 4.6-2 are several examples of the noise levels associated with common situations.

NOISE DESCRIPTORS

The intensity of environmental noise fluctuates over time, and several descriptors of time-averaged noise levels are used. The three most commonly used descriptors are L_{eq}, L_{dn}, and CNEL. The energy-equivalent noise level, L_{eq}, is a measure of the average energy content (intensity) of noise over any given period. Many communities use 24-hour descriptors of noise levels to regulate noise. The day-night average noise level, L_{dn}, is the 24-hour average of the noise intensity, with a 10-dBA "penalty" added for nighttime noise (10 p.m. to 7 a.m.) to account for the greater sensitivity to noise during this period. CNEL, the community equivalent noise level, is similar to L_{dn} but adds an additional 5-dBA penalty for evening noise (7 p.m. to 10 p.m.). Noise analyses often depend on measurements of L_{max}, the maximum



* dB are ìaverageî values as measured on the A-scale of a sound-level meter.
From Concepts in Architectural Acoustics: M.David Egan, McGraw Hill, 1972 and U.S. Department of Housing and Urban Development, Office of Community Planning and Development ìThe Noise Guidebookî.

Source: Egan 1972; U.S. Department of Housing and Urban Development 2002

Common Noise Sources and Levels

EXHIBIT 4.6-2

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instantaneous noise level during a specific period of time (sometimes referred to as the "peak noise level"), and L_{min}, the minimum instantaneous noise level during a specific period.

Another descriptor that is commonly discussed is the single-event (impulsive) noise level (SEL). The SEL describes a receiver's cumulative noise exposure from a single impulsive noise event, which is defined as an acoustical event of short duration (0.5 second), such as a backup beeper, the sound of an airplane traveling overhead, or a train whistle, and involves a change in sound pressure above a defined reference value (usually approximately 40 dBA).

CHARACTERISTICS OF SOUND PROPAGATION AND ATTENUATION

Noise can be generated by a wide variety of sources, including mobile sources, such as automobiles, trucks, and airplanes, and stationary sources, such as machinery and industrial operations. Noise generated by mobile sources typically attenuates (is muffled or reduced) at a rate of 3.0–4.5 dBA per doubling of distance, depending on the ground surface and the number or type of objects between the noise source and the receiver. Hard and flat surfaces, such as concrete or asphalt, have an attenuation rate of 3.0 dBA per doubling of distance. Soft surfaces, such as uneven or vegetated terrain, have an attenuation rate of approximately 4.5 dBA per doubling of distance. Noise generated by stationary sources typically attenuates at a rate of 6.0–7.5 dBA per doubling of distance.

Sound levels can be reduced by placing barriers between the noise source and the receiver. In general, barriers contribute to decreasing noise levels only when the structure breaks the "line of sight" between the source and the receiver. Buildings, concrete walls, and berms can all act as effective noise barriers. Wooden fences or broad areas of dense foliage also can reduce noise but are less effective than solid barriers.

HUMAN RESPONSE TO NOISE

The human response to environmental noise is subjective and varies considerably from individual to individual. Noise in the community has often been cited as a health problem, not in terms of actual physiological damage, such as hearing impairment, but in terms of inhibiting general well-being and contributing to undue stress and annoyance. The health effects of noise in the community arise from interference with human activities, including sleep, speech, recreation, and tasks that demand concentration or coordination. Hearing loss can occur at the highest noise intensity levels. When community noise interferes with human activities or contributes to stress, public annoyance with the noise source increases. The acceptability of noise and the threat to public well-being are the basis for land use planning policies preventing exposure to excessive community noise levels.

Because construction activities typically are short term, the associated effects of construction-generated noise typically are limited to annoyance and interference with speech. In an exterior noise environment, noise levels in excess of 60 dBA are generally considered to have an appreciable degree of speech interference. The level at which speech interference occurs is based on an average sentence comprehension rate of approximately 98% at 5 meters. Greater speaker-listener distances would be possible indoors at the same level of vocal effort and speech intelligibility because sound pressure levels diminish more slowly than predicted by the inverse square law, which is typically used in the exterior environment (EPA 1971).

Unfortunately, there is no completely satisfactory way to measure the subjective effects of noise or of the corresponding reactions of annoyance and dissatisfaction. This is primarily because of the wide variation in individual thresholds of annoyance and habituation to noise over differing individual experiences with noise. Thus, an important way of determining a person's subjective reaction to a new noise is the

comparison of it to the existing environment to which one has adapted: the so-called "ambient" environment. In general, the more a new noise exceeds the previously existing ambient noise level, the less acceptable the new noise will be judged by the hearers. Regarding increases in A-weighted noise levels, knowledge of the following relationships (EPA 1971) will be helpful in understanding this analysis:

- Except in carefully controlled laboratory experiments, a change of 1 dB cannot be perceived by humans.
- Outside of the laboratory, a 3-dB change is considered a just-perceivable difference.
- A change in level of at least 5 dB is required before any noticeable change in community response would be expected.
- A 10-dB change is subjectively heard as approximately a doubling in loudness and would almost certainly cause an adverse change in community response.

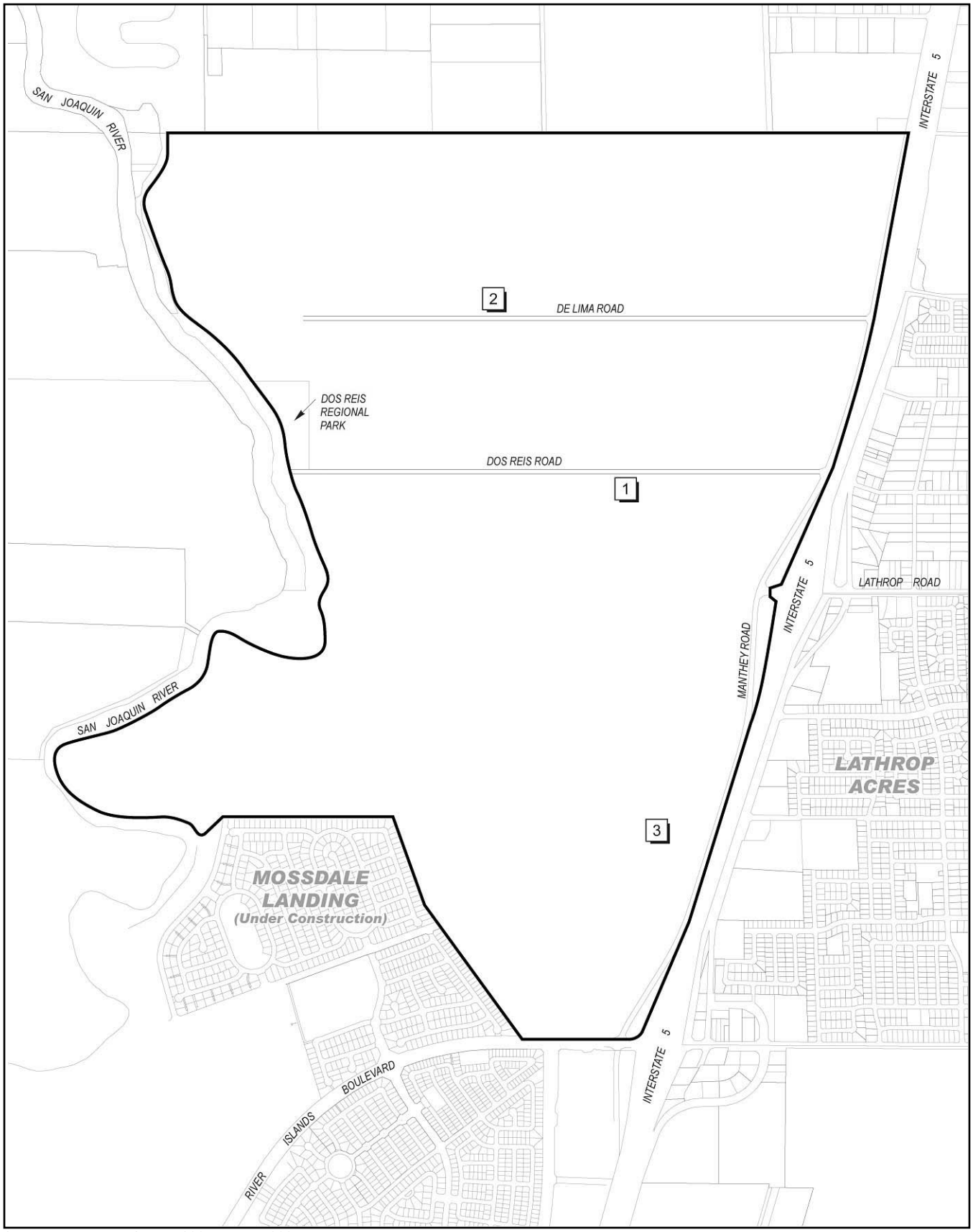
EXISTING NOISE ENVIRONMENT

Noise-Sensitive Land Uses

Noise-sensitive land uses are generally considered to include those uses where noise exposure could result in health-related risks to individuals, as well as places where quiet is an essential element of their intended purpose. Residential dwellings are of primary concern because of the potential for increased and prolonged exposure of individuals to both interior and exterior noise levels. Additional land uses such as parks, historic sites, cemeteries, and recreation areas are also considered sensitive to increases in exterior noise levels. Schools, churches, hotels, libraries, and other places where low interior noise levels are essential are also considered noise-sensitive land uses. Noise-sensitive land uses in the project area consist primarily of rural residential dwellings and Dos Reis Regional Park, which is located along the San Joaquin River.

Ambient Noise Survey

An ambient noise survey was conducted on May 12, 2004, to document the existing noise environment at various locations within the CLSP area. Measurements were taken for a period of 15 minutes at each location during the non-peak traffic hours using a Larson Davis model 820 sound level meter placed at approximately 4.5 feet above the ground surface. Exhibit 4.6-3 depicts the locations at which ambient noise measurements were taken during the survey. The daytime A-weighted sound levels (i.e., weighted toward the frequency range of human hearing) measured during the survey are summarized in Table 4.6-4. Based on the measurements conducted, average daytime noise levels (in dBA L_{eq}) within the CLSP area generally range from the mid-40s to lower 70s, dependent primarily on distance from I-5 and shielding from noise by nearby structures.



Source: MacKay & Somps 2004; EDAW 2004

Monitoring Locations ñ Existing Conditions

EXHIBIT 4.6-3

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Table 4.6-4 Daytime Ambient Noise Levels						
Location		Primary Noise Source	Date/Time	A-Weighted Sound Level (dBA)		
				L_{eq}	L_{min}	L_{max}
1	South side of Dos Reis Road, approximately 1,900 feet west of I-5	Traffic on Dos Reis Road	May 12, 2004 – 9:00–9:15 am	54.6	42.0	74.4
2	North side of De Lima Road, approximately 2,860 feet west of I-5	Traffic on I-5, tractor in field	May 12, 2004 – 9:25–9:40 am	45.2	38.0	55.0
3	Approximately 450 feet west of I-5	Traffic on I-5	May 12, 2004 – 9:50–10:05 am	56.4	49.7	62.1

Existing Noise Sources

The existing noise environment in and surrounding the proposed CLSP project area is influenced primarily by surface transportation noise emanating from vehicular traffic on area roadways, particularly Interstate 5 (I-5). Agricultural activities on and near the project site, as well as planes flying overhead, also contribute to the existing background noise levels.

Vehicular traffic noise levels along area roadways were calculated using the Federal Highway Administration (FHWA) Traffic Noise Prediction Model (FHWA-RD-77-108). Traffic data used in the analysis were obtained from the data generated by Fehr & Peers used to prepare Section 4.4, Transportation and Circulation, of this DEIR, as well as from the California Department of Transportation (Caltrans). Additional input data included day/night percentages of automobiles, medium-duty trucks, and heavy-duty trucks; vehicle speeds; ground attenuation factors; and roadway widths. Existing noise levels at several representative roadway and freeway segments are provided in Table 4.6-5. The locations of these segments can be seen in Exhibit 4.4-1 in Section 4.4, Transportation and Circulation. Actual noise levels will vary from day to day, dependent on various factors, including local traffic volumes, shielding from existing structures, variations in attenuation rates attributable to changes in surface parameters, and meteorological conditions.

Table 4.6-5 Existing Traffic Noise Levels	
Roadway Segment	Existing Noise Level (dBA CNEL/L_{dn}) at 50 feet / 200 feet from centerline of near travel lane*
Manthey Road (south of Roth Road)	62.88
Harlan Road (south of Roth Road)	64.25
Harlan Road (south of Lathrop Road)	64.83
Louise Avenue (west of Cambridge Avenue)	68.30
Freeway Segment	
I-5 (between Roth Road and Lathrop Road)	83.39
I-5 (between Lathrop Road and Louise Avenue)	83.08
I-5 (between Louise Avenue and SR 120)	83.08
SR 120 (between I-5 and Yosemite Avenue)	81.07
SR 120 (between Yosemite Avenue and Airport Way)	81.07
* Noise measurement is at 50 feet from centerline of near travel lane for roadway segments, 200 feet from centerline of near travel lane for freeway segments	

4.6.3 ENVIRONMENTAL IMPACTS

ANALYSIS METHODOLOGY

Data included in Chapter 3, Description of the Proposed Project, and obtained during onsite noise monitoring were used to determine potential locations of sensitive noise receptors and potential noise-generating land uses on the project site. Noise levels generated from stationary and mobile sources on and near the project site were estimated using applicable models. Anticipated noise conditions on the project site were then compared with the City's Noise Ordinance standards and other suitable criteria to determine potential conflicts between sensitive receptors and projected noise levels.

THRESHOLDS OF SIGNIFICANCE

For purposes of this analysis, the following applicable thresholds of significance were used to determine whether implementing the proposed project would result in a significant noise impact:

- Short-term construction noise impacts—Construction noise impacts would be considered significant if construction noise levels would exceed the City Noise Ordinance standards (Table 4.6-3) or if construction were to occur in, or within 500 feet of, a residential zone during the nighttime or weekend hours prohibited by the noise ordinance (i.e., between 10 p.m. and 7 a.m. on Sunday through Thursday and between 11 p.m. and 9 a.m. on Fridays, Saturdays, and legal holidays).

- Long-term operational stationary source noise impacts—Long-term stationary-source noise impacts would be considered significant if the proposed project would result in noise levels that exceed the City Noise Ordinance standards at nearby noise-sensitive land uses (see Table 4.6-3).

- Long-term traffic noise impacts—Long-term traffic noise impacts would be considered significant if implementation of the proposed project would result in a noticeable increase (i.e., 3 dBA or greater) in traffic noise levels that would also result in noise levels at a sensitive receptor exceeding the City standards, or contribute noise at a sensitive receptor where City standards are already exceeded.

- Land use compatibility with projected noise levels—Development of the proposed land uses would have a significant impact if the proposed project would contribute measurably to projected noise levels that would exceed the City's "normally acceptable" land use compatibility criteria (Exhibit 4.6-1).

Because the plan area is not located within two miles of any public or private airport, and is not located within the vicinity of any private airstrip, there are no significance thresholds addressing the impacts of aircraft noise in the project area.

IMPACT ANALYSIS

Impact 4.6-a

Noise – Increases in Short-term Construction-generated Noise. *Depending on the activities being performed, as well as the duration and hours during which activities occur, construction-generated noise levels at nearby residences could violate City Noise Ordinance standards. Activities occurring during the more noise-sensitive evening and nighttime hours could result in increased levels of annoyance and sleep disruption for occupants of nearby residences. This impact is considered* ***significant****.*

Construction noise in any one particular area would be temporary and would include noise from activities such as site preparation, truck hauling of material, pouring of concrete, and use of power hand tools.

Construction noise typically occurs intermittently and varies depending on the nature of the construction activities being performed. Noise generated by construction equipment, including excavation equipment, material handlers, and portable generators, can reach high levels for brief periods.

When noise levels generated by construction operations are being evaluated, activities occurring during the more noise-sensitive evening and nighttime hours are of increased concern. Because exterior ambient noise levels typically decrease during the late evening and nighttime hours as community activities (e.g., industrial activities, vehicle traffic) decrease, construction activities performed during these more noise-sensitive periods of the day can result in increased annoyance and potential sleep disruption for occupants of nearby residential dwellings.

The U.S. Environmental Protection Agency (EPA) has found that the average noise levels associated with construction activities typically range from approximately 76 dBA to 84 dBA L_{eq}, with intermittent individual equipment noise levels ranging from approximately 75 dBA to more than 88 dBA for brief periods. Table 4.6-6 lists typical uncontrolled noise levels generated by individual pieces of construction equipment at a distance of 50 feet. These equipment noise levels were obtained from the EPA and are currently the most thorough and comprehensive data listing of construction equipment noise levels available. However, it should be noted that these data on equipment noise levels are more than 30 years old. Newer equipment models typically have noise control features (e.g., mufflers, engine shrouds, insulation) and, as a result, are anticipated to generate noise levels that are substantially less than those presented in Table 4.6-6. Consequently, it is reasonable to assume that the equipment noise levels presented in Table 4.6-6 would represent conservative (worst-case) estimations of construction-generated noise levels.

Table 4.6-6
Noise Levels Generated by Typical Construction Equipment

Type of Equipment	Range of Sound Levels (dBA at 50 feet)	Suggested Sound Levels for Analysis (dBA at 50 feet)
Pile driver	81–96	93
Rock drill	83–99	96
Jack hammer	75–85	82
Pneumatic tools	78–88	85
Pumps	68–80	77
Dozer	85–90	88
Tractor	77–82	80
Front-end loader	86–90	88
Hydraulic backhoe	81–90	86
Hydraulic excavator	81–90	86
Grader	79–89	86
Air compressor	76–86	86
Truck	81–87	86

Sources: EPA 1971, BBN Layman Miller 1987

Noise from localized point sources (such as construction sites) typically decreases by approximately 6 dBA with each doubling of distance from source to receptor. Given this noise attenuation rate and assuming no noise shielding from either natural or human-made features (e.g., trees, buildings, fences), outdoor receptors within approximately 1,600 feet of construction sites could experience maximum instantaneous noise levels of greater than 60 dBA when onsite construction-related noise levels exceed approximately 90 dBA at the project site boundary. During project development, construction could result in increased levels of annoyance and sleep disruption for occupants of existing residential dwellings

or new dwellings constructed nearby as part of the proposed project. Depending on the activities being performed, as well as the duration and hours during which activities occur, construction-generated noise levels at nearby existing or project-related residences could violate City Noise Ordinance standards, and activities occurring during the evening and nighttime hours, when people are more sensitive to noise, could result in increased levels of annoyance and sleep disruption to occupants of nearby residences. As a result, noise-generating construction activities would be considered to have a significant impact.

Impact 4.6-b

Noise – Stationary-Source Noise Generated by Onsite Land Uses. *Increases in stationary-source noise associated with proposed project land uses could potentially exceed the City's maximum allowable noise standards. This impact is considered* ***significant****.*

The proposed CLSP land use plan features a mix of various land uses, including residential, commercial, office, public/semi-public, schools, parks, open space, and a wastewater treatment/water recycling plant (WRP #2). The sources and levels of noise typically associated with these land uses are discussed separately below.

Residential Land Uses

Noise from proposed residential dwellings would expose other nearby residences (both existing and project related) to minor increases in ambient noise levels. Noise typically associated with such development includes lawn and garden equipment, voices, and amplified music. Activities associated with these land uses would result in only minor increases in ambient noise levels, primarily during the day and evening hours and less frequently at night, as perceived at the closest residential receptors. Noise levels generated by stationary sources, primarily residential central air conditioning units, typically average approximately 60 dBA at 3 feet from the source (EPA 1971). Depending on the distance between dwellings, noise levels associated with air conditioning units located in residential side yard areas could potentially exceed the City's maximum allowable noise level of 50 dBA at neighboring one- and two-family residences in urban settings (Table 4.6-2). As a result, increased noise levels associated with proposed residential land uses are considered a potentially significant impact.

Commercial and Civic Uses

As discussed in Chapter 3, Description of the Proposed Project, the CLSP includes plans for the development of Office Commercial, Neighborhood Commercial, Specialty Commercial, and Public/Semi-Public land uses on a total of up to 383.4 acres. However, the specific types of commercial and public/semi-public facilities to be developed in these areas have not yet been determined. Potential sources of noise associated with these types of land uses can vary substantially. Noise associated with office and public land uses might be limited to occasional parking lot–related noise (e.g., opening and closing of vehicle doors, people talking); commercial land uses, on the other hand, may include additional noise sources, such as the use of forklifts for the loading and unloading of materials or the operation of hydraulic lifts and air compressors at automotive repair facilities. Noise from such equipment can reach intermittent levels of approximately 90 dBA at 50 feet from the source (EPA 1971). Early morning truck deliveries also may be a source of elevated noise levels at nearby receptors.

Operational noise levels associated with the proposed commercial and public land uses could potentially exceed the City's maximum allowable exterior noise standards at nearby existing and future noise-sensitive receptors. In addition, increases in single-event noise levels, such as backup alarms from material delivery trucks, occurring during evening and nighttime hours could result in increased levels of disturbance and sleep disruption to occupants of nearby residential dwellings. This impact is considered potentially significant.

Schools, Parks, and Open Space

The proposed CLSP includes development of approximately 95 acres for three kindergarten through grade 8 (K–8) schools and one high school and approximately 209 acres dedicated as parks or open space. Activities occurring at the schools, parks, and open space areas have the potential to produce two types of noise that could be detectable at nearby noise sensitive land uses: (1) noise primarily associated with school and recreational activities, and (2) noise primarily associated with the operation of maintenance equipment. The anticipated noise associated with these activities is discussed in the following sections.

School and Recreational Activities

Noise typically associated with schools, parks, and open space areas includes the voices of adults and children, group recreation, the opening and closing of vehicle doors in parking lots, and mechanical noise associated with building ventilation systems. During periods when children and community members are using exterior recreational areas, exterior noise levels can exceed 60 dBA L_{eq} at 50 feet. In addition, mechanical noise associated with the operation of ventilation equipment required to service school facilities could generate high noise levels depending on the type of equipment and extent of use (hours of operation). Use of large heating and ventilation systems can result in noise levels of approximately 90 dBA at 3 feet from the source.

Community parks, middle schools, and high schools can result in additional noise extending into the evening and nighttime hours associated with the operation of recreational facilities during competitive sporting events, such as soccer games, football games, and track and field events, and other group events such as concerts. Noise sources commonly associated with these types of events include elevated voices from crowds, exterior public address systems, and musical instruments. Noise levels typically associated with recreational events, including noise from spectators and players, can reach approximately 75 dBA at 50 feet. If an amplified speaker system is used during sporting events, additional increases in ambient noise levels could occur. Depending on distances between source and receptor, noise generated by these land uses has the potential to exceed the City's maximum allowable exterior noise standards at nearby existing and proposed land uses. Sensitive receptors most likely to be affected would be homes located near the three proposed K–8 schools, the high school, and community and neighborhood parks (Exhibit 3-4). This impact is considered potentially significant.

Recreation Maintenance Equipment

Equipment used to maintain athletic fields, parks, and open space areas includes lawnmowers and sprayers. Representative manufacturers' specifications for decibel levels measured at the operator's seat of these types of equipment are listed in Table 4.6-7, with a description of function and predicted noise levels. Mowing operations at school playfields typically occur once per week and produce irregular sound levels because of fairly rapid movement and limited time of exposure to nearby land uses. Noise levels from maintenance equipment are also influenced by factors such as direction of movement, location, speed, and local wind conditions. Noise levels shown in Table 4.6-7 are the highest levels expected, based on direct exposure measurement of stationary equipment.

Assuming a maximum noise level of 90 dBA associated with mowing along the outer perimeter of the playfields, noise-sensitive land uses within approximately 100 feet of the parks and schools could be exposed to levels in excess of 60 dBA L_{eq}. Depending on the distance between source and receptor and the hour of day during which such activities were to occur, operational noise levels associated with maintenance equipment could potentially exceed the City's maximum allowable noise standards or result in a noticeable increase in ambient noise levels at nearby noise-sensitive land uses. This impact is considered potentially significant.

Table 4.6-7 Typical Generation of Playfield Maintenance Equipment Noise		
Equipment and Function	Sound Level at Operator's Position	Estimated Sound Level at 50 Feet
Mower (Reelmaster 5000)	86 dBA L_{eq}	62 dBA L_{eq}
Mower (Groundmaster 325D)	90 dBA L_{eq}	66 dBA L_{eq}
Sprayer (Multi Pro 1100)	84 dBA L_{eq}	60 dBA L_{eq}

Notes: Sound levels at operator's position are based on manufacturers' specifications. Predicted sound levels at 50 feet assume a near-noise field of 3 feet and a 6-dBA reduction in noise levels per doubling of distance from the source.

Source: EDAW 1997

Wastewater Treatment/Water Recycling Plant Facilities (WRP #2)

Construction and operation of WRP #2 could increase noise levels in noise-sensitive areas. The potential noise level increases would depend on the design and location of stationary noise-generating equipment. As previously discussed, noise from stationary point sources, which would include items such as water pump motors, typically attenuate at a rate between 6 dBA for hard sites (e.g., buildings, pavement) and 7.5 dBA for soft sites (e.g., landscaping) per doubling of distance from the source. For purposes of this analysis, sound levels generated during the various operational activities were estimated based on the 6-dBA attenuation rate and assuming the simultaneous operation of identified equipment at each facility.

Noise-producing equipment typically associated with wastewater treatment facilities includes electrical pump motors, transformers, and emergency power generators. More specifically, the proposed WRP #2 is expected to include noise-generating equipment such as influent transfer pumps, grit pumps, effluent pumps, blowers, fans, and a belt press for sludge processing. The plant would also have an emergency generator that is operated for testing once per month. Depending on the type and size of the pumps required, operational noise levels can range from approximately 65 dBA to 90 dBA at 10 feet. Electrical generators and transformers can generate noise levels of approximately 80 dBA at 3 feet (EPA 1971). Additional equipment, such as water filtration and chlorination systems, typically generates noise levels of approximately 58 dBA or less at 3 feet.

WRP #2 could be located in an office/commercial area in the northeast corner of the CLSP site (Area 4 as shown in Exhibit 3-6) or in one of two offsite locations, either in an industrial area near the existing WRP #1 (Area 5) or in an agricultural area northwest of the CLSP area (Area 3). An ambient base noise level of 60–70 dBA, as shown in Table 4.6-3, would apply at the property line of these sites. The Noise Ordinance allows operational noise to exceed the base noise level by 5 dBA, so that the City's noise limit at the property line would be 65–75 dBA. Though unlikely, the design of the plant could result in one or more large pieces of unshielded noise-generating equipment being located near the site property line, so that the noise from the equipment would exceed 65–75 dBA L_{eq}. Therefore, there is potential for violation of the noise ordinance, which would be a significant noise impact.

Summary of Stationary-Source Noise

Stationary-source noise levels associated with several proposed land uses could result in noise levels that would exceed the City's maximum allowable noise standards, resulting in a significant impact from both Phase 1 and Phase 2 development. In addition, increases in single-event noise levels, such as backup alarms from material delivery trucks at commercial land uses and exterior public address systems at schools and recreational facilities, could result in increased levels of disturbance and sleep disruption for occupants of nearby residential dwellings, particularly during evening, nighttime, and early morning hours. Operational noise from WRP #2 would be an additional potentially significant impact.

Impact 4.6-c

Noise – Increases in Existing Traffic Noise Levels. *Implementation of the proposed CLSP project would result in a noticeable increase in traffic noise levels (i.e., 3 dBA or more) along several roadway segments. This is considered a* ***significant*** *impact.*

The FHWA Traffic Noise Prediction Model (FHWA-RD-77-108) was used to calculate traffic noise levels along affected roadways for existing baseline traffic conditions, with and without implementation of the proposed project, based on the trip distribution estimates obtained from the data generated by Fehr & Peers and used to prepare Section 4.4, Transportation and Circulation, of this DEIR. Input data used in the model included average daily traffic levels for nearby area roadways, fleet mixes (percentages of automobiles, medium-duty trucks, and heavy-duty trucks during daytime, evening, and nighttime hours), vehicle speeds, ground attenuation factors, and roadway widths. The project's contribution to the existing traffic noise levels along area roadways was determined by comparing existing roadside noise levels to predicted noise levels with and without project-generated traffic from full buildout of the proposed CLSP.

Table 4.6-8 summarizes the calculated noise levels for existing roadway and freeway segments in the vicinity of the project site. These roadway and freeway segments are shown in Exhibit 4.4-1. The noise levels shown in Table 4.6-8 indicate conditions at 50 feet from the centerline of the near travel lane for affected roadways and 200 feet from the centerline of the near travel lane for freeway segments. Predicted traffic noise levels were calculated assuming a noise reduction of 3 dBA per doubling of distance from the source, which is the minimally expected noise reduction based on field experience.

Table 4.6-8
Predicted Traffic Noise Levels

Roadway Segments	Noise Level (dBA CNEL/L_{dn}) at 50 Feet (at 200 feet for freeway segments)				
	Existing	Existing + Phase 1[a]	Difference	Existing + CLSP Buildout	Difference
Manthey Road (north of Roth Road)	62.88	—	<3.00	65.30	2.42
Manthey Road (south of Roth Road)	62.88	63.84	0.97	70.65	7.77
Harlan Road (south of Roth Road)	64.25	—	<3.00	65.80	1.55
Harlan Road (north of Roth Road)	62.79	66.59	3.80	67.84	5.05
McKinley Avenue (north of Roth Road)	59.42	60.67	1.25	62.43	3.01
Roth Road (west of McKinley Avenue)	67.26	68.31	1.05	70.46	3.20
Airport Way (north of Roth Road)	67.95	—	<3.00	70.10	2.15
Fifth Street (south of Lathrop Road)	56.27	—	<3.00	56.94	0.67
Lathrop Road (west of Fifth Street)	65.07	67.60	2.53	68.29	3.22
Harlan Road (south of Louise Avenue)	68.1	—	<3.00	68.81	0.71
Cambridge Avenue (north of Louise Avenue)	56.27	—	<3.00	58.49	2.22
Louise Avenue (west of Cambridge Avenue)	68.30	—	<3.00	70.29	1.99
Fifth Street (north of Louise Avenue)	56.27	—	<3.00	56.94	0.67
McKinley Avenue (north of Louise Avenue)	60.67	—	<3.00	61.64	0.97
Airport Way (south of Louise Avenue)	69.63	—	<3.00	69.86	0.23
Vierra Road (west of McKinley Avenue)	51.96	—	<3.00	51.96	0.00
McKinley Avenue (south of Yosemite Avenue)	65.30	—	<3.00	67.64	2.34
Yosemite Avenue (east of McKinley Avenue)	68.79	—	<3.00	70.10	1.31
Harlan Road (south of Lathrop Road)	64.83	—	<3.00	65.8	0.97
Airport Way (south of Lathrop Road)	67.28	—	<3.00	68.25	0.97
Lathrop Road (west of Airport Way)	65.86	—	<3.00	68.74	2.88
Louise Avenue (east of Cambridge Avenue)	68.11	—	<3.00	70.40	2.29
Louise Avenue (east of Fifth Street)	68.64	—	<3.00	70.73	2.09
Louise Avenue (east of McKinley Avenue)	69.40	—	<3.00	71.16	1.76

Table 4.6-8
Predicted Traffic Noise Levels

Roadway Segments	Noise Level (dBA CNEL/L_{dn}) at 50 Feet (at 200 feet for freeway segments)				
	Existing	Existing + Phase 1[a]	Difference	Existing + CLSP Buildout	Difference
McKinley Avenue (south of Louise Avenue)	65.79	—	<3.00	67.43	1.64
Roth Road (east of McKinley Avenue)	66.85	67.64	0.38	70.27	3.01
Airport Way (south of Roth Road)	67.63	—	<3.00	68.79	1.16
Freeway Segments					
I-5 (between Roth Road and Lathrop Road)	83.39	—	<3.00	84.52	1.13
I-5 (between Lathrop Road and Louise Avenue)	83.08	—	<3.00	83.93	0.85
I-5 (between Louise Avenue and SR 120)	83.08	—	<3.00	84.25	1.17
SR 120 (between I-5 and Yosemite Avenue)	81.07	—	<3.00	82.36	1.29
SR 120 (between Yosemite Avenue and Airport Way)	81.07	—	<3.00	81.62	0.55

[a] Roadside noise levels were not estimated for the "Existing + Phase 1" scenario if predicted noise level increases for the "Existing + CLSP Buildout" were found to be less than significant (<3.00 dBA).

Notes: Traffic noise levels were modeled using the FHWA Traffic Noise Prediction Model (FHWA-RD-77-108) based on traffic information (e.g., average daily traffic, vehicle speeds, roadway width) obtained from the data generated by Fehr & Peers used to prepare Section 4.4, Transportation and Circulation, for this DEIR and assuming no natural or human-made shielding (e.g., vegetation, berms, walls, buildings). Refer to Appendix D for modeling input assumptions and output results.

Source: EDAW 2004

Based on the traffic modeling conducted, buildout of the proposed CLSP would result in an increase of roadside noise levels greater than 3.0 dBA along one roadway segment during Phase 1 and five additional roadway segments at full buildout (see highlighted data in Table 4.6-8). Noise-sensitive receptors (residences) are located along each of the road segments that would experience noise increases of 3.0 dBA or more. It should be noted that the noise increases along Manthey Road (south of Roth Road) and Harlan Road (north of Roth Road) are believed to be overstated in Table 4.6-8 because traffic along adjacent I-5 contributes to the overall traffic noise attributed to these surface streets. It is not known at this time whether interior or exterior noise levels at sensitive receptors near these six road segments currently exceed City standards, or whether traffic generated by the CLSP would create noise conditions that exceed City standards. However, because these situations could occur in areas where the proposed project would result in a noticeable increase in traffic noise, this impact is considered significant.

Impact 4.6-d

Noise – Compatibility of Proposed Land Uses with Projected Onsite Noise Levels. *Predicted noise levels at some noise-sensitive receptors associated with the proposed project would exceed the City's "normally acceptable" land use compatibility noise standards. As a result, this impact is considered* ***significant.***

As previously discussed, noise levels within the plan area are influenced primarily by traffic noise associated with vehicle traffic on I-5, although noise generated by other sources, such as agricultural operations, may also play a role. Predicted transportation noise contours (in dBA CNEL) for highways in the project area at buildout (i.e., projected conditions in 2020, or 2020 Plus Project scenario described in Section 4.4, Transportation and Circulation) are summarized in Table 4.6-9. The predicted noise contour distances do not take into account shielding or reflection of noise from existing structures. As a result, the noise contour distances should be considered to represent bands of similar noise exposure, rather than absolute distances of demarcation. Actual noise levels would vary from day to day, depending on factors such as local traffic volumes, shielding from existing structures, variations in attenuation rates resulting

from changes in surface parameters, and meteorological conditions. The compatibility of the proposed land uses in comparison to predicted traffic noise levels and other noise sources is discussed separately below.

Table 4.6-9
Predicted Roadway Traffic Noise Levels with CLSP Buildout in 2020

	Distance to CNEL Contour (feet)		
Existing Freeway Segments	60 dBA	65 dBA	70 dBA
I-5 (between Roth Road and Lathrop Road)	5,469	2,539	1,180
I-5 (between Lathrop Road and Louise Avenue)	5,426	2,519	1,170
I-5 (between Louise Avenue and SR 120)	5,288	2,455	1,141
SR 120 (between I-5 and Yosemite Avenue)	3,914	1,818	845
SR 120 (between Yosemite Avenue and Airport Way)	3,591	1,667	775
Existing Roadway Segments			
Roth Road (east of I-5)	767	243	77
Lathrop Road (east of I-5)	628	200	67
Louise Avenue (east of I-5)	910	288	91
Proposed Roadway Segments			
Lathrop Road west of Main Street	180	61	<50
Golden Valley Parkway north of Street A	1,065	339	113
Golden Valley Parkway south of Louise Avenue	1,295	411	135
River Islands Boulevard west of Golden Valley Parkway	1,007	321	107

Notes: Based on 2020 cumulative traffic conditions (2020 projected regional development plus project). Traffic noise levels were modeled using the FHWA Traffic Noise Prediction Model (FHWA-RD-77-108) based on traffic information (e.g., average daily traffic, vehicle speeds, roadway width) obtained from the data generated by Fehr & Peers used to prepare Section 4.4, Transportation and Circulation, for this DEIR and assuming no natural or human-made shielding (e.g., vegetation, berms, walls, buildings) between the roadway and receptor. Refer to Appendix D for modeling input assumptions and output results.

Source: EDAW 2004

Roadway Traffic Noise Levels

Predicted traffic noise levels in the plan area were calculated using the FHWA Traffic Noise Prediction Model (FHWA-RD-77-108) based on traffic information (e.g., average daily traffic, vehicle speeds, roadway width) obtained from the data generated by Fehr & Peers and used to prepare the traffic analysis for this DEIR (Section 4.4, Transportation and Circulation). Input data used in the model included average daily traffic levels for nearby area roadways, day/night percentages of autos and medium and heavy trucks, vehicle speeds, ground attenuation factors, and roadway widths. Predicted traffic noise levels were calculated for 2020, assuming full buildout of the CLSP and projected future regional development and roadway improvements assumed in the 2020 Plus Buildout scenario described in Section 4.4, Transportation and Circulation.

As previously discussed, noise levels on the CLSP site are affected primarily by vehicle traffic on I-5. Based on the modeling conducted, the 60-dBA CNEL noise contour for I-5 would extend onto the eastern portion of the CLSP site at a distance of approximately 5,400 feet from the near travel lane centerline. Sensitive receptors primarily affected by I-5 traffic noise would include the proposed Variable Density Residential and High Density Residential districts on the eastern side of both the Phase 1 and Phase 2 portions of the CLSP area. Predicted noise levels at proposed onsite residential dwellings, such as those planned along portions of Golden Valley Parkway (in both Phase 1 and Phase 2), could potentially exceed the City's "normally acceptable" land use compatibility standard of 60 dBA CNEL. While buildings developed in the proposed Office-Commercial districts between Golden Valley Parkway and I-5 might

act as noise barriers that protect noise-sensitive uses located farther to the west, the exact locations and heights of these facilities are unknown and direct lines of site between I-5 and the proposed residential areas may still occur. Moreover, the proposed Office-Commercial land uses on the east side of Golden Valley Parkway could experience noise levels that exceed the City's 70-dBA CNEL land use compatibility threshold for these land uses.

Although outside of the projected 60 dBA CNEL noise contour for I-5, the remaining proposed land uses, including schools, parks, open space, and public land uses, could be affected by noise associated with vehicles traveling along the proposed onsite roadways. As shown in Table 4.6-9, the 60 dBA CNEL noise contour along major proposed area roadways, such as Golden Valley Parkway, can extend well beyond the roadway right-of-way. Consequently, traffic noise levels along proposed area roadways also may result in noise levels that would exceed the City's land use compatibility thresholds. These exceedances would be considered significant impacts.

Additional Noise Sources

The CLSP area is also affected on an intermittent basis by various other sources of noise, including occasional aircraft overflights and agricultural activities on adjacent parcels north of the CLSP area. The plan area is not located in the 60-dBA noise contour of any nearby public airports or private airstrips; exposure to aircraft noise typically occurs for only short periods and, as a result, aircraft noise does not contribute substantially to average daily noise levels in the area. Agricultural activities near the northern boundary of the CLSP area, and within the CLSP area as development proceeds, include the use of various types of heavy equipment. The operation of heavy agricultural equipment can generate noise levels of approximately 85-dBA L_{eq} at 50 feet (EPA 1971). Depending on the duration and time of day when these activities occur, resultant noise levels at nearby noise-sensitive receptors could potentially exceed the City's land use compatibility noise standards. Thus, this impact is considered potentially significant.

4.6.4 MITIGATION MEASURES

The following mitigation measures are provided for significant impacts:

4.6-a: Increases in Short-term Construction-generated Noise. In accordance with the City Noise Ordinance, construction activities in or within 500 feet of a residential zone (i.e., an area containing occupied residences) shall be permitted only between 7 a.m. and 10 p.m. on Monday through Thursday, between 7 a.m. and 11 p.m. on Friday, between 9 a.m. and 11 p.m. on Saturday, and between 9 a.m. and 10 p.m. on Sunday and legal holidays. These limitations shall be specified in all construction contracts and specifications entered into by the applicant and/or its successors in interest.

In addition, all construction vehicles or equipment, fixed or mobile, shall be equipped with properly operating and maintained mufflers and acoustical shields or shrouds, in accordance with manufacturers' recommendations. Construction equipment and truck routes shall be arranged to minimize travel adjacent to occupied residences. Stationary construction equipment and staging areas shall be located as far as possible from sensitive receptors, and temporary acoustic barriers may be installed around stationary equipment if necessary.

Implementation of Mitigation Measure 4.6-a would reduce construction-related noise impacts to a less-than-significant level.

4.6-b: Stationary-Source Noise Generated by Onsite Land Uses. As individual facilities, subdivisions, and other project elements are permitted by the City, the City shall evaluate the element for compliance with the City's Noise Ordinance and noise policies in the City General Plan. Where individual project elements do not clearly comply with interior noise standards included in these guidelines, mitigation measures shall be required to reduce projected interior and exterior noise levels to within acceptable levels.

Mitigation measures may include, but are not limited to, the following:

- Dual-pane, noise-rated windows; mechanical air systems; exterior wall insulation; and other noise-reducing building materials shall be used.

- Mechanical equipment (e.g., air conditioning and ventilation systems) and area-source operations (e.g., loading docks, parking lots, recreational use areas) shall be located at the farthest distance from and/or be shielded from nearby existing and proposed noise-sensitive land uses.

In addition, the following measures will apply to noise-generating activities associated with school grounds, neighborhood and community parks, and open space areas:

- Onsite landscape maintenance equipment shall be equipped with properly operating exhaust mufflers and engine shrouds, in accordance with manufacturers' specifications.

- For maintenance areas located within 500 feet of noise-sensitive land uses, the operation of onsite landscape maintenance equipment shall be limited to the least noise sensitive periods of the day, between the hours of 7 a.m. and 7 p.m.

- Outdoor use of amplified sound systems within 500 feet of noise-sensitive land uses shall only be permitted between 7 a.m. and 10 p.m. on Sunday through Thursday, and between 7 a.m. and 11 p.m. on Friday and Saturday.

Also, prior to the approval of site development plans for WRP #2, each lift station, and each booster pump station, the City's contractor shall submit a supplemental noise analysis demonstrating that stationary noise sources will be adequately designed and constructed (including the incorporation of shielding or enclosures) to ensure that operational noise levels at the property lines and at the nearest noise-sensitive land uses comply with the City Noise Ordinance.

Compliance with the City's Noise Ordinance and implementation of additional mitigation measures for the control of stationary-source noise, such as those identified above, would reduce stationary-source noise impacts to a less-than-significant level.

4.6-c: Increases in Existing Traffic Noise Levels. Noticeable increases in traffic noise (i.e., 3 dBA or more) in and of themselves would not result in an adverse effect on the environment if there are no sensitive receptors in the vicinity of the increased noise levels. Noticeable increases in traffic noise are simply an indication that nearby sensitive receptors could be exposed to higher noise levels, and therefore could be subject to increased potential for disturbance, annoyance, sleep disruption, and other potential adverse noise effects.

To determine whether increases in traffic noise attributable to the proposed project would result in a significant adverse effect on nearby sensitive receptors, a traffic noise study shall be

conducted at the six roadway segments where the EIR noise modeling indicates that project-related traffic would increase noise by 3 dBA or more:

- Manthey Road south of Roth Road,
- Harlan Road north of Roth Road,
- McKinley Avenue north of Roth Road,
- Roth Road west of McKinley Avenue,
- Roth Road east of McKinley Avenue, and
- Lathrop Road west of Fifth Street.

The traffic noise study shall determine whether dBA increases attributable to the proposed project (as shown in Table 4.6-8) would result in, or contribute to, interior or exterior noise levels at nearby receptors exceeding applicable City or County standards. If applicable standards would be exceeded as a result of the proposed project, or if existing conditions exceed the applicable standard, the City shall determine whether there are feasible mitigation measures that can attenuate the project's contribution to increased noise levels. Such a determination shall include consideration of the following: the cost of erecting any necessary structures or implementing nonstructural mitigation measures; current availability of land for any proposed structures or vegetation; consistency with regulatory objectives, requirements, and limitations; the existence of any mechanism for obtaining reimbursement from any other parties contributing to the need for mitigation to ensure that the applicant is not required to pay more than its fair share of the cost of mitigation; and the willingness of residents or landowners in the affected area to cooperate with the implementation of mitigation. Potentially feasible mitigation measures might include:

- Installation of sound walls,

- Planting of vegetative screening, or

- Providing existing homes with dual-pane noise-rated windows, exterior wall insulation, improved exterior fencing, or other noise-attenuating structural features.

The first noticeable increase in traffic noise attributable to the CLSP project is anticipated to occur some time during the development of Phase 1 (see Table 4.6-8). To ensure that project-generated increases in traffic noise remain below noticeable levels at sensitive receptors, the noise study described above shall be completed and applicable mitigation measures shall be in place, before approval of a final small-lot subdivision map or similar discretionary approval for nonresidential uses (e.g., a use permit) that would permit development of traffic-generating land uses on more than 25% of the Phase 1 area (i.e., before more than 235 acres of the project site are developed with traffic-generating land uses).

As noted in the discussion of Impact 4.6-c, increased traffic noise attributed to the proposed project, as shown in Table 4.6-8, may be overstated in some instances as a result of noise contributed by nearby roadways (i.e., I-5). The noise study conducted to assess traffic noise conditions at the six roadway segments may also revisit and refine the CLSP project's contribution to traffic noise. If this analysis is conducted, the results may be used to define the project's contribution to traffic noise, and hence the extent of noise attenuation measures, if needed.

If feasible mitigation measures can be implemented, Mitigation Measure 4.6-c could reduce impacts related to increases in traffic noise to less-than-significant levels. If, however, no feasible measures can be implemented, the impact will remain significant and unavoidable.

4.6-d: Compatibility of the Proposed Land Uses with Projected Onsite Noise Levels. As the City considers approval of individual discretionary projects (e.g., tentative small-lot subdivision maps, use permits, and design review approvals), the City shall evaluate such projects for compliance with the City's Noise Ordinance and noise policies in the General Plan. Where individual projects do not clearly comply with the interior noise standards included in these guidelines, mitigation measures such as use of dual-pane windows, mechanical air systems, exterior wall insulation, and other noise-reducing building materials and methods shall be required as appropriate to reduce interior noise exposure to the "normally acceptable" levels identified by the City (Exhibit 4.6-1). Where individual projects do not clearly comply with exterior noise standards included in the City guidelines (Table 4.6-2), mitigation measures such as use of sound walls, vegetative screening, buildings for screening, and setbacks between noise sources and receptors, shall be implemented as appropriate to minimize exterior noise levels. Any outdoor human-made noise barriers shall have an aesthetically pleasing appearance that agrees with the color and character of nearby homes or other facilities. Where there is a question regarding premitigation or postmitigation noise levels in a particular area, site-specific noise studies may be conducted to determine compliance or noncompliance with City guidelines.

Title 24 of the California Code of Regulations requires the preparation of an acoustical analysis for multifamily residences that demonstrates how interior noise levels will achieve a 45-dBA CNEL/ L_{dn} in locations where the exterior noise levels exceed 60-dBA CNEL/ L_{dn}. As a result, a Title 24 analysis shall be prepared as part of the final design of any proposed multifamily residential dwellings. To the extent necessary, noise control measures shall be designed according to the type of building construction and specified sound rating for each building element to achieve an interior noise level of 45-dBA CNEL/ L_{dn}.

Implementation of Mitigation Measure 4.6-d would be effective in reducing impacts associated with interior noise levels to less-than-significant levels. However, exterior noise levels in some locations would be anticipated to exceed applicable noise standards adopted by the City even after mitigation because of roadway traffic (particularly on I-5) and potentially nearby agricultural operations. Site-specific studies would be required to determine the precise location of sensitive receptors that would be exposed to exterior noise levels exceeding City standards; however, the most likely areas would be homes within 3,900 feet of I-5 and near the north boundary of the CLSP site. As a result, impacts associated with exterior noise level compatibility with proposed land uses are considered significant and unavoidable.

4.6.5 RESIDUAL SIGNIFICANT IMPACTS

If no feasible measures can be implemented to reduce impacts related to increases in traffic noise to less-than-significant levels, the impact would remain significant after the implementation of Mitigation Measure 4.6-c. Impacts related to compatibility or incompatibility between proposed land uses and projected onsite exterior noise levels would remain significant after the implementation of Mitigation Measure 4.6-d. Therefore, these impacts are considered significant and unavoidable.

4.7 Geology, Soils, and Mineral Resources

4.7 GEOLOGY, SOILS, AND MINERAL RESOURCES

This section describes current conditions at the CLSP project site relative to geology, soils, and mineral resources; analyzes potential environmental impacts; and recommends mitigation measures to reduce significant or potentially significant impacts to less-than-significant levels.

Public comments received in response to the Notice of Preparation raised issues related to high groundwater, liquefaction, and erosion. These issues are addressed in this section.

The primary source of information used for this analysis is the Preliminary Geotechnical Report, Central Lathrop Specific Plan, Lathrop, California (ENGEO 2004). This study is available for review at the City of Lathrop Community Development Department, Planning Division, 16775 Howland Road, Suite One, Lathrop, California 95330 (209/858-2860, extension 327).

4.7.1 REGULATORY BACKGROUND

FEDERAL EARTHQUAKE HAZARDS REDUCTION ACT

In October 1977, the U.S. Congress passed the Earthquake Hazards Reduction Act (Public Law 95-124) to "reduce the risks to life and property from future earthquakes in the United States through the establishment and maintenance of an effective earthquake hazards and reduction program." To accomplish this, the act established the National Earthquake Hazards Reduction Program (NEHRP). Congress substantially amended this program in November 1990 by approving the National Earthquake Hazards Reduction Program Act (NEHRPA) (Public Law 101-614), which refines the description of the agency responsibilities, program goals, and objectives.

To meet hazard reduction goals, NEHRP's mission 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, coordination, and reporting responsibilities to FEMA and other agencies. Other NEHRPA agencies include the National Institute of Standards and Technology, National Science Foundation, and U.S. Geological Survey (USGS).

CALIFORNIA UNIFORM BUILDING CODE

The State of California provides minimum standards for building design through the California Building Standards Code (California Code of Regulations Title 24). Where no other building codes apply, Chapter 29 regulates excavation, foundations, and retaining walls. The California Uniform Building Code (UBC) also applies to building design and construction in the state and is based on the national UBC used widely throughout the country (generally adopted on a state-by-state or district-by-district basis). The California UBC modifies the national UBC for California conditions, with numerous more detailed and/or more stringent regulations.

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. Specific minimum standards for seismic safety and structural design to meet earthquake protection requirements are set forth in Chapter 16 of the UBC. The UBC identifies seismic factors that must be considered in structural design.

Chapter 18 of the UBC regulates the excavation of foundations and retaining walls, and Appendix Chapter A33 regulates grading activities, including drainage and erosion control; and construction on unstable soils, such as expansive and liquefiable soils and liquefaction areas.

CALIFORNIA SEISMIC HAZARDS MAPPING ACT

The California Seismic Hazards Mapping Act of 1990 (California Public Resources Code Sections 2690–2699.6) addresses seismic hazards other than surface rupture, such as liquefaction and seismically induced landslides. The Seismic Hazards Mapping Act 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.

ALQUIST-PRIOLO EARTHQUAKE FAULT ZONING ACT

The Alquist-Priolo Earthquake Fault Zoning Act was passed by the California Legislature in 1972 to mitigate the hazard of surface faulting to structures. The act's main purpose is to prevent the construction of buildings used for human occupancy on the surface trace of active faults. The act addresses only the hazard of surface fault rupture and is not directed toward other earthquake hazards. Local agencies must regulate most development in fault zones established by the State Geologist. Before a project can be permitted in a designated Alquist-Priolo Fault Study Zone, the city or county with jurisdiction must require a geologic investigation to demonstrate that proposed buildings would not be constructed across active faults (CGS 2004).

CALIFORNIA SURFACE MINING AND RECLAMATION ACT

The California Surface Mining and Reclamation Act (SMARA) was enacted in 1975 by the State Legislature (Public Resources Code Division 2, Chapter 9, Section 2710 et seq.) to regulate activities related to mineral resource extraction. The act requires the prevention of adverse environmental effects caused by mining, the reclamation of mined lands for alternative land uses, and the elimination of public health and safety hazards from the effects of mining activities. At the same time, the state SMARA encourages both the conservation and production of extractive mineral resources, requiring the State Geologist to identify and attach levels of significance to the state's varied extractive resource deposits. As described below, in 1998 the City of Lathrop adopted its own SMARA ordinance, modeled after the state's SMARA guidelines.

STATE MINERAL LANDS CLASSIFICATION SYSTEM

In compliance with the SMARA, the California Department of Conservation, Division of Mines and Geology (CDMG) has established a classification system to denote both the location and significance of key extractive resources. An explanation of the classification system is presented in Table 4.7-1. Lands are included in one of four categories based on available information indicating their potential to contain mineral deposits. Not all lands in the state have been classified by the CDMG.

Table 4.7-1 CDMG Mineral Classification System	
Classification	Definition
MRZ-1	Areas where adequate information indicates that no significant mineral deposits are present or where it is judged that little likelihood exists for their presence.
MRZ-2	Areas where adequate information indicates that significant mineral deposits are present or where it is judged that a high likelihood for their presence exists.
MRZ-3	Areas containing mineral deposits, the significance of which cannot be evaluated from existing data.
MRZ-4	Areas where available data is inadequate for placement in any other MRZ zone.
Source: City of Lathrop 1991	

SAN JOAQUIN COUNTY GENERAL PLAN 2010

The San Joaquin County General Plan 2010 (County General Plan) (County of San Joaquin 1992) Public Health and Safety Element specifies policies to minimize the risk associated with seismic and geologic hazards. The following policies relate to the proposed project:

- The risk to human safety and property from seismic and geologic hazards shall be considered in determining the location and intensity of development and the conditions under which it may occur.

- Facilities necessary for emergency services, major utility lines and facilities, manufacturing plants using or storing hazardous materials, high occupancy structures (such as multifamily residences and large public assembly facilities), and facilities housing dependent populations (such as prisons, schools, and convalescent centers) shall not be located within one-eighth of a mile of an active fault.

- Facilities necessary for emergency services should be capable of withstanding a maximum credible earthquake and remain operational to provide emergency response.

The County General Plan also states that the County shall comply with state regulations, require studies where necessary for geologic information, require mitigation of seismic or unstable geologic hazards for new construction, inventory buildings to identify and evaluate structural and nonstructural hazards, provide public information, and include erosion and sediment control regulations in its planning efforts.

CITY OF LATHROP GENERAL PLAN

The Hazard Management Element of the City of Lathrop General Plan (City General Plan) outlines goals and policies associated with geology and soils. The following policies relate to the proposed project:

- **Policy 2:** All new building construction shall conform to the latest seismic requirements of the Uniform Building Code as a minimum standard.

- **Policy 4:** Facilities needed for emergency service should be capable of withstanding a maximum credible earthquake and remain operational to provide emergency response.

- **Policy 5:** Preliminary soil compaction tests and geotechnical analysis of soil conditions shall be submitted as part of the justification for development proposals contained in any Specific Plan.

- **Policy 6:** Soil compaction tests and geotechnical analysis of soil conditions and behavior under seismic conditions shall be required of all subdivisions and of all commercial, industrial and institutional structures over 6,000 square feet in area.

- **Policy 7:** A preliminary soils report is to be prepared by a registered geo-technical engineer for any residential development project, based on adequate test borings. If the report indicates the presence of critically expansive soils or other soil problems which, if not corrected, would lead to structural defects, the developer shall provide for and submit the findings of a soil investigation of each lot or housing site proposed. The soil investigation shall be prepared by a state-registered civil engineer and shall recommend corrective action likely to prevent structural damage to each dwelling to be constructed. Prior to the issuance of a building permit, any recommended action approved by the Building Official shall be incorporated into the construction of each dwelling.

- **Policy 8:** A preliminary geologic report, prepared by a state-certified engineering geologist and based on adequate test borings, shall be submitted to the Building Official for every subdivision, planned development or other residential project at the time of submitting a tentative map or other type of development application to the City.

- **Policy 9:** If the preliminary geologic report indicates the presence of critically expansive soils or other soil problems (e.g., potential for liquefaction which if not corrected could lead to structural defects), the developer shall provide such additional soils investigation for each development site as may be requested by the Building Official. The geologic investigation shall be prepared by a state-certified engineering geologist and shall recommend further corrective action likely to prevent structural damage to dwelling units. Prior to the issuance of a building permit, any recommended action approved by the Building Official shall be incorporated into site preparation and the construction of each dwelling.

- **Policy 10:** The provisions of Policy Nos. 6–9 shall be applicable to all commercial, industrial, institutional and public development projects.

The Resource Management Element of the City General Plan outlines goals and policies associated with mineral resources. The following mineral resource policies could relate to the proposed project:

- **Policy 1:** Land classified by the State Department of Conservation as MRZ-2 as shown on Figure V-1 [of the General Plan] and as designated by the State Mining and Geology Board as shown on Figure V-2 [of the General Plan], are urged for protection to assure their availability for mining under applicable provisions of State law and local ordinance. If determined practical and feasible, these lands are to be mined and reclaimed in accordance with the provisions of the California Surface Mining and Reclamation Act of 1975, as amended, prior to their being utilized for the various urban purposes depicted on the General Plan Diagram and as described in this Document [City General Plan].

- **Policy 2:** While the depth of the known sand deposits of regional significance is considerable, the potential for mining to this depth is recognized only for the lands between the I-5/SR 120 merge and the Union Pacific Railroad. Lands classified MRZ-2 and designated on Stewart Tract may be mined to a much lesser depth, or not at all, because of the potential of this site location for Regional Commercial and Highway Commercial development.

- **Policy 3:** Lands classified MRZ-2 as described above shall be zoned by the City with a combining "mineral resource open space zone" to identify the presence of known mineral deposits and which may restrict the encroachment of incompatible land uses in those areas for which mineral conservation is urged. As an alternative, such restriction may be included in any Specific Plan applicable to the affected property.

- **Policy 4:** In consideration of mineral policy #2, above, lands classified MRZ-2, and designated, may be developed for urban use without first being mined only if compelling reasons can be stated by the City in writing in support of such action and upon fulfilling the requirements of Section 2562 (d) and Section 2763 (a) of the Surface Mining and Reclamation Act of 1975, as amended. Action by the City shall consider the need to balance mineral values against alternative land uses, and the importance of these mineral deposits to the regional market demand for their use. *[Note: Sections 2562(d) and 2763(a) of the State SMARA require documentation of justification for permitting uses in areas with important mineral resources that would threaten the potential to extract minerals in the area. Requirements for coordination with the State Geologist and public review are also included.]*

CITY OF LATHROP SURFACE MINING AND RECLAMATION ACT ORDINANCE

On June 16, 1998, the City adopted its own Surface Mining and Reclamation Act (SMARA) ordinance, which is modeled after the state's SMARA guidelines (see above). The City's SMARA ordinance is designed to preserve mineral resources while protecting people, property, and the environment from hazards caused by excavations.

4.7.2 EXISTING CONDITIONS

TOPOGRAPHY AND DRAINAGE

The City of Lathrop is located in the northern portion of the San Joaquin Valley, which lies between the Coast Ranges on the west and the Sierra Nevada on the east. The floor of the valley tends to be relatively flat, with elevations ranging from near sea level to a few hundred feet above sea level. The topography of the project site slopes very gently to the southwest, with elevations ranging from 12 feet above mean sea level (msl) in the eastern portion of the site near Interstate 5 (I-5) to 8 feet msl in the southwestern corner of the site, adjacent to the San Joaquin River. The San Joaquin River levee ranges in elevation from 25½ feet msl at the north end of the project site to 28 feet msl at the south end. Unlined and concrete-lined irrigation canals run north-south and east-west through the project site. Several agricultural water pumps are present within the unlined drainage system. In addition, shallow drainage swales are present on both sides of Dos Reis Road.

GEOLOGY

The project site (i.e., the CLSP area, the proposed offsite water recycling plant locations, and the proposed recycled water storage and disposal areas) is located in the Great Valley Geomorphic Province of California, a large northwest-trending valley bounded by the Sierra Nevada range to the east and south, the Coast Ranges to the west, and the Klamath Mountains to the north. The Great Valley is drained by the Sacramento and San Joaquin Rivers, which join and flow out of the province through the San Francisco Bay. This geomorphic province is an asymmetric trough approximately 400 miles long and 50 miles wide filled with a thick sequence of sediments ranging from Jurassic (180 million years ago) to recent age. The sediments in the Great Valley vary between 5 and 10 kilometers in thickness and were derived primarily from erosion of the Sierra Nevada to the east, with lesser amounts of material from the Coast Ranges to the west.

Most of the sediments in the Sacramento-San Joaquin Delta (the Delta) were deposited between 175 million and 25 million years ago and were accumulated in marine environments. Younger deposits (25 million years ago to recent) are generally described as nonmarine; however, some of the younger deposits may have formed as marine deposits in shallow seas and estuaries. The depositional history of the Delta during the late Quaternary period (the last 1 million years) probably was controlled by several cycles related to fluctuations in regional and global climate in which each cycle consisted of a period of

deposition followed by a period of nondeposition and erosion. Thus, the Delta region during the late Quaternary period had stages of wetlands and floodplain creation as tidewaters rose in the valley from the west, areas of erosion when tidewaters receded, deposition of alluvial fans that were reworked by wind to create extensive sand dunes, and alluvial fan deposition from streams emanating from the adjacent mountain ranges.

According to the Geologic Map of the Sacramento-San Joaquin Delta, Lathrop Quadrangle (Atwater 1982), the geologic formations exposed at the project site are undifferentiated Holocene (less than 10,000 years old) alluvium and the Pleistocene-age Modesto Formation. The Holocene alluvium consists of undivided floodplain deposits and is mapped as being adjacent to the San Joaquin River. This unit consists of unweathered gravel, sand, silt, and clay deposited by present-day stream and river systems. The Modesto Formation is mapped over the remainder of the site and consists of loose eolian (wind-formed) sands, loose fluvial (water-formed) sands and silts, and compacted fluvial sands and silts (ENGEO 2004).

For additional information on the geologic history of the region, see Section 4.17, Paleontological Resources.

GROUNDWATER

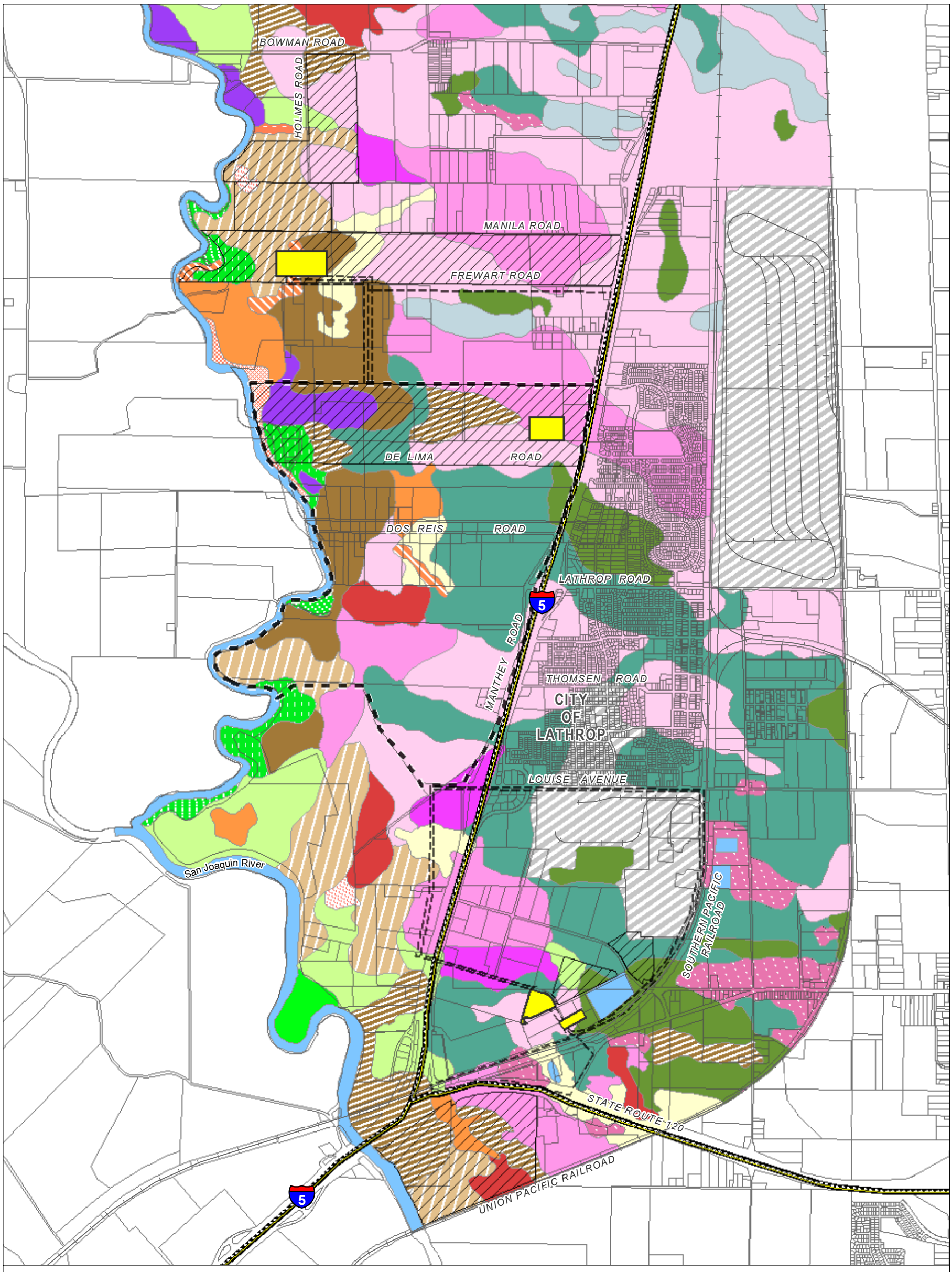
Approximately 10 groundwater monitoring wells are located in the CLSP area. On the basis of data collected from these wells, groundwater levels range between 5 and 8½ feet below the ground surface. Groundwater monitoring at the site suggests that the groundwater levels are even shallower in some places during the wet season.

SOILS

The project site soils are alluvial (deposited by water) in origin and were placed over approximately the last 1 million years (late Quaternary period) during episodes of deposition followed by periods of nondeposition and erosion. The site soils, as mapped by the U.S. Department of Agriculture (USDA) Soil Conservation Service (now the Natural Resources Conservation Service), are shown in Exhibit 4.7-1. The predominant soil types in the project area consist of silty, clayey, and clean sands; sandy silt; and sandy clay. Loose sands are present across the project site at various depths, but generally within the upper 15 feet. Table 4.7-2 presents a summary of soil types found on the project site and their characteristics. Appendix A of the Preliminary Geotechnical Report for the Central Lathrop Specific Plan (ENGEO 2004) provides information on specific soil conditions, based on the borings and excavated test pit logs for the project site.

Shrink-Swell Potential

Expansive soils shrink and swell as a result of moisture changes. Specifically, expansive soils swell when wet and shrink when dry. Soils with high clay content tend to be the most affected. The shrinking and swelling of soils can cause differential movement and settlement of structures constructed on these unless proper engineering techniques are used. Areas of potentially expansive clayey sand and clayey silt may exist throughout the project site. These soils exhibit moderate to high shrink/swell potential with variations in moisture content, as identified in Table 4.7-2.



Sources: USDA NRCS 1999, USGS 7.5' Quadrangle, Lathrop, CA, MacKay and Somps 2004

Project Soil Types

EXHIBIT 4.7-1

Central Lathrop Specific Plan EIR

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Miles

NORTH

EDAW

Table 4.7-2
CLSP Project Site – Summary of Soil Characteristics

Soil Group	Map Unit*	Texture	Shrink-Swell Potential	Wind/Water Erosion Potential
Bisgani	109	Loamy coarse sand	Low	High (wind) Low (water)
Columbia	130	Fine sandy loam	Low	Low (wind) Low (water)
Columbia	131	Fine sandy loam	Low	Low (wind) Low (water)
Dello	144	Sand	Low	High (wind) Low (water)
Dello	145	Loamy sand	Low	High (wind) Low (water)
Dello	147	Sandy loam	Low	Moderate (wind) Low (water)
Dello	148	Clay loam	Moderate / Low	Low (wind) Low (water)
Egbert	153	Silty clay loam	High	Moderate (wind) Low (water)
Grangeville	166	Fine sandy loam	Low	Low (wind) Low (water)
Grangeville	167	Clay loam	Moderate / Low	Low (wind) Low (water)
Guard	169	Clay loam	Moderate	Low (wind) Low (water)
Manteca	196	Fine sandy loam	Low	Moderate (wind) Low (water)
Merritt	197	Silty clay loam	Moderate	Low (wind) Low (water)
Scribner	243	Clay loam	Moderate	Moderate (wind) Low (water)
Timor	254	Loamy sand	Low	High (wind) Low (water)
Tinnin	255	Loamy coarse sand	Low	High (wind) Low (water)
Urban Land	260	Identification of soils is not feasible.	Not available	Not available
Valdez	261	Silt loam, organic substratum	Moderate / Low	Low (wind) Low (water)
Veritas	266	Fine sandy loam	Low	Moderate (wind) Low (water)

* Map unit numbers correlate to the numbers in the San Joaquin County Soil Survey.
Sources: U.S. Soil Conservation Service 1988; USGS 7.5' Quadrangle, Lathrop, CA

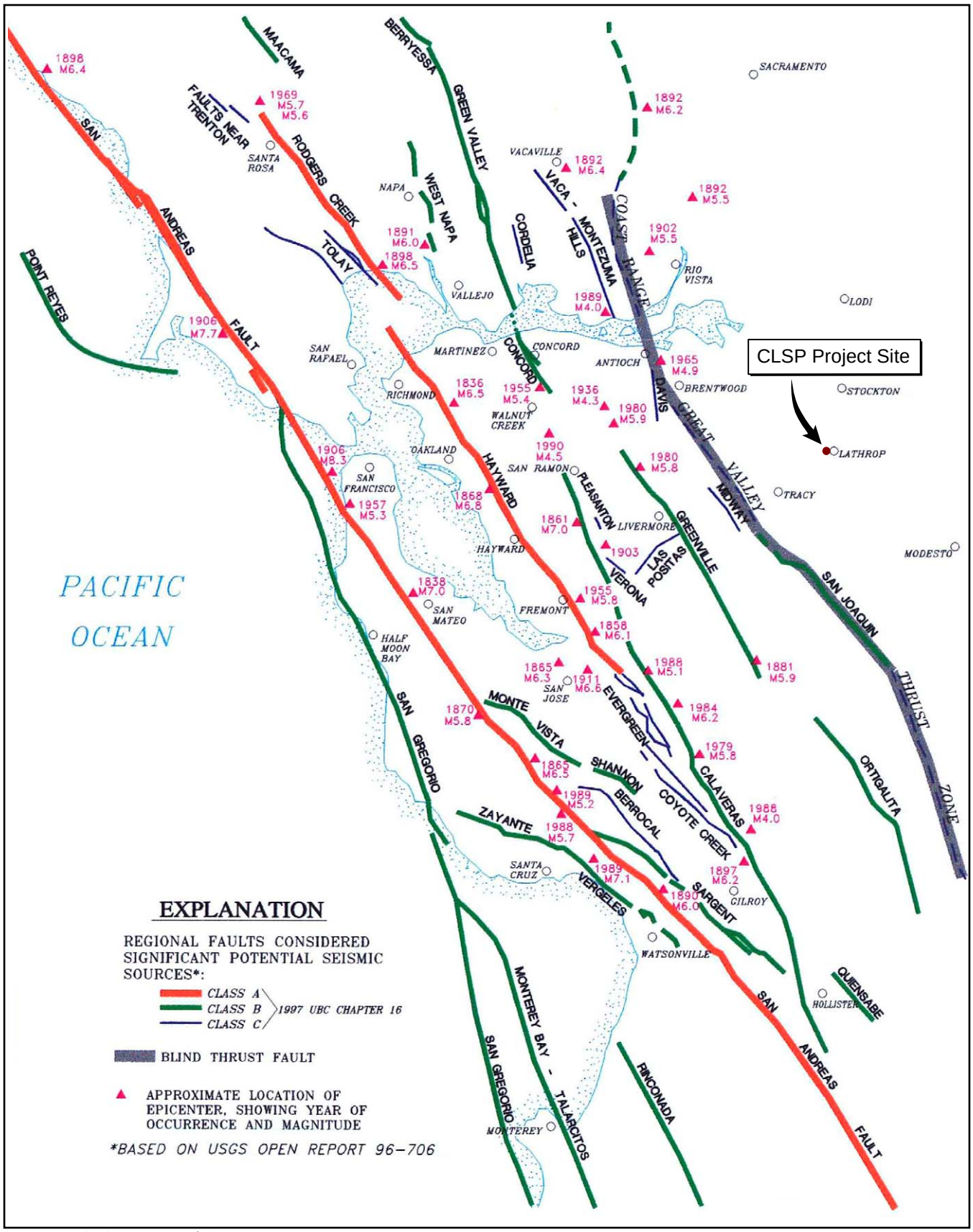
SEISMICITY

The CLSP project site is situated within a seismically active region. Potential hazards from seismic events include earthquake-induced ground shaking or rupture, subsidence, liquefaction, and tsunamis or seiches. As presented in Table 4.7-3, earthquake "magnitude" (shown using the Richter Magnitude Scale) is a measure of the total amount of energy released in an earthquake. With increasing magnitude (i.e., larger earthquakes), ground motions are stronger, last longer, and are felt over larger areas. Earthquake "intensity" is a measure of the effects of earthquake ground motions on people and buildings. Earthquake intensity is often more useful than magnitude when discussing the damaging effects of earthquakes. The most common intensity scale is the Modified Mercalli Intensity (MMI) scale, which ranges from I to XII, as shown in Table 4.7-3.

Table 4.7-3
Seismic Magnitude and Intensity

Richter Magnitude Scale	Modified Mercalli Scale	Effects of Intensity
0.1 – 0.9	I	Earthquake shaking not felt.
1.0 – 2.9	II	Shaking felt by those at rest.
3.0 – 3.9	III	Felt by most people indoors; some can estimate duration of shaking.
4.0 – 4.5	IV	Felt by most people indoors. Hanging objects rattle, wooden walls and frames creak.
4.6 – 4.9	V	Felt by everyone indoors; many estimate duration of shaking. Standing autos rock. Crockery clashes, dishes rattle, and glasses clink. Doors open, close and swing.
5.0 – 5.5	VI	Felt by all who estimate duration of shaking and direction. Sleepers awaken, liquids spill, objects displaced, weak materials crack.
5.6 – 6.4	VII	People frightened and wall unsteady. Pictures and books thrown, dishes/glass are broken. Weak chimneys break. Plaster, loose bricks and parapets fall.
6.5 – 6.9	VIII	Difficult to stand, waves on ponds, cohesionless soils slump. Stucco and masonry walls fall. Chimneys, stacks, towers and elevated tanks twist and fall.
7.0 – 7.4	IX	General fright as people thrown down. Hard to drive, trees broken, damage to foundations and frames. Reservoirs damaged. Underground pipeline broken.
7.5 – 7.9	X	General panic, ground cracks, masonry and frame buildings destroyed. Bridges destroyed, dams, dikes and embankments damaged. Railroads bent slightly.
8.0 – 8.4	XI	Large landslides, water thrown, general destruction of buildings, pipelines destroyed, railroads bent.
8.5+	XII	Total nearby damage, rock masses displaced. Lines of sight/level distorted. Objects thrown into air.

According to the parameters of the 1997 Uniform Building Code, the CLSP project site is in Earthquake Zone 3 (ENGEO 2004). Zone 3 applies to areas that can be expected to experience an earthquake with an intensity rating of VIII or greater on the MMI scale. No active faults are mapped across the project site, or within San Joaquin County, by the California Geological Survey (CGS) or USGS, and the CGS does not list Lathrop as an area included in the Alquist Priolo earthquake hazard zones. The location of the site relative to regional faults is shown in Exhibit 4.7-2.



Source: ENGEO Incorporated 2002

Regional Fault Lines

EXHIBIT 4.7-2

Central Lathrop Specific Plan EIR
City of Lathrop
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The 1998 California Building Code categorizes faults based on seismic source descriptions as presented in Table 4.7-4. Type A faults are those that are capable of producing large-magnitude events and have a high rate of seismic activity. Type C faults are those not capable of producing large-magnitude earthquakes and that have a relatively low rate of seismic activity. Type B faults are all faults not classified as Types A and C.

Table 4.7-4
1998 California Building Code - Seismic Source Type

Seismic Source Type	Seismic Source Description	Seismic Source Definition	
		Maximum Moment Magnitude, M	Slip Rate (mm/year)
A	Faults that are capable of producing large-magnitude events that have a high rate of seismic activity	$M \geq 7.0$	$SR \geq 5$
B	All faults other than Types A and C	$M \geq 7.0$ $M < 7.0$ $M \geq 6.5$	$SR < 5$ $SR > 2$ $SR < 2$
C	Faults that are not capable of producing large-magnitude earthquakes and that have a relatively low rate of seismic activity	$M < 6.5$	$SR \leq 2$

Source: 1998 California Building Code

The nearest known surface trace of a fault designated as active by the CGS is the Type B Greenville fault, approximately 23 miles west of the project site. The next substantial fault zone designated active by the CGS is the Type B Calaveras fault, approximately 33 miles west of the site. The closest traces of Type A faults are the San Andreas fault, approximately 58 miles to the west of the site, and the Hayward fault, approximately 61 miles to the southwest of the site.

Recent geologic studies have indicated that a tectonic boundary exists along the western margin of the San Joaquin Valley of California, referred to as the Great Valley Fault System (Type B). The 6.7 (Richter scale magnitude) Coalinga earthquake in 1983 and a >6.0 (Richter scale magnitude) earthquake in 1892 near Vacaville and Winters occurred on segments of the Great Valley Fault System. Because of this relatively recent (in geologic terms) earthquake activity, this zone is considered seismically active. These earthquakes probably were caused by blind thrust faults, which do not intersect the ground surface; therefore, no known surface fault rupture has been observed as a result of these earthquakes.

The location and nature of the Great Valley fault system and associated blind thrust faults are not well known. Based on preliminary segmentation of the Great Valley fault system, a 30-kilometer-long segment with a characteristic earthquake magnitude of 6.7 (Richter scale) is indicated approximately 13 miles west of the CLSP project site. The recurrence intervals for the average Great Valley fault segments, as estimated from historical seismicity, are 360-440 years. However, the Great Valley fault is not accounted for in the 1997 report titled *Determining Distances from Faults within and Bordering the State of California for the 1997 Uniform Building Code*, which was jointly published by the CGS and the International Conference of Building Officials.

The preliminary geotechnical report prepared by ENGEO (2004) for the proposed project predicts that a horizontal ground surface acceleration of 0.3 gravity (g) (equivalent to ±30% of the earth's normal gravitational strength) would have a 10% probability of being exceeded in a 50-year design life. This prediction is considered to be highly conservative; the seismic history of the project site reflects a much

lower likelihood of an event of this magnitude. The maximum ground surface acceleration previously recorded in the project area was estimated to be 0.16g, which occurred during the 1906 San Francisco earthquake. Damage to a single-family dwelling typically begins at 0.2g (Risk Prediction Initiative 1996).

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. Because there are no known active faults crossing the CLSP project site and because the site is not located in an Alquist-Priolo Special Study Zone, fault ground rupture is unlikely. The common secondary seismic hazards include ground shaking, ground lurching, soil liquefaction, and lateral spreading. These potential hazards are discussed in the following sections.

Ground Shaking

Ground shaking is a complex concept related to velocity, amplitude, and duration of earthquake vibrations. The active faults in the San Francisco Bay Area and the potentially active faults on the margins of the San Joaquin Valley could generate earthquakes producing strong ground shaking. Intensity of ground shaking is related to the size of an earthquake, the distance from the epicenter, and the response of the geologic materials at the site. Ground shaking can be described in terms of peak acceleration (movement) of the ground. The mean peak horizontal ground acceleration for the project site, calculated using a probabilistic approach, was determined to be 0.3g with a 10% probability of exceedance in a 50-year design life (ENGEO 2004).

Ground Lurching

Ground lurching occurs as a result of the rolling motion imparted to the ground surface during an earthquake. The deformation of the ground surface by such rolling motion can cause ground cracks to form. The potential for the formation of these cracks is considered greater at contacts between materials with substantially different properties, such as deep, soft soil and bedrock. Such an occurrence is possible at the project site, but as with other locations in the San Joaquin Valley, the probability is low.

Soil 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 fluids. Primary factors in 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. Age also is a factor in the potential of soils to liquefy, with the younger (less than 10,000 years old) Holocene deposits being the most sensitive to liquefaction. The stability of most clayey silts, silty clays, and clays deposited in freshwater environments is not normally adversely affected by vibratory motion.

One consequence that may result from the occurrence of liquefaction is an associated surface expression. If the seismic event occurs over an extended duration, the liquefied soils may migrate toward the surface, resulting in an ejection and subsequent sand boiling at the surface. If not mitigated, this phenomenon of surface expression can result in ground settlement and heave.

The proposed project site has relatively high groundwater. In general, the groundwater table ranges from 5 to 8½ feet below the ground surface. In addition, the project site contains areas of loose to dense silty, clayey, and clean sand. The liquefaction potential of these sand strata were evaluated using an earthquake magnitude of 6.7 (Richter scale) and a peak horizontal ground acceleration of 0.3 g. The preliminary analysis suggests that liquefaction-induced ground settlements on the order of 2–4 inches could occur at the site. Therefore, it may be expected that localized areas at the CLSP project site may be susceptible to

the effects of liquefaction and subsequent settlement, should a seismic event with sufficient ground motion occur during the expected life of the proposed project.

Lateral Spreading and Landsliding

Lateral spreading (lurching) occurs when soils liquefy (see description above) and the overlying soils move horizontally or down a gentle slope. Because the topography at the site is relatively flat, the potential for lateral spreading is generally considered low.

Although the project area is relatively flat, slope stability problems could arise along the levee separating much of the project site from the San Joaquin River. However, this levee was constructed in the late 1980s and has since been enlarged and reconstructed, and later provided landslide toe berms and seepage berms after the 1997 flood event (McKay & Somps 2002). This levee was constructed using modern techniques and to date has shown no evidence of susceptibility to lateral spreading or landslide.

MINERAL RESOURCES

The lands within the CLSP project site are classified by CDMG as MRZ-1, MRZ-2, and MRZ-3 (Exhibit 4.7-3). The MRZ-2 classification at the southernmost potential recycled water storage and disposal site indicates that the area does contain, or is likely to contain, significant mineral deposits. The MRZ-2 classification is based on the presence of sand deposits (used in the making of high-quality Portland cement concrete), which the City General Plan identifies as a mineral resource that should be extracted prior to urban development unless sufficient justification is provided to permit a use that would threaten the potential to extract minerals in the area. In addition, a portion of another potential recycled water storage and disposal site is within an area classified as MRZ-3, indicating that the area contains mineral deposits; however, the significance of the deposits is unknown based on existing data.

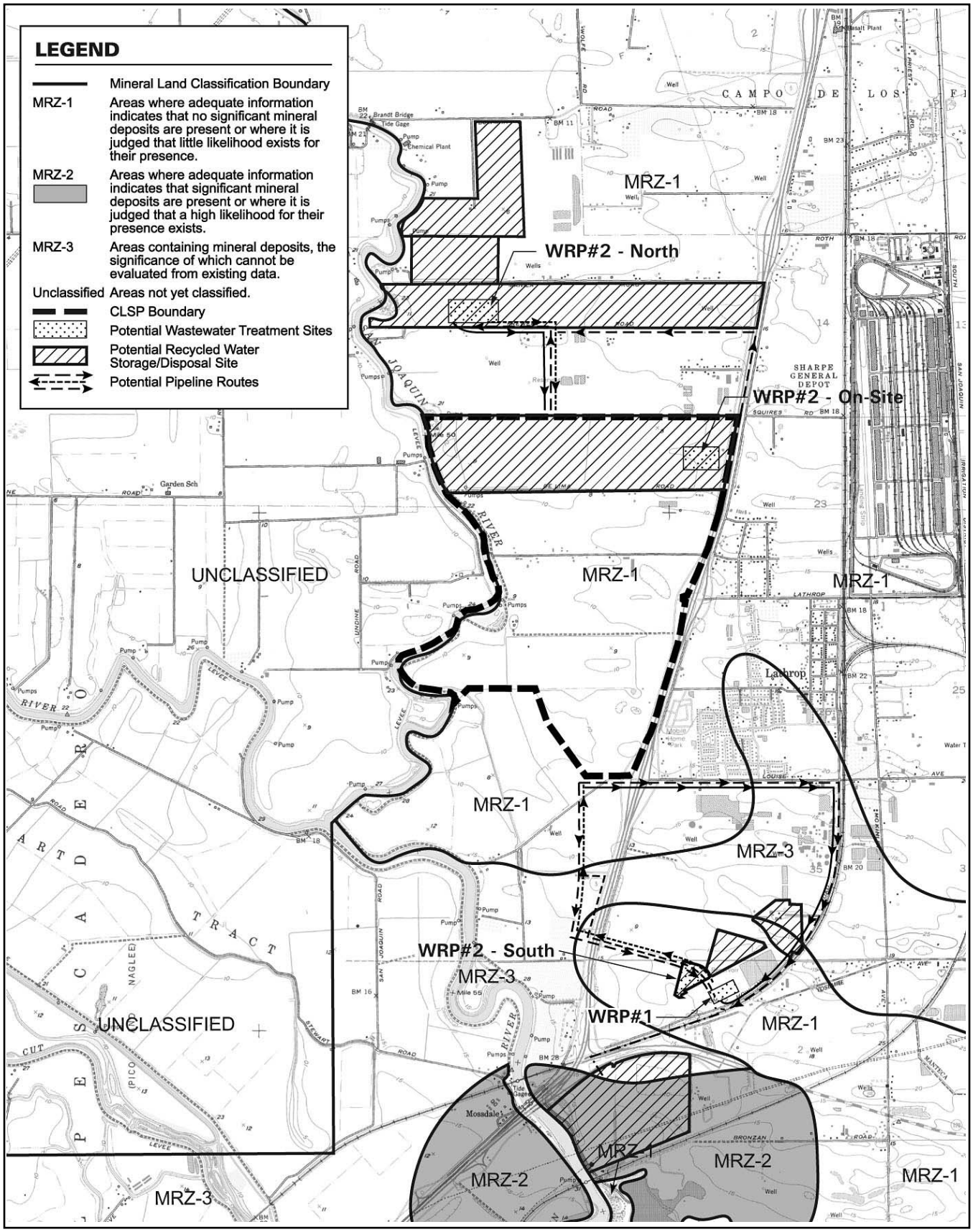
4.7.3 ENVIRONMENTAL IMPACTS

ANALYSIS METHODOLOGY

The examination of geology, soils, and mineral resources is based on information obtained from reviews of:

- plans for the proposed project;
- available literature, including documents published by the City, County, state and federal agencies, and texts dealing with geotechnical conditions in the San Joaquin Valley area;
- review of applicable elements from the County and City General Plans and the Central Lathrop Specific Plan; and
- the preliminary geotechnical report prepared for the CLSP project by ENGEO (2004).

The preliminary geotechnical report focused on the Phase 1 portion of the CLSP area. However, because geologic, topographic, and seismic conditions are relatively consistent across the proposed project site, the report provides sufficient information to support a project-level analysis across the entire CLSP area. In addition, because recycled water disposal would be a continuation of existing agricultural uses, detailed geotechnical data are not needed for the impact analysis of the recycled water disposal areas.



Source: City of Lathrop 1991;
Base Map Source: Lathrop Quad, 1952 (photorevised 1987 – minor revisions 1994), Union Island Quad, 1978

Mineral Land Classifications

EXHIBIT 4.7-3

Central Lathrop Specific Plan EIR
City of Lathrop
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NORTH

EDAW

THRESHOLDS OF SIGNIFICANCE

The CLSP project would cause a significant impact on earth resources if it 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, 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 onsite or offsite 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;
- result in the loss of availability of known mineral resources that would be of value to the region and the residents of the state;
- result in the loss of availability of a locally important mineral resources recovery site delineated on the general plan; or
- have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water.

IMPACT ANALYSIS

The CLSP project would have no impact associated with the following issues, and no further analysis of these topics is necessary:

- There are no known active faults crossing the CLSP site and the site is not located in an Alquist-Priolo Special Study Zone; therefore, fault ground rupture is unlikely.
- Based on topographic and soil data, the risk of landslides is considered negligible for the project site.
- The potential for tsunamis at the proposed project site is considered negligible because of the distance from the San Francisco Bay and the Pacific Ocean.
- The potential for damaging seiches is considered very low to negligible because of the absence of a deep, large open body of water adjacent to or in the project site.
- All CLSP development would be connected to and served by the City's municipal sewer system and no septic tanks would be utilized.
- Recycled water disposal activities are considered to have little to no potential to result in impacts related to geology and soils because they are considered a continuation of existing irrigated agricultural uses.

Impact 4.7-a

Geology, Soils, and Mineral Resources – Soil Erosion. *Construction activities during project implementation would involve excavations, fills, and movement and stockpiling of earth, which could expose soils to erosion and the loss of topsoil. Levees along the western side of the CLSP area would provide a barrier to sediment entering the San Joaquin River, and erosion control measures (such as practices to control spillage or leaks, control site runoff, and control drainage from raw material storage) would be implemented as part of the project. This impact is considered* ***less than significant****.*

Construction activities during project implementation would involve substantial excavating, moving, and temporary stockpiling of soil in the project site. Phase 1 would involve grading and the disturbance of soils over an approximately 943-acre area during the anticipated 5-year construction period (2005–2010). Phase 2, which covers 578 acres, would involve similar types of soil disturbance spread over an anticipated 10-year buildout period. In addition, approximately 98 acres outside the CLSP area would be disturbed if recycled water storage ponds are constructed, and 7 acres outside the CLSP area would be disturbed for construction of WRP #2 if one of the WRP #2 North or South options is selected.

The extensive earthwork activities could expose soils to erosion during both project phases. However, topography at the CLSP project site is flat, which minimizes the potential for water erosion, and the soils of the project site have a low risk of water erosion (Table 4.7-2). In addition, the levees at the western boundary of the project site along the San Joaquin River act as a barrier to minimize sediments being moved from the CLSP area to the San Joaquin River. Nonetheless, sediments entering the drainages on site could be pumped into the San Joaquin River and the project site soils are at variable risk for wind erosion. However, construction contractors would be required by the City as a condition of future project approval, to comply with Storm Water Pollution Prevention Plan (SWPPP) as part of the project design and implement best management practices (BMPs) included in the SWPPP to minimize potential erosion. BMPs are activities or structural improvements that help reduce the quantity and improve the quality of stormwater runoff. BMPs include practices to control spillage or leaks, site runoff, and drainage from raw material storage.

Given the sediment-containment function provided by the levees along the western boundary of the project site and the required implementation of erosion control measures and BMPs included in SWPPPs, substantial amounts of soil erosion are not expected to occur. Therefore, erosion impacts relative to geology and soils are considered less than significant. Potential impacts of erosion on other resources, such as fisheries and water quality, are evaluated separately in the corresponding sections of this document.

Impact 4.7-b

Geology, Soils, and Mineral Resources – Seismic Hazards (Ground Shaking). *Ground shaking on the project site could expose people or structures to substantial risk of loss, injury, or death. This impact is considered* ***significant****.*

Seismic activity in the nine-county San Francisco Bay Area (San Andreas, Hayward, and Calaveras faults) and the Great Valley Fault System could generate strong ground shaking on the project site. Because of this potential fault activity, ground shaking is a hazard for facilities in the San Joaquin Valley. Intensity of the ground shaking would depend on the magnitude of the earthquake, the distance from the epicenter, and the duration of shaking. The damage sustained and the degree of hazard depend on the seismic hazards of each specific site, the type of structure and its building materials, and construction quality. The proposed project involves the development of residential, commercial, and public uses, as well as associated utility improvements. The proposed development would be anticipated to experience at least one major

earthquake during the operational lifetime of the project. Although the project area would not likely experience a fault rupture, ground shaking could cause structural damage to levees, buildings, pipelines, recycled water storage ponds, and other permanent developments proposed as part of the project.

Potential damage to recycled water storage ponds caused by seismic activity could result in a secondary hazard of localized flooding. The storage ponds may be more than an acre in area and may hold up to 10 feet of water. In the event of a failure of a recycled water storage pond due to ground shaking, more than 10 acre-feet of water could be rapidly released.

The proposed project development would be required to comply with the provisions of the national and California UBCs (collectively referred to as UBC). Seismic design provisions of current building codes generally prescribe minimum lateral forces, applied statically to the structure and combined with the gravity forces of dead-and-live loads. The UBC-prescribed lateral forces generally are substantially smaller than the expected peak forces that would be associated with a major earthquake. Therefore, when built according to UBC standards, structures are anticipated to:

- resist minor earthquakes without damage,
- resist moderate earthquakes without structural damage but with some nonstructural damage, and
- resist major earthquakes without collapse but with some structural as well as nonstructural damage.

Conformance to the current building code standards does not constitute any kind of guarantee that significant structural damage would not occur in the event of a maximum magnitude earthquake; however, it is reasonable to expect that a well-designed and well-constructed structure would not collapse or cause loss of life in a major earthquake.

At this time, the UBC requirements (based on the probabilistic seismic event) are considered the design minimum. As mentioned above, the Great Valley fault is not accounted for in the 1997 report *Determining Distances from Faults within and Bordering the State of California for the 1997 Uniform Building Code*. Because of the relatively close presence of the Great Valley fault, it is conceivable that the site may experience ground shaking more severe than the UBC-specified ground shaking (produced by the more distant Greenville fault), but the probability of occurrence is lower. In the event of a moderate to major seismic event along the Great Valley fault, ground shaking could result in lateral forces exceeding the capabilities of structures built to minimum UBC design standards. Severe structural and nonstructural damage and associated hazards resulting from such a seismic event is considered a significant impact.

Impact 4.7-c

Geology, Soils, and Mineral Resources – Seismic Hazards (Liquefaction).
Earthquake-induced liquefaction at the project site could result in substantial risk of structural damage and could expose residents, workers, and visitors on the project site to substantial risk of bodily injury. This impact is considered ***significant****.*

Soil liquefaction results from loss of strength during cyclic loading, such as is imposed by earthquakes. Soils most susceptible to liquefaction are clean, loose, saturated, uniformly graded fine sands below the groundwater table. According to the 1997 UBC, the CLSP site is located in Seismic Zone 3. The preliminary liquefaction analysis (ENGEO 2004) suggests that the project site has some areas of saturated, sandy soil layers that could liquefy when subjected to an earthquake with 0.3g horizontal ground motion as predicted by the 10% probability of exceedance in 50 years. The predominant liquefaction potential was observed in the upper 5–15 feet below the ground surface. Substantial liquefaction potential was not identified below 15 feet.

The project site has relatively high groundwater and areas of potentially liquefiable sands. According to the geotechnical analysis, liquefaction-induced ground settlement may be approximately 2–4 inches as a result of a 0.3g earthquake event (ENGEO 2004). Given the soil and groundwater conditions at the project site, liquefaction of soils during a seismic event could result in structural failures of buildings or other facilities. Therefore, this impact is considered significant.

Impact 4.7-d

Geology, Soils, and Mineral Resources – Expansive Soil (Shrink-Swell Potential). *The shrinking and swelling of soils could result in damage to structures, underground utilities, and other facilities on the project site during the operation of proposed development. This impact is considered* ***significant****.*

Expansive soils shrink and swell as a result of moisture changes. These volume changes can result in damage over time to building foundations, underground utilities, and other subsurface facilities if they are not designed and constructed appropriately to resist the changing soil conditions. Volume changes of expansive soils can also result in the consolidation of soft clays following the lowering of the water table or the placement of fill. This phenomenon, known as shallow ground subsidence, is widespread throughout the Delta.

Soil samples from the project site consisting of clayey silt and sandy clay had plasticity indexes of 9 and 23, suggesting low and moderate expansion potential (ENGEO 2004). Several soil types occurring at the project site are considered to have moderate or high shrink-swell potential (Table 4.7-2). Expansive soil can cause damage to foundations, floor slabs, pavements, sidewalks, and other improvements that are sensitive to soil movements. Therefore, this impact is considered significant.

Impact 4.7-e

Geology, Soils, and Mineral Resources – Mineral Resources. *The development of recycled water storage and disposal sites for the project on land classified MRZ-2 or MRZ-3 could result in the loss of access to potentially important sand deposits classified by the CDMG. This impact is considered* ***significant****.*

The majority of the project site, including the entire CLSP area and northern recycled water storage and disposal sites, are located within lands classified as MRZ-1 (areas where no mineral deposits are present or are unlikely). The southernmost potential recycled water storage/disposal site is located within an area classified as MRZ-2, as shown in Exhibit 4.7-3. MRZ-2 lands within the City contain important deposits of sand used in making high-quality Portland cement concrete. The City General Plan identifies that this mineral resource should be extracted prior to urban development unless sufficient justification is provided to permit a use that would threaten the potential to extract minerals from the area. In addition, a portion of another potential recycled water storage/disposal site is within an area classified as MRZ-3, which indicates that the area contains mineral deposits; however, the significance of the deposits is unknown based on existing data. The City General Plan has no policies or guidance related to MRZ-3–classified areas.

The proposed project could result in the development of recycled water storage and disposal facilities on lands classified as MRZ-2 and MRZ-3. This development could impede extraction or result in the loss of availability of a known mineral resource. Therefore, this impact is considered significant.

4.7.4 MITIGATION MEASURES

No mitigation measures are necessary for the following less-than-significant impact:

- 4.7-a Soil Erosion

The following mitigation measures are provided for significant impacts:

4.7-b Ground Shaking. Project facilities shall be designed for maximum horizontal ground surface accelerations of at least 0.3g. Geotechnical reports completed by ENGEO in 2004 for the proposed project predict that a horizontal ground surface acceleration of 0.3g at the CLSP site would have a 10% probability of being exceeded in a 50-year project design life. This estimate incorporates the possibility of a seismic event associated with the Great Valley Fault System. A surface acceleration of 0.3g exceeds the maximum ground surface accelerations previously recorded in the area (estimated at 0.16g), which occurred during the 1906 San Francisco earthquake. If project facilities are designed to meet minimum safety standards during a seismic event with ground surface accelerations of at least 0.3g, the risk of loss, injury, or death from ground shaking would be substantially reduced.

Implementation of Mitigation Measure 4.7-b would reduce the potential impact associated with ground shaking to a less-than-significant level.

4.7-c Liquefaction. A site-specific, design-level geotechnical study shall be completed for each project development component (e.g., housing area, commercial area, school, water recycling plant, group of recycled water storage ponds) before a grading permit is issued. The study shall include an evaluation of liquefaction potential in the area and identify appropriate means to minimize or avoid damage from liquefaction. Geotechnical design recommendations included in each study shall be implemented during project construction. Potential recommendations include over-excavating and recompacting the area with engineered fill or in-place soil densification. In-place densification measures may include deep dynamic compaction, compaction grouting, vibro-compaction, and the use of nonliquefiable caps. Special design features may need to be utilized for foundations (such as post-tensioned mat foundations for residential structures and stiffening grade beams and reinforced slabs-on-grade). However, other foundation types may be considered if further geotechnical study shows the liquefaction potential to be less than significant or if the effects of liquefaction-induced settlement can be mitigated with earthwork.

Implementation of Mitigation Measure 4.7-c would reduce the potential impact associated with liquefaction to a less-than-significant level.

4.7-d Shrink-Swell Potential. A site-specific, design-level geotechnical study shall be completed for each project development component (e.g., housing area, commercial area, school, water recycling plant, group of recycled water storage ponds) before a grading permit is issued. The study shall include an evaluation of expansive soils in the area and identify appropriate means to address these soils and minimize or avoid damage from shrinking and swelling consistent with UBC standards. Methods to address expansive soils include regrading with appropriate soils and adding special design features to foundations and other underground facilities. Measures included in each geotechnical study shall be implemented as appropriate, based on the specific soil conditions and the type of facility being constructed.

Implementation of Mitigation Measure 4.7-d would reduce the impact associated with shrink-swell potential to a less-than-significant level.

4.7-e Mineral Resources. The City shall allow recycled water storage and disposal within the project site in areas classified as MRZ-2 or MRZ-3 only with the condition that the City may later approve mineral extraction activities in these areas, as long as equal replacement recycled water storage and disposal capacity is provided elsewhere. Replacement recycled water storage and disposal capacity may be provided by the City, the entity performing the mineral extraction, or others, and must be in place prior to initiating mineral extraction activities in the area in question.

Implementation of Mitigation Measure 4.7-e would reduce the impact associated with mineral resources to a less-than-significant level.

4.7.5 RESIDUAL SIGNIFICANT IMPACTS

No residual significant impacts on geology, soils, or mineral resources would occur with implementation of the recommended mitigation measures.

4.8 Hydrology and Water Quality

4.8 HYDROLOGY AND WATER QUALITY

This section analyzes hydrology and water quality in the Central Lathrop Specific Plan (CLSP) area and the adjacent portion of the San Joaquin River (SJR). This evaluation uses existing information from previously completed documents that address water resources in the project vicinity, including (1) Environmental Impact Report for the Lathrop Water, Wastewater, and Recycled Water Master Plan (EDAW 2001); (2) Environmental Impact Report for the Mossdale Landing Urban Design Concept (EDAW 2002a), and (3) Environmental Impact Report for the River Islands at Lathrop Project (EDAW 2002b).

In addition, the following site-specific, water-related technical analyses were developed for this project and are included in the appendices to this draft environmental impact report (DEIR):

- Appendix G, *Water Quality Analysis Report for Central Lathrop Specific Plan* (ECORP Consulting Inc. 2004); and
- Appendix H, *Project Area Drainage Plan for Central Lathrop* (MacKay & Somps 2004).

4.8.1 REGULATORY BACKGROUND

HYDROLOGY

Federal Emergency Management Agency

The Federal Emergency Management Agency (FEMA) administers the National Flood Insurance Program (NFIP) to provide subsidized flood insurance to communities that comply with FEMA regulations limiting development in floodplains. FEMA also issues Flood Insurance Rate Maps (FIRMs) that identify which land areas are subject to flooding. These maps provide flood information and identify flood hazard zones in the community. The design standard for flood protection is established by FEMA, with the minimum level of flood protection for new development determined to be the 1-in-100 annual exceedence probability (AEP) (i.e., the 100-year flood event). Specifically, where levees provide flood protection, the levee crown is required by FEMA to have 3 feet of freeboard above the 1-in-100-AEP water surface elevation, except in the vicinity of a structure such as a bridge, where the levee crown must have 4 feet of freeboard for a distance of 100 feet upstream and downstream from the structure.

U.S. Army Corps of Engineers Sacramento and San Joaquin River Basins Comprehensive Study

The Sacramento and San Joaquin River Basins Comprehensive Study is a joint effort by the State Reclamation Board and the U.S. Army Corps of Engineers (USACE), in coordination with federal, state, and local agencies, groups, and organizations in California's Central Valley, to develop a comprehensive plan for flood damage reduction and environmental restoration for the Sacramento and SJR basins. The comprehensive study is more a regionwide planning effort than a regulatory program; however, consistency with its goals and objectives is important for any project affecting flood control in the Sacramento-SJR basins. The proposed CLSP project is in the Lower SJR Region of the comprehensive study area.

State Reclamation Board

The State Reclamation Board also has jurisdiction over flood control in California. It is responsible for ensuring the serviceability of levees and requires permits for any activity that may affect the capacity of

the flood control system. Reclamation District No. 17 (RD 17) is the local agency responsible for maintaining levees adjacent to the SJR in the CLSP area. RD 17 guidelines include the following:

- a setback from the toe of the levee of 60 feet;
- a maximum size of storm drain pipes over or through the levee of 30 inches;
- restriction of levee excavation to portions of levee above the designated flood stage elevation (i.e., elevation 21);
- a preference for outfall pipes that go up and over the levee (through the top 3 feet), rather than through it;
- requirement that detention basins be located no nearer than 200 feet from the toe of the levee; and
- requirement that drainage plans design to provide for a reduction of peak flow to the river (MacKay & Somps 2004).

San Joaquin County General Plan 2010

The San Joaquin County General Plan 2010 (County General Plan) includes policies, in the Public Health and Safety Element under Flood Hazards, Objective 1 and associated policies, to protect people and property from flood hazards. Specifically, the County General Plan states that new industrial development shall be required to have protection from a 100-year flood through the implementation of flood hazard identification and flood control structures (County of San Joaquin 1992).

City of Lathrop General Plan and Drainage Standards

The City of Lathrop General Plan (City General Plan) has a policy that requires all new development to provide drainage plans that do not adversely affect adjacent properties and that allow all properties within a given watershed an appropriate means of discharging surface runoff. The storm drainage design standards for both the City and the County require that a drainage report be prepared for all subdivisions greater than 25 acres in size. The report must include maps showing drainage basins relative to the project, and subbasins within the project, with catch basin and inlet locations and calculations of design runoff before and after subdivision development. Hydraulic calculations for depth of flow and quantity of runoff, pipe sizing, pump stations, and detention/retention basins must be included in the drainage report. All urban development within the City is required to be protected from flooding.

Drainage requirements and design standards for drainage facilities are identified in the City's Design and Construction Standards (City of Lathrop 2001). These standards and additional design and operational requirements for drainage facilities are identified in the Project Area Drainage Plan for Central Lathrop (MacKay & Somps 2004). Among the relevant requirements are the following:

- detention basins and pump stations shall be designed to accommodate 48-hour, 100-year storm flows;
- terminal retention to store runoff on a temporary basis is permitted;
- pump stations shall be designed with backup pumps and generators;
- mains and trunk lines shall be 15 inches or larger in diameter;

- surface detention basins shall have a minimum 1 foot of freeboard or be oversized by 25%;
- minimum separation distance between the bottom of detention basins and the high groundwater level shall be two feet unless an impermeable liner is provided;
- surface detention basins shall be located a minimum of 200 feet from the toe of the SJR levee;
- surface detention basins should accommodate multiple passive and/or active recreational activities, when possible; and
- underground detention may be necessary in lieu of more traditional surface basins due to high groundwater conditions.

Groundwater Hydrology

California groundwater law is extremely complicated because of the variety of groundwater rights recognized in the state. Groundwater is classified as either a subterranean stream or percolating groundwater. A subterranean stream exists when the flow of groundwater is confined to a known and defined subsurface channel. Groundwater not flowing as a subterranean stream is classified as percolating groundwater. Subterranean streams are subject to surface water law, which recognizes riparian and appropriative rights, and are regulated by the State Water Resources Control Board (SWRCB). Percolating groundwater is subject to general court-enforced principles of groundwater law, which recognizes overlying and appropriative rights. This latter category of groundwater can be regulated by ordinances adopted at the local level but is generally not subject to SWRCB regulation or oversight. There are no groundwater quality requirements in the City General Plan or the Lathrop Water, Wastewater, and Recycled Water Master Plan (Water Master Plan) that are applicable to the proposed project.

WATER QUALITY

Federal Clean Water Act

The U.S. Environmental Protection Agency (EPA) is the lead federal agency responsible for water quality management. The Clean Water Act of 1972 (CWA) is the primary federal law that governs and authorizes water quality control activities by the EPA as well as the states. Various elements of the CWA address water quality. These are discussed below. Wetland protection elements administered by the USACE under Section 404 of the CWA, including permits to dredge or fill wetlands, are discussed in Section 4.14, Terrestrial Biology.

Water Quality Criteria and Standards

Under federal law, the EPA has published water quality regulations under Volume 40 of the Code of Federal Regulations (40 CFR). Section 303 of the CWA requires states to adopt water quality standards for all surface waters of the United States. 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. Section 304(a) requires the EPA to publish advisory water quality criteria that accurately reflect the latest scientific knowledge on the kind and extent of all effects on health and welfare that may be expected from the presence of pollutants in water. Where multiple uses exist, water quality standards must protect the most sensitive use. In California, the EPA has designated the SWRCB and its nine regional water quality control boards (RWQCBs) with authority to identify beneficial uses and adopt applicable water quality objectives.

National Pollutant Discharge Elimination System Permit Program

The National Pollutant Discharge Elimination System (NPDES) permit program was established in the CWA to regulate municipal and industrial discharges to surface waters of the United States. 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.

More specifically, the discharge prohibitions and limitations in an NPDES permit for wastewater treatment plants are designed to ensure the maintenance of public health and safety, protection of receiving water resources, and safeguarding of the designated beneficial uses. Discharge limitations typically define allowable effluent quantities for flow, biochemical oxygen demand (BOD), total suspended matter, residual chlorine, settleable matter, total coliform, oil and grease, pH, and toxic pollutants. Limitations also typically encompass narrative requirements regarding mineralization and toxicity to aquatic life.

In November 1990, the 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 between 1 and 5 acres. Phase 2 of the municipal permit system (known as the NPDES General Permit for Small MS4s) required small municipal areas of less than 100,000 persons to develop stormwater management programs. The RWQCBs in California are responsible for implementing the NPDES permit system (see additional information 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 United States) 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 and water quality and national water resources. The federal policy directs states to adopt a statewide policy that includes the following primary provisions:

(1) existing in-stream uses and the water quality necessary to protect those uses shall be maintained and protected;

(2) 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; and

(3) 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.

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 can also act as a plan to reduce loading of a specific pollutant from various sources to achieve 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 the linkage 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 Laws and Regulations

In California, the SWRCB has broad authority over water quality control issues for the state. The SWRCB is responsible for developing statewide water quality policy and exercises the powers delegated to the state by the federal government under the CWA. Other state agencies with jurisdiction over water quality regulation in California include the California Department of Health Services (DHS) (for drinking water regulations), the California Department of Pesticide Regulation, the California Department of Fish and Game (CDFG), and the Office of Environmental Health and Hazard Assessment.

Regional authority for planning, permitting, and enforcement is delegated to the nine RWQCBs. The regional boards are required to formulate and adopt water quality control plans for all areas in the region and establish water quality objectives in the plans. The Central Valley RWQCB is responsible for the SJR and the Sacramento-San Joaquin Delta (Delta).

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act (Porter-Cologne Act) of 1969 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 water quality control plans (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 (RWD) 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 RWD/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.

Water Quality Control Plan for the Sacramento-San Joaquin River Basins

The Water Quality Control Plan for the Sacramento-San Joaquin River Basins (Basin Plan), adopted by the Central Valley RWQCB in 1998, identifies the beneficial uses of water bodies and provides water quality objectives and standards for waters of the Sacramento River and SJR basins, including the Delta. State and federal laws mandate the protection of designated "beneficial uses" of water bodies. State law defines beneficial uses as "domestic; municipal; agricultural and industrial supply; power generation; recreation; aesthetic enjoyment; navigation; and preservation and enhancement of fish, wildlife, and other aquatic resources or preserves" (Water Code Section 13050[f]). Additional protected beneficial uses of the SJR include groundwater recharge and fresh water replenishment. Major issues and the general conditions of existing beneficial uses in the SJR are as follows:

- **Water Supply:** The SJR is not currently a source of municipal water supply for the City of Lathrop and is not identified as a source for the proposed CLSP project, although some farms in the area use the river as a source of water for irrigation. The City currently uses groundwater only and plans to obtain municipal water supplies to serve future growth through a combination of additional groundwater and surface water from the South San Joaquin Irrigation District (SSJID) South County Surface Water Supply Project (SCSWSP), which does not rely on the SJR.

- **Agricultural Supply:** Extensive use is made of SJR and Delta waters for agricultural purposes. Annual water diversions from the Delta by the State Water Project (SWP) and the Central Valley Project (CVP) for agriculture are estimated to reach 4.3 million acre-feet (MAF) per year by 2030. In addition, about 2,000 privately owned agricultural water supply diversions are scattered throughout the Delta, generally consisting of riverside pumping stations.

- **Recreation:** Water-dependent recreation uses of the SJR and the Delta include swimming, wading, waterskiing, sport fishing, and a variety of other activities that involve contact with the water. Noncontact (water-enhanced) recreation uses include picnicking, camping, pleasure boating, hunting, bird watching, education, and aesthetic enjoyment.

- **Groundwater Recharge:** Water from the SJR and the Delta recharges the San Joaquin Valley groundwater basin. Recharge serves to maintain salt balance in the soil column, prevent saltwater intrusion into freshwater aquifers, and provide for water supplies. Groundwater is replenished through deep percolation of streamflow, precipitation, and applied irrigation water. Groundwater quality is generally adequate throughout the San Joaquin Valley and the Delta, although at shallow depths within the Delta the water is often saline and contains high levels of total dissolved solids (TDS) and dissolved minerals. Enforceable TDS standards do not exist for drinking water. The need for treatment generally depends on consumer acceptance.

- **Fish and Wildlife:** The SJR and the waterways of the Delta provide important habitat for a diverse variety of aquatic life and terrestrial wildlife. This includes temporary habitat and migration routes for anadromous and other migratory species, as well as permanent habitat for resident species. Fish dependent on the Delta as a migration corridor, nursery, or permanent residence include Chinook salmon, steelhead, delta smelt, Sacramento splittail, striped bass, American shad, sturgeon, catfish, largemouth bass, and numerous other estuary and freshwater species. The amount and quality of water flowing through the Delta greatly influences the overall productivity of the area on an annual basis. A large assemblage of wildlife uses the Delta either seasonally or year round, including waterfowl; migratory and resident songbirds; mice, rabbits, and other small mammals; water-dependent mammals, such as beaver and muskrat; and predators such as skunk, raccoon, northern harrier, and coyote. (See Section 4.14, Terrestrial Biology, and Section 4.15, Fisheries, for more information.)

The Basin Plan contains specific narrative and numeric water quality objectives for a number of physical properties (e.g., temperature, turbidity, and suspended solids), biological constituents (e.g., coliform bacteria), and chemical constituents of concern, including inorganic parameters, trace metals, and organic compounds. Water quality objectives for toxic priority pollutants (i.e., select trace metals and synthetic organic compounds) are included in the Basin Plan and the California Toxics Rule (CTR) that was adopted in May 2000.

1995 Bay-Delta Water Quality Control Plan

The CVP and SWP are currently responsible for maintaining water quality in the Delta to standards established by the SWRCB as stipulated in the 1995 Bay-Delta Water Quality Control Plan (Bay-Delta Plan). Among the various criteria described in the Bay-Delta Plan are numeric objectives for water quality constituents (salinity and dissolved oxygen), numeric operational constraints for the CVP and SWP, a narrative objective to protect salmon, and a narrative objective to protect brackish tidal marshes in Suisun Marsh. The Bay-Delta Plan is the substantive regulatory authority over Delta hydrologic conditions. Compliance with the standards is maintained, in part, by regulating the releases from CVP and SWP reservoirs upstream of the Delta. During certain months of certain years, a major portion of inflow to the Delta is affected by CVP and SWP regulation.

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:

a. 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.

b. 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.

California Toxics Rule

In May 2000, the SWRCB adopted, and the EPA approved, the CTR, which establishes numeric water quality criteria for approximately 130 priority pollutant trace metals and organic compounds. The SWRCB subsequently adopted its State Implementation Policy (SIP) of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries. The SIP outlines procedures for NPDES permitting for toxic pollutant objectives that have been adopted in Basin Plans and in the CTR.

NPDES Permit System and WDRs

The SWRCB and Central Valley RWQCB have adopted specific NPDES permits for a variety of activities that have potential to discharge wastes to waters of the state. The SWRCB's statewide stormwater permit for general construction activity (Order 99-08-DWQ, as amended) is applicable to all

land-disturbing construction activities that would disturb more than 1 acre. The Central Valley RWQCB's general NPDES permit for construction dewatering activity (Order 5-00-175) authorizes direct discharges to surface waters up to 250,000 gallons per day for no more than a 4-month period each year. The statewide stormwater permit for general industrial activity (Order 97-03-DWQ) would also be applicable to operations of the wastewater treatment plant site. All of the NPDES permits involve similar processes, including submittal to the Central Valley RWQCB of Notices of Intent (NOI) to discharge and implementation of best management practices (BMPs) to minimize those discharges. 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 for a variety of activities, 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 nonstormwater discharges to storm sewer systems and other waters. The permit also requires dischargers to consider the use of permanent postconstruction BMPs that will remain in service to protect water quality throughout the life of the project. All NPDES permits also have inspection, monitoring, and reporting requirements. In response to a court decision, the Central Valley RWQCB also implemented mandatory water quality sampling requirements in Resolution 2001-046 for visible and nonvisible contaminants in discharges from construction activities. Water quality sampling is now required if the activity could result in the discharge of turbidity or sediment to a water body that is listed as impaired under 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. NPDES permits require the implementation of design and operational BMPs to reduce the level of contaminant runoff. Types of BMPs include source controls, treatment controls, and site planning measures.

Discharges subject to the SWRCB's NPDES general permit for construction activity must develop and implement a stormwater pollution prevention plan (SWPPP). The SWPPP includes a site map and description of construction activities and identifies the BMPs that will be employed to prevent soil erosion and discharge of other construction-related pollutants (e.g., petroleum products, solvents, paints, cement) that could contaminate nearby water resources. A monitoring program is generally required to ensure that BMPs are implemented according to the SWPPP and are effective at controlling discharges of stormwater-related pollutants.

Recycled Wastewater Requirements

Wastewater recycling in California is regulated under Title 22, Division 4, of the California Code of Regulations under the jurisdiction of DHS. The intent of these regulations is to ensure protection of public health associated with the use of recycled water. The regulations establish acceptable levels of constituents in recycled water for a range of uses and prescribe means for ensuring reliability in the production of recycled water. Use of recycled water for nonpotable uses is common throughout the state and is an effective means of maximizing use of water resources. The RWQCB establishes water reclamation requirements under the Title 22 regulations and is responsible for implementing wastewater recycling projects. The Title 22 standards are described in Table 4.8-1.

Table 4.8-1 Title 22 Disinfected Tertiary Recycled Water Standards for Unrestricted Use	
Constituent	Standard
Turbidity	24-hour average: < 2 NTU Less than 5% of values: > 5 NTU At all times: < 10 NTU
Total coliform bacteria	Running 7-day median: < 2.2 MPN/100 ml Once every 30 days: > 23 MPN/100 ml At all times: < 240 MPN/100 ml
Biochemical oxygen demand, 5-day	At all times: < 10 mg/l
Total suspended solids	At all times: < 10 mg/l
NTU = Nephelometric Turbidity Unit MPN/100mL = Most Probable Number per 100 millileters mg/l = milligrams per liter Source: EDAW 2001	

Safe Drinking Water Act

Under the Safe Drinking Water Act (Public Law 93-523), passed in 1974, the EPA regulates contaminants of concern to domestic water supply. Contaminants of concern relevant to domestic water supply are defined as those that pose a public health threat or that alter the aesthetic acceptability of the water. These types of contaminants are regulated by EPA primary and secondary Maximum Contaminant Levels (MCLs). MCLs and the process for setting these standards are reviewed triennially. Amendments to the SDWA enacted in 1986 established an accelerated schedule for setting drinking water MCLs.

The EPA has delegated to DHS the responsibility for administering California's drinking water program. DHS is accountable to the EPA for program implementation and for adopting standards and regulations that are at least as stringent as those developed by the EPA.

Title 22 of the California Code of Regulations (Article 16, Section 64449) also defines secondary drinking water standards, which are established primarily for reasons of consumer acceptance (i.e., taste) rather than because of health issues. For mineralization (i.e., TDS and chloride), the secondary standards are expressed in the form of recommended, upper, and short-term MCLs. The recommended, upper, and short-term MCLs for TDS are 500, 1,000, and 1,500 milligrams per liter (mg/l), respectively.

San Joaquin County Water Quality Policies General Plan 2010

The County General Plan Resources Element, under Water Resources and Quality, in Objectives 1 through 6 and related policies, provides for the protection of surface water and groundwater and encourages wastewater reclamation efforts. These goals and policies generally call for strict water quality maintenance, management of water resources, and water conservation (County of San Joaquin 1992).

City of Lathrop General Plan

Several City plans and environmental documents address surface water quality, including the City General Plan and the Water Master Plan and associated EIR. Goal 10: Water Supply, Wastewater and Surface Water Management presented in the City General Plan is to provide for the reuse of wastewater

and surface water so that there is no net increase in water pollution. The City General Plan does not identify requirements or regulatory constraints pertaining to water quality and recycled water use beyond those outlined above.

City of Lathrop Stormwater Management Program

The City recently adopted a stormwater management program (SWMP) for compliance with requirements of the Phase 2 NPDES municipal stormwater permit (City of Lathrop 2003; included as Appendix F of this DEIR). The SWMP is composed of six program elements developed to reduce contaminants discharged into receiving water bodies. The six Minimum Control Measure (MCM) elements of the SWMP are public education and outreach, public involvement/participation, illicit discharge detection and elimination, construction site runoff control, postconstruction runoff control in new development and redevelopment, and pollution prevention/good housekeeping for municipal operations. For each MCM, the City has selected a suite of BMPs and measurable goals to address the specific stormwater problems identified within the city limits.

In association with the SWMP, the City adopted a Storm Water Ordinance, construction standards, and design review guidelines to reduce contaminants in stormwater runoff. Of particular relevance to the proposed project is the City's coordination of BMP review and implementation under the construction site runoff control program. New development and redevelopment control measures include development of structural controls, development of nonstructural controls, development of ordinances or regulatory mechanisms, and development of long-term operation and maintenance (O&M) practices.

Pollution prevention/good housekeeping for municipal operations addresses routine O&M activities for drainage systems, roadways, parks and open spaces, and other municipal operations to help ensure a reduction in pollutants entering the storm sewer system. The pollution prevention/good housekeeping program also includes a training component to prevent and reduce stormwater pollution from municipal operations. The pollution prevention/good housekeeping BMPs can be separated into two broad categories: source controls and materials management. Source controls are BMPs designed to prevent or reduce pollutants at the source and include BMPs such as storm drainage system maintenance, structural floatable controls, street maintenance staff training, flood control projects, and litter ordinances. Materials management BMPs are designed to reduce pollutants with nonstructural controls such as pesticide education and spill prevention control.

4.8.2 EXISTING CONDITIONS

HYDROLOGY AND DRAINAGE

Bay-Delta and San Joaquin River

The CLSP area is within the legal boundary of the Delta, in the Secondary zone of the Delta (see Section 4.2, Land Use Consistency and Compatibility, for a discussion of the Primary and Secondary zones of the Delta). The Delta covers approximately 1,500 square miles, is interlaced with hundreds of miles of waterways, and includes flows from 19 tributary rivers (including the SJR). The Sacramento River contributes about 75–80% of the Delta inflow in most years, while the SJR contributes about 10–15%. The Delta contains approximately 1,000 miles of channels; 1,100 miles of levees; and approximately 70 "islands," or tracts of land. Delta channels are generally less than 20 feet deep, unless dredged, and vary in width from less than 100 feet to more than 1 mile.

The Delta is a tidally influenced estuary and the hydraulics of this estuarine system are complex. Freshwater inflows to the Delta vary greatly depending on precipitation, snowmelt, and Delta export

operations at CVP and SWP pumping stations at Tracy and Banks. During the summer months, most of the inflow to the Delta comes from regulated releases from SWP and CVP reservoirs. Both of these projects withdraw significant volumes of water from the Delta for agricultural and urban use.

The 330-mile-long SJR flows through portions of Fresno, Madera, Merced, Stanislaus, San Joaquin, Sacramento, and Contra Costa counties. The river has flows ranging from 1,500 cubic feet per second (cfs) in dry years to more than 40,000 cfs in wet years.

CLSP Area Surface Hydrology

The CLSP area occupies approximately 1,521 acres of land within the Central Valley that is bounded by the SJR on the west and Interstate 5 (I-5) on the east. Existing ground slopes vary from 0 to 2%, with elevations ranging from 8 to 12 feet above mean sea level. The east levee of the SJR rises approximately 20 feet above the prevailing adjacent ground elevations. Average annual rainfall in the CLSP area is approximately 13.5 inches, with most of this rain coming between November and April.

The CLSP area and vicinity are characterized by a variety of soil types, with hydrological soil Types B and C being predominant (EDAW 2002a). Type B soils have a moderate infiltration rate when thoroughly wet, while Type C soils have a slow infiltration rate when wet. However, because of extensive agricultural use of the soils in this area, permeability is higher than would be suggested by soil type alone, and runoff is minimal. The runoff that does occur is directed to the west through a series of agricultural swales and ditches, and is then pumped into the SJR by means of private agricultural sump pumps. A new municipal pump station and discharge outfall to the SJR, currently under construction near the end of Dos Reis Road, will discharge stormwater drainage from the Stonebridge development located east of I-5. The Stonebridge outfall structure will also include four outfall ports that would be available to serve development in the CLSP area.

The CLSP area is in an area of the SJR designated by FEMA as Flood Hazard Zone B, which indicates that the surrounding levees provide protection for flooding up to at least the 1-in-100-year AEP flood event. However, the area could be subject to flooding during storm events with lower frequency (i.e., higher floodwater elevations). At flood stage (elevation 21.0), the water level in the SJR is almost 15 feet higher than the adjoining CLSP land elevations and drainage is pumped over the levee into the river.

Past failures of SJR levees in the area have led to levee improvements by the USACE and RD 17. The levee failed near Dos Reis Road in 1950 (most likely by overtopping) following a dam failure upstream. At that time, the levees were so narrow that all patrolling had to be performed on horseback. Following that failure, the USACE raised and widened the levees substantially and placed slope protection along most of the system (EDAW 2002a). The SJR levee in the CLSP area was enlarged and reconstructed in the late 1980s to meet USACE and State Reclamation Board design standards. Geotechnical field explorations were conducted by a hydrologic and engineering firm in 1986 at locations along the levees where seepage had been identified. Test borings indicated substantial amounts of relatively clean sands (an indicator of relatively stable conditions). Seepage berms were placed along the levees at these seven locations (EDAW 2002a).

In 1997, major flooding occurred in the Delta and upstream tributaries. A breach occurred on the adjacent Stewart Tract at Paradise Cut. Several sand boils and areas of seepage were also observed along RD 17 levees in and near Lathrop and, where considered necessary, these areas were covered with a filter fabric and rock. During and shortly after this flood, the USACE spent $14 million to upgrade specific areas along the SJR levee alignment where seepage had occurred. The USACE made additional repairs to the levee in summer 2001 by constructing landside toe berms at selected locations. Also, RD 17 records indicate that during the 1997 event, the CLSP area and other nearby locations had standing water from an

upswell of groundwater or the inability of rainwater to percolate because of extremely high groundwater (EDAW 2002a). Since then, RD 17 and USACE have also constructed seepage berms along the base of the levee to largely mitigate this problem.

Because of the granular nature of many of the soils making up local levees, a relatively high seepage value was assigned by FEMA in a 1987 hydrologic/engineering report on the levees. However, for static loading conditions, the factor of safety more than met the minimum FEMA requirements, even with water levels at the 100-year flood stage. Hence, the levees protecting the CLSP area are some of the more stable levees in the Delta under static loading conditions, which is the primary concern of the USACE (EDAW 2002a).

Groundwater Hydrology

The groundwater basin in the Lathrop area is within the Delta subregion, a part of the Central Valley aquifer system. Most of the fresh groundwater is unconfined and at depths of less than 2,500 feet. Several hydrologic formations underlie the Lathrop area; however, only the top two, the Victor and Laguna formations, are currently being used as a source of fresh water. The Victor formation, the uppermost formation, extends from the ground surface to a maximum depth of approximately 150 feet. The underlying Laguna formation is hydrologically connected to the Victor formation and is estimated to be 75–1,000 feet thick. Most of the municipal and industrial wells in the Lathrop area penetrate through the Victor formation into the deeper Laguna formation (EDAW 2001). Groundwater used for drinking water in the Lathrop area is generally obtained from depths of 100–250 feet (i.e., the deep aquifer).

The groundwater surface in the Lathrop area generally slopes from south to north. In 1997, groundwater elevations in Lathrop ranged from 14 feet below to 10 feet above mean sea level, with an average of approximately sea level. The groundwater elevation in the fall, after the high-use summer months, averages approximately 3 feet lower than during the spring. Between 1993 and 1999, there were several years of above-average precipitation, and over this 6-year period the groundwater elevation in the Lathrop area increased by approximately 4 feet (EDAW 2001).

Within the CLSP area, groundwater is very shallow as a result of the low elevation and proximity to the SJR channel. High groundwater can be influenced by water level in the SJR, subsurface groundwater flow from areas of higher elevation to the east, and local irrigation practices. As noted above, wet-season observations by RD 17 staff during flood periods identified high groundwater and surface ponding near the SJR levee. Even during the summer dry season, groundwater may be within 5–10 feet of ground surface (MacKay & Somps 2004).

Local Water Supplies

The City of Lathrop currently draws its entire drinking water supply from groundwater wells. The City has five municipal groundwater wells, four of which are currently active. The City currently pumps approximately 3,326 af per year of groundwater to meet municipal water demand (Nolte 2004). The 6-month high-demand period for water in the City occurs from May through October (approximately 65% of annual demand).

The City does not currently obtain any municipal water supplies from surface water; construction is under way on a project to convey surface water to the City for municipal use. The South San Joaquin Irrigation District's (SSJID's) South County Surface Water Supply Project (SCSWSP) is a joint project of SSJID and the cities of Lathrop, Manteca, Escalon, and Tracy to supply treated potable water to these cities. The project involves construction and operation of a new surface water treatment plant near Woodward Reservoir in Stanislaus County and a 36.5-mile water transmission pipeline with pumping facilities to

transport treated water to turnouts at each city. The SCSWSP's source of water would be the Stanislaus River. Construction is ongoing, with initial deliveries expected in 2005. The quantity of water contractually available from the SCSWSP to the City of Lathrop would range from 8,007 AFY in 2005 to 11,791 AFY in 2025. Of the amount available in 2005, 5,200 ac-ft is anticipated to be required for use by the City. The availability of surface water as a municipal water source for the City would reduce the quantity of groundwater pumping required.

For more information regarding local water supplies and the SCSWSP, see Section 4.11, Public Utilities.

WATER QUALITY

Surface Water Quality

The 2002 version of the Section 303(d) list for California issued by the SWRCB identifies impaired status for channels in the eastern Delta, the SJR, and the Deep Water Ship Channel in the lower SJR near Stockton for a number of pollutants. The upper SJR is on the Section 303(d) list for impairment from boron, chlorpyrifos, diazinon, DDT, electrical conductivity, unknown toxicity, Group A pesticides, and mercury. The Deep Water Ship Channel is additionally on the Section 303(d) list for dissolved oxygen. Potential sources of pollution for all of the listed constituents in the basin include agriculture, resource extraction, and unknown sources. The Central Valley RWQCB has initiated work on a dissolved oxygen TMDL to address low dissolved oxygen levels in the Stockton area. TMDLs have also been initiated for organophosphorus pesticides (i.e., diazinon and chlorpyrifos), salinity and boron, and selenium in the upper SJR watershed and for TDS and mercury in Delta channels. A stakeholder process is used in each of these TMDL efforts to address technical, social, and economic issues. TMDLs for other listed pollutants are scheduled to be developed at various times over the next 13 years, in accordance with the priorities contained in the Section 303(d) list.

Major monitoring programs in the SJR include the California Department of Water Resources (DWR) Municipal Water Quality Investigations (MWQI) Program and the DWR D-1485 Water Quality Monitoring Program. The City of Stockton also monitors ambient water quality to assess potential effects associated with discharges from the Stockton Regional Wastewater Control Facility (RWCF). The Water Master Plan EIR (EDAW 2001) includes a summary of compliance records from five water quality monitoring sites in the SJR located upstream and downstream of the CLSP area for the period 1990-2000 (Table 4.8-2). The Mossdale Bridge sampling site is the closest monitoring location to the CLSP area. Summary discussions of the tabulated data follow.

Total Dissolved Solids and Electrical Conductivity

The salinity of surface waters is often measured by the concentration of TDS and electrical conductivity (EC). EC is commonly used as a surrogate parameter upon which to evaluate TDS. Discharges from agriculture, wetlands, mines, industries, and urban areas contribute TDS, and therefore EC, to the SJR and the Delta. The data indicates that median TDS concentrations were greater during critical (drought) water years than during wet or above-normal water years. Median TDS concentrations were higher in the mainstem SJR at Vernalis (530–560 milligrams per liter [mg/l]) than in southwestern Delta locations (320-380 mg/l) during critical dry years. During wet or above-normal water years, TDS concentrations throughout the Delta were similar (180–200 mg/l). The secondary drinking water maximum contaminant level (MCL) for TDS in water delivered by distributors is 500 mg/l and the recommended agriculture objective is 450 mg/l. Seasonal water quality objectives in the Basin Plan for EC in the Delta are routinely exceeded in the SJR near Vernalis and at Mossdale Bridge; the standards are typically met at the other monitoring locations. As with TDS, specific conductance values are greater during critically dry water years than during wet or above-normal water years.

Table 4.8-2
Comparisons of Surface Water Quality with Water Quality Criteria

Parameter	Minimum Relevant Water Quality Criteria	Regulatory Source	Frequency of Compliance [1]	Monitoring Sites [2]
Total dissolved solids	None	n/a	n/a	All DWR-MWQI sites
Electrical conductivity (as specific conductance) Objectives for SJR near Vernalis	A. [3] 700 µmhos/cm Apr 1 - Aug 31	Basin Plan	A, B	
			62.0%, 89.8%	SJR near Vernalis
			57.1%, 93.3%	SJR at Mossdale Bridge
			100%, 100%	SJR at Hwy 4
			97.7%, 98.0%	SJR at Stockton RWCF-R2
	B. [3] 1,000 µmhos/cm		93.2%, 100%	SJR at Stockton RWCF-R5
Total organic carbon	None	n/a	n/a	SJR near Vernalis SJR at Hwy 4
Fecal coliform	200 MPN/100 ml	Basin Plan	55.5% 60.0%	SJR near Vernalis SJR at Mossdale Bridge
Dissolved oxygen	5 mg/l 5 mg/ 5 mg/l	Basin Plan	100% 100% 98.9%	SJR near Vernalis SJR at Mossdale Bridge SJR at Stockton RWCF-R2
	5 mg/l 6 mg/l	Dec 1 - Aug 31 Sept 1 - Nov 30	76.8% 36.8%	SJR at Stockton RWCF-R5 SJR at Stockton RWCF-R5
pH	6.5-8.5 standard units	Basin Plan	98.2%	SJR near Vernalis
			89.1%	SJR at Mossdale Bridge
			100%	SJR at Hwy 4
			100%	SJR at Stockton RWCF-R2
			100%	SJR at Stockton RWCF-R5
Temperature	None	n/a	n/a	All monitoring sites
Ammonia, dissolved as N	Ammonia toxicity sliding scale based on pH	EPA	100%	No ammonia toxicity observed at any monitoring site
Copper, dissolved	5.12 µg/l [4]	CTR	97.8%	SJR near Vernalis

1 Frequency of compliance calculated as percent of data in compliance with relevant water quality criterion.

2 Sample sites identified as follows: Department of Water Resources for SJR at Vernalis, Mossdale, and Highway 4; SJR at Stockton Regional Wastewater Control Facility (RWCF)

3 The Basin Plan has two EC objectives for the locations noted and are a function of the time of year. The A value reflects the Basin Plan objective for April 1 - August 31. The B value reflects the Basin Plan objective for September 1 - March 31. The corresponding percentages reflect the frequency of compliance of the receiving water with the seasonal objective.

4 Dissolved copper criterion is based on specific calculation where field-measured hardness = 52.0 mg/l. Only a single exceedence of the CTR hardness-based dissolved copper criterion was observed for the SJR near Vernalis data set.

n/a = not applicable

Source: EDAW 2001

Total Organic Carbon and Dissolved Organic Carbon

Organic carbon (in both its total and dissolved forms) in surface water acts as a precursor to the formation of unwanted chemical byproducts resulting from chlorination during the drinking water disinfection process; these chemicals are often referred to as disinfection byproducts. Total organic carbon (TOC) was measured at two of the five SJR monitoring sites listed in Table 4.8-2. In general, TOC levels appear to be similar in the SJR (2.8 to 3.0 mg/l) during wet and above-normal water years. However, organic compound concentrations were greater at all sites during critically dry water years than during wet or above-normal water years. The RWQCB has not adopted water quality objectives for TOC or dissolved organic carbon (DOC) in the Basin Plan. TOC and DOC concentrations are commonly compared to the 2-mg/l and 4-mg/l treatment thresholds of the Disinfection/Disinfection Byproduct (D/DBP) Rule of the federal Safe Drinking Water Act, which are health-based standards applied at the intakes to drinking water treatment plants.

Fecal Coliform and Pathogens

Fecal coliform bacteria are used as an indicator of the presence of human pathogens in water. Monitoring data typically measure coliform concentrations in units of Most Probable Number (MPN) per 100 milliliters (ml). Monitoring data show that fecal coliform concentrations decrease in the downstream direction in the SJR and into the Delta. Median concentrations range from 192 MPN per 100 ml at Vernalis to 128 MPN per 100 ml at Mossdale. Although monitoring data for the pathogens Giardia and Cryptosporidium are insufficient to allow summary statistics, all data collected in the SJR (at Vernalis) for these pathogens were below the laboratory detection limits of 10 cysts per 100 liters.

Dissolved Oxygen

The Basin Plan specifies that the dissolved oxygen (DO) concentration for the SJR and the Delta shall not be reduced below 5 mg/l, and in the lower SJR, within the Stockton Deep Water Ship Channel, the DO concentration shall not be reduced below 6 mg/l from September 1 through November 30. Monitoring data show that DO concentrations regularly fall below the 5-mg/l and 6-mg/l standards in the SJR near Stockton. Low or negative streamflow past Stockton because of tidal influences reduces dilution and mixing, which reduces re-aeration of the water. Oxygen depletion in the SJR and other water bodies in the Central Valley is typically highest in late summer and fall, when high water temperature reduces the oxygen-carrying capacity of the water. An analysis of DO data collected during critically dry water years revealed DO concentrations in the upper SJR (9.0 to 10.0 mg/l) that were higher than those in the Delta (7.6 to 8.1 mg/l).

pH

pH is a measurement of the acidity of water; aquatic life may begin to be adversely affected by pH values that are less than 6.5 or greater than 8.5. In natural waters, pH levels are influenced by both the photosynthesis of algae and aquatic plants and the respiration of plants, animals, and bacteria. An analysis of pH data for critically dry water years revealed that median pH levels in the mainstem SJR ranged from 7.9 to 8.1 pH units. Intense algal growth or eutrophication can affect pH. During the process of photosynthesis, algal growth in shallow areas can elevate pH levels. Compliance with the Basin Plan pH objective ranged from 90% to 100% at all monitoring sites.

Temperature

Ambient water temperatures have a clear influence on the aquatic species composition of a water body. Separate beneficial uses are designated in the Basin Plan for warmwater uses and coldwater uses. The

lower SJR and Delta waterways are classified as supporting warmwater fisheries, although efforts are underway to improve the SJR as a migration corridor for various endangered species that favor coldwater conditions. Specific numeric Basin Plan objectives have not been adopted for temperature in the SJR or the Delta; however, the Basin Plan does contain a general provision that limits temperature changes from controllable factors to less than 5ºF. Median water temperatures collected during critically dry water years showed the mainstem SJR to be at least 1–3°C (1.8–5.4°F) cooler than median temperatures calculated for the Delta. The monthly average temperature at the Mossdale Bridge site ranges from 49ºF in December to 76ºF in July.

Ammonia

The distribution of ammonia in freshwater rivers and lakes is highly variable regionally, seasonally, and spatially and depends upon the level of productivity of the water body and the extent of inputs from organic matter. At high concentrations for short periods (i.e., hours), ammonia may be acutely toxic. Lower concentrations may also cause chronic (long-term) effects if the period of exposure is sufficiently long (weeks or months). Ammonia toxicity also varies with pH, and EPA standards for ammonia concentrations follow a sliding scale based on pH. The data indicate that ammonia concentrations at the seven monitoring sites are below levels that would cause either acute or chronic toxicity.

Copper and Other Trace Elements

Trace elements (metals and minerals) may affect aquatic organisms directly or may affect human health or wildlife through water consumption or through bioaccumulation in fish or shellfish consumed by humans or high-end predators. The state is currently developing a TMDL program for mercury in the Delta that would result in the identification of regulatory target(s), determination of sources and their associated loads, development of a quantitative model to predict loading, and implementation of a mercury control program to achieve load reductions that would lead to compliance with water quality objectives.

Available data for dissolved copper indicate 97.8% compliance with CTR water quality objectives in the SJR near Vernalis (Table 4.8-2). Although data on dissolved boron were collected at several of the monitoring sites, no assessment of regulatory compliance can be made because the Basin Plan specifies a criterion only for total boron. Similarly, data on dissolved selenium were collected at several sites, but total selenium is the fraction of the metal regulated by both the Basin Plan and the CTR; therefore, no estimates of regulatory compliance can be made for this constituent.

Groundwater Quality

Because of saltwater intrusion into the Delta region of the County, and because of infiltration of runoff from the SJR, agricultural areas, and urban areas, the quality of groundwater taken from the shallower Victor formation in the Lathrop area is generally poor. TDS provides a measure of the level of saltwater intrusion into the groundwater supply. The recommended secondary TDS standard for drinking water is 500 mg/l. The upper limits for TDS are 1,000 mg/l for long-term use and 1,500 mg/l for short-term use. Groundwater quality from the Victor formation in the Lathrop area generally has concentrations of chloride above 300 mg/l and TDS above 500 mg/l (and in many instances exceeding 1,000 mg/l) (EDAW 2002b). However, as described above, the City wells draw water from the deeper aquifer and the poor-quality shallow groundwater is generally not used for drinking water purposes.

TDS levels in water from the City's wells have averaged from 245 mg/l to 422 mg/l, with an overall average of 297 mg/l. Other groundwater quality concerns in the Lathrop area include nitrate, iron, manganese, and bacteriological and radiological contamination. As a result of the bacteriological

contamination, the City began chlorinating water at all of its municipal wells in 1996. In general, groundwater within the City currently meets all drinking water standards.

4.8.3 ENVIRONMENTAL IMPACTS

ANALYSIS METHODOLOGY

The environmental analysis for hydrology and water quality was based largely on the project-related documents identified at the beginning of this section (ECORP Consulting 2004, MacKay & Somps 2004). Background information included in recent EIRs prepared for the Water Master Plan (EDAW 2001), the Mossdale Landing project (EDAW 2002a), and the River Islands project (EDAW 2002b) was also used. The effects of the proposed project were compared to environmental baseline conditions (i.e., existing conditions) to determine duration and magnitude of impacts. The proposed project represents a substantial change in land use in the CLSP area, transforming the area from agricultural production to mixed-use employment/residential/commercial development. Analysis of the effects on CVP- and SWP-wide operations, and Delta water supply pumping operations was considered unnecessary because the proposed project is very localized, does not affect CVP or SWP operations, and does not affect available relevant water supplies. The project site is located outside the 100-year floodplain (i.e., is protected from the 100-year flood by the east levee of the SJR). Therefore, the proposed project would not require levee or other flood control improvements.

Project Area Drainage Plan

The Project Area Drainage Plan (MacKay & Somps 2004, included as Appendix H in this DEIR) and Section 4.11, Public Utilities, describe the proposed drainage facilities that would be constructed to safely control and convey stormwater runoff in accordance with City policies and procedures. In summary, the drainage plan designates five separate drainage sub-basins within the CLSP area (see Exhibit 3-5). Each sub-basin would be served by gravity conveyance of stormwater drainage to detention facilities (either surface basins or underground storage facilities) and a pump station and force main that would collect and pump stormwater to one of two discharge outfalls along the bank of the SJR for discharge to the river. The drainage detention facilities within each sub-basin would be interconnected by pipelines that are sized to allow them to function as a single storage entity.

In accordance with the City's stormwater drainage management protocols, the proposed gravity storm drain systems upstream of the pump stations would be designed to accommodate 10-year peak flows with a minimum freeboard of 1 foot. The drainage and street conveyance systems would be designed to accommodate 100-year peak flows while maintaining the hydraulic grade line at a minimum of one foot below the lowest adjacent building pad. Surface detention basins would be set back from the levee and would be designed to maintain at least 2 feet of separation from groundwater unless lined with impermeable material. Water seepage through the levee and the presence of high groundwater would be controlled through the development of toe drains along the landside levee frontage, which would divert seepage into the proposed storm drain system.

Stormwater drainage would be conveyed to two outfalls (the Stonebridge outfall currently under construction and another proposed outfall) located on the east SJR levee. The Stonebridge outfall would have sufficient capacity to accommodate a portion of the drainage generated within the CLSP area. The discharge flow rate to the SJR would be limited to 30% or less of the projected peak 100-year flow rate produced at buildout. Discharge to the river would also not be allowed to exceed the 100-year preproject flow rate whenever water levels in the SJR exceed a design elevation of 21.0 feet. Table 4.8-3 shows the approximate stormwater runoff in the 48-hour, 100-year storm; the discharge rates; and the required stormwater detention for each watershed. City standards require that detention basins and pump stations

be designed assuming 4.37 inches of precipitation for the 48-hour, 100-year storm. In addition, the total storage that would be provided by the detention facilities includes an additional 10% safety factor.

Table 4.8-3
Total Storage Volumes Required for CLSP Watersheds

Watershed	Area (acres)	Peak 100-year Storm Flow Rate (cfs)	Discharge Flow Rate (cfs)	Detention Volume (acre-feet)	Total Detention Volume (with 10% safety factor) (acre-feet)
1	404	435	130.5	11.6	12.8
2	205	278	83.4	6.2	6.8
3	378	321	96.3	11.1	12.2
4	234	262	78.6	6.0	6.6
5	238	283	84.9	7.7	8.5
Total	1,459*	1,579	473.7	42.6	46.9

* The total acreage shown is less than that of the entire CLSP area because portions of the site are west of the levee and would not enter the drainage system.
Source: MacKay & Somps 2004

The outfall pipes would be constructed through the top portion of the levee, above the 100-year-AEP flood elevation in accordance with RD 17 guidelines. On the river side of the levee, the discharge pipes would extend down the levee slope and outlet to a concrete headwall structure located above the elevation of the ordinary high-water mark. Discharges would then flow to the river over hardened slope protection features to ensure that the discharge does not cause erosion and scouring of the river bank. All pump stations would be designed with backup pumps and generators.

Water Quality Constituent Loading Model

The water quality analysis report for the CLSP project (ECORP Consulting 2004, included as Appendix G of this DEIR) describes the water quality contaminant loading analysis that was conducted to identify potential effects of the proposed project on stormwater drainage quality. The annual constituent loading model used calculated runoff volumes, and research-based estimates of runoff water quality were developed using methodology developed by the EPA. The following three conditions were assessed for the project watershed:

- Existing condition (i.e., existing land use),
- Developed condition without BMPs, and
- Developed condition with BMPs.

For each case, the annual constituent load was estimated as the product of the annual runoff volume and the average constituent concentration associated with a particular activity or land use. The constituent loading model used average runoff coefficients for three land use designations (i.e., agricultural, residential, commercial) within the five drainage sub-basins of the CLSP area (identified in the Project Area Drainage Plan [MacKay & Somps 2004] and depicted in Exhibit 3-5) as shown in Table 4.8-4. The land use categories represent the baseline agricultural land use and the two primary categories of developed land uses that are proposed for the CLSP area—residential and commercial. The existing land use at the project site is agricultural; therefore, existing runoff was calculated assuming no impervious cover. The proposed CLSP area would be predominantly residential, with this land use covering

approximately 71% of the CLSP area at buildout; commercial areas would account for the other 29% of the CLSP area. The annual runoff used in the loading model was calculated based on assumed average annual precipitation of 13.5 inches.

Constituent concentrations in runoff for each land use category were based on various literature-based source documents. The proposed project would include implementation of permanent nonstructural and structural postconstruction BMPs. Effectiveness coefficients for contaminant reduction following implementation of BMPs were also based on various literature-based resources. Removal efficiencies were projected assuming that BMPs were applied sequentially: first, nonstructural practices such as education and pollution prevention, then smaller structural practices such as on-lot treatment, and finally, larger scale structural BMPs such as extended detention basins. The constituent loading model was used to evaluate runoff quality under three scenarios: (1) baseline agricultural conditions; (2) full development of the project, assuming that all of the CLSP area would be developed into a combination of residential and commercial land uses without implementation of BMPs; and (3) full development with implementation of BMPs. Table 4.2-5 summarizes the calculated constituent loads for the baseline and two development scenarios.

Table 4.8-4
Runoff Coefficients Used for Constituent Loading Analysis

Subasin	Agriculture		Residential		Commercial	
	Runoff Coefficient	Area (ac)	Runoff Coefficient	Area (ac)	Runoff Coefficient	Area (ac)
Baseline pre project	0.1	1,439*				
1			0.38	359	0.89	33
2			0.43	78	0.77	127
3			0.43	355	0.96	18
4			0.44	88	0.77	112
5			0.45	136	0.67	133

* The total acreage shown is less than that of the entire CLSP area because portions of the site are west of the levee and would not enter the drainage system.
Source: ECORP 2004

BMPs Implemented as Part of the Proposed Project

The BMPs assumed in the constituent load modeling were specified to be consistent with the six MCMs identified in City policies and procedures contained within the SWMP for the NPDES MS4 municipal stormwater permit. The most effective SWMPs combine both preventive (nonstructural) and treatment (structural) BMPs. The SWMP for the proposed project would use nonstructural BMPs that would reduce pollutant load to runoff and structural BMPs that would treat the runoff before its discharge to the SJR.

Table 4.8-5
CLSP Constituent Loads and Impact

Constituent	Baseline	CLSP w/o BMPs	CLSP w/ BMPs	Difference, CLSP with BMPs vs. Baseline
	lbs/yr	lbs/yr	lbs/yr	% of Baseline Load
Conventional				
Oil & Grease	3,784	5,837	1,885	-50
Hardness as CaCO3	180,635	50,372	19,682	-89
TSS	366,182	193,668	72,153	-80
TDS	526,060	102,130	94,409	-82
BOD	19,775	51,101	15,636	-21
Fecal coliform (#)	1.9E+ 12	3.8E +07	3.8E +07	-<99.9
Nutrients				
TKN	3,492	5,146	3,792	+9
Total nitrogen	7,847	6,030	4,283	-45
Nitrate + Nitrite	4,356	2,310	1,354	-69
Ammonia	1,236	1,507	1,241	+<1
Dissolved phosphorus	482	510	259	-46
Total phosphorus	1,090	983	396	-64
Trace Metals				
Dissolved chromium	3.8	2.4	0.6	-86
Total chromium	45.0	14.6	1.4	-97
Dissolved copper	15.5	10.8	1.7	-89
Total copper	23.5	31.9	4.4	-81
Dissolved lead	7.2	3.2	0.7	-91
Total lead	12.5	35.3	5.2	-59
Total mercury	0.07	0.13	0.02	-65
Dissolved nickel	2.6	5.0	1.1	-57
Total nickel	3.5	17.9	3.0	-15
Dissolved selenium	4.2	1.0	0.2	-96
Total selenium	4.1	1.0	0.2	-96
Dissolved zinc	20.3	149	30.2	+49
Total zinc	138	349	36.8	-73
Pesticides				
Chlorpyrifos	0.13	0.14	0.00	-<100
Diazinon*	0.04	1.3	0.1	+139

* The EPA is phasing out approval for over-the-counter sales, reducing residential use by approximately 75%; this indicated increase in constituent load is based on continued residential use at current levels and thus is anticipated to be an overestimate.

Source: ECORP Consulting Inc. 2004

Nonstructural BMPs

One of the best ways to protect water quality is to reduce the number of pollutants entering storm water runoff. Preventing pollution of a water body is much less difficult and less expensive than attempting to restore that water body once it has been polluted. Consequently, ECORP Consulting (2004) identified a series of nonstructural BMPs associated with the City's SWMP (City of Lathrop 2003). The project applicant has committed to work with the City to implement the following nonstructural BMPs that focus on preventing pollutants from entering stormwater.

- Public Education and Outreach Regarding Storm Water Impacts
  - Educational Presentations in Schools: The City, in coordination with the Manteca Unified School District, would develop and implement a stormwater management curriculum targeting 50% of the fifth grade classes annually.
  - Newsletters and City Website: The City would distribute a semi-annual newsletter to increase public awareness of stormwater quality concerns. The newsletter would be sent with utility bills and would include information on the City's website.
  - Citizens Outreach through Media: The City would provide stormwater management information through educational materials, displays, commercials, billboards, and advertisements.
  - Outreach for Commercial Activities and Businesses: The City would implement a business outreach program to help reduce the amount of pollutants originating from commercial property within the CLSP area. High-priority businesses (i.e., those types of businesses known to involve large pollutant loads) would be targeted with business-specific materials. The City would conduct inspections of industrial facilities to ensure that facilities were complying with the NPDES General Permit for Industrial Activities.
  - Storm Drain Stenciling: All storm drain inlets within the CLSP area would be stamped with a permanent label that warns the public against dumping pollutants into drains.
- Public Involvement and Participation. The public would be encouraged to participate in the development and implementation of stormwater management programs. The City would conduct outreach to groups within the CLSP area through activities that may include river cleanup events, dry-weather screening and monitoring, and reporting of illicit dumping.
- Pollution Prevention/Good Housekeeping. The proposed project would include a variety of activities aimed at pollution prevention.
  - Spill Response and Prevention: A spill response and prevention plan would be developed as a component of (1) SWPPPs prepared for construction activities, (2) SWPPPs for facilities subject to the NPDES general Industrial Stormwater permit, and (3) spill prevention control and countermeasure plans for qualifying facilities.
  - Parking Lot and Street Sweeping: The City would sweep residential and commercial streets at least once every two weeks.
  - Green Waste Removal: The City would implement a green waste removal program within the CLSP area and waste would be removed at least once every two weeks.

- Operation and Maintenance (O&M) of Treatment Controls. The CLSP area would include a number of stormwater quality treatment BMPs. An O&M plan would be developed for each of the selected facilities to ensure long-term performance. The O&M plans would incorporate the manufacturers' recommended maintenance procedures and include (1) provisions for debris removal, (2) guidance for addressing public health or safety issues, and (3) methods and criteria for assessing the efficacy of the facilities. An annual report would be submitted to the City certifying that maintenance of the structures was conducted according to the O&M plan.

Structural BMPs

ECORP Consulting (2004) and MacKay & Somps (2004) identified structural BMPs that would be developed as an integral element of postconstruction stormwater management and would include storage, filtration, and infiltration practices. The selection, design, and siting of structural BMPs within a project depend largely on the development of a projectwide drainage plan. The CLSP land uses were classified as either residential or commercial for the purposes of the constituent loading analysis. Drainage sub-basins 1 and 3 would be primarily residential; sub-basins 2, 4, and 5 would be primarily commercial (Exhibit 3-5). BMPs used for the constituent loading analysis were chosen based on these predominant land use classifications. The following structural BMPs were considered feasible, have been committed to by the project applicant, and were used in the constituent loading model to estimate future stormwater drainage quality within the CLSP area.

- Extended Detention Facilities: Extended detention refers to the facilities proposed for the CLSP area that would detain and temporarily store stormwater runoff to reduce the peak rates of discharge to the SJR. Detention of stormwater allows particles and other pollutants to settle and thereby potentially reduce concentrations and mass loading of contaminants in the discharge. Extended detention facilities are among the most widely applicable stormwater management practices, although they have limited applicability in highly urbanized settings because of space constraints. The preferred drainage plan for the proposed project would include construction of a variety of types, sizes, and configurations of extended detention basins within the community (i.e., multi-use detention basins in neighborhood parks, linear detention basins in open space areas, underground detention facilities) (see Section 4.11, Public Utilities, for additional information).

- Grassed Swales: A swale is a vegetated, open channel management practice designed to treat and attenuate stormwater runoff for a specified water quality volume. Stormwater runoff flowing through these channels is treated by being filtered through vegetation in the channel, through a subsoil matrix, and/or through infiltration into the underlying soils. Swales would be used throughout the CLSP area where feasible. However, they would be located primarily in the proposed commercial areas to treat road and parking lot runoff.

- Proprietary Devices: A variety of commercially available stormwater treatment devices designed to remove contaminants from drainage once flows enter the conveyance systems were considered for the CLSP area. The ECORP Consulting (2004) water quality analysis report identified that residential areas would likely have lower pollutant concentrations and lower stormwater runoff rates than commercial areas. Accordingly, CDS™ units or similar hydrodynamic-type separators are recommended as the main structural BMPs for residential areas. Commercial areas generate greater runoff rates and pollutant concentrations; StormFilter™ units, or equivalent filtration-type systems, are recommended as the main structural BMP for these areas. Bioswales are also recommended for streets and areas adjacent to I-5. Drop inlet filters would also be used in both residential and commercial areas to control drainage runoff water quality in potential "hot spot" locations.

- CDS™ Units: These units, and other similar hydrodynamic or "vortex" separators, remove pollutants with physical settling processes and through various filtering mechanisms. CDS™ units use screens to slow the drainage flow, allowing heavy particles to settle and light materials to float, and also effectively hold trash and debris in a basket.

- StormFilter™: Drainage enters these units and flows through various filtering material, depending on the pollutants needing treatment. This device is typically used for large drainage areas.

- Drop Inlet Filters: These devices are installed directly in the storm drain catch basins and contain filter material to remove pollutants. They are typically applied to treat potential "hot spot" areas such as commercial activity areas, gas stations, nurseries, and maintenance yards.

THRESHOLDS OF SIGNIFICANCE

The CLSP project would result in significant hydrology and water quality impacts if it would:

- violate any water quality standards or waste discharge requirements, including violating 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 local groundwater table level;

- 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 onsite or offsite;

- create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff;

- substantially degrade water quality;

- place housing within a 1-in-100-AEP flood hazard area as mapped on a federal flood hazard boundary or Flood Insurance Rate Map or other flood hazard delineation map;

- place within a 1-in-100-AEP flood hazard area 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;

- create inundation by seiche, tsunami, or mudflow; or

- measurably reduce water supplies to other water users.

IMPACT ANALYSIS

Impact 4.8-a

Hydrology and Water Quality – Effects on Potential Onsite and Offsite Flooding Risk from Increased Stormwater Runoff. *Implementation of the CLSP would increase the amount of impervious surface on site and thereby increase surface runoff and the need for discharge to the SJR. The increased surface runoff could result in a greater potential for offsite and onsite flooding. However, the CLSP project includes a stormwater runoff collection system, including drainage detention facilities, to provide onsite stormwater storage and discharge capacity sufficient to protect the CLSP area during a 48-hour, 100-year flood event and avoid increases in offsite flooding. Therefore, this impact is considered* ***less than significant****.*

The proposed development of the CLSP area would increase the amount of impervious surfaces (e.g., buildings, paved roadways, parking surfaces) on the land, which would increase both the total volume and peak discharge rate of stormwater runoff generated on the project site. If not properly accommodated on the project site, increased stormwater runoff could result in localized flooding in the CLSP area and adjacent lands. Or, if stormwater runoff from the project site were discharged to the SJR in sufficient quantities during severe storm events, lands downstream of the project site could be exposed to greater flooding risk because of increased river flows.

The incremental increase in runoff generated on the project site and discharged to the SJR would not substantially increase flows in the SJR in a manner that would cause flooding at or downstream of the project site because detention facilities would limit the discharge rate to 30% of the onsite runoff rate consistent with City policies (see Table 4.8-3). If background SJR flow conditions are exceeding the 100-year flood stage elevations (i.e., 21 feet), the rate of stormwater drainage discharges from the project site would not be allowed to exceed the existing (i.e., preproject) rate of runoff from undeveloped agricultural land and thus would not cause or contribute to increases in river flows and potential for offsite flooding.

The project area drainage plan, as described previously in this section and Chapter 3.0, Description of the Proposed Project, is designed to detain stormwater on the project site generated by the 48-hour, 100 year flood event, while limiting discharges to the SJR as described above. These detention and discharge requirements would be met while protecting homes and other structures to on-site flooding. The drainage system is designed to meet these criteria while also providing an additional 10% safety factor. The proposed CLSP drainage system would provide sufficient capacity to address project generated stormwater and would prevent stormwater related flooding damage on the project site.

Because the CLSP project includes a stormwater runoff collection and detention system sufficient to protect the project area and increases in offsite flooding potential, this impact is considered less than significant.

Impact 4.8-b

Hydrology and Water Quality – Exposure of People or Structures to a Significant Risk of Flooding as a Result of the Failure of a Levee. *The proposed project would not expose people or structures to a significant risk of flooding, including flooding as a result of the failure of a levee, because the east levee of the SJR has been constructed consistent with all applicable requirements, has been improved in recent years by RD 17 and the USACE consistent with the latest levee design and construction policies, and has resulted in FEMA removing the CLSP area from the 100-year floodplain. Therefore, this impact is considered* ***less than significant.***

The proposed project would not expose people or structures to a significant risk of flooding as a result of the failure of a levee because the east levee of the SJR has been constructed consistent with all applicable

requirements. In addition, the levee has been improved since the 1997 flood year by RD 17 and the USACE consistent with the latest levee design and construction practices, and has resulted in FEMA removing the CLSP area from the 100-year floodplain. Furthermore, there is no substantial evidence to suggest that levee failure in the area of the project site is likely or that the Lathrop segment of the levee is more prone to failure than segments in other areas, and the proposed project would do nothing to increase the potential for levee failure. This impact is considered less than significant.

Impact 4.8-c

Hydrology and Water Quality – Temporary Construction-related Water Quality Effects. *Temporary construction-related disturbances within the CLSP area could result in the discharge of contaminated stormwater and nonstormwater discharges to drainage systems and ultimately the SJR. Project-related impacts on water quality attributable to construction activities are considered* ***potentially significant.***

Construction activities within the CLSP area would be extensive. Grading, earth moving, excavation and utility installation, infrastructure development, and building construction would disturb the existing vegetative cover, soil, and drainage systems over the entire plan area. Additional offsite disturbance would occur to construct up to 98 acres of ponds for storage of treated municipal wastewater (refer to the discussion of operational effects of recycled water below). Construction activities is anticipated to occur on and off in various locations across the project site over approximately 15 years. During this period, disturbed sites, throughout the 1,521-acre area and at the offsite storage pond locations, would be subject to exposure to wind erosion, rain, and winter stormwater runoff events. In particular, construction activities could result in substantial soil erosion and stormwater discharges of suspended solids, increased turbidity, and potential mobilization of other pollutants from project construction sites as contaminated runoff or direct discharges to drainage channels. Although the proposed project site is relatively flat and the potential for soil erosion is considered low, intense rainfall and associated stormwater runoff could result in short periods of sheet erosion within areas of exposed or stockpiled soils. If this erosion is uncontrolled, these soil materials could cause sedimentation and blockage of drainage channels. Further, the compaction of soils by heavy equipment may reduce the infiltration capacity of soils and increase the potential for runoff and erosion.

Nonstormwater discharges could result from activities such as construction dewatering procedures; direct construction disturbances of drainage channels or the SJR channel during installation of the proposed outfall; or discharge or accidental spills of hazardous substances such as fuels, oils, concrete, paints, solvents, cleaners, or other construction materials. Because of the shallow, perched groundwater conditions in the CLSP area, construction dewatering activities are likely to be necessary for foundation and utility installations. Potential disposal options for the dewatering discharges include land application with subsequent evaporation and percolation back to the groundwater, use for dust control mitigation practices, or direct discharge to the existing or constructed stormwater drainage channels. Dewatering discharges may contain elevated levels of suspended sediment or other construction-related contaminants. Shallow groundwater beneath the project site may also be of poor quality because of saltwater intrusion within the Delta and runoff/infiltration of agricultural and urban drainage (e.g., elevated levels of dissolved solids). Many construction-related wastes have the potential to degrade existing water quality by altering the dissolved oxygen content, temperature, pH, suspended sediment and turbidity levels, nutrient content or causing toxic effects in the aquatic environment. Construction activities for the proposed project that are implemented without mitigation could violate water quality standards or cause direct harm to aquatic organisms. Consequently, the potential surface water quality impacts on onsite and offsite drainage channels and the SJR from proposed construction activities are considered potentially significant.

Impact 4.8-d

Hydrology and Water Quality – Long-term Water Quality Effects of Urban Runoff. *The proposed project would convert agricultural lands to residential and commercial uses and thereby change the amount and timing of potential waste discharges in stormwater runoff to the SJR. However, the combination of nonstructural and structural BMPs for the new stormwater drainage system would reduce the overall amount of potential contaminant discharges compared to existing conditions. Therefore, this impact is considered* ***less than significant.***

The predominant existing land use in the CLSP area is agriculture. No water quality monitoring data exists from the local drainage system; however, anticipated constituent loading under existing conditions was modeled by ECORP in the Water Quality Analysis Report provided in Appendix G (ECORP 2004). In general, irrigation and stormwater runoff from agricultural lands (including the CLSP area) are not considered of high quality and contain a variety of constituents/contaminants in relatively high concentrations. In addition, agricultural runoff, including in the CLSP area, is not typically treated or passed through various BMPs.

The conversion of agricultural land within the CLSP area to urban land uses would alter the types, quantities, and timing of contaminant discharges in stormwater runoff relative to existing conditions. As described in the water quality analysis conducted by ECORP, the level of contaminants in stormwater runoff from CLSP development is anticipated to be substantially lower than the existing runoff from agricultural activities following implementation of structural and nonstructural pollution prevention and control BMPs (see Table 4.8-5).

Stormwater runoff generated within the CLSP area would be collected in new drainage systems that would include structural water quality treatment measures as described previously. Stormwater would pass through these treatment measures and continue to the detention facilities, where it would then be pumped to one of the two proposed SJR pump station/discharge outfalls. The structural BMPs, which are designed to remove pollutant constituents from runoff, would substantially improve runoff water quality compared to the quality of existing agricultural runoff. The implementation of nonstructural BMPs, through various public education and outreach programs maintained by the City under the municipal NPDES MS4 stormwater permit and as authorized by the Central Valley RWQCB, would also have the potential to prevent or substantially reduce the types, amounts, and likely discharges of contaminants into stormwater.

Water temperatures of existing return water discharges from irrigated agricultural operations in the Central Valley can be relatively high because most discharges take place during late spring and throughout the summer. Under the proposed project, however, warm-weather discharges of runoff would largely be eliminated and stormwater runoff discharges would occur primarily between December and April, when ambient water temperatures would be cool. Consequently, water temperature is not considered to be an issue of concern with the proposed discharges into the SJR and the Delta, and the project's effects on water temperature could be beneficial. Similar to water temperature, dissolved oxygen concentrations in discharges may be improved simply because discharges under the proposed project would occur primarily during the winter months. High temperatures reduce the oxygen-carrying capacity of water. Therefore, spring and summer discharges under current conditions would be expected to contain lower concentrations of dissolved oxygen than fall and winter discharges under the proposed project.

Although the project could result in an increase in amount of nitrogen (i.e., total kjeldahl nitrogen), dissolved zinc, and diazinon discharged from the drainage system (Table 4.8-5), these additional loads would not cause a substantial adverse water quality effect for several reasons.

The ECORP report not only evaluates the total annual loading of water quality constituents, but also allows a comparison of anticipated concentrations of the constituents in discharges to the SJR under existing and post project conditions. Because the overall volume of stormwater discharges to the SJR after project development will be greater than the volume of existing agricultural discharges (due to the increase in impervious surfaces after project construction) conditions can occur where the total annual loading for a constituent would be higher after project development, although the concentration of the constituent in each liter of discharge may be lower. Such is the case with TKN, where total annual loading increases by 9% after project implementation, although the concentration of TKN is anticipated to decrease from 5.51 mg/l under existing agricultural operations to 2.0 mg/l after project development with BMPs.

Under existing conditions TKN is discharged at higher concentrations than the post project condition, and would often be discharged during the warmer spring and summer months when irrigation runoff is generated during the growing season. Under the post-project condition discharges would occur during the cooler rainy season (late fall, winter, early spring) and would have lower concentrations of TKN. Algae and other organisms increase growth in response to higher concentrations of TKN and other forms of nitrogen, and are capable of increasing growth rates more readily when warmer temperatures and sunlight are available. Therefore, the existing discharge conditions for TKN are expected to improve conditions for the growth of algae and other organisms more than the post-project discharges, even though the overall annual loading of TKN would be slightly higher after project implementation. Therefore, the anticipated 9% increase in annual TKN loading associated with the proposed project is not anticipated to have an adverse effect on water quality.

Similar to TKN, the post project annual loading of dissolved zinc would be greater than the existing condition (increase of 49%); however, the concentration of dissolved zinc in the discharges would be less after project implementation (32.03 µg/l vs. 19.39 µg/l). Under both existing and post project conditions zinc concentrations would be below applicable water quality standards/criteria (36 µg/l) and any project related increases in zinc loading are not expected to result in adverse water quality impacts.

Based on the available data, the expected and modeled concentration of diazinon associated with urban runoff (i.e., 0.06 µg/l) are expected to be higher than the concentration in background agricultural runoff, and could exceed the regulatory guidance criteria of 0.05 µg/l established by DFG. A TMDL program for diazinon has not yet been completed by the Central Valley RWQCB; however, the concentration of diazinon under existing SJR conditions is already higher than the range currently being considered by the RWQCB. Diazinon levels resulting from the CLSP project should not result in a measurable increase in the overall diazinon levels in the SJR, which themselves must be reduced by applying regional measures that extend beyond the scope of this project. Source control would be the most effective measure for limiting the discharge of diazinon from this site and others in the region. The EPA is currently phasing out diazinon for over-the-counter sale, and residential outdoor use is expected to decrease by about 75% according to the EPA. The constituent loading analysis reflects conditions before the EPA phaseout of residential diazinon use and thereby overestimates the likely loading that would occur following development of the CLSP area. Consequently, the proposed project is not anticipated to increase diazinon discharges in the SJR because diazinon is being phased out for residential outdoor uses.

Stormwater runoff water quality and loading to the SJR for potential constituents of concern would be improved compared to existing conditions. Therefore, stormwater runoff from the project would result in a less-than-significant water quality impact on the SJR.

Impact 4.8-e

Hydrology and Water Quality – Effects of Recycled Water Use on Surface Water and Groundwater Quality. *Runoff from areas proposed for recycled water application could potentially be discharged to the SJR and affect river water quality, or percolate to groundwater and affect sub-surface aquafers. However, the high level of treatment to be applied to the recycled water, the pollutant reduction capacity of the soil and plant matter onto which the recycled water is to be applied, the proposed application of the recycled water at the agronomic rate, the fact that all stormwater would first pass through the project's proposed BMPs, and the presence of the SJR east levee between the river and the project site that would prevent gravity flow of recycled water (or stormwater containing recycled water) to the river, would all combine to result in a* ***less-than-significant*** *water quality impact.*

Wastewater generated by the CLSP project would be conveyed to WRP #2 for treatment and then returned to the plan area and offsite areas for storage and land disposal through irrigation. A portion of the recycled water generated by the project would be land applied onsite for irrigation of public (e.g., parks, playfields, roadway medians) and private (i.e., front and back yards) landscaping. The remainder would be disposed of offsite through irrigation of dedicated agricultural spray fields. There is the potential that use of recycled water could result in contaminants reaching the SJR via over application of recycled water resulting in direct runoff, or from stormwater carrying contaminants from recycled water application areas to the river. Percolation of recycled water through the soil could also carry contaminants to sub-surface aquifers. However, for a variety of reasons, adverse impacts on SJR and groundwater water quality from use of recycled water is considered highly unlikely**.**

Recycled water leaving WRP #2 would be disinfected and would undergo tertiary treatment to Title 22 standards for unrestricted use. Tertiary treatment includes the removal of nutrients such as phosphorous and nitrogen, and practically all suspended and organic matter from wastewater. Therefore, the recycled water would contain minimal to no water quality constituents that could be directly (via runoff of recycled water) or indirectly (via deposition in the recycled water disposal areas then subsequent mobilization through stormwater runoff) transported to the SJR, or reach groundwater aquifers via percolation through the soil As indicated in the Water Master Plan EIR (EDAW 2001), extensive quantitative modeling conducted for a direct discharge of tertiary-treated wastewater to the SJR indicated that resulting water quality effects on the river would be considered less than significant even under a direct discharge condition because the tertiary-treated water being discharged into the river would be of higher quality (i.e., lower levels of contaminants) than the river flow.

Recycled water would be applied at agronomic rates to minimize percolation below the root zone and to avoid runoff or ponding at the surface. Therefore, recycled water is unlikely to reach the SJR through runoff from over irrigation, or contact groundwater from percolation through the soil. The uptake of any contaminants and nutrients by vegetation irrigated with the recycled water, and binding of contaminants and nutrients to soil particles, would further reduce the potential for recycled water to adversely affect the SJR or groundwater sources.

Any stormwater or recycled water that might leave application areas in the CLSP area would pass through the project's stormwater system and associated BMPs, providing additional contaminant removal before reaching the SJR. The SJR levee serves as a physical barrier that separates the project site from the river, preventing gravity flow of recycled water to the river and ensuring that recycled water and stormwater from CLSP application areas must pass through the stormwater drainage system and associated BMPs.

Because recycled water would be highly treated and would contain minimal to know constituents that could adversely affect water quality, and because various mechanisms would prevent or minimize the potential for constituents that might be present to reach the SJR or groundwater, the use of recycled water

in the CLSP project site would not adversely affect water quality in the SJR or groundwater aquifers. This impact is considered less-than-significant.

4.8.4 MITIGATION MEASURES

No mitigation measures are provided for the following less-than-significant impacts:

- 4.8-a: Long-term Effects on Potential Onsite and Offsite Flooding Risk from Development of Agricultural Lands
- 4.8-b: Exposure of People or Structures to a Significant Risk of Flooding as a Result of the Failure of a Levee
- 4.8-d: Long-term Water Quality Effects of Urban Runoff
- 4.8-e: Effects of Recycled Water Use on Receiving Water Quality

The following mitigation measures are provided for significant impacts:

4.8-c: Temporary Construction-related Water Quality Effects. The project applicant shall consult with the Central Valley RWQCB to acquire the appropriate regulatory approvals that may be necessary to obtain Section 401 water quality certification, SWRCB statewide NPDES stormwater permit for general construction activity, Central Valley RWQCB NPDES permit for construction dewatering activity, and any other necessary site-specific WDRs or waivers under the Porter-Cologne Act. As required under the NPDES stormwater permit for general construction activity, the project applicant shall prepare and submit the appropriate NOIs and prepare the SWPPP and any other necessary engineering plans and specifications for pollution prevention and control. The SWPPP and other appropriate plans shall identify and specify the use of erosion and sediment control BMPs, means of waste disposal, implementation of approved local plans, nonstormwater management controls, permanent postconstruction BMPs, and inspection and maintenance responsibilities. The SWPPP will also specify the pollutants that are likely to be used during construction that could be present in stormwater drainage and nonstormwater discharges. A sampling and monitoring program will be included in the SWPPP that meets the requirements of SWRCB Order 99-08-DWQ to ensure that the BMPs are effective.

Construction techniques shall be identified that will reduce the potential for runoff, and the plan shall identify the erosion and sedimentation control measures to be implemented. The SWPPP shall also specify spill prevention and contingency measures, identify the types of materials used for equipment operation, and identify measures to prevent or clean up spills of hazardous materials used for equipment operation and hazardous waste. Emergency procedures for responding to spills shall also be identified. BMPs identified in the SWPPP shall be used in all subsequent site development activities. The SWPPP will identify personnel training requirements and procedures that will be used to ensure that workers are aware of permit requirements and proper installation and performance inspection methods for BMPs specified in the SWPPP. The SWPPP shall also identify the appropriate personnel responsible for supervisory duties related to implementation of the SWPPP. All construction contractors shall retain a copy of the approved SWPPP on the construction site.

The project applicant shall also prepare and submit an NOI and acquire authorization for the Central Valley RWQCB NPDES permit for construction dewatering activities that may be necessary for foundation and utility installations within the CLSP area.

> Under SWRCB Order 99-08-DWQ, as amended, the SWRCB has determined that implementation of a SWPPP, the BMPs identified in the SWPPP, and the monitoring and sampling program required in the SWPPP are considered to meet the water quality requirements of the Porter-Cologne Act, barring a violation identified by the monitoring or sampling procedures.

Implementation of Mitigation Measure 4.8-c would reduce temporary construction-related water quality effects to a less-than-significant level.

4.8.5 RESIDUAL SIGNIFICANT IMPACTS

No residual significant impacts on hydrology or water quality would occur with implementation of the recommended mitigation measures.

4.9 Hazardous Materials and Public Health

4.9 HAZARDOUS MATERIALS AND PUBLIC HEALTH

This section evaluates the potential hazardous material and public health impacts of the Central Lathrop Specific Plan (CLSP) project. It is based on review of the Phase I environmental site assessment (ESA) prepared for the Robinson property by ENGEO, Inc. (ENGEO), in June 2003 and the Phase II ESA prepared for the Widmer property by Terrasearch, Inc. (Terrasearch), in June 1999, and on EDAW's review of the U.S. Environmental Protection Agency's (EPA's) Envirofacts website databases.

4.9.1 REGULATORY BACKGROUND

STATE AND LOCAL AGENCIES

Several state agencies regulate the transportation and use of hazardous materials to minimize potential risks to public health and safety. These agencies include the California Environmental Protection Agency (Cal EPA) and the Office of Emergency Services. The California Highway Patrol and California Department of Transportation (Caltrans) enforce regulations specifically related to hazardous materials transport. Within Cal EPA, the Department of Toxic Substances Control (DTSC) has primary authority to enforce hazardous materials regulations. State hazardous waste regulations are contained primarily in Title 22 of the California Code of Regulations (CCR). Individual Regional Water Quality Control Boards (RWQCBs) are the lead agencies responsible for identifying, monitoring, and cleaning up leaking underground storage tanks. The San Joaquin County Environmental Health Department (SJCEHD) regulates the cleanup of contaminated properties in its jurisdiction in coordination with Cal EPA.

The project proposes to use recycled wastewater to irrigate private (including front and back yards) and public landscaping and agricultural lands. Use of recycled wastewater in California is regulated under CCR Title 22, Division 4. The intent of these regulations is to ensure the protection of public health associated with the use of recycled water. The regulations establish acceptable levels of constituents and pathogens in recycled water for a range of uses and prescribe means of assuring reliability in the production of recycled water. The California Department of Health Services (DHS) has jurisdiction over the distribution of recycled water and the enforcement of Title 22 regulations. RWQCBs are responsible for issuing waste discharge requirements (including discharge prohibitions, monitoring, and reporting programs). They also are responsible for user reuse requirements associated with implementation of wastewater reclamation projects.

An ESA is conducted on a property to investigate the potential presence of hazardous materials on the property, in the soil, or in the groundwater. The results of an ESA are provided to DTSC for concurrence and to obtain recommendations for further investigation. A Phase I ESA is an initial investigation of the site to identify whether materials are present that require further evaluation. A Phase II ESA is a supplemental investigation that explores subsurface conditions of those areas of the site that were identified by the Phase I ESA as having an elevated potential to create a recognized environmental condition at the site. Thus, it is an added investigative step for those areas that are likely to have contamination and confirms whether they do in fact have contamination present.

SAN JOAQUIN COUNTY GENERAL PLAN

The San Joaquin County General Plan (County General Plan) does not specifically address the potential for existing hazardous materials in the CLSP area but includes policies regarding the safe use, manufacture, production, transportation, storage, treatment, disposal, and clean-up of hazardous materials and wastes. The following policies under the Hazardous Materials and Wastes section of the County General Plan would apply to the proposed project:

- **Policy No. 1:** Hazardous materials and wastes shall not contaminate air or water resources or soils.
- **Policy No. 2:** The use, storage and disposal of hazardous materials and wastes shall be controlled to prevent harm to individuals.
- **Policy No. 3:** Land uses and structures which contain hazardous materials or wastes which may be a safety hazard for nearby areas shall be located away from existing and planned populated areas.
- **Policy No. 4:** The use of hazardous materials and the creation of hazardous wastes shall be minimized.
- **Policy No. 5:** All development shall be consistent with the County's Waste Management Plans.

CITY OF LATHROP GENERAL PLAN

The City of Lathrop General Plan (City General Plan) does not specifically address the potential for existing hazardous materials in the CLSP area but includes policies to regulate the extent and location of land uses that may generate hazardous materials and other public health impacts. The following policies under the Safety Goals and Policies section of the City General Plan would apply to the proposed project:

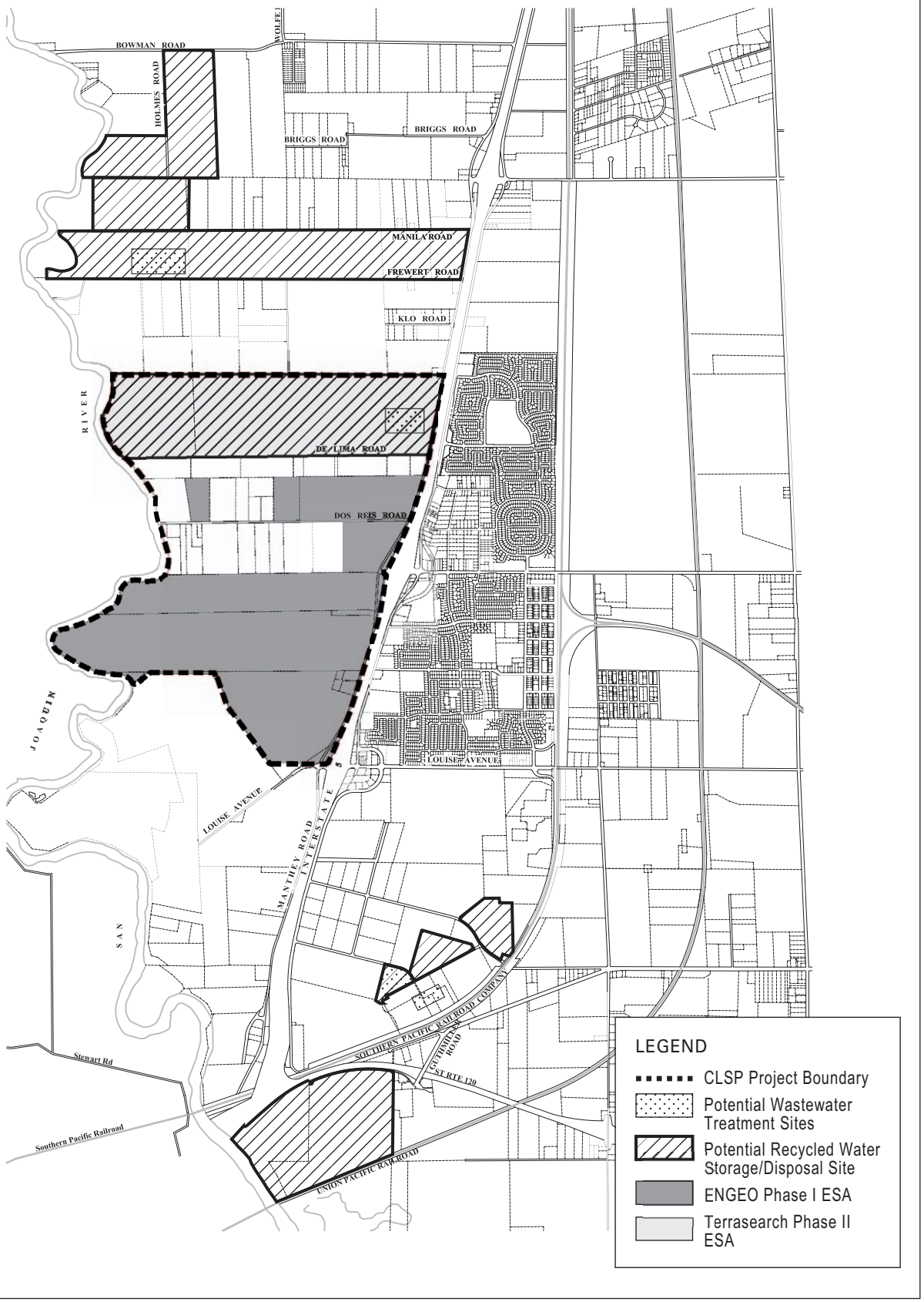
- **Policy No. 4:** The City will continue to maintain and update emergency service plans, including plans for managing emergency operations, the handling of hazardous materials and the rapid cleanup of hazardous materials spills.
- **Policy No. 6:** The City will seek to reduce the risks and potential for hazards to the public through planning and zoning practices and regulations which avoid hazardous land use relationships, and by the continued and timely adoption of new-edition building and fire codes.

4.9.2 EXISTING CONDITIONS

Parcels in the CLSP project site are owned by various entities, including Richland Planned Communities. The project site is used primarily for agricultural and farming operations, and some parcels are under Williamson Act contract. Numerous dwellings, barns, storage buildings, equipment and maintenance buildings, and other structures associated with existing farming operations are located on the project site.

A Phase I ESA was prepared by ENGEO in June 2003 for the Robinson property, which encompasses approximately the southern half of the CLSP area (Exhibit 4.9-1). The purpose of the Phase I ESA was to document recognized environmental conditions (RECs) on the Robinson property related to current and historical uses of the area and to evaluate the potential for a release of hazardous materials from onsite or offsite sources that could significantly affect environmental conditions at the project site. The site reconnaissance and records search conducted for the Phase I ESA did not find documentation or physical evidence of RECs in soil or groundwater associated with the use of the Robinson property.

A Phase II ESA was prepared by Terrasearch in June 1999 for the Widmer property, which spans the width of the CLSP area and extends from De Lima Road north to the northern plan area boundary (Exhibit 4.9-1). The purpose of the Phase II ESA was to evaluate the presence of metal and organochloride pesticides in the surficial soil at the Widmer property related to current and historical uses of the area. The soil sampling conducted for the Phase II ESA confirmed that metal and organochloride pesticides were below detection limits or within background concentrations in soil associated with use of the Widmer property.



Source: Base Map, MacKay & Somps 2004; ENGEO 2003; Terrasearch 1999

Areas Covered by Phase I and II Environmental Site Assessments

EXHIBIT 4.9-1

Central Lathrop Specific Plan EIR
City of Lathrop
G 3T017.01 06/04

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FEET

NORTH

EDAW

EDAW searched the EPA's Envirofacts website and the State Water Resources Control Board's (SWRCB's) Geotrack website to confirm and update information presented in these ESAs. The Envirofacts website presents information from several regulatory agencies and databases, including those for the EPA, DTSC, and Office of Emergency Services. According to these websites, the CLSP area and proposed recycled water storage/disposal sites are not listed in any of the regulatory databases (U.S. Environmental Protection Agency 2004).

4.9.3 ENVIRONMENTAL IMPACTS

ANALYSIS METHODOLOGY

The following reports document potential hazardous conditions at the project site and were reviewed for this analysis:

- Plans for the proposed project;
- Available literature, including documents published by city, county, state, and federal agencies;
- Review of applicable elements from the County and City General Plans;
- *Phase I Environmental Site Assessment for the Robinson Property*, prepared by ENGEO (2003); and
- *Phase II Environmental Site Assessment for the Widmer Property*, prepared by Terrasearch (1999).

In addition to reviewing the above reports, EDAW searched the EPA's Envirofacts website (as described above) to confirm information presented in the ESAs and to identify any new hazardous material sites in the project area. Project activities were evaluated against the hazardous materials information gathered from the above sources to determine whether any risks to public health and safety or other conflicts would occur.

THRESHOLDS OF SIGNIFICANCE

The CLSP project would cause a significant impact related to hazardous materials and public health if it would:

- create a public health hazard through the use, production, generation, release, or disposal of materials that pose a hazard to human, animal, or plant populations;

- expose construction workers to hazardous materials that would create health risks during construction; or

- create a health or potential health hazard.

IMPACT ANALYSIS

Impact 4.9-a

Hazardous Materials and Public Health – Use of Hazardous Materials. *The proposed project would involve the storage, use, and transport of hazardous materials at the project site during construction activities. In addition, because the project proposes commercial uses, it is likely that some facilities (e.g., dry cleaners and gas stations) could use hazardous materials during operation. However, use of hazardous materials at the site would be in compliance with local, state, and federal regulations. Therefore, impacts related to creation of significant hazards to the public through routine transport, storage, use, disposal, and risk of upset would not occur. This impact is considered* ***less than significant****.*

Development of the project site with residential and commercial uses would involve the storage, use, and transport of hazardous materials (e.g., asphalt, fuel, lubricants, paint) during construction activities. In addition, commercial uses associated with project operation could include facilities such as gas stations and dry cleaners that could use and routinely transport hazardous material on and off the project site. Transportation of hazardous materials on area roadways is regulated by the California Highway Patrol and Caltrans, whereas use of these materials is regulated by the DTSC, as outlined in Title 22 of the CCR. The project applicant, builders, contractors, business owners, and others would be required to use, store, and transport hazardous materials in compliance with local, state, and federal regulations during project construction and operation. Facilities that would use hazardous materials on site after the project is constructed would be required to obtain permits and comply with appropriate regulatory agency standards designed to avoid hazardous waste releases. Because the project would implement and comply with existing hazardous material regulations, impacts related to creation of significant hazards to the public through routine transport, use, disposal, and risk of upset would not occur with project development. Therefore, this impact is considered less than significant.

Impact 4.9-b

Hazardous Materials and Public Health – Exposure of Construction Workers, Residents, and Others to Hazardous Materials. *Although no RECs have been identified to date on the CLSP project site, the entire project site has not been evaluated using the ESA process. Past agricultural and farming operations at the project site could have resulted in contamination of soil and/or groundwater in some locations. Demolition, excavation, and construction activities in the CLSP area could result in the exposure of construction workers to hazardous materials, including asbestos, petroleum hydrocarbons, pesticides, herbicides, and fertilizers. In addition, if contaminated sites in the CLSP area are not remediated before occupation or use of the site, then residents and others could be exposed to hazardous materials. This impact is considered* ***significant****.*

Hazardous constituents of potential concern at the project site include asbestos, petroleum hydrocarbons, pesticides, herbicides, and fertilizers. However, no evidence of RECs or hazardous material contamination has been reported at the project site. The site reconnaissance and records review conducted for the Phase I ESA (ENGEO 2003) did not find documentation or physical evidence of soil or groundwater impairments associated with the Robinson property or abutting properties. Although the soil samples from the Widmer property analyzed for the Phase II ESA (Terrasearch 1999) contained organochloride pesticides, levels were below established regulatory thresholds. Lead, mercury, and arsenic were also found to be within background concentrations.

Not all parts of the project site have been evaluated using the ESA process (Exhibit 4.9-1), however. There is potential that previously unrecorded incidences of contamination or RECs could be located in these areas. There is also the potential for areas previously evaluated in ESAs to become contaminated between the time of the ESA review (1999 and 2003) and project construction (2005–2020). Development of the CLSP project would involve site grading, excavation for utilities, dewatering of open trenches, backfilling, demolition of existing facilities, and construction of new residences and commercial facilities. Excavation and construction activities at or near areas of currently unrecorded soil and/or groundwater contamination could expose construction workers to hazardous materials. If areas identified as potentially having contaminated soil and/or groundwater are not remediated, future residents and others could come into contact with and be exposed to hazardous materials. In addition, several onsite structures could include asbestos-containing building materials and lead-containing materials (e.g., paint, sealants, pipe solder), which could become friable or mobile during demolition activities and come into contact with construction workers. Potential exposure of construction workers, residents, and others to hazardous materials on the project site is considered a significant impact.

Impact 4.9-c

Hazardous Materials and Public Health – Potential Public Health Impacts Associated with Recycled Water. *The proposed project includes the use of recycled water to irrigate residential and nonresidential landscaping in the CLSP area and for crop irrigation at recycled water disposal sites. The recycled water would comply with state requirements for unrestricted use. Application methods would also meet state standards. Because recycled water and the methods for its use would comply with state health requirements, conflicts related to public health are not anticipated. This impact is considered* ***less than significant****.*

The proposed project includes plans to use recycled water from the City's proposed Water Recycling Plant #2 (WRP #2) to irrigate private and public landscaping and some agricultural areas. If wastewater recycling facilities do not operate properly, the public could come into contact with contaminated water, resulting in a public health hazard. However, recycled water treated at WRP #2 would comply with Title 22 requirements for unrestricted use (i.e., disinfected tertiary treatment). Methods for application and use of the recycled water would also need to follow Title 22 requirements. Because the recycled water used at the project site would comply with Title 22 health requirements (allowing for better control of public contact), the potential public health impact is considered less than significant.

4.9.4 MITIGATION MEASURES

No mitigation measures are necessary for the following less-than-significant impacts:

- 4.9-a Use of Hazardous Materials
- 4.9-c Potential Public Health Impacts Associated with Recycled Water

The following mitigation measure is provided for significant impacts relating to hazardous materials and public health:

4.9-b Exposure of Construction Workers, Residents, and Others to Hazardous Materials. Before excavations in any areas not previously evaluated using the ESA process or before demolition of any structures associated with past and current farming operations (e.g., buildings, aboveground and underground storage tanks), the project applicant shall investigate the extent to which soil and/or groundwater has been contaminated from these operations. This investigation shall follow ESA and/or other appropriate testing guidelines and shall include, as necessary, analysis of soil and/or groundwater samples taken at or near the potential contamination sites. Areas previously evaluated in the Terrasearch (1999) and ENGEO (2003) ESAs shall also receive an evaluation that follows appropriate testing guidelines before excavation begins to determine whether conditions have changed since completion of the previous ESAs. If the results of any evaluation indicate that contamination exists at levels above regulatory action standards, then the SJCEHD shall be notified and the site shall be remediated in accordance with recommendations made by SJCEHD; RWQCB; DTSC; or other appropriate federal, state, or local regulatory agencies. The agencies involved would be dependent on the type and extent of contamination.

In addition, the following measures shall apply to construction activities as appropriate.

(1) The SJCEHD shall be notified if evidence of previously undiscovered soil or groundwater contamination (e.g., stained soil, odorous groundwater) is encountered during excavation and dewatering activities. Any contaminated areas shall be remediated

in accordance with recommendations made by SJCEHD; RWQCB; DTSC; or other appropriate federal, state, or local regulatory agencies.

(2) Before demolition of any onsite buildings, the project applicant shall hire a qualified consultant to investigate whether any of these buildings contain asbestos-containing materials and lead that could become friable or mobile during demolition activities. If found, the asbestos-containing materials and lead shall be removed by an accredited inspector in accordance with EPA and California Occupational Safety and Health Administration (Cal/OSHA) standards. In addition, all activities (construction or demolition) in the vicinity of these materials shall comply with Cal/OSHA asbestos and lead worker construction standards. The asbestos-containing materials and lead shall be disposed of properly at an appropriate offsite disposal facility.

Implementation of Mitigation Measure 4.9-b would reduce impacts related to exposure to hazardous materials during construction to a less-than-significant level.

4.9.5 RESIDUAL SIGNIFICANT IMPACTS

There would be no residual significant impacts associated with hazardous materials and public health after implementation of the mitigation measures recommended in this section.

4.10 Public Services

4.10 PUBLIC SERVICES

This section evaluates the potential impacts on public services (including fire protection, police services, animal control, public schools, and solid waste management) from implementation of the Central Lathrop Specific Plan (CLSP) project. Impacts are evaluated in relation to increased demand for public services associated with the proposed project and actions needed to provide increased services that could potentially lead to physical environmental effects. Other publicly provided utility services, such as water and wastewater treatment, stormwater management, electricity, and natural gas services, are addressed in Section 4.11, Public Utilities.

Much of the information and analysis provided in this section is focused on the CLSP area rather than the potential offsite recycled water storage and disposal areas and Water Recycling Plant (WRP) #2 sites. Although structures may be placed in these offsite areas (i.e., the WRP, recycled water storage ponds), these facilities would not generate substantial demand for public services that could result in significant environmental effects.

4.10.1 REGULATORY BACKGROUND

CALIFORNIA DEPARTMENT OF EDUCATION

The California Department of Education (CDE) School Facilities Planning Division (SFPD) has prepared a School Site Selection and Approval Guide that provides criteria for locating appropriate school sites in the State of California. These criteria originate in the Education Code (see, e.g., Sections 17212, 17212.5, 17213, 17213.1, 17215, 17215.5) and in Title 5 of the California Code of Regulations (see Section 14010). (See also Public Resources Code Section 21151.8 and California Environmental Quality Act Guidelines Section 15186.) The CDE's authority for approving proposed sites is contained in Education Code Section 17251. The CDE's approval is a condition for school districts to receive state funds for the acquisition of sites under the state's School Facilities Program administered by the State Allocation Board. Districts using only local funds are still encouraged to seek the CDE's approval for the benefits that such outside review can provide.

School site and size recommendations were changed by the CDE in 2000 to reflect various changes in educational conditions, such as reduction of class sizes and use of advanced technology. The expanded use of school buildings and grounds for community and agency joint use and concern for the safety of the students and staff members also influenced the modification of the CDE recommendations.

The CDE provides specific recommendations for school size in the publication School Site Analysis and Development (CDE 2000). This document suggests a ratio of 1:2 between buildings and grounds. CDE is aware that in many cases, primarily in urban settings, smaller sites cannot accommodate this ratio. In such cases, the SFPD may approve an amount of acreage less than the recommended gross site size and building-to-grounds ratio.

Certain health and safety requirements for school site selection are governed by state regulations and the policies of the SFPD relating to:

- proximity to airports, high-voltage power transmission lines, railroads, and major roadways;
- presence of toxic and hazardous substances;
- proximity to hazardous facilities and hazardous air emissions sources;

- proximity to high-pressure natural gas lines, propane storage facilities, gasoline lines, pressurized sewer lines, or high-pressure water pipelines;
- noise;
- results of geological studies or soil analyses;
- traffic and school bus safety; and
- safety issues related to joint-use facilities.

SAN JOAQUIN COUNTY GENERAL PLAN

The San Joaquin County General Plan (County General Plan) includes the following objectives and policies related to the public services addressed in this section:

- **Solid Waste Disposal Objective 1:** To ensure the safe and efficient disposal or recycling of wastes generated in San Joaquin County.
- **Solid Waste Disposal Policy No. 2:** The County shall promote maximum use of solid waste source reduction, recycling, composting, and environmentally safe transformations of waste.
- **Educational Facilities Objective 1:** To ensure adequate educational facilities, properly sized and located.
- **Educational Facilities Policy No. 1:** Development shall be served by adequate educational facilities.
- **Educational Facilities Policy No. 2:** Future elementary and middle schools should be:

  a. centrally located within or adjacent to residential neighborhoods and within the projected attendance area to minimize walking distances;

  b. located to minimize the number of students who would have to cross a major street to reach the school;

  c. located with direct access to an existing or planned Collector or Minor Arterial street, as well as direct or indirect access to a second road; and

  d. conveniently and safely accessible by pedestrians and bicyclists.

- **Educational Facilities Policy No. 3:** Future high schools should be sited:

  a. directly on a Minor Arterial or larger street as well as directly or indirectly on a secondary road;
  b. in residential or commercial areas depending on access, noise, safety and other considerations.

- **Educational Facilities Policy No. 4:** Whenever possible, schools and local parks should be adjacent.
- **Educational Facilities Policy No. 5:** In planning school sites, the County shall allow the following approximate areas for school sites:

a. Elementary schools – 10 acres;
b. Junior high schools – 20 acres; and
c. High schools – 40 acres.

- **Fire Safety and Law Enforcement Objective 1**: To provide fire protection and law enforcement for the public's health and safety.

- **Fire Safety and Law Enforcement Objective 2**: To prevent fire and law enforcement hazards through physical planning.

- **Fire Safety Policy No. 1:** The fire protection and law enforcement services and facilities shall provide adequate protection throughout the County, including waterways used by boaters.

- **Fire Safety Policy No. 2:** New development shall have water systems which meet County fire flow requirements or shall provide adequate onsite water storage, as determined by the County Fire Warden or by the local fire district having jurisdiction, if the district has a fire prevention bureau.

- **Fire Safety Policy No. 4:** The fire station locations shall be planned to achieve a maximum run time of 3 minutes or 1.5 miles in urban areas and 6 minutes or 4.0 miles in rural areas.

- **Fire Safety Policy No. 5:** All development shall have adequate access for fire fighting and emergency equipment.

- **Law Enforcement Policy No. 7:** The standard for law enforcement shall be 1.5 line officers assigned to patrol duty per 1000 residents in urban communities and one line officer assigned to patrol duty per 1000 residents in the remaining unincorporated portions of the County.

- **Law Enforcement Policy No. 8:** Development design should foster a sense of community and incorporate defensible space design concepts.

CITY OF LATHROP GENERAL PLAN

The City of Lathrop General Plan (City General Plan) includes several policies specifically related to the public services addressed in this section. The following policies under the "Safety Goals and Policies" section of the City General Plan apply to the proposed project:

- **Policy 1:** The City will continue to give high priority to the support of police protection, and to fire suppression and prevention and life safety functions of the Fire Department. Ultimate expansion of the City's fire service is to include additional stations affording adequate response within a maximum of 3-4 minutes to all parts of the urban area.

- **Policy 2:** The City will work to maintain a fire flow standard of 3,000 gpm [gallons per minute] for all commercial and industrial areas, and 1,500 gpm for residential areas, to assure capability to suppress urban fires. In strategic areas, the City should provide above ground water storage with capacities sufficient to supply the City for required durations.

- **Policy 3:** The City will maintain a street system which is capable of providing access to any fires that may develop within the urban area, and which is capable of providing for the adequate evacuation of residents in the event of an emergency condition of magnitude.

- **Policy 6:** Neighborhood watch programs will be encouraged in all residential areas of the City.

One City General Plan policy in the "Seismic Goals and Policies" section applies to fire protection:

- **Policy 3:** The present building height limit of 50 feet shall be maintained, with a maximum of four stories. This policy shall stay in force until such time that high rise construction is desired and capability for evacuation and fire fighting in upper stories is possible through the availability of appropriate equipment.

One City General Plan policy in the "Air Quality and Solid Waste Management Policies" section applies to solid waste management:

- **Policy 7:** Environmental assessments for the development projects proposed consistent with the General Plan shall provide all of the information required under the "Waste Plan Format for Development Projects" that is employed by the San Joaquin County Department of Public Works.

4.10.2 EXISTING CONDITIONS

FIRE PROTECTION SERVICES

The project site is in the service area of the Lathrop-Manteca Fire Protection District (LMFPD). The following information on the LMFPD was obtained from the district's website (LMFPD 2004) and relevant documents. The LMFPD was established in 1936 as the Manteca-Lathrop Rural County Fire Protection District; the district changed its name to the Lathrop-Manteca Fire Protection District in February 2002. References to documents prepared before 2002 use the name of the agency at the time the document was prepared (i.e., Manteca-Lathrop Rural County Fire Protection District).

The district service area covers more than 100 square miles in southern San Joaquin County and includes the City of Lathrop. The district surrounds, but does not include, the City of Manteca, which has its own fire protection services.

The LMFPD service area consists of a mixture of rural and urban areas, including more than 4,300 single-family dwellings, more than 5 million square feet of commercial-use structures, and thousands of acres of agricultural lands. Since the City of Lathrop was incorporated in 1989, the LMFPD has accommodated all planned urban growth in the City, and the district plans to provide necessary service to new development in its 100-square-mile jurisdiction.

The LMFPD currently employs 28 career personnel and 17 reserve firefighters. The districtwide fire suppression force is organized into three rotating 24-hour shifts with eight members of the force on duty for each shift. These shifts cover operations at three stations:

- Station 31 – Lathrop City – 800 East J Street, Lathrop
- Station 32 – Nile Garden – 22701 South Union Road, Manteca
- Station 33 – New Haven – 9121 East Lathrop Road, Manteca

Each shift includes four members of the force at the main station (Station 31) and a minimum of two at each of the two satellite stations (Stations 32 and 33). The main station is equipped with a 65-foot Tele-squirt pump, triple combination pump, one reserve Type 1 fire engine, one 3,000-gallon water tender/pump, one light rescue truck, and one heavy rescue truck. A total of four additional pumpers are shared between the two satellite stations. Additional assistance can be summoned under mutual aid and automatic aid agreements with surrounding cities, the County, and state firefighting agencies.

An important requirement in 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 duration this flow is available. The total fire flow needed to extinguish a structural fire is determined by 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. Generally, fire flow requirements for the type of development associated with the proposed project is between 1,250 and 2,000 gpm (measured at 20 pounds per square inch [psi]) with a minimum 2-hour duration.

The LMFPD responds to fires, medical emergencies, traffic accidents, river rescues, and a variety of other emergency situations. All of the LMFPD firefighting personnel are qualified as Emergency Medical Technicians. Ambulance service from the Manteca District Ambulance is also available at Station 31. All medical patients in the LMFPD service area are transported to one of six local hospitals, depending on proximity and available space.

Fire Station 31, which also serves as LMFPD's headquarters, currently provides first-response service to the CLSP area. This station is approximately 1.3 miles from the plan area by road and would have a response time of approximately 2–3 minutes to the western and central portions of the plan area. Response times would exceed 4 minutes to reach the more distant eastern and northern portions of the CLSP area. The first-response time goal in the LMFPD is 3 minutes in urban areas and 6 minutes in rural areas (Manteca-Lathrop Rural County Fire Protection District 2000). The average first-response time for Station 31 is 3–5 minutes.

Under an agreement between parties associated with the Mossdale Landing project and the LMFPD, a fire station is planned in the Mossdale Landing project site just south of the CLSP area (EDAW 2002a). The station, identified as Fire Station 34 – Lathrop City Central Station (Station 34), will be located along River Islands Boulevard in the northernmost portion of Mossdale Landing. Station 34 will be placed in service when 170 homes are developed at Mossdale Landing or response times to project homes exceed 3–4 minutes, whichever comes first. Station 34, when built, will provide faster response times to the CLSP area than the existing Station 31, although response times to the far northeastern portion of the plan area would likely still exceed 4 minutes.

POLICE SERVICES

Police service is provided to the CLSP area by the San Joaquin County Sheriff's Department (County Sheriff's Department). The Patrol Division assigns officers to patrol duties in the County. The Patrol Division is organized to provide emergency first response, investigation of reported crimes, specialized police services, and to assist citizens in creating safe neighborhoods. There are 124 uniformed deputies providing Police Patrol Service 24 hours a day 7 days a week. The deputies are divided into 8 patrol teams on two day off sequences (4 teams on duty each day). The county is divided into eight geographical areas or beats. These beat areas are staffed around the clock, providing emergency response capability to citizens in the unincorporated area of the County. Additionally, these same officers act as deputy coroners, responding to unattended deaths in the County. In the CLSP area, first response to emergency calls is provided by officers assigned to beat 6.

Police services are provided to the City of Lathrop under contract with the County Sheriff's Department. Personnel from the department are assigned to the City for a minimum of 3 years. Although police services are provided to the City under contract with the County Sheriff's Department, the deputies assigned to the City work only in the city limits.

The City police department is located at 15597 Seventh Street, approximately 1.5 miles by road from the CLSP area. In accordance with the City General Plan, a new Government Center is planned to be developed west of Interstate 5 (I-5) in the City. A new police station may be included in this Government Center. A new police station could also be constructed in another location west of I-5. The Government Center police station or another station west of I-5, if constructed, would either add to or replace the Seventh Street station, depending on service needs when the new station is built.

Since the City was incorporated, police service has been expanded to include six patrol cars. The department is staffed 24 hours a day in a series of six shifts with one officer during the slowest times (3 a.m. to 8 a.m.) and two to four officers during periods of heavier calls for service. Minimum staffing levels are set at five officers per day. The existing 20-person sheriff's department staff working in the City includes 14 patrol deputies, one chief, one lieutenant, one detective, one community resource officer, and 2 full-time equivalent (FTE) administrative personnel (City of Lathrop 2004). If needed, additional assistance can be summoned under a mutual aid agreement with surrounding cities and the County.

Existing police staffing levels in the City are 1.4 officers per 1,000 residents. The City plans to hire one additional officer to attain a 1.5-officer-per-1,000-residents ratio, as directed by the City Council (Carder, pers. comm., 2004). The current emergency response time in the core area of the City is 2–4 minutes. However, the northern areas of the City and the Stewart Tract have longer response times (EDAW 2002b).

ANIMAL CONTROL

Animal control service is provided to the CLSP area by San Joaquin County Animal Control (County Animal Control), which operates the County Animal Shelter in Stockton. The Animal Control Facility (shelter and County Animal Control facilities) is a joint City of Stockton/County operation, and distribution of costs are split at the end of each year, based on the amount and type of services provided during the year. The shelter is open 7 days a week, and animal control officers are on call 24 hours a day. Services provided by County Animal Control staff include issuing of pet licenses; capturing stray or aggressive animals; providing humane animal traps to citizens for use in capturing wild cats and other miscellaneous animals; providing assistance in removing skunks, bats, and other wild animals from residences; providing adoptions for unwanted animals; providing information and referral services to residents; and veterinary services.

In the City of Lathrop, Animal Control is a part of the City's police service function and is supported by the City's General Fund. This division is staffed by City employees, including one animal control manager, one animal control officer, and one animal control assistant and is equipped with two animal collection vehicles. The City of Lathrop contracts with the City of Manteca for animal shelter services. Presently, Animal Control monitors the number of calls received at the department. The general trend for total calls for service has been increasing, with total annual calls more than doubling between 1995, when 1,005 calls were received, and 2003, when there were 2,122 total calls (Enneking, pers. comm., 2004). It is anticipated that additional patrol units will be required as demand for services continues to increase

PUBLIC SCHOOLS

The Manteca Unified School District (MUSD) provides educational services in the City (other than on Stewart Tract) for grades K-12. MUSD schools currently include 17 elementary schools, three high schools, two community day schools, and one continuation school. The teacher-student ratio is 1:20 for grades K-3 and 1:34 for grades 4-12. Elementary school students living in the City attend the Lathrop Annex for grades K-3 (at 721 Thomsen Road), the Lathrop Elementary School for grades 4-8 (at 15851 South Fifth Street), and Joseph Widmer Elementary School for grades K-8. The first two schools are

approximately 1.5 miles from the CLSP area; Widmer Elementary School is located in the Stonebridge development. High school students living in the City attend Sierra High School at 1700 Thomas Street in Manteca, approximately 6.5 miles east of the CLSP area.

MUSD is considered a rural district and serves approximately 22,500 students. On a district level, the MUSD is operating at or near capacity for its elementary and high schools. The school district has experienced considerable growth in the past few years. For each of the past 3 years, it has added 1,200 students (MUSD 2004). With the introduction of year-round school, the district can serve 20% more students than a traditionally scheduled school district. Table 4.10-1 identifies the 2002-2003 school year enrollment for MUSD K-8 schools in September 2002 and an assessment of capacity at district high schools at that time. It should be noted that the exact capacity levels and enrollment figures can change frequently as more portable classrooms are added and additional students enroll in the district.

Table 4.10-1
Manteca Unified School District Enrollment, 2002-2003 School Year

School Name	Grade Levels	Current Enrollment[1]	Student Capacity (# of students)	% of Capacity	Remaining Capacity (# of students)
Brockman	K-8	794	690	115	-104
Cowell	K-8	909	900	101	-9
Elliot	K-8	918	900	102	-18
French Camp	K-8	757	800	95	43
Golden West	K-8	796	850	94	54
Great Valley	K-6	1,056	1,075	98	19
Hafley	K-8	956	1,000	96	44
Knodt	K-8	1,565	1,300	120	-265
Komure	K-3	381	968	39	587
Lathrop (Annex and Elementary)	K-8	1,221	1,200	102	-21
Lincoln	K-8	733	800	92	67
McParland (Annex and Elementary)	K-8	964	900	107	-64
New Haven	K-8	690	800	86	110
Nile Garden	K-8	749	800	94	51
Sequoia (Annex and Elementary)	K-8	1,038	1,000	104	-38
Shasta	K-8	852	850	100	-2
Widmer	K-8	814	1,075	76	261
Manteca Day School	K-12	90	115	78	25
Calla High Continuation	9-12	257	at or exceeding capacity[1]	100	0
East Union High	9-12	2,159	at or exceeding capacity[1]	100	0
Manteca High	9-12	1,667	at or exceeding capacity[1]	100	0
Sierra High	9-12	1,808	at or exceeding capacity[1]	100	0
Lindbergh Adult Campus[2]	9-adult	4,000	---	---	---

[1] Student enrollment in the district changes daily as more students enroll and others leave; therefore, Table 4.10-1 cannot reflect exact current enrollment.
[2] Lindbergh Adult Campus serves about 4,000 high-school aged and adult students in an alternative setting.

Source: Manteca Unified School District 2004.

The MUSD expects that, in the next 5 years, it will need to build at least two new elementary schools and a high school to handle the influx of new students (Recorder 2003). To accommodate growth and maintain teacher-student ratios, improvements and additions to existing schools and construction of new schools are underway. The district opened Komure Elementary School for K-3 students in July 2002 to accommodate rapid growth in the Weston Ranch area. Weston Ranch High School opened in August 2003 for grades 9–10 and will expand by one grade level in fall 2004 (to grade 11) and fall 2005 (to grade 12). Construction of Woodward Elementary School is underway south of Highway 120 and will provide 43 classrooms, a library, and a computer lab. In addition, the Mossdale Landing project will include the development of two new elementary schools.

The school district funds new facilities with 50% state and 50% local sources. Under state law, the district can receive local funding through developer impact fees, tax revenue from Mello-Roos districts, and general obligation (GO) bonds. For MUSD, developer impact fees constitute the major source of local funding for the district. Currently, the developer is charged $3.90 per square foot for residential development and $0.34 per square foot for commercial development in the district boundaries. Mello-Roos districts are areas, mainly new residential subdivisions, which have an additional voter-approved school tax imposed on them. The GO bonds require approval through a general vote by residents in the district boundary and have not been successful in the district.

SOLID WASTE REMOVAL AND DISPOSAL

The City of Lathrop provides curbside pickup and hauling services for residential and commercial solid waste through a contract with Lathrop Sunrise Sanitation, an independent solid waste hauler. Sunset Disposal provides similar services to the CLSP area through a contract with the County. Waste is collected in a three-container system, allowing separation of garbage, recyclables, and yard wastes. Recyclables are sent to Stockton Recycling (a private company), and garden waste is composted. Delta Containers, an independent waste hauler associated with Lathrop Sunrise Sanitation and Sunset Disposal, provides waste collection to commercial and industrial customers in the City and the CLSP area. Both residential and commercial/industrial waste are hauled to the County's Lovelace Transfer Station, approximately 1 mile northeast of Lathrop, and then to the County's Class III Foothill Sanitary Landfill in Linden, approximately 35 miles northeast of the City. The landfill has approximately 40 million tons of capacity remaining and is expected to remain open until 2048 (EDAW 2002b).

4.10.3 ENVIRONMENTAL IMPACTS

ANALYSIS METHODOLOGY

Impacts on fire and police services, animal control, public schools, and solid waste disposal that would result from the proposed project were identified by comparing existing service capacity and facilities against future demand associated with project implementation. It is assumed that responsibility for police, animal control, and solid waste services currently administered by the County in the CLSP area would be transferred to the City of Lathrop when the plan area is annexed to the City. Because temporary impacts could occur if public services are not provided concurrently with the project elements that create demand for these services (residential, commercial), an evaluation of project phasing is included.

Phase 1 of the proposed project includes options for a fire station (if determined to be needed to meet desired response times) and a police station (in the Public/Semi-Public/Neighborhood Commercial [P-SP(NC)] land use area), and plans for two K-8 schools and one high school. Phase 2 includes plans for an additional K-8 school and can accommodate a fire station if one is not constructed in the Phase 1 area. Potential impacts on the local school system are analyzed based on a student generation report prepared for the project (Appendix I of this DEIR), on the anticipated sequence of school construction in the CLSP

area, and on legally established school funding guidelines. The impact analysis for solid waste disposal focuses on anticipated solid waste generation from the proposed project compared to existing capacity in landfill facilities that would receive the waste.

Environmental impacts associated with development of the CLSP project as a whole, including planned public service facilities (i.e., fire station, police station, schools) are evaluated in this Draft Environmental Impact Report (EIR). Although construction and operation of these individual facilities is not evaluated as a single activity in this Draft EIR, they would contribute to overall project impacts related to traffic; air quality; noise; geology, soils, and mineral resources; hydrology and water quality; agricultural resources; terrestrial biology; cultural resources; and paleontological resources. Please refer to the applicable sections of this Draft EIR for a full assessment of project impacts related to these issue areas. The following section only addresses the environmental effects of construction of new fire protection, police, and school facilities in the CLSP area as they apply to the provision of public services.

THRESHOLDS OF SIGNIFICANCE

The CLSP project would cause a significant impact on public services if it would:

- create a need for the development of new service facilities (e.g., fire, police, schools), the construction of which could result in significant environmental impacts;
- create circumstances where existing services and facilities could not meet established performance standards (i.e., response times, provider per resident ratios);
- substantially impede existing services;
- generate solid waste beyond the capacity of existing landfills; or
- violate federal, state, or local statues and regulations related to solid waste.

IMPACT ANALYSIS

Impact 4.10-a

Public Services – Obstruction of Roadways during Construction. *Implementation of the proposed project could obstruct roadways in the vicinity during construction, which could obstruct or slow emergency vehicles attempting to access the area. This impact is considered* ***significant****.*

The proposed project would include construction activities of varying levels over a 15-year period (2005–2020). While a majority of project construction activities would occur onsite, nearby roadways, such as Manthey Road, could be affected (see Section 4.4, Transportation and Circulation). Construction activities during Phase 2 could also affect segments of onsite roads developed during Phase 1, such as Golden Valley Parkway. Ongoing construction activities could result in temporary lane closures, increased truck traffic, and other roadway effects that could slow or stop emergency vehicles, temporarily increasing response times and impeding existing service. This impact is considered significant.

Impact 4.10-b

Public Services – Increased Demand for Fire Protection Facilities and Services. *Development of the proposed project would result in increased demand for fire protection facilities and services. If a fire station (or stations) is not constructed in the CLSP area, existing fire protection facilities could not adequately serve the plan area. This impact is considered* ***significant****.*

The estimated resident population for the proposed project would be 10,781 at buildout of Phase 1, with 7,969 residents being added at buildout of Phase 2 for a total population of 18,750 at full project buildout (see Section 4.3, Population, Employment, and Housing). According to the Manteca-Lathrop Fire Protection District Master Plan (Manteca-Lathrop Rural County Fire Protection District 2000), a ratio of 1.2 firefighters to 1,000 residents must be maintained. Therefore, to maintain an appropriate level of service, a minimum of 13 additional firefighters would need to be added to accommodate Phase 1, and an additional 10 firefighters would need to be added to accommodate Phase 2 for a total of 23 additional firefighters at full project buildout.

Associated with the increased need for firefighters, new stations and equipment would be required. During initial construction in the CLSP area the existing fire stations in the City of Lathrop, particularly Fire Station 31, would provide first-response service. However, Station 31 could not maintain a 3- to 4-minute response time for all portions of the project site at full buildout. A new fire station, Station 34, is planned to be built to serve the Mossdale Landing project, just south of the CLSP area (EDAW 2002). The new station will be placed in service when 170 homes are developed at Mossdale Landing or response times exceed 3–4 minutes, whichever comes first. Construction is underway on the Mossdale Landing project; therefore, it is anticipated that Station 34 will be completed before facilities are occupied in the CLSP area. In addition, a new fire station is planned for the CLSP area. The location of the fire station would be determined in consultation with the LMFPD based on estimated response times. If Station 34 and the planned station in the CLSP area are not constructed, existing LMFPD fire protection facilities could not provide adequate service to the plan area.

As required by the City General Plan, buildings associated with the proposed project cannot exceed 50 feet in height or four stories until appropriate firefighting equipment is available. If any proposed buildings exceed this height limit, the LMFPD would need to obtain aerial ("hook and ladder") trucks and other specialized equipment to allow fire suppression and emergency response in upper stories.

The need for increased fire protection service and new facilities created by the proposed project to meet current performance standards is considered a significant impact.

Impact 4.10-c

Public Services – Increased Demand for Fire Flow. *The proposed project would include the development of residential, commercial, school, and other uses that would require adequate available water flow for fire suppression. Lack of adequate fire flow would impede the ability of the LMFPD to provide effective fire suppression at the project site. This impact is considered* ***significant****.*

The LMFPD maintains oversight authority to ensure that adequate fire flow (water volume, pressure, and quantity) are available in the district's service area. Methods to calculate minimum fire flow involve design-specific calculations, including the density of structures, height, number of stories, square footage, building materials, and structural design. For most of the structures associated with the proposed project, the minimum fire flow requirement would be between 1,250 gpm and 2,000 gpm (measured at 20 pounds per square inch pressure) for a duration of at least 2 hours. Fire flow requirements may be greater in areas

where multiple-story commercial and office buildings could be constructed. Lack of adequate fire flow would impede the ability of the LMFPD to provide effective fire suppression service at the project site and would be considered a significant impact.

Impact 4.10-d

Public Services – Increased Demand for Police Protection Facilities and Services. *Development of the proposed project would increase the demand for police protection facilities and services, resulting in the need for additional staff and equipment to maintain an adequate level of service. This impact is considered* ***significant****.*

The estimated resident population for the proposed project would be 10,781 at buildout of Phase 1, with 7,969 residents being added at buildout of Phase 2 for a total population of 18,750 at full project buildout (See Section 4.3, Population, Employment, and Housing). Using the identified target ratio of 1.5 officers to 1,000 residents in the City, a minimum of 16 additional police officers would need to be added to accommodate Phase 1, and an additional 12 police officers would need to be added to accommodate Phase 2 for a total of 28 additional police officers at full project buildout to maintain a similar level of service. Additional administrative staff members would also be required to support these patrol officers.

The existing police station on Seventh Street is capable of supporting some additional officers required for new development in the City. However, at some point during development of the CLSP area, a new police station or some other facility (i.e., police substation) would be required to accommodate the additional patrol officers and associated administrative staff members required to provide service to the proposed project. The police station, or similar facility, could be located in the Government Center or within other approved development west of I-5. The CLSP area would provide a potential location for a new police station in the Public/Semi-Public/Neighborhood Commercial (P-SP/NC) land use area. This could either be an independent police station, or be included in the Government Center called for in the City General Plan.

The River Islands project site is also considered a potential location for the Government Center (and associated police station). Environmental impacts associated with development of the River Islands Project as a whole, including the potential for a Government Center, are evaluated in the Subsequent EIR completed for the project (EDAW 2002b). Although construction and operation of the Government Center is not evaluated as a single activity in Subsequent EIR, significant impacts that could be associated with this facility, or that this facility would contribute to, would occur related to traffic; air quality; noise; geology, soils, and mineral resources; hydrology and water quality; agricultural resources; terrestrial biology; fisheries; and cultural resources. Significant impacts directly attributable to the Government Center, or the Government Center's contribution to impacts associated with the project as a whole, could be mitigated to less than significant levels.

Initially, the CLSP area would be served by police officers associated with the planned Seventh Street facility, which is 0.5 mile by road from the plan area. Police emergency response times are expected to remain within the 3- to 4-minute goal of the City General Plan due in part to the proximity of the Seventh Street facility, but more importantly because police emergency response primarily originates from squad cars on patrol beats rather than from the police station; therefore, the location of the station relative to the project site is not a critical factor. Whether officers serving the CLSP area are associated with the existing Seventh Street station or another facility west of I-5, emergency police response times would remain within desired goals as long as sufficient patrol officers are available.

Funding for police facilities and services is deducted from the City's General Fund. The City also incurs startup costs associated with the hiring and training of new officers, equipping each new officer, and providing patrol vehicles (one vehicle serves two officers). These startup and equipment costs are

typically paid for by project applicants as a standard City requirement included in the development agreements for new development projects.

Because the CLSP would generate the demand for additional officers, staff, equipment, and facilities to maintain the level of service currently provided by the Lathrop Police Department, this impact is considered significant.

Impact 4.10-e

Public Services – Increased Demand for Animal Control Facilities and Services.
Development of the proposed project would increase the number of City residents, thereby increasing the number of pets, and consequently increasing the demand for animal control facilities and services. New facilities and staff members would be required to maintain the existing level of service in the City. This impact is considered ***significant****.*

Increased population associated with the proposed project would result in a corresponding increase in demand for animal control services, including retrieval of stray or abandoned animals; animal shelter operations; cruelty investigations; and responses to animal nuisance (e.g., barking dog) complaints, dog bites, and leash law violations. The City of Stockton/County Animal Control Division facilities and staff are currently maintaining acceptable levels of service to the CLSP area. After annexation into the City, animal control services would be provided by the City Animal Control Department, which maintains an acceptable level of service to City residents but does not have the capability to respond to increased demands resulting from development of the proposed project. In addition, following annexation, there would be an immediate impact on Lathrop animal control facilities for existing residential dwelling units within the CLSP area. It can be anticipated that if the existing staff level (two animal control officers) is maintained, response times for service requests would increase and noncritical services (e.g., responses to animal nuisance complaints) may no longer be provided, or would not be provided in a timely manner. New facilities and staff members would be required to maintain the existing level of service in the City.

Because existing service levels could be adversely affected by the proposed project, and additional staff and facilities would be required to maintain acceptable service levels, this impact is considered significant.

Impact 4.10-f

Public Services – Increased Demand for Public School Facilities and Services.
Implementation of the proposed project would increase demand for elementary school (K-8) and high school services in the MUSD. The project would pay the state mandated school impact fees and would dedicate three K-8 school sites and one high school site. Construction of schools on these sites, to meet project generated demand, would reduce the project's long-term impacts on public school facilities to less-than-significant levels. There is a potential that the proposed project would exceed the existing available high school capacity of the MUSD prior to the development of the proposed onsite high school; however, payment of the State mandated school impact fee is legislatively deemed full mitigation by the state. Therefore, the project's short-term impacts on public school facilities would be ***less than significant.***

The proposed project would increase the demand for elementary school and high school facilities in MUSD. Data from the student generation report prepared for the proposed project (Gibbs & Associates 2004, provided in Appendix I of this DEIR) were used to estimate the number of students generated in Phase 1 and Phase 2 of the CLSP area. The report assigns student generation rates for the various residential lands uses in the CLSP area and uses these rates to estimate the number of students who would be housed in the plan area. At completion of Phase 1 of the proposed project, the estimated K-8 student

population would be 1,540 students, with 1,280 students added during Phase 2, for a total of 2,820 K–8 students at project buildout. The estimated high school student population would be 413 students at completion of Phase 1, with 357 students added during Phase 2, for a total of 770 high school students at project buildout. Thus, a total of 3,050 students would be housed by residential development in the CLSP area at buildout.

It is anticipated that during initial development in the CLSP area, K-8 students would likely be bused to Joseph Widmer Elementary School or schools currently being constructed in the Mossdale Landing area until sufficient students reside in the plan area to support a school. Based on data made available by the MUSD (Manteca Unified School District 2004), the Widmer school has capacity to accept up to 261 additional students (Table 4.10-1). Therefore, sufficient capacity is considered available to support this interim condition.

Three new K-8 schools are planned for the CLSP area and would be constructed progressively as new neighborhoods are developed. Each school would be located on an approximately 18-acre parcel. The K-8 schools would be designed to serve approximately 1,000 students each, with sufficient expansion capacity to accommodate up to 200 additional students if needed. The calculations below do not take into account this expansion capacity. Two K–8 schools would be constructed during Phase 1. One of the Phase 1 K–8 schools would be located in the southern portion of the plan area. The second K–8 school would be centrally located on the north side of Dos Reis Road. These two schools could accommodate the 1,540 students housed in the CLSP area at buildout of Phase 1 and have remaining capacity available for 460 additional students. One K–8 school would be constructed during Phase 2 and would be located in the northern portion of the plan area. This school could accommodate 1,000 of the 1,280 K-8 students housed in the Phase 2 portion of the CLSP area. Capacity would be available for the remaining 280 students to attend one of the two schools completed in Phase 1. Therefore, other than a short period during initial site development, the proposed project provides sufficient K-8 school capacity to meet demand during all phases of project development.

Similar to the discussion for K-8 students, it is anticipated that during initial development of the CLSP area, high school students would be bused to an existing offsite school until the CLSP high school is constructed. Depending on school vacancies at the time of project initiation, high school students living in the project area would attend Weston Ranch High School or East Union High School during this interim period. East Union high school is considered to be at, or exceeding, student capacity. It is unclear at this time how much, if any, capacity would be available at the recently opened Weston Ranch High School when development of the CLSP area begins. Therefore, there is potential that demand for high school services associated with the CLSP may exceed school capacity for a short period before the CLSP high school is built.

The proposed CLSP high school is anticipated to be constructed early in Phase 1. The high school would be located on approximately 50-acres in the center of the CLSP area and would be designed to serve approximately 2,000 students. It would also be designed with expansion capacity to accommodate up to 500 additional students if needed. The proposed high school would accommodate all 770 students housed in the CLSP area during Phase 1 and Phase 2 of the proposed project and have remaining capacity for an additional 1,230 students (without use of the expansion capacity).

Because the project includes plans to accommodate sufficient new schools to meet demands generated by the proposed project, no long-term shortfall of school services and facilities is anticipated.

As required by state law, the project applicant would pay the state-mandated school impact fees to the appropriate school district (i.e., MUSD). Although this fee is often an insufficient amount to fund 100% of new school facility construction and operation, the California State Legislature has declared that the

school impact fee is deemed to be full and adequate mitigation under CEQA. Under California Government Code Section 65996, the City of Lathrop is limited to charging the statutorily created fee to offset impacts to local school districts generated by proposed projects. Section 65996 does not provide for remediation of existing deficiencies in school services. With payment of the state-mandated school impact fees, the proposed project would have a less-than-significant impact on school services and facilities in both the short term and long term.

It should also be noted that, in June 2004, the MUSD Board adopted a School Facility Needs Analysis that assumes a student generation rate of 0.944 students per new dwelling unit (consisting of 0.658 K-8 students per dwelling unit and 0.286 high school students per dwelling unit). These student generation rates "are based on analysis of 6,756 dwelling units constructed in the District during the five-year period ending December 31, 2002" (MUSD 2004). The student generation rate assumption used by the MUSD is higher than the student generation rates projected for the CLSP (Gibbs & Associates 2004, included in Appendix I).

This discrepancy is a result principally of the fact that the MUSD calculations are based on historical student generation rates for new residential units constructed during the 5-year period ending December 31, 2002. These previously constructed residential units consist almost exclusively of single-family detached homes and reflect an average dwelling unit size of 2,182 square feet. The 6,790 CLSP residential units, on the other hand, would include 1,176 multifamily units. In addition, the CLSP single-family residential densities would average 7.27 units per acre, resulting in development that would be more dense and homes that would be, it is reasonable to assume, smaller on average than the homes constructed during the 5-year study period upon which the MUSD based its student generation rate assumptions.

The inclusion in the CLSP school capacity analysis of multifamily units and of single-family units that would be, on average, smaller than the single-family units constructed during the MUSD's 5-year study period results in a lower CLSP student generation rate per residential unit than the MUSD assumes on a districtwide basis. This is the principal reason that the MUSD's numbers are higher.

Nevertheless, even if the higher student generation rates used by the MUSD in its School Facility Needs Analysis are used to assess the adequacy of the school capacity for which provision is made in the CLSP, sufficient capacity can be provided to address the 4,468 K-8 students who would be expected to live in the CLSP area (0.658 students/unit x 6,790 units = 4,468 students). If the three proposed CLSP elementary schools are constructed at their full design capacity of 1,200 students and are operated on a year-round basis, they would have sufficient capacity to accommodate 4,320 K-8 students (1,200 students/school x 3 schools x 1.20 year-round adjustment factor = 4,320 students). The additional 148 K-8 students that would be expected to live in the CLSP area under an assumed K-8 student generation rate of 0.658 (4,468 resident students – 4,320 accommodated students = 148 remaining students) could be accommodated by the unused capacity that will be available in the second Mossdale K-8 school.

In the same way, the 1,942 high school students that would be expected to live in the CLSP area assuming the MUSD's high school student generation rate of 0.286 students per dwelling unit (0.286 students/unit x 6,790 units = 1,942 students) can be accommodated by the proposed CLSP high school in its 2,000-student base case configuration, without the need to expand the school to its design capacity of 2,500 students.

Thus, although the City is precluded by state law, as noted above, from requiring mitigation beyond the statutory impact fees, the City notes that, assuming that the MUSD develops the three elementary schools and the one high school for which sites are identified in the CLSP, the CLSP area would include facilities sufficient to accommodate all of the students anticipated to live within the CLSP area.

Impact 4.10-g

Public Services – Increased Generation of Solid Waste. *The proposed project would substantially increase solid waste generation. However, Foothill Sanitary Landfill, which would receive solid waste from the project area, has ample available disposal capacity in the long term. Therefore, this impact is considered* ***less than significant****.*

The California Integrated Waste Management Board (CIWMB) has estimated that the average per-capita solid waste disposal rate for San Joaquin County is 0.36 ton per resident per year (CIWMB 2004a). The estimated total population for the proposed project at buildout is 18,750 residents; therefore, solid waste generation for the project residents would be approximately 6,750 tons per year.

In addition, between 9,155 and 10,030 workers are expected to be employed on the project site. The CLSP provides for several varieties of commercial development, including office/commercial, neighborhood commercial, and specialty commercial uses, as would normally occur in a large mixed-use development. Business waste disposal rates are calculated by CIWMB to range from 0.3 ton per year for general merchandise stores to 3.1 tons per year for restaurants (CIWMB 2004b). Many of the employees in the CLSP area are likely to be working in jobs in waste categories such as finance/insurance/real estate/legal (0.3 ton per employee per year), other professional services (1.2 tons per employee per year), communications (1.5 tons per employee per year), and business services (1.7 tons per employee per year). To estimate a single business waste disposal rate for the proposed project, the two anticipated extremes among the various categories (0.3 and 1.7 tons per employee per year) were averaged, resulting in a generation rate of 1.0 ton per employee per year. Using the average business waste disposal rate of 1.0 ton per employee per year results in 9,155-10,030 tons of waste generated annually by employees in the CLSP area.

Combining residential and business solid waste generation, the overall solid waste generation for the CLSP is approximately 15,905-16,780 tons per year. This rate would not be reached until full buildout of the project in 2020. Much lower generation rates would occur at project initiation in 2005, with gradual increases in the rate until full buildout. The Foothill Sanitary Landfill has approximately 44 million tons of available capacity, which is estimated to last for more than four decades. This landfill has sufficient permitted capacity to accommodate the project's solid waste disposal needs. The proposed project would also comply with all federal, state, and local statutes and regulations related to solid waste reduction and recycling. Therefore, this impact is considered less than significant.

4.10.4 MITIGATION MEASURES

No mitigation measures are necessary for the following less-than-significant impacts:

- 4.10-f: Increased Demand for Public School Facilities and Services
- 4.10-g: Increased Generation of Solid Waste

The following mitigation measures are provided for significant impacts:

4.10-a Obstruction of Roadways during Construction. In accordance with City requirements, the applicant/contractor shall prepare and implement traffic control plans for construction activities that may affect road rights-of-way. The traffic control plan must follow California Department of Transportation standards and be signed by a professional engineer. Measures typically used in traffic control plans include advertising of planned lane closures, warning signage, flagmen to direct traffic flows when needed, and methods to ensure continued access by emergency vehicles. During project construction, access to existing land uses shall be maintained at all times, with detours being used as necessary during road closures.

Implementation of Mitigation Measure 4.10-a would reduce impacts associated with potential delays to emergency vehicles from obstruction of roadways to a less-than-significant level.

4.10-b: Increased Demand for Fire Protection Facilities and Services. As development proceeds in the CLSP area, the City shall authorize occupancy of new structures only if confirmation of 3- to 4-minute average emergency response times to the structures can be provided using LMFPD methodologies. First response may initially be provided by the existing Station 31, or Station 34 planned on the Mossdale Landing site. At some currently undetermined point in project development, a new fire station in the CLSP area would need to be constructed and brought into service to meet the response time requirement in the northern portion of the plan area. The location of the fire station will be determined in consultation with the LMFPD to maximize its ability to meet the response time requirement. The LMFPD would build and equip the fire station, as needed, on land acquired by the LMFPD. The project applicant shall pay all applicable fire service fees and assessments required to fund its fair share of fire district facilities and services required to serve the CLSP project.

The City shall not allow or approve construction of structures greater than 50 feet in height or four stories until the LMFPD possesses appropriate equipment (e.g., aerial trucks) to provide fire suppression and emergency services to the upper stories of these buildings. If the CLSP project includes buildings that would exceed this height restriction, the project applicant shall pay to the City all applicable fire service fees and assessments required to fund its share of this equipment.

Implementation of Mitigation Measure 4.10-b would reduce impacts associated with increased demand for fire protection facilities and services to a less-than-significant level.

4.10-c: Increased Demand for Fire Flow. The City shall not authorize the occupancy of any structures until the project applicant has confirmed provision of adequate minimum fire flows as required by the LMFPD and the California Fire Code.

Implementation of Mitigation Measure 4.10-c would reduce impacts associated with increased demand for fire flow to a less-than-significant level.

4.10-d: Increased Demand for Police Protection Facilities and Services. The project applicant shall pay to the City upon the filing of each final small-lot residential subdivision map its pro rata share (on a per-unit basis) of the total startup costs incurred in the hiring and training for each of the new police officer positions needed to serve the project (a total of 28 officers in the CLSP area, assuming the identified target ratio of 1.5 officers to 1,000 residents). This fee shall be incurred once per position (i.e., it shall not be used to train turnover staff). In addition, the following equipment costs shall be paid for by the project applicant:

- standard safety equipment for each officer (e.g., sidearm, belt, holster, body armor, mobile radio); and

- a fully equipped patrol vehicle for every two officers, including radio, siren, roof lighting, Opticom mobile strobe, mobile computer terminal, and vehicle video recorder.

The payment of the above startup fees and equipment costs shall be phased to coincide with the need for new officers generated by project development. Resident generation rates to be used for this calculation are:

- variable-density residential 2.9 persons per dwelling unit
- high-density residential 2.1 persons per dwelling unit

As police officers and support staff members are hired to meet the demand associated with the proposed project, the planned Government Center, or similar or interim facilities, would be completed before Police Department staff exceed available space in the Seventh Street building. The project applicant shall also ensure the use of 3M Addressable Opticom Traffic Control Preemption devices and detectors/reflectors (or equivalent based on Police Department standards) in all traffic lights for which the project is responsible and the City has jurisdiction.

Implementation of Mitigation Measure 4.10-d would reduce impacts associated with increased demand for police protection facilities and services to a less-than-significant level.

4.10-e: Increased Demand for Animal Control Facilities and Services. The project applicant and the City shall include in the Development Agreement provisions for funding animal control facilities and services, as follows:

(a) Animal Control Startup Costs: The Development Agreement shall include a provision that will ensure maintenance of the existing level of animal control service in the City. The agreement shall be designed to ensure that resources are available for animal control facilities and staff to expand to meet demand associated with the proposed project. The project applicant shall pay the one-time startup cost for these animal control services.

(b) Animal Control Ongoing Costs: The applicant shall pay a proportionate share of ongoing costs associated with additional services until revenues generated from the project can cover this cost through participation in a community facilities district or an equivalent funding mechanism.

(c) Capital Facilities Fees: The applicant shall pay capital facilities fees to defray capital facility costs associated with an animal control facility.

Implementation of Mitigation Measure 4.10-e would reduce impacts associated with increased demand for animal control facilities and services to a less-than-significant level.

4.10.5 RESIDUAL SIGNIFICANT IMPACTS

No residual significant impacts on public services would occur with implementation of the recommended mitigation measures.

4.11 Public Utilities

4.11 PUBLIC UTILITIES

This section describes existing and proposed utilities systems associated with the Central Lathrop Specific Plan (CLSP) project: water, wastewater, recycled water, stormwater conveyance, electricity, and natural gas. The potential impacts of the proposed project on these utilities are described and environmental impacts of necessary onsite and offsite infrastructure improvements are evaluated. Impacts are evaluated for development of Phase I of the proposed project and full buildout. Much of the information and analysis provided in this section is focused on the CLSP area rather than the potential offsite recycled water storage and disposal areas and WRP #2 sites. Although these offsite facilities would provide utility service (i.e., wastewater treatment and recycled water storage/disposal) in support of planned development, they would not themselves generate substantial demand for utility services that could result in significant environmental effects.

Public comments received in response to the Notice of Preparation raised issues related to stormwater drainage and detention and the provision and study of sewer and water service to the proposed project area (see Appendix A). These issues are addressed in the analysis that follows.

4.11.1 REGULATORY BACKGROUND

The San Joaquin County (County) General Plan 2010 (County of San Joaquin 1992) and the City of Lathrop (City) General Plan (City of Lathrop 1991) identify goals and policies associated with providing water, wastewater, recycled water, electricity, and natural gas to new development. These plans provide guidance on the provision of utility services and on eliminating deficiencies and obstacles to the expansion of utility services to adequately serve existing and future development. In addition to the City and County general plans, state legislation ties proposed development to the availability of adequate long-term water supplies to serve the proposed project. These county, city, and state requirements, as they apply to each utility element, are summarized below.

WATER SUPPLY

The County General Plan Objective for Water Supply is "to maintain an adequate and safe water supply for County users." The County General Plan states that the availability of long-term, reliable potable water supply shall be a primary determinant in planning areas of growth (Water Supply Policy 1). In agricultural areas, such as the CLSP area, the minimum requirement for water supply is individual water wells (Water Supply Policy 2). Urban areas shall be served by public water systems provided by public or quasi-public agencies (Water Supply Policy 3) and water supplies serving new development shall meet state water quality standards.

The City General Plan Water Supply Goal is to provide both for a secure source of fresh water for existing and future residents of Lathrop and for the reuse of wastewater so that there is no net increase in water pollution, including point and nonpoint sources (Goal 10: Water Supply, Wastewater, and Surface Water Management). In support of this goal, the following City General Plan policies apply to the proposed project:

- **Policy 1:** The City of Lathrop is the most logical governmental entity to assume management responsibility for water service to the developing urban pattern. Development within the City's three sub-plan areas is to be served by the City under development agreements between the City and project developers.

- **Policy 2:** Urban development outside the existing city limits shall not be allowed to occur until reasonable certainty is established that additional firm supplies of potable water will be available to meet the needs of urban expansion into perpetuity.

- **Policy 3:** The Water System Master Plan should provide for the eventual integration of the water well and distribution system serving the existing community with the system(s) needed to serve areas of urban expansion to avoid potential future problems of groundwater quality associated with the existing system.

- **Policy 4:** In developing additional groundwater sources to meet requirements for firm water supply, the City will be required to meet State and Federal standards of water quality, including concern for such factors as taste, odor control, color, removal of any unique compounds or minerals identified through water testing, and need for disinfection and/or residual chlorination.

In addition, the following measure under the City General Plan Seismic Goals and Policies applies to water supply for the proposed project:

- **Seismic Policy 12:** All lines which are part of the domestic water distribution system should be looped to assure adequate pressure in the event of major fire, earthquake or explosion. Emergency standby power generation capability should be available at all water wells to assure water availability in the event of a major power failure.

The City adopted water conservation requirements to reduce overdrawing from the underground aquifers. Section 13.08.180 of the Lathrop Code of Ordinances (City of Lathrop 2002) requires that the following conservation measures be practiced throughout the year:

- No landscape watering between the hours of 10:00 a.m. and 7:00 p.m. Water runoff is prohibited.

- Hand-held trigger shut-off devices are required when using a garden hose.

- Washing of building exteriors, sidewalks, etc. is prohibited except in the case of spillage of substances that may be harmful to the public health or the environment. Under no circumstance should such substances be allowed to flow into the storm drain system.

- Irrigating landscapes during high winds that cause the water to blow away from the landscaped area is prohibited.

- Addresses ending in an odd number (1, 3, 5, 7, 9) may water on Wednesday, Friday and Sunday before 10:00 a.m. and after 7:00 p.m. Addresses ending in an even number (0, 2, 4, 6, 8) may water on Tuesday, Thursday and Saturday before 10:00 a.m. and after 7:00 p.m.

- Watering is prohibited on Mondays.

- Commercial and industrial customers may water on Tuesdays, Wednesdays, and Fridays.

The City has also prepared an Urban Water Management Plan (Nolte Associates 2004a), which details the City's efforts to implement water conservation programs, called demand management measures (DMMs). To achieve short-term and long-term conservation, the City has implemented, is planning to implement, or is currently studying the following DMMs:

- **DMM 1** – Water survey programs for single-family residential and multi-family residential customers
- **DMM 2** – Residential plumbing retrofit
- **DMM 3** – System water audits, leak detection, and repair
- **DMM 4** – Metering with commodity rates for all new connections and retrofit of existing connections
- **DMM 5** – Large landscape conservation programs and incentives
- **DMM 6** – High-efficiency washing machine rebate programs
- **DMM 7** – Public information programs
- **DMM 8** – School education programs
- **DMM 9** – Conservation programs for commercial, industrial, and institutional accounts
- **DMM 10** – Wholesale agency assistance programs
- **DMM 11** – Conservation pricing
- **DMM 12** – Conservation coordinator
- **DMM 13** – Water waste prohibition
- **DMM 14** – Residential ultra-low flow toilet (ULFT) replacement

In addition to the County's and City's goals and policies, the State of California has legislation applicable to California Environmental Quality Act (CEQA) consideration of larger projects. Senate Bill (SB) 610 (Section 21151.9 of the Public Resources Code and Section 10910 et seq. of the Water Code) requires the preparation of "water supply assessments" for large developments (e.g., more than 500 dwelling units or nonresidential equivalent), such as the CLSP project. These assessments, prepared by "public water systems" responsible for serving project areas (here the City itself), address whether there are adequate existing or projected water supplies available to serve such proposed projects, in addition to existing urban and agricultural demands and other anticipated development in the service area in which the project is located. Where a water supply assessment concludes that insufficient supplies are currently available, the assessment must lay out the steps that would be required to obtain the necessary supply. The content requirements for the assessment include, but are not limited to, identification of the existing and future water suppliers and quantification of water demand and supply by source in 5-year increments over a 20-year projection. This information must be provided for average normal, single-dry, and multiple-dry years. The absence of an adequate current water supply does not preclude project approval, but does require a lead agency to address a water supply shortfall in its project approval findings.

An SB 610 water supply assessment has been prepared for the CLSP project (Nolte Associates 2004b). The assessment is included as Appendix J of this EIR. The conclusions of the assessment are summarized in the setting and impact analysis portions of this section.

If the CLSP is approved, additional, complementary statutory requirements, created by 2001 legislation known as SB 221 (Gov. Code Section 66473.7) would apply to the approval of tentative subdivision maps for more than 500 residential dwelling units. This statute requires the preparation of water supply verifications prior to the approval of such tentative maps. To permit approval of such maps, the verifications must demonstrate that there is a "sufficient water supply" for the newly created residential lots. The law defines "sufficient water supply" as "the total water supplies available during normal, single-dry, and multiple-dry years within a 20-year projection that will meet the projected demand associated with the proposed subdivision, in addition to existing and planned future uses, including, but not limited to, agricultural and industrial uses." A number of factors must be considered in determining the sufficiency of projected supplies, including:

(a) The availability of water supplies over a historical record of at least 20 years;

(b) The applicability of an urban water shortage contingency analysis that includes action to be undertaken by the public water system in response to water supply shortages;

(c) The reduction in water supply allocated to a specific water use sector under a resolution or ordinance adopted, or a contract entered into, by the public water system, as long as that resolution, ordinance, or contract does not conflict with statutory provisions giving priority to water needed for domestic use, sanitation, and fire protection; and

(d) The amount of water that the water supplier can reasonably rely on receiving from other water supply projects, such as conjunctive use, reclaimed water, water conservation, and water transfer, including programs identified under federal, state, and local water initiatives such as CALFED and Colorado River tentative agreements.

If the verification relies on a projected source of water, the verification must include detailed information indicating that the supplies will actually be available when needed. That information should include, to the extent that it is applicable:

(1) Written contracts or other proof of valid rights to the identified water supply that identify the terms and conditions under which the water will be available to serve the proposed subdivision;

(2) Copies of a capital outlay program for financing the delivery of a sufficient water supply that has been adopted by the applicable governing body;

(3) Securing of applicable federal, state, and local permits for construction of necessary infrastructure associated with supplying a sufficient water supply; and

(4) Any necessary regulatory approvals that are required to be able to convey or deliver a sufficient water supply to the subdivision.

WASTEWATER AND RECYCLED WATER

The County General Plan Objective for Wastewater Treatment is "to ensure adequate wastewater treatment and the safe disposal of liquid waste." The County General Plan states that the expansion of urban communities shall be limited to areas where community wastewater treatment systems can be provided (Wastewater Treatment Policy 1). In agricultural areas, such as the CLSP area, the minimum requirement for wastewater treatment is septic systems (Wastewater Treatment Policy 2 and 4), which must meet the requirements and standards County Public Health Services (Wastewater Treatment Policy 8). Urban areas shall be served by a public wastewater treatment system (Wastewater Treatment Policy 3) provided by an existing public agency (or a new district if necessary) and wastewater treatment systems shall meet the requirements and standards of the operating agency and the County (Wastewater Treatment Policy 7). In addition, sewage treatment facilities must be located outside the Primary Zone of the Sacramento-San Joaquin Delta (Delta) (Wastewater Treatment Policy 9).

The City's preferred strategy for wastewater management, as identified in the City of Lathrop Water, Wastewater, and Recycled Water Master Plan (Water Master Plan) (Nolte Associates 2001), is treatment, recycling, and reuse to both limit water discharges of tertiary-treated effluent to surface waters and to reduce reliance on potable groundwater and surface water for irrigation purposes. Therefore, to facilitate recycling and reuse, the Water Master Plan indicates that dual distribution systems should be provided in new developments for nonpotable water use, such as landscape irrigation (EDAW 2001). Consistent with the Water Master Plan, the CLSP project proposes to use recycled wastewater (tertiary-treated effluent) to irrigate proposed parks, school grounds, and other public landscaping. The CLSP also proposes amending the Water Master Plan to permit use of recycled water to irrigate residential front and back yards.

Wastewater recycling in California is regulated under the California Code of Regulations (CCR) Title 22, Division 4. The intent of these regulations is to ensure protection of public health associated with the use of recycled water. The regulations establish acceptable levels of constituents in recycled wastewater for a range of uses and prescribe means of ensuring reliability in the production of recycled wastewater. Use of recycled wastewater for nonpotable uses is common throughout the state and is an effective means of maximizing uses of water resources. The California Department of Health Services (DHS) has jurisdiction over the distribution of recycled wastewater and the enforcement of Title 22 regulations. The Regional Water Quality Control Boards (RWQCBs) are also responsible for reuse requirements associated with wastewater reclamation at proposed projects.

STORMWATER CONVEYANCE

The County General Plan Objective for Stormwater Drainage is "to collect and dispose of stormwater in a manner that least inconveniences the public, reduces potential water-related damage, and enhances the environment." The County states that agricultural areas shall be served by onsite drainage and that urban communities shall be served by a public drainage system (Stormwater Drainage Policy 1). Public agencies or new districts shall provide the stormwater drainage systems and should use natural drainage systems where possible and consider recreational and visual opportunities in the design of stormwater ponds (Stormwater Drainage Policy 2, 4, and 5).

The City established that the drainage discharge into the San Joaquin River must not exceed 30% of the estimated 100-year peak developed-condition runoff rate for the area between I-5 and the San Joaquin River, including the CLSP project area. For example, if the estimated post-project peak discharge during a 100-year storm event was 10 cubic feet per second (cfs), stormwater discharges from the project site during any storm event could never exceed 3 cfs. The policy is based on hydraulic analysis that a 30% discharge from future development areas in the City has very little impact on the total flow rate, water surface elevation, and velocity in the San Joaquin River during a high-flow event. It also gives assurance that the postdevelopment increase in flow in the San Joaquin River will not result in increased potential for downstream erosion.

As a result of a 1955 memorandum by the USACE, the State Reclamation Board adopted a policy of "zero impact" to the San Joaquin River. As implemented, discharge to the river must be restricted to predevelopment rates whenever water levels in the San Joaquin River exceed an elevation of 21.0 feet. This state requirement overrides the local 30% discharge described above (which is allowed during conditions when the river is not at high stage). As a result of these discharge requirements, new development must be designed to accommodate excess runoff from a 48-hour, 100-year storm while river discharges are limited to predevelopment rates.

Under the requirements of the federal Clean Water Act, the City is required to apply for coverage under the National Pollutant Discharge Elimination System (NPDES) Phase II permit, and to develop and implement a storm water management plan (SWMP) to control and prohibit the discharge of pollutants into the municipal storm sewer system. The City prepared a SWMP, dated November 4, 2003 (Appendix F), composed of six elements that, when implemented together, are expected to reduce pollutants discharged into receiving water bodies to the maximum extent possible. The Central Valley Regional Water Quality Control Board (RWQCB) approved the SWMP on January 13, 2004, stating that the City had obtained coverage under the General Permit for the Discharge of Small Municipal Separate Storm Sewer Systems (Small MS4) effective December 14, 2003.

The discharge of urban runoff is also regulated by the U.S. Environmental Protection Agency (EPA) and others through numerous interrelated water quality laws and programs. These regulations are described in detail in Section 4.8, Hydrology and Water Quality.

ELECTRICITY AND NATURAL GAS

The County General Plan Objectives for Utility Corridors, including electricity and natural gas, are:

- To protect the public and the natural environment from possible hazards associated with utility corridors.
- To protect the scenic value of the County landscape from inappropriately located overhead utility lines.
- To protect land uses from the placement of utility corridors across properties at inappropriate locations.

The County General Plan policies (Utility Corridor Policies 1-6) guide the proper siting of electrical and gas lines by requiring proper environmental assessment of utility lines; requiring placement of distribution lines underground, encouraging the use of existing transmission corridors, encouraging the joint use of utility corridors for recreational uses, and routing of utilities along property lines.

The City General Plan requires all gas and electrical distribution lines to be placed underground. If overhead transmission line rights-of-way are required, they should be incorporated into open space corridors to minimize their visual impacts on the urban environment (City of Lathrop 1991).

The City General Plan also states that the City should adopt an energy conservation ordinance, with provision for energy conservation features as part of all construction intended for human use (City of Lathrop 1991). Consistent with the General Plan, the City adopted energy conservation standards in 2001.

4.11.2 EXISTING CONDITIONS

WATER SUPPLY

City of Lathrop

The City would serve as the water supplier for the CLSP project. At present, the City relies exclusively on groundwater for its municipal potable water supply. The municipal system serves residential, commercial, and industrial customers. Agricultural and industrial users rely on private wells or water systems. The City's groundwater comes from the Central Valley aquifer system, which occupies most of a large basin in central California between the Sierra Nevada and the Coast Ranges. This groundwater basin, which is not adjudicated, is in overdraft but is considered to have an average safe yield of approximately 1 acre-foot per year (AFY) per surface acre. For the City, this is equivalent to 7,200 AFY (Nolte Associates 2004b). Therefore, overall groundwater withdrawals in the City (from combined City, industrial, and private wells) would be able to reach 7,200 AFY without exacerbating current overdraft conditions. It is estimated that, at present, withdrawals from industrial and private wells in the City total 1,026 AFY (Nolte Associates 2004b). Therefore, approximately 6,174 AFY of groundwater could be withdrawn from City municipal wells without adversely affecting overdraft conditions.

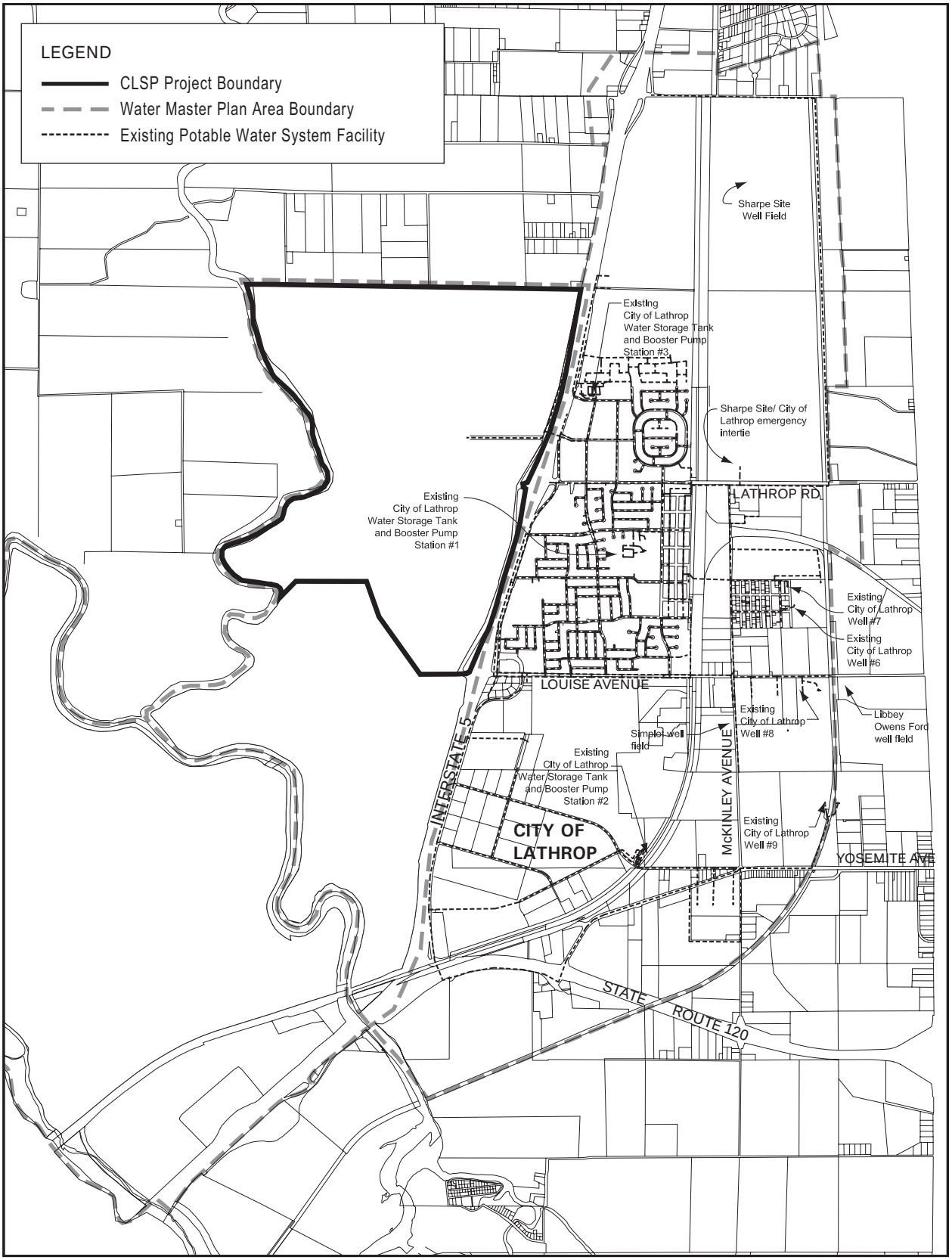
Most of the fresh groundwater in the City is encountered at depths of less than 2,500 feet. Several hydrologic formations underlie the Lathrop area; however, only the top two, the Victor and Laguna formations, are currently used as sources of fresh water. The Victor formation is the uppermost formation, extending from the ground surface to a depth of approximately 150 feet. Because of saltwater intrusion into the Delta region, and because of infiltration of runoff from the San Joaquin River, agricultural areas,

and urban areas, groundwater quality in this shallow formation is generally considered poor (Nolte Associates 2004b). However, this poor-quality groundwater from the Victor formation generally is not used for drinking water purposes. The underlying Laguna formation extends to an approximately 1,000-foot depth. Most municipal and industrial wells in Lathrop pass through the Victor formation to draw high-quality water from the Laguna formation. As a result of bacteriological contamination, the City began chlorinating water at all of its municipal wells in 1996. However, groundwater drawn by the City from the Laguna formation meets all drinking water standards after treatment. For example, total dissolved solids (TDS) in water from the City wells generally averaged from 245 milligrams per liter (mg/l) to 422 mg/l, with an overall annual average of 297 mg/l (Nolte Associates 2001). The recommended secondary TDS standard for drinking water is 500 mg/l, with an upper limit of 1,000 mg/l for long-term use and 1,500 mg/l for short-term use. TDS also can provide a measure of the level of saltwater intrusion into a groundwater supply. These TDS levels indicate that saltwater intrusion is not a severe problem in the Laguna formation groundwater at the City.

The City's existing potable water system consists of three water storage tank/booster pump stations that store and pump water from the City's four active wells through the municipal water pipeline network to residential, commercial, and other users in the service area (Exhibit 4.11-1). A fire booster pump and a potable water booster pump are included at the pump stations associated with each of the existing storage tanks. The City's municipal pipeline network includes 47 miles of underground 2-inch- to 16-inch-diameter pipes used to distribute water to the City's approximately 3,012 water service connections. The wells are located on the east side of the City, between Lathrop Road and Yosemite Avenue. The total capacity of the four wells is approximately 5,000 gallons per minute (gpm). The 6-month high-demand period for water in the City occurs from May to October (approximately 65% of annual demand). The highest water demand experienced by the City's municipal water system occurred in July 1996 when a peak rate of 1,823 gpm was produced by the wells. Based on 2002 pumping demands, the City has an existing demand of approximately 3,105 AFY (Nolte Associates 2004a).

According to the Water Master Plan, the future water supply for the City is planned to be a combination of groundwater from the City's existing well system and four proposed new wells, along with surface water deliveries from the approved South San Joaquin Irrigation District's (SSJID's) South County Water Supply Project (SCSWSP), which is currently under construction and scheduled to be operational in June 2005. Available water from these sources (minimum 15,940 AFY during multi-year drought conditions) is considered sufficient to supply all existing and planned future development in the City (15,868 AFY projected demand) (more detailed information is provided in the impact discussion below). The SCSWSP is a joint effort of SSJID and Lathrop, Escalon, Manteca, and Tracy to supply treated potable water from Woodward Reservoir to these participating cities via pipeline. The SSJID's source for water is the Stanislaus River based on pre-1914 rights for direct diversion and diversion to storage. There will be two points of connection between the SCSWSP project and the City's water system (Exhibit 4.11-2).

New wells (Wells #21, #22, and #23) would be installed near the southwest corner of the McKinley Avenue/Yosemite Avenue intersection in an expanded City well field (Exhibit 4.11-2). Well #21 is currently under construction. In addition, Well #5 would be replaced by the new Well #10, to be installed east of McKinley Avenue. Groundwater pumping could range from 2,700 AFY in 2005 to 5,100 AFY in 2025. Deliveries from the SCSWSP will initially begin in 2005, with 8,007 AFY contractually available and 5,200 AFY anticipated to be required for use by the City; deliveries are anticipated to increase to approximately 11,800 AFY by 2020 (Nolte Associates 2004a).



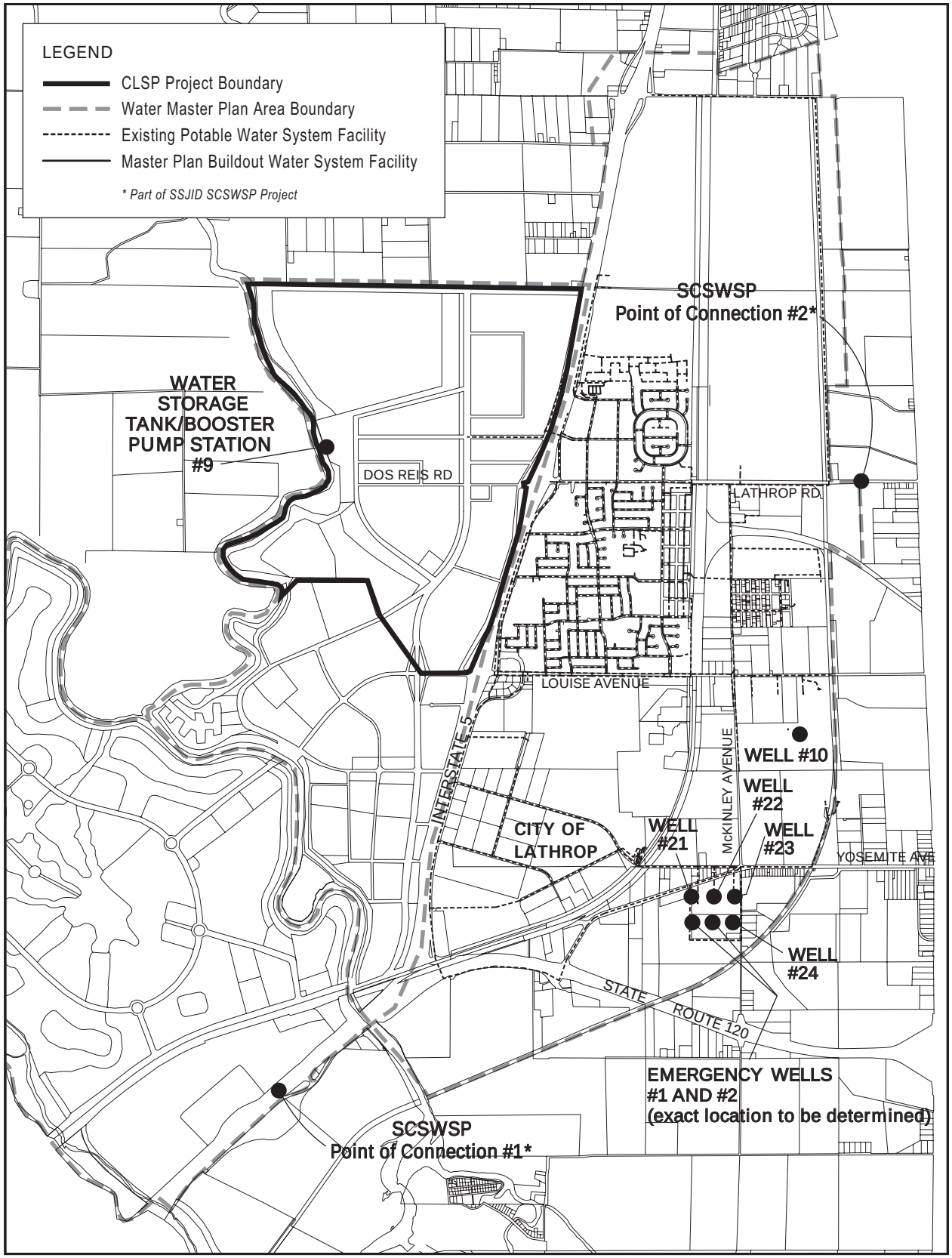
Source: Nolte Associates 2004a

Existing Potable Water Facilities in the City of Lathrop

EXHIBIT 4.11-1

Central Lathrop Specific Plan
G 3T017.01 06/04

EDAW



Source: Nolte Associates 2004a

Proposed Water Master Plan Water Distribution System

EXHIBIT 4.11-2

Central Lathrop Specific Plan
G 3T017.01 06/04

0 2000 4000 FEET

NORTH

EDAW

Central Lathrop Specific Plan Area

The Water Master Plan EIR indicates that, in 2001, municipal water pipes in the CLSP area were present in De Lima Road, Dos Reis Road, and a small portion of Manthey Road (EDAW 2001). Other properties in the CLSP area are served by onsite wells. Nonpotable water is also supplied to the CLSP area for agricultural uses with water drawn from the San Joaquin River using existing riparian and appropriative water rights. The water is conveyed through a series of irrigation canals, pump stations, and pipelines.

WASTEWATER

City of Lathrop

The existing wastewater collection system in the City is located primarily in the developed eastern portion of the City. Wastewater generated in the City is currently treated and disposed of at WRP #1 (a City-owned treatment plant located in the Crossroads Business Park) and at the Manteca Water Quality Control Facility (WQCF) in Manteca. The City currently generates approximately 0.96 million gallons per day (mgd) of wastewater. Approximately 88% of the currently generated wastewater (0.85 mgd) is conveyed to the Manteca WQCF. The remainder, 114,000 gpd, is treated and disposed of at WRP #1.

WRP #1 was originally designed to accommodate an average daily flow of 0.6 mgd of low-strength effluent. Treated effluent is disposed to land through onsite evaporation/percolation ponds. The three existing percolation ponds at this site had a design capacity of 0.2 mgd each, but investigation and hydraulic analysis determined that the underlying soils had a lower transmissivity rate than expected, and the existing ponds had a maximum combined disposal capacity of approximately 100,000 gpd (EDAW 2001). This severely limited the plant's capacity. However, WRP #1 was recently upgraded to treat 0.25 mgd and produce secondary-treated effluent suitable for agricultural irrigation. Sludge produced by sewage treatment processes at the treatment plant is currently disposed of on the WRP site.

The City has a contractual relationship with the City of Manteca whereby 14.7% of the Manteca WQCF's existing and future expanded capacity is allotted for City flows (currently a total allotment of 1.02 mgd). Flows from the City to the Manteca WQCF currently average approximately 0.85 mgd, or 0.17 mgd less than the allotted capacity (Nolte Associates 2003). The Manteca WQCF has an existing capacity of 6.94 mgd with plans for future expansion to 9.87 mgd. Following anticipated completion of the expansion in late 2005, Lathrop's allotment of WQCF capacity will increase to 1.45 mgd. Treated wastewater (secondary effluent) from the Manteca WQCF is disinfected and then most of the water is discharged into the San Joaquin River. A portion of the secondary effluent is used to irrigate crops.

The City of Lathrop is projected to generate 11.5 mgd of wastewater by 2030 (including anticipated development projects) (Nolte Associates 2001). To accommodate this projected City wastewater generation, three WRPs (WRP #1, WRP #2, and WRP #3) are planned in the City under the Water Master Plan. The WRP #1 expansion project, of which Phase 1 is currently under construction, will ultimately create a parallel 3.0-mgd facility to provide tertiary treatment . The WRP #1 expansion is designed in a manner that allows treatment capacity to be brought into service in 0.75 mgd increments.

At buildout, WRP #1 is planned to serve the residential portion of East Lathrop, but would also serve all of the Mossdale Village projects and some or all of the River Islands project. The proposed WRP #2 (as identified in the Water Master Plan) would serve West Central Lathrop (Sub-Plan Area #2) between I-5 and the San Joaquin River, including the proposed CLSP project site, treating between 2.8 and 3.2 mgd at buildout. As described in Chapter 3, Description of the Proposed Project, the Water Master Plan identifies the location of WRP #2 as the northeast corner of the CLSP area. Several alternative locations

for WRP #2 are being considered by the City, however, and all of these locations are being evaluated in this EIR. If constructed, Water Master Plan WRP #3 would serve Stewart Tract (Sub-Plan Area #3), treating up to 4.5 mgd at buildout. Contingency provisions are included in the Water Master Plan for WRP #1 to treat wastewater generated in Stewart Tract if development occurs there before development of WRP #2 or #3. This is the approach currently adopted by the City. A similar contingency provision is available allowing wastewater generated in Sub-Plan Area #2 (including the CLSP area) to also be treated at WRP #1.

Each of the City's planned WRPs would be designed to meet all applicable regulations for Title 22 tertiary treatment and disposal. Effluent produced by the City's treatment plants is planned to be disposed of through land applications, with the option for eventual surface water discharge being pursued.

Central Lathrop Specific Plan Area

The CLSP area is not currently served by the City's municipal sewer system. At present, wastewater generated at the site is disposed of via private septic systems.

RECYCLED WATER

City of Lathrop

Currently, the City does not maintain a citywide recycled water system, and there is no recycled water system in the CLSP area. However, recycled water currently generated at WRP #1 is disposed of via crop irrigation at parcels comprising proposed recycled water storage and disposal site 5 (Exhibit 3-3), and a portion of the wastewater generated by the City is treated at the Manteca WQCF and used in Manteca for crop irrigation. In addition, the Mossdale Landing project, which is currently under construction, includes pipelines, storage ponds, and other facilities to allow delivery and use of recycled water from WRP #1. The Water Master Plan identifies the need to provide recycled water services to the City and forecasts that the recycled water demand in the City would be approximately 4,700 AFY in 2030. Under the Water Master Plan, wastewater generated in the City would be treated to Title 22 disinfected tertiary levels by the three proposed WRPs discussed above in the "Wastewater" subsection. The treated wastewater would then be delivered to public landscaped areas, agriculture, and open space in the City for use as irrigation water via a new municipal recycled water distribution pipeline system (purple pipe) (EDAW 2001). Operational storage would be provided at the treatment plants, at the project sites served by the treatment plants, and offsite areas to balance production and delivery requirements. All recycled water use would comply with applicable RWQCB and DHS water quality requirements. In the long term, the City is pursuing the option for tertiary-treated wastewater not used for irrigation under the Water Master Plan to be discharged to the San Joaquin River during the nonirrigation season (November through February).

Central Lathrop Specific Plan Area

The CLSP area is not currently served by a recycled water system. At present, no recycled water use occurs at the plan area, and no recycled water pipelines exist between the CLSP area and WRP #1 (EDAW 2001). However, recycled water pipelines are being installed as part of the Mossdale Landing development immediately south of the CLSP area.

STORMWATER CONVEYANCE

City of Lathrop

Stormwater drainage in the older developed and partially developed areas of the City (generally east of I-5) is either lacking or of marginal character because of lack of access to offsite disposal facilities. Existing stormwater facilities consist of collection systems, retention or detention basins, and, in some instances, pump stations that discharge to the San Joaquin River via two existing storm drain pipes and a planned third outfall system, the Stonebridge outfall, which is under construction. More recent construction in the eastern part of the City is sized for 10-year intensity, 24-hour storms, with retention/detention basins sized for 48-hour, 100-year storms in accordance with the City design standards. Development in the City west of I-5 must meet the standards described previously in Section 4.11.1, Regulatory Background, related to maximum 30% discharge of the 100-year developed-condition storm runoff and predevelopment discharge rates when San Joaquin River elevations exceed 21.0 feet.

Central Lathrop Specific Plan Area

There are no public storm drain facilities serving the CLSP area. Currently, runoff from the site is minimal because of the high soil permeability associated with agricultural use. Storm and irrigation runoff that does not percolate to groundwater is collected in a system of shallow agricultural ditches and discharged into the San Joaquin River.

The CLSP area falls within the area evaluated by the City's Northern Area Portion Master Plan of Drainage (NAPMPD) (RBF Consulting 2003). The NAPMPD was initiated primarily to support development proposals for a project known as Stonebridge, located in the City of Lathrop, east of the CLSP area, on the east side of I-5. However, the NAPMPD also addresses lands west of I-5, including the CLSP area (see Section 3.2.4, Northern Area Portion Master Plan of Drainage). Consistent with the NAPMPD, a drainage outfall system in support of the Stonebridge development project is currently under construction. The Stonebridge drainage/outfall system includes a pipeline passing through the CLSP area along Dos Reis Road and an outfall structure at the San Joaquin River near Dos Reis County Park (Exhibit 3-5). This outfall structure (i.e., headwall) will serve the Stonebridge development area, but will also include four outfall ports that would be available to serve development in the CLSP area.

ELECTRICITY AND NATURAL GAS

City of Lathrop

Pacific Gas and Electric (PG&E) is responsible for the provision of electricity to the City. PG&E delivers approximately 81,923 million kilowatt-hours (kWh) of electricity to its 13 million customers throughout the 70,000-square-mile service area in northern and central California. The service area is divided into seven distribution areas, with Lathrop located in the Stockton Division of PG&E's Operations, Maintenance, and Construction Area 5 (EDAW 2002).

PG&E is also responsible for the provision of natural gas to the City. In 2000, PG&E delivered 887 million cubic feet (Mcf) of gas to customers in the City. The gas is delivered to the City area from portions of the company's 43,000 miles of natural gas pipelines (EDAW 2002).

Central Lathrop Specific Plan Area

PG&E provides electrical service to the CLSP area via a number of existing transmission lines including lines along Manthey Road, De Lima Road, and Dos Reis Road (EDAW 2001). No natural gas service is

available in the CLSP area. Propane is used for gas appliances. The nearest source for natural gas service to the CLSP area would be PG&E's Louise Avenue Feeder, located on Louise Avenue approximately 1,500 feet west of I-5. However, gas lines will be installed immediately south of the CLSP area to serve the Mossdale Landing project.

4.11.3 ENVIRONMENTAL IMPACTS

ANALYSIS METHODOLOGY

Impacts on water, wastewater, recycled water, stormwater conveyance, electricity, and natural gas services that would result from the proposed project were identified by comparing existing service capacity and facilities against anticipated future demand associated with project implementation. Because temporary impacts could occur if utilities are not provided concurrently with the project developments that create demand for these services (residential, commercial), an evaluation of project phasing is included.

Numerous technical and environmental documents describe the projected utility demands associated with development of the project area, including:

- *City of Lathrop SB 610 Water Supply Assessment Report for Central Lathrop Specific Plan*, prepared by Nolte Associates, February 2004 (included as Appendix J of this DEIR);
- *City of Lathrop Draft Addenda to Water, Wastewater, and Recycled Water Master Plan Documents–Technical Memorandum, Projected Wastewater Flows*, prepared by Nolte Associates, January 2004;
- *City of Lathrop 2003 Urban Water Management Program* (Draft), prepared by Nolte Associates, March 2004;
- *Draft Environmental Impact Report for the Lathrop Water, Wastewater, and Recycled Water Master Plan*, prepared by EDAW, Inc., March 2001.

The analysis of utility services is made in light of these current and future projects:

- Lathrop Water Recycling Plant #1 Phase 1 expansion project,
- SCSWSP surface water supply project,
- City of Lathrop well field expansion, and
- Other projects outlined in the Water Master Plan.

This analysis also assumes the development of the stormwater collection system, WRP #2, and recycled water storage and disposal areas as described in Chapter 3, Description of Proposed Project.

THRESHOLDS OF SIGNIFICANCE

The CLSP project would cause a significant impact on utilities if it would:

- create demand beyond available service capacity;
- create demand for wastewater treatment/disposal beyond available service;
- cause generation of recycled water beyond available disposal capacity;

- substantially increase the rate or amount of surface runoff in a manner that would exceed the capacity of existing/planned drainage facilities and/or result in flooding on- or off-site;
- create demand for electrical or natural gas service that is substantial in relation to the existing demands;
- exceed wastewater treatment requirements of the 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;
- require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects;
- have insufficient water supplies available to serve the project from existing or permitted entitlements and resources, or require new or expanded entitlements; or
- 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.

IMPACT ANALYSIS

Impact 4.11-a

Public Utilities – Demand for Potable Water. *The proposed project would create demand for potable water that could not be met by existing City water production facilities (i.e., wells). Although construction of additional City wells and the SCSWSP project is planned and/or underway to meet the needs of several proposed or approved projects in addition to the CLSP project, the timing of when these facilities will begin water deliveries cannot be confirmed. This impact is considered* ***significant****.*

The SB 610 Water Supply Assessment prepared for the CLSP project (Nolte Associates 2004b) (Appendix J) evaluates the adequacy of existing and future water supplies to meet the water demand created by the CLSP project in conjunction with existing and future development in the City over the next 20 years. The assessment accomplishes this by identifying water demand and supply in 5-year increments over a 20-year time horizon, taking into account not only existing water supplies but also planned and/or approved water supplies not yet constructed (such as new municipal wells planned for under the adopted Water, Master Plan and new surface water supplies under the approved SSJID SCSWSP).

Estimated potable water supply and demand in the City as described in the SB 610 analysis is shown in Table 4.11-1. Available supply is shown for normal-year and multiple dry-year drought conditions. Water demand associated specifically with the CLSP project is also provided. It is assumed that the future water supply for the City would consist of groundwater from the City's existing and planned municipal wells and surface water deliveries from the SCSWSP. It is estimated that the CLSP project would require approximately 33 AFY in 2005 (initiation of the project), or about 0.4% of the City's normal-year supply; approximately 1,562 AFY in 2010 (completion of Phase 1), or 14% of the City's total normal-year supply; and an estimated 3,248 AFY at full buildout in 2020, or 19% of the City's total normal-year supply (Nolte Associates 2004b).

Table 4.11-1
City of Lathrop and Central Lathrop Specific Plan Estimated Water Supply and Demand, 2005–2025

Year	Estimated Total Water Demand in the City of Lathrop (AFY)*	Portion of Total Estimated Water Demand from CLSP (AFY)	Available Water Supply in the City			
			Normal Year (AFY)		Multi-Dry Year Drought (AFY)	
2005	4,514	33	Well	2,700	Well	2,700
			Surface	5,200	Surface	4,524
			Total	7,900	Total	7,224
2010	7,891	1,562	Well	3,525	Well	3,525
			Surface	8,000	Surface	6,960
			Total	11,525	Total	10,845
2015	10,410	2,951	Well	4,350	Well	4,350
			Surface	8,000	Surface	6,880
			Total	12,350	Total	11,230
2020	13,189	3,248	Well	2,700	Well	4,000
			Surface	10,780	Surface	9,271
			Total	13,480	Total	13,271
2025	15,868	3,248	Well	5,100	Well	5,800
			Surface	11,791	Surface	10,140
			Total	16,891	Total	15,940

* Includes existing City baseline demand and anticipated additional future growth, including the River Islands at Lathrop, Mossdale Landing, and Mossdale Landing East projects.

Source: Nolte Associates 2004a

Groundwater pumping during normal years would range from 2,700 AFY in 2005 to 5,100 AFY in 2025, with increased reliance on groundwater use during dry years when surface water deliveries from the SCSWSP are reduced. Deliveries from the SCSWSP are planned to begin in 2005 and during normal years would range from 5,200 AFY in 2005 to 11,791 AFY in 2025. Combined normal-year future supply would range from 7,900 AFY in 2005 to 16,891 in 2025. During multiple-year drought conditions, supply would range from 7,224 AFY in 2005 to 15,940 AFY in 2025. At the same time, it is projected that future water demand (i.e., proposed project plus existing and future cumulative development) would range from 4,514 AFY in 2005 to 15,868 AFY in 2025. As indicated in Table 4.11-1, future water supply available to the City during normal years and under multiple-year drought conditions would be adequate to meet future water demand during all horizon years and, therefore, for all phases of the CLSP project (Nolte Associates 2004a).

The potable water required to serve the proposed project would be provided, in part, by the City's municipal well system. The CLSP project would adhere to all of the City's adopted water conservation requirements (Section 13.08.180 of the Lathrop Code of Ordinances) to reduce the need for withdrawals from the underground aquifers. However, to provide the 2,700 AFY of groundwater production assumed in the SB 610 analysis for 2005, construction of a new well, Well #21, would be required. As described in the Water Master Plan, up to four additional wells (#22, 23, 24, and 10 [replacement for Well #5]) would be required to provide the 2025 normal-year deliveries (5,100 AFY) and the multiple dry-year deliveries for 2015 and beyond (4,000–5,800 AFY). All of these wells have been planned for under the Water Master Plan, and Wells #21-23 underwent separate project-level CEQA review as part of a separate City-initiated well project. Well #21 is currently under construction near the southwestern corner of Yosemite Avenue and McKinley Avenue in what is planned to be an expanded City well field under the

Water Master Plan (Exhibit 4.11-2). This well will have a capacity of 1,250 gpm, or 1.8 mgd, and will connect to the City's existing municipal water system. Although some unused capacity remains in the City's existing municipal water system, the City has determined that development of Wells #21-23 is required to meet the near-term incremental increase in demand for water associated with several currently proposed or recently approved projects (i.e., River Islands, Mossdale Landing, and Mossdale Landing East), in addition to providing water supply for the CLSP project (Nolte Associates 2004b).

Groundwater from existing wells and Wells #21-23 would be an initial source of potable water during the early construction period. Upon commencement of planned surface water deliveries to the City from the SCSWSP in 2005, water for the project would be provided through conjunctive use of both groundwater from city wells and surface water from the SCSWSP. After SCSWSP water becomes available, it is the intent of the City that SCSWSP water be used as the primary water source for the City (approximately 65–70%), with existing and future wells providing supplemental water during peak demand and needed water pressure for fire flows (approximately 30–35%).

The City must have water available from the planned new wells and the SCSWSP or the proposed CLSP project would create a demand for potable water that could not be met by existing City water production facilities. This is true for both Phase 1 and Phase 2. Although Well #21 and the SCSWSP project are under construction, completion of these and other water supply infrastructure elements is not assured. Therefore, this impact is considered significant.

Impact 4.11-b

Public Utilities – Environmental Impacts Associated with the Development of New City Wells. *According to the Water Master Plan EIR (EDAW 2001), the construction and operation of planned City Wells #21–23 could contribute to significant geotechnical, groundwater, flooding, noise, farmland, aesthetic/visual, terrestrial biological, and cultural resource impacts. These wells would provide municipal water to the City, including the proposed project. Implementation of the mitigation measures identified in the Water Master Plan EIR would reduce these impacts to a less-than-significant level, with the exception of farmland conversion impacts, which would be* ***significant and unavoidable****.*

According to the Water Master Plan EIR (EDAW 2001), wells #21, #22, and #23 (and any additional new or replacement wells) would each consist of a well head and pump rated at 1,250 gpm, would each be a maximum of 10 feet tall, and would have a footprint and fenced area ranging from 1.0 to 1.3 acres in size. According to the Water Master Plan EIR, the construction and operation of the planned city wells would potentially result in the following significant environmental effects:

- exposure of soils to erosion and loss of topsoil during construction,
- facility damage or disruption of water service as a result of seismic events and/or shrink-swell of underlying soils,
- advancement eastward of the 500-mg/l total dissolved solids (TDS) groundwater concentration front,
- localized flooding,
- construction noise,
- stationary-source noise,
- conversion of State-designated farmland to urban use,

- aesthetic degradation and view blockage,
- loss of burrowing owls or active nests,
- destruction of undiscovered/unrecorded cultural resource sites, and
- exposure to preexisting listed and unknown hazardous materials contamination.

As indicated in the Water Master Plan EIR, each of the above impacts, with the exception of small amounts of farmland conversion, would be reduced to a less-than-significant level with implementation of the recommended mitigation measures (EDAW 2001). Impacts associated with conversion of farmland would be considered significant and unavoidable.

In accordance with the Water Master Plan, the City prepared a project-level CEQA analysis for the construction of Wells #21-23, and would prepare similar project-level CEQA analyses for future well projects. Any significant impacts not identified in the Water Master Plan EIR that may occur associated with City-sponsored well projects would be identified in the associated project-level CEQA analysis. Applicable mitigation measures from the Water Master Plan EIR, along with any additional required mitigation, also would be identified. See Chapter 5 of this DEIR, Cumulative Impacts, for further evaluation of future projects in the City.

Impact 4.11-c

Public Utilities – Environmental Impacts Associated with the SSJID SCSWSP.

According to the EIR prepared for the SSJID SCSWSP, construction and operation of this facility could contribute to significant impacts for the following issue areas: hydrology, flooding, and water quality; air quality; geology, soils, and seismicity; biological resources; noise; hazardous materials / public health; visual resources; transportation and traffic circulation; public service and utilities / energy; cultural resources; and recreation. The SCSWSP would provide municipal water to the City, including the proposed project. These impacts would be reduced to ***less-than-significant*** *levels with implementation of the mitigation measures identified in the SCSWSP EIR.*

SSJID, under contract to the Cities of Manteca, Escalon, Lathrop, and Tracy, is currently constructing the SCSWSP. The project would provide treated potable water to the participating cities through construction and operation of a new water treatment plant (WTP) and water transmission facilities to deliver treated water. The proposed WTP would be located near SSJID's Woodward Reservoir in Stanislaus County. Water would be delivered from the reservoir to the approximately 40 acre WTP facility. An approximately 36.5-mile pipeline would carry treated water from the WTP to turnouts for each participating City. Under normal precipitation conditions, approximately 27.4% of the overall water supply delivered to the participating cities by the SCSWP would be allocated to the City of Lathrop (Table 4.11-2).

SSJID's water supply source for the project is the Stanislaus River, based on pre-1914 rights for direct diversion and diversion to storage. Total water deliveries to the participating cities at full project buildout, and during normal precipitation years, would be approximately 43,090 AFY. Maximum deliveries to each City under normal precipitation conditions are shown in Table 4.11-2. During drought conditions deliveries would be reduced.

Table 4.11-2 SCSWSP Annual Deliveries to Participating Cities	
City Receiving SCSWSP Deliveries	Maximum Annual Delivery (AFY)[1]
Manteca	18,500
Escalon	2,799
Lathrop	11,791
Tracy	10,000
Total	**43,090**

[1] Normal precipitation year delivery at full project buildout
Source: ESA 1999

The EIR prepared for the SCSWSP describes the environmental impacts associated with the project and mitigation measures to address significant impacts. A copy of the EIR is available for review at the City of Lathrop Community Development Department/Planning Division, 16775 Howland Road, Suite One, Lathrop, California 95330 (209/858-2860, extension 327). According to the SCSWSP EIR, the project would result in the following significant environmental effects, summarized by issue area:

Land Use

- Farmland or adjacent agricultural activities could be impacted due to siting and operation of project facilitates.
- Sensitive land uses, primarily residences, may incur short-term disturbance due to construction of proposed project facilities.

Hydrology, Flooding, and Water Quality

- Use of Woodward Reservoir as a drinking water supply source would increase its sensitivity to water quality degradation issues within the watershed.
- Local storm runoff volumes may have minor increases due to increased impervious surface area at the WTP.
- Increased sedimentation in the stream channel may result from possible creek bed erosion during the pipeline installation or proposed project construction.
- Potential damage to structures in the project area may result from inundation due to the remote chance of dam failure at Woodward Reservoir.
- Increased erosion and sedimentation, with subsequent impacts to water quality and/or storm drain capacity, may result from construction of the proposed facilities.
- Surface water quality may be affected due to discharge from dewatering activities during construction.

Air Quality

- Temporary increases in air pollutant emissions will occur during construction.
- Operational, equipment, and vehicular air emissions will result at the WTP.

Geology, Soils, and Seismicity

- Potential seismic activity and resulting hazards in the region could affect the project facilities and its users.
- Underlying soil properties may cause damage at the proposed facilities.

Biological Resources

- Jurisdictional wetlands and annual grasslands may be removed during construction of the project facilities.
- Temporary and permanent impacts to special status plants and animals, supported by wetlands and annual grasslands, may result from construction of the project facilities.
- Sensitive tree resources would be removed during construction of the water transmission lines and Tracy Pump Station.
- Temporary impacts to riparian habitats, and associated special status plants and animals, may result during construction of the water transmission lines.

Noise

- Noise levels will be temporarily increased during construction.
- Increased noise will be generated from operation of the WTP and Tracy Pump Station.

Hazardous Materials / Public Health

- Workers, the public, and the environment could be affected by hazardous materials stored and used at the WTP.
- Pre-existing hazardous materials could contaminate construction workers, the public, and the environment during construction of the proposed project components.

Visual Resources

- Visual quality in the project area could be adversely affected by project facilities.

Transportation and Traffic Circulation

- Public roads in the construction zone may experience short-term traffic delays during construction of the water transmission lines.
- Vehicle trips by workers will be increased during construction.
- Access to adjacent land uses, on streets, and for bicycles/pedestrians will be adversely affected by the proposed project.
- Transit service will be disrupted on pipeline alignment routes due to construction of the proposed project.
- Vehicular, bicycle, and pedestrian traffic safety hazards on public roadways will increase due to construction of the proposed project.

- Designated haul routes will incur increased wear-and-tear during construction of the proposed project.
- Newly repaved streets would be disrupted due to construction of the proposed project.
- Use of some existing agricultural dirt roads could be prohibited or limited due to construction and operation of the pipeline alignments.

Public Service and Utilities / Energy

- Utility services may be disrupted during pipeline construction.
- Utility conflicts may result from construction of specific segments of the water transmission lines.
- Access for local emergency services may be temporarily blocked during pipeline construction.
- Short-term police and fire protection services will be required for traffic management and accidents during construction activities.

Cultural Resources

- Within the project area, damage to known and/or unknown prehistoric archeological, historical, or paleontological resources may result during construction.

Recreation

- Use of Woodward Reservoir as a drinking water supply may place restrictions on current recreational activities to comply with public health regulations for drinking water and to protect water quality.

As indicated in the SCSWSP EIR, each of the above impacts would be reduced to less-than-significant levels with implementation of adopted mitigation measures. As noted above, maximum deliveries to the City of Lathrop (11,791 AFY) constitute approximately 27.4% of the total water deliveries associated with the SCSWSP in normal precipitation years, while the CLSP project (3,248 AFY) constitutes approximately 7.5% of the total SCSWSP deliveries. Thus, both buildout of the City and development of the CLSP would contribute to the overall impacts assessed in the SCSWSP EIR.

Impact 4.11-d

Public Utilities – Demand for Wastewater Treatment Capacity. *Implementation of Phase 1 of the CLSP would generate demand for approximately 1.37 mgd of wastewater treatment capacity. At full buildout demand for treatment capacity is estimated to be 2.17 mgd. This demand could not be met by the City's existing wastewater treatment facilities. The proposed project includes development of 3.0 mgd of wastewater treatment capacity at WRP #2. However, if treatment capacity at WRP #2 is not brought into service concurrently with demand generated by the proposed project, there may not be sufficient treatment capacity available in the City to support the project. This is considered a* ***significant*** *impact.*

Demand for wastewater treatment capacity generated by the proposed project was calculated using wastewater generation factors for various land uses included in the Water Master Plan and generation factors developed by the City and Nolte Associates for CLSP land uses not specifically included in the Water Master Plan (e.g., variable density residential). Wastewater generation factors for each project land use and calculations of wastewater treatment demand for the CLSP project are shown in Appendix K. Based on these calculations, it is estimated that the CLSP project would require approximately 1.37 mgd

of wastewater treatment capacity at the end of Phase 1 (2010), and 2.17 mgd of wastewater treatment capacity at full project buildout (2020).

The proposed project includes development of WRP #2 to treat wastewater generated in the CLSP area. Three locations are being considered for WRP #2, with two plant configurations considered at each location, resulting in six total alternatives available for WRP #2 (See Chapter 3.0, Description of the Proposed Project). Each alternative would provide 3.0 mgd of total treatment capacity; with the treatment capacity able to be brought into service in 0.75 mgd increments, similar to the City's existing WRP #1 Phase 1 Expansion project (see Section 4.11.2, Existing Conditions, above).

Any of the six WRP #2 options would provide sufficient capacity to treat wastewater generated by the proposed project. Because treatment capacity at WRP #2 could be brought into service in 0.75 mgd increments, half of the total treatment capacity (1.5 mgd) could be brought into service to meet demand generated by Phase 1 (1.37 mgd). Use of another 0.75 mgd increment (2.25 mgd total treatment capacity) would be sufficient to treat project generated wastewater at full buildout (2.17 mgd). The last remaining 0.75 mgd of treatment capacity would then be brought into service as needed to treat wastewater generated elsewhere in the City, consistent with the citywide wastewater treatment scenario described in the Water Master Plan. If one of the WRP #2 South options is selected, pipelines installed to carry wastewater from the CLSP area to WRP #2 South would be sized to also accommodate wastewater from northern parts of the City identified in the Water Master Plan to be served by WRP #2. Potential growth inducing effects of additional treatment capacity provided by WRP #2 is evaluated in Chapter 6, Growth-Inducing Impacts.

As noted in Chapter 3.0, Description of the Proposed Project, as part of the two scalping plant scenarios considered for WRP #2, approximately 0.3 mgd of the solid constituent of wastewater entering WRP #2 would be diverted to WRP #1 for treatment. Because the solid constituent of wastewater is more difficult to treat than the liquid constituent, the 0.3 mgd of solids sent to WRP #1 would require more than 0.3 mgd of additional effective treatment capacity at this facility. Based on the planned expansion of WRP #1 to 6.0 mgd identified in the Water Master Plan, WRP #1 would be able to accommodate the additional effective treatment capacity needed to treat solids sent from a WRP #2 scalping plant. However, even if this were not the case, a portion of the approximately 0.75 mgd of additional treatment capacity at WRP #2 could be allocated to serve development planned to be served by WRP #1. Therefore, demand for treatment capacity at WRP #1 associated with a WRP #2 scalping plant option could be compensated for with a portion of the additional treatment capacity at WRP #2.

Although construction of WRP #2 would provide sufficient wastewater treatment capacity to serve the CLSP project, WRP #2 does not currently exist, and it cannot be assured that treatment capacity at WRP #2 would be brought into service concurrently with demand generated by the proposed project. The City's existing WRP #1, with its current 0.25 mgd treatment capacity, does not have sufficient capacity to support the proposed project. Even after the planned WRP #1 Phase 1 Expansion is brought into service, the 3.25 mgd of total treatment capacity at WRP #1 may not be sufficient to serve the CLSP project and other development in the City. Because sufficient wastewater treatment capacity is not currently available to support the proposed project, this impact is considered significant.

Impact 4.11-e

Environmental Impacts Associated with the Expansion of WRP #1. *If either of the scalping plant options are selected for WRP #2, the solids portion of the wastewater generated by the proposed project would be treated at WRP #1. If the WRP #2 South (integrated) option is selected, operation of WRP #2 could be integrated with operation of WRP #1. According to the Water Master Plan EIR, and the EIR prepared for the WRP #1 Phase 1 Expansion Project, the expansion of WRP #1 and the potential discharges of treated wastewater to the San Joaquin River during later expansion phases could contribute to significant geotechnical, groundwater, flooding, air, odor, noise, land use, farmland, aesthetics/ views, terrestrial biology, cultural resources, and public utility emergency impacts. These impacts would be reduced to less-than-significant levels with implementation of the mitigation measures identified in the Master Plan EIR and the WRP #1 Phase 1 Expansion EIR, with the exception of odor impacts, cumulative surface water quality and fisheries impacts, and impacts associated with conversion of important farmland, which would be* ***significant and unavoidable****.*

As described in Chapter 3.0, Description of the proposed project, six options are being considered for WRP #2. Under three of these options, WRP #2 would be an entirely stand alone facility and all recycled water generated by WRP #2 would be disposed of on land via irrigation of landscaping in the CLSP area and irrigation of agricultural lands off-site. Under two of the options considered, WRP #2 North (scalping) and WRP #2 Onsite (scalping), wastewater entering WRP #2 would be separated into a solid component and a liquid component. The liquid component (approximately 90% of the total effluent) would be treated at WRP #2 and the resulting recycled water would all be disposed of on land as described above. The solid component (approximately 10% of the total effluent) would be treated at WRP #1 and any residual materials (recycled water, sludge) would be disposed of consistent with the operation of that facility. Under the final WRP #2 option, WRP #2 South (integrated), WRP #2 would be located near WRP #1. The two WRPs would be connected via pipelines, allowing the treatment capacity of the two plants to be combined. Sufficient recycled water storage and disposal sites would still be provided under this scenario to dispose of all recycled water generated by the CLSP project. However, because of the integrated nature of the two WRPs, some recycled water disposed of on CLSP related sites may be generated by treating wastewater from elsewhere in the City, and some recycled water disposed of via WRP #1 may be generated by treating wastewater originating from the WLSP site.

The City's adopted Water Master Plan provides for expansion of WRP #1 over the next 30 years to serve forecasted growth in the City. The Master Plan calls for expansion of WRP #1 to between 0.46 mgd and 3 mgd during the near term (2001-2004) and to between 3.0 mgd and 6.1 mgd at buildout (2030), with potential disposal of treated wastewater during the later phases accomplished through discharges to the San Joaquin River. The EIR prepared for the Water Master Plan, and certified by the City in 2001 (EDAW 2001), evaluated the impacts of the Water Master Plan at a programmatic level, including impacts of expanding and improving WRP #1. According to the Water Master Plan EIR, the expansion and improvement of WRP #1 would result in the following potentially significant environmental effects:

- exposure of soils to erosion and loss of topsoil during construction
- facility damage or disruption of wastewater treatment service as a result of seismic events and/or shrink-swell of underlying soils
- localized flooding
- surface water quality (cumulative impacts)

- construction-related air emissions
- odor impacts
- construction-related noise
- stationary-source noise
- land use incompatibility
- aesthetic degradation and view blockage
- loss of burrowing owls or active nests
- loss of elderberry shrubs and the associated valley elderberry longhorn beetle
- loss of Swainson's hawk nests and other protected raptor nests
- loss of jurisdictional waters of the United States
- fisheries (cumulative impacts)
- destruction of undiscovered/unrecorded cultural resource sites
- exposure to pre-existing listed and unknown hazardous materials contamination
- disruption of WRP operation during an emergency (power failure)

As identified in the Water Master Plan EIR, most of these impacts would be reduced to less-than-significant levels with the implementation of mitigation measures included in the EIR. The three exceptions would be odor impacts and cumulative surface water quality and fisheries impacts associated with discharges to the San Joaquin River. These impacts would be significant and unavoidable (EDAW 2001). However, if total maximum daily load limits (TMDLs) established by the RWQCB for the San Joaquin River (see Section 4.8, Hydrology and Water Quality) are effective in improving water quality in the river, cumulative impacts associated with surface water quality and fisheries may no longer be significant.

A project-level EIR was completed for the WRP #1 Phase 1 Expansion project and certified by the City in 2002 (EDAW 2002). That EIR evaluated the impacts of expanding WRP #1 to provide 3.0 mgd of additional treatment capacity, establishing recycled water storage and disposal sites, and installing necessary pipelines to carry wastewater to WRP #1 and to carry recycled water to the storage and disposal sites. Impacts identified in this project level EIR were generally consistent with those identified in the Water Master Plan EIR. However, some additional potentially significant/significant environmental effects were identified in the WRP #1 Phase 1 Expansion EIR:

- construction related impairment of agricultural productivity
- conversion of important farmland
- loss of special-status plants
- disturbance of potential giant garter snake habitat (associated with pipelines to recycled water disposal sites)

- loss or disturbance of nests for various bird species (i.e., northern harrier, loggerhead shrike, Cooper's hawk, white-tailed kite, common tree nesting raptors)
- Disturbance of suitable riparian brush rabbit habitat (associated with pipelines to recycled water disposal sites)
- Potential health risks associated with storage of, and irrigation with, recycled water

As identified in the WRP #1 Phase 1 Expansion EIR, most of these impacts would be reduced to less-than-significant levels with the implementation of mitigation measures included in the EIR. The exception would be conversion of important farmland. This impact would be significant and unavoidable (EDAW 2002).

Impact 4.11-f

Public Utilities – Demand for Recycled Water Storage and Disposal Capacity. *The proposed project would increase the demand for recycled water storage and disposal areas. Because adequate storage and disposal areas are available to accommodate the quantity of recycled water to be generated by the proposed project, this impact is considered* ***less than significant****.*

Wastewater generated by the CLSP project would be conveyed to WRP #2 (whichever of the six options evaluated in this DEIR is selected) via wastewater pipelines, treated at WRP #2, and then delivered via pipeline as tertiary treated and disinfected recycled water to the CLSP area and potential offsite recycled water storage and disposal areas (see Exhibit 3-6). Recycled water systems proposed as part of the CLSP project would be designed in accordance with the Water Master Plan. The proposed project includes an amendment to the Water Master Plan to allow the use of recycled water for irrigation of front and back yards.

The volume of recycled water generated by the proposed project would be similar to the volume of wastewater sent for treatment. As described above in the discussion of Impact 4.11-d, the CLSP project is estimated to generate 1.37 mgd of wastewater at the completion of Phase 1 and 2.17 mgd of wastewater at full buildout. Therefore, it is assumed that the proposed project would generate approximately 1.37 mgd of recycled water at the completion of Phase 1 and 2.17 mgd of recycled water at full buildout.

Under the CLSP project, 100% of the recycled water generated by the proposed project is planned to be disposed of on land at the project site and at offsite disposal areas (Exhibit 3-6). No river discharge of recycled water is proposed. Onsite land disposal would consist of irrigation of onsite public areas (e.g., parks, play fields, parkway strips, medians) and private landscaped areas (i.e., front and back yards). Offsite land disposal would consist of irrigation of agricultural crops. In both cases, the recycled water would be applied at agronomic rates so as to minimize percolation below the root zone and to avoid runoff or ponding at the surface. During periods when irrigation is not necessary or would not meet the requirements for application at agronomic rates (e.g., during storm events, during much of the winter), recycled water would be stored in man-made ponds until conditions are suitable again for irrigation. The recycled water disposal areas shown in Exhibit 3-6 would also be available as locations for recycled water storage ponds.

An analysis is provided in Appendix H of this DEIR that calculates the area required to store and dispose of the 2.17 mgd of recycled water anticipated to be generated by the proposed project at buildout (PACE 2004). The analysis evaluated storage and disposal requirements under conditions where limited winter irrigation is permitted and conditions where no winter irrigation is permitted. For this EIR, results related

to the "no winter irrigation" condition were used (i.e., water is stored during the next winter months) as these provide the greatest requirements for recycled water storage and disposal area.

Table 4.11-3 shows the estimated acreage required for offsite recycled water storage and disposal based on the analysis provided in Appendix K. The analysis only calculates recycled water storage and disposal requirements at project buildout. No demand estimates are provided for Phase 1. For this EIR it was assumed that Phase 1 demands for recycled water storage and disposal would be proportionate to the volume of recycled water generated under Phase 1. Because development associated with Phase 1 would generate an estimated 63.4% of the project's overall recycled water volume (1.37 mgd divided by 2.17 mgd), it was assumed that Phase 1 would also require approximately 63.4% of the recycled water storage and disposal facilities.

Table 4.11-3
Recycled Water Storage and Disposal Area Required for the CLSP Project

	Phase 1	Buildout
Storage pond area required	62 acres*	98 acres
Total irrigation/disposal area requirement	353 acres*	560 acres
Irrigation/disposal area available in the CLSP area	214 acres*	340 acres
Total offsite irrigation/disposal area requirement (total disposal area requirement minus acreage available in the CLSP area)	139 acres	220 acres
Total offsite facility requirement (storage ponds and irrigation/disposal area)	201 acres	318 acres

* Because 63.4% of the total project recycled water generation is attributed to Phase 1, it was assumed that storage pond and disposal area demands would also equal 63.4% of the buildout total.

Source: PACE 2004

It is estimated that 62 acres of land would be required for recycled water storage ponds at completion of Phase 1 of the CLSP, and 98 acres of land would be required at buildout (Table 4.11-3). The required area for recycled water storage ponds assumes that the ponds would hold water up to a 14-foot maximum depth. Other assumptions regarding the size and configuration of the storage ponds is provided in Appendix K.

Approximately 353 acres of irrigation area would be required for disposal of recycled water generated at completion of Phase 1 of the CLSP. A total of 560 acres would be required at project buildout. It is estimated that 214 acres of this irrigation/disposal area could be provided by public and private landscaping in the CLSP area at the completion of Phase 1, resulting in the need for 139 acres of offsite recycled water disposal area. At project buildout, approximately 340 acres of onsite irrigation/disposal area would be available, resulting in the need for 220 acres of offsite recycled water disposal area.

Areas available for offsite recycled water storage and disposal are shown in Exhibit 3-6. Areas 1, 2, 3, 5, and 6, which are all outside the CLSP area, cover approximately 826 acres. The WRP #2 North and WRP #2 South sites are located in recycled water storage and disposal sites 3 and 5 respectively. Assuming one of these WRP options were constructed, approximately 7 acres of the total 826 acres would not be available for recycled water storage or disposal. Area 5 is also currently used for recycled water disposal in support of the existing the WRP #1. If this approximately 56 -acre area were used to support the CLSP project, the 56 acres of existing disposal capacity would be shifted to Area 1, 2, 3, or 6. The net affect is that the 56 acres associated with Area 5 provides no recycled water storage or disposal capacity benefit to the CLSP project. Similarly, approximately 63 acres in the western portion of Area 6 is proposed for use as a recycled water disposal site in support of the WRP #1 Phase 1 Expansion project,

and therefore would not provide any recycled water storage or disposal benefit to the CLSP project. Considering the area potentially covered by WRP #1 (7 acres), the existing use of Area 5 for WRP #1 recycled water disposal (56 acres), and the planned use of a portion of Area 6 for WRP #1 recycled water disposal (63 acres), the total offsite area available for recycled water storage and disposal in support of the CLSP is 700 acres.

The 700 acres of available offsite recycled water storage and disposal area is more than sufficient to accommodate recycled water storage and disposal demands for Phase 1 (201 acres) and project buildout (318 acres) (see Table 4.11-3). Even if no irrigation with recycled water was permitted in the CLSP area, there would be sufficient land available at Sites 1, 2, 3, 5, and 6 to accommodate recycled water storage and disposal demands at full project buildout (658 acres).

Potential recycled water storage and disposal area 4 is located within the CLSP area (Exhibit 3-6). This approximately 413 acre area is considered as a potential temporary recycled water storage/disposal site. Area 4 would be used for recycled water/disposal during development of Phase 1 of the proposed project, and would later be converted to development as Phase 2 is constructed. As Phase 2 is built out, the recycled water storage/disposal capacity provided by Area 4 would be shifted to Areas, 1, 2, 3, 5, and 6. Assuming the WRP #2 Onsite option is constructed, Area 4 would provide approximately 406 acres of recycled water storage/disposal capacity. The total recycled water storage/disposal demand for Phase 1 is estimated to be 201 acres (assuming use of recycled water for landscape irrigation in the CLSP area) (Table 4.11-1). Therefore, Area 4 provides sufficient acreage to accommodate the storage and disposal of recycled water generated by Phase 1 development.

Because adequate storage and disposal areas are available to accommodate recycled water generated by the proposed project at both Phase 1 and full buildout, this impact is considered less than significant. Potential use of these areas for storage and disposal is discussed where relevant throughout each of the subsections of Chapter 4.

Impact 4.11-g

Public Utilities – Stormwater/Surface Runoff Management. *Implementation of the CLSP would increase the amount of impervious surface on site, producing increased stormwater runoff that would require collection and discharge. However, the CLSP project includes a stormwater management system, including detention facilities, to provide onsite stormwater storage and discharge capacity sufficient to protect the CLSP area during a 100-year/48-hour storm event. Therefore, this impact is considered* ***less than significant****.*

Implementation of the proposed project would increase the amount of impervious surface in the CLSP area, producing increased stormwater runoff that would require collection and discharge. General land use types that would result in the development of impervious surfaces include residential, office, commercial, public/semi-public, schools, and roadways; and to a lesser degree neighborhood and community parks. Although the entire surface area of these land uses would not be covered by impervious surfaces, a substantial amount of stormwater runoff would be generated in the area by the CLSP project.

As described in Chapter 3, Description of the Proposed Project, and Section 4.8, Hydrology and Water Quality, the CLSP project includes an extensive stormwater management system to collect, detain, and discharge stormwater runoff generated in the CLSP area. The system has been designed to meet the two key stormwater management criteria described above in Section 4.11.1, Regulatory Background:

- Discharge to the San Joaquin River cannot exceed 30% of the estimated 100-year peak post project runoff rate.

- When water levels in the San Joaquin River exceed the 21.0-foot elevation, discharges to the river are restricted to pre-project rates. As a result of this restriction, development must be designed to detain runoff from a 48-hour, 100-year storm, with discharges to the river limited to pre-development rates. This state restriction supercedes the local discharge criteria above whenever water levels in the San Joaquin River exceed the 21.0-foot elevation.

Supporting documentation regarding the design and effectiveness of the CLSP stormwater management system is provided in Appendix F. The following text summarizes information from this appendix.

The CLSP project site has been divided into five drainage watersheds, as illustrated in Exhibit 3-5. These watersheds encompass the approximately 1,459 acres of the 1,521-acre CLSP area located inland of the San Joaquin River levee. The remaining land in the CLSP project area (approximately 62 acres) is located west of the levee, would not be developed (other than with the stormwater outfall and minor park facilities), would drain directly to the river, and is not included in the CLSP storm drainage system.

Table 4.11-4 shows the approximate stormwater runoff in the 48-hour, 100-year storm, the allowable discharge rates, and the required stormwater detention for each watershed. City standards require that detention facilities and pump stations be designed using 4.37 inches of precipitation for the 100-year, 48-hour storm. In addition, the total storage that would be provided by each detention facility includes an additional 10% safety factor.

Table 4.11-4
Total Storage Volumes Required for CLSP Watersheds

Watershed	Area (acres)	48-hour 100-year Storm Flow Rate (cfs)	Discharge Flow Rate (cfs)	Detention Volume (acre-feet)	Total Detention Volume (with 10% safety factor) (acre-feet)
1	404	435	130.5	11.6	12.8
2	205	278	83.4	6.2	6.8
3	378	321	96.3	11.1	12.2
4	234	262	78.6	6.0	6.6
5	238	283	84.9	7.7	8.5
Total	1,459*	1,579	473.7	42.6	46.9

* The total acreage shown is less than that of the entire CLSP area because portions of the site are west of the levee and would not enter the drainage system.
Source: MacKay & Somps 2004

The stormwater management system in each of the five watersheds would be hydraulically independent of the others and would consist of a system having four integrated components. The first component is the gravity lines that collect surface runoff. A system of multiple detention facilities (either surface basins or underground storage facilities) makes up the second part of the system. The combined storage capacity for all detention facilities in the CLSP area would be 46.9 af (see Table 4.11-4). The detention facilities within each watershed would be interconnected by pipelines that would allow them to function as a single unit. The third part of the system is the gravity outfall line that leads to a pump station. There would be a separate pump station for each of the five watersheds. The fourth component is the pump station and force main that conveys water to one of two proposed outfall structures. Within each watershed, the drainage facilities would work as a unified system where the stormwater detention needs of the entire watershed are provided by the combined total storage of its detention areas.

The proposed stormwater collection system would function by discharging all stormwater runoff directly into the San Joaquin River up to the point where the rate would exceed the 30% peak runoff limit. The pumps would be designed to not allow discharges beyond this limit. During severe storm events where stormwater inflows exceed the pump's discharge capacity, water would begin to "back up" into the detention facilities until the precipitation rate decreases and stormwater inflow rates once again equal, or are less than, the capacity of the pump station. The water level in the detention facilities would then decrease, emptying completely within a City-mandated 24-hour period after the storm event has ended. As required by RD 17, no part of any detention facility would be located nearer than 200 feet to the base of the levee.

The five pump stations would discharge to the San Joaquin River through two outfall structures, as shown in Exhibit 3-5. The Stonebridge outfall at the end of Dos Reis Road, scheduled for completion in 2004, would serve Watersheds 3 and 5. A second outfall would be constructed to serve Watersheds 1, 2, and 4 in the southern portion of the CLSP area.

Although development under the CLSP would increase the amount of stormwater runoff, the stormwater management system is designed to provide sufficient onsite detention and discharge capacity to meet applicable design criteria. Therefore, this impact is considered less than significant.

Impact 4.11-h

Public Utilities – Demand for Electricity and Natural Gas. *The proposed project would increase the demand for electricity and natural gas. PG&E is able to provide electricity and natural gas to the project, and the increase in demand for electricity and natural gas would not be substantial in relation to the existing electricity and natural gas consumption in PG&E's service area; therefore, this impact is considered* ***less than significant****.*

As indicated in Tables 4.11-5 and 4.11-6, buildout of the CLSP project would increase electricity and natural gas demand in the City by approximately 323,923 kilowatt hours per day (kWh/day) and 1,923,810 cubic feet (cf) per day, respectively. PG&E has acknowledged that it has adequate electricity and natural gas supplies to support the proposed project without affecting service to current users (Lang, pers. comm., 2004). The energy demands to be created by the proposed project cannot be considered "substantial" in relation to the total amount of energy supplied by PG&E in its northern and central California service area (estimated in 2000 to be 81,923 million kW per day of electricity and 887 million cf per day of natural gas [Palermo 2001]) and available energy expected in the future. Therefore, although PG&E has acknowledged that the CLSP project would experience the same possibility of electric service interruption attributable to a lack of statewide electric supply availability as any other development in the California Independent System Operator's jurisdiction, the project's potential impact on existing electricity and natural gas supplies are considered less than significant.

Electricity would be provided to the project site via connections to existing main electrical feeder lines in the developed portion of the City east of I-5. Natural gas would be delivered either directly from PG&E's existing Louise Avenue Feeder (located on Louise Avenue approximately 1,500 feet west of I-5), from natural gas lines installed to serve the Mossdale Landing project, or a combination of these two sources. PG&E would determine the precise locations and types of connections at the design stage of the proposed project. Because the proposed electrical and natural gas utility improvements would be required to comply with all existing City, PG&E, and applicable Uniform Building Code requirements, it is anticipated that the proposed electricity and natural gas utility improvements would be sufficient to serve the proposed project. The impact would be less than significant.

Table 4.11-5
CLSP Project Electricity Demand at Buildout (2020)

Land Use Type	Units/Sq Ft*	Consumption Factor (kW-h/day) [1]	Consumption (kW-h/day)
Residential	6,790 du	15.41 per du	104,634
Office and Commercial [2]	4,994,372 sq. ft.	0.037 per sq. ft.	184,792
Schools	374,986 sq. ft [3]	0.016 per sq. ft.	6,000
Parks	--	--	--
Levee/Open Space	--	--	--
Major Roads	--	--	--
Recycled Water Storage and Disposal Sites	--	--	--
WRP #2	--	--	14,870 [4]
Water Storage Tank/Booster Pump Station	--	--	3,625 [4]
Stormwater Pump Stations (5)	--	--	8,335 [4]
Wastewater Lift Station	--	--	1,667 [4]
Total:			323,923

[1] *CEQA Air Quality Handbook, South Coast Air Quality Management District, April 1993.*
[2] The Office Commercial only option was selected for the OC/VR/WWTP parcel as this option would generate the greatest energy consumption.
[3] Based on the California Department of Education recommendations for building area per pupil in the 2000 edition of the Guide to School Site Analysis and Development.
[4] Lathrop Water, Wastewater, and Recycled Water Master Plan EIR, March 2001.

Table 4.11-6
CLSP Project Natural Gas Demand at Buildout (2020)

Land Use Type	Units/Sq Ft*	Consumption Factor (cubic-feet/day) [1]	Consumption (cubic-feet/day)
Variable Density Residential	5,614 du	221 per du	1,240,694
High Density Residential	1,176 du	138 per du	162,288
Office and Commercial [2]	4,994,372 sq. ft.	0.097 per sq. ft.	484,454
Schools	374,986 [3]	0.097 per sq. ft.	36,374
Parks	--	--	--
Levee/Open Space	--	--	--
Major Roads	--	--	--
Recycled Water Storage and Disposal Sites	--	--	--
WRP #2	--	--	--
Water Storage Tank/Booster Pump Station	--	--	--
Stormwater Pump Stations (5)	--	--	--
Wastewater Lift Station	--	--	--
Total:			1,923,810

[1] *CEQA Air Quality Handbook, South Coast Air Quality Management District, April 1993.*
[2] The Office Commercial only option was selected for the OC/VR/WWTP parcel as this option would generate the greatest energy consumption.
[3] Based on the California Department of Education recommendations for building area per pupil in the 2000 edition of the Guide to School Site Analysis and Development.

4.11.4 MITIGATION MEASURES

No mitigation measures are provided for the following less-than-significant impacts and significant impacts summarized from the Water Master Plan, the WRP #1 Phase 1Expansion EIR, and the SSJID SCSWSP EIR.

- 4.11-b: Environmental Impacts Associated with the Development of New City Wells
- 4.11-c: Environmental Impacts Associated with the SSJID SCSWSP
- 4.11-e: Environmental Impacts Associated with the Expansion of WRP #1
- 4.11-f: Demand for Recycled Water Storage and Disposal Capacity.
- 4.11-g: Stormwater/Surface Runoff Management
- 4.11-h: Demand for Electricity and Natural Gas

Although some of the specific subimpacts associated with Impacts 4.11-b and 4.11-e, as described above, are significant, no mitigation measures are required of the CLSP for those impacts because the responsibility for mitigation, where it is feasible, lies with the agencies that are the proponents of the projects at issue (the City for the new City wells and SSJID for the SCSWSP), which are separate from the CLSP.

The following mitigation measures are provided for significant impacts:

4.11-a Demand for Potable Water. The applicant or its successor in interest shall comply with the requirements of Government Code Section 66473.7 for all small-lot tentative subdivision map applications of more than 500 lots. In addition, approval of small-lot tentative maps for a lesser number of lots, or for nonresidential projects requiring conditional use permits or similar discretionary entitlements, shall be conditioned to require a showing, prior to final map approval for residential projects or prior to building permit approval for nonresidential discretionary projects, that the City, for a 20-year planning period following the date of approval of the tentative map, conditional use permit, or similar discretionary entitlement, has a sufficient water supply to serve the project, in addition to existing and planned future uses, during normal, single-dry, and multiple-dry years. For purposes of this mitigation measure, "sufficient water supply" has the same meaning found in Government Code Section 66473.7.

Implementation of this mitigation measure would reduce Impact 4.11-a to a less-than-significant level.

4.11-d Demand for Wastewater Treatment Capacity. No element of the proposed project (i.e., housing subdivision, commercial area) shall be occupied until both adequate treatment capacity at WRP #2 or another comparable wastewater treatment facility is available and wastewater infrastructure (e.g., pipelines) is in place to serve that portion of the project site.

Implementation of this mitigation measure would reduce Impact 4.11-d to a less-than-significant level.

4.11.5 RESIDUAL SIGNIFICANT IMPACTS

As described under Impact 4.11-b, development of new City wells in accordance with the Water Master Plan would result in significant and unavoidable associated with conversion of important farmland. As described under Impact 4.11-e, expansion of WRP #1 in accordance with the Water Master Plan and the WRP #1 Phase 1 Expansion Project would result in significant and unavoidable odor impacts, farmland conversion impacts, and cumulative surface water quality and fisheries impacts. However, if total maximum daily loads established by the RWQCB for the San Joaquin River are effective in improving

water quality in the river, cumulative impacts associated with surface water quality and fisheries would no longer be significant.

No other residual significant public utility impacts would occur with implementation of the recommended mitigation measures.

4.12 Recreation

4.12 RECREATION

This section describes the existing recreational facilities in the City of Lathrop (City), the Central Lathrop Specific Plan (CLSP) project site (i.e., the CLSP area, potential water recycling plant [WRP] #2 sites, and potential recycled water storage and disposal sites), and the nearby region. This section also provides a discussion of impacts from the proposed project on these recreational facilities, and evaluates the adequacy of the recreational facilities included as part of the proposed project in meeting the recreational demand generated by the proposed development.

4.12.1 REGULATORY BACKGROUND

THE QUIMBY ACT

The Quimby Act was established by the California State Legislature in 1965 to preserve open space and parkland in the rapidly urbanizing areas of the state. The Quimby Act allows cities and counties to establish requirements for new development to dedicate land for parks, pay an in-lieu fee, or perform a combination of the two. The Quimby Act requires a city or county to adopt standards for recreational facilities in its general plan recreation element if it is to adopt a parkland dedication/fee ordinance.

The City of Lathrop has collected Quimby Act fees since its incorporation in 1989. Before 1989, San Joaquin County (County) collected Quimby Act fees in the area and turned these funds over to the City when it was incorporated. These fees contribute to a fund that would be used to acquire properties for parkland and improve parks. The City continues to collect fees to meet the parkland requirement of the City of Lathrop General Plan (City General Plan).

The City General Plan states that in determining the amount of land dedication, land development, and/or in-lieu fee required of a developer, the requirement shall not exceed a combined standard of 5 acres per 1,000 City residents for neighborhood and community parkland.

The City of Lathrop, as mandated by the Quimby Act, calculates its population ratio based upon the most current census information of people per household. The 2000 U.S. Census determined this factor to be 3.59 residents per dwelling unit (du), regardless of housing type or density. Housing in the City currently is 98% single-family, larger lot dwellings. The Quimby Act does however allow for different population ratios if refutable evidence is provided that this factor should be changed. Such a process is being undertaken for the CLSP area.

Due to the higher densities and wider mix of housing types offered in the CLSP, the project applicant is requesting that the City allow a population factor of 2.9 residents per du for Variable Density Residential (VR) areas and 2.1 residents per du for High Density Residential (HR) and Residential/Mixed Use areas (R/MU) (see Section 4.2, Population, Employment, and Housing).

SAN JOAQUIN COUNTY GENERAL PLAN 2010

The Public Facilities section of the San Joaquin County General Plan 2010 (County General Plan) includes a section on Recreation which outlines the County's objectives and policies for providing and maintaining recreational facilities and parks for its citizens. These objectives and policies provide general guidance on a countywide level. Relevant policies from this section are listed below.

- **Policy 7.** Natural features shall be preserved in recreation areas, and opportunities to experience natural settings shall be provided.

- **Policy 9.** It shall be recognized that the value of some public land may lie in the preservation of natural or historic features with limited or no public uses permitted on the site.

- **Policy 11.** Overuse and misuse of recreation areas shall be prevented.

- **Policy 12.** Areas for the following recreational opportunities should be provided along the County's waterways:

  (a) bank fishing
  (b) boating
  (c) water skiing
  (d) hiking, bicycling, and horseback riding
  (e) picnicking
  (f) nature study

- **Policy 13.** Recreational use of the County's waterways will be supported, and the County shall ensure adequate public access to waterways at selected locations.

- **Policy 16.** The recreational potential, particularly for trails, of the Calaveras River, San Joaquin River, the Stockton Diverting Canal, and water conveyance projects shall be recognized and studied. The potential for land use conflicts associated with public use of waterways (e.g. trespassing, littering, vandalism) should be assessed for selected sites.

- **Policy 23.** Scenic corridors along recreation travelways and scenic routes shall be protected from unsightly development.

CITY OF LATHROP GENERAL PLAN

The Resource Management Element of the City General Plan includes several policies and standards related to recreation. The following policies are applicable to the proposed project.

Recreation Policies

- **Policy 1:** It is the policy of the City and the School District, functioning under joint powers or other appropriate written agreement, to provide the quantity and quality of recreation opportunity necessary for individual enjoyment and to assure the physical, cultural, and spiritual benefit of recreation for all people of the community.

- **Policy 4:** The range of recreation opportunities … will be provided through the development of general and specialized areas and facilities at the neighborhood and community level throughout the urban area.

- **Policy 7:** The City will encourage and, where appropriate, require the provision of recreation areas and facilities within residential areas and the community as a whole to meet the general and specialized needs of existing and future residents. The Recreation component of the Resource Management Element of the General Plan is intended to meet the criteria and standards required by the State Subdivision Map Act and by the Quimby Act for determining financial responsibilities of developers in meeting recreation needs of the community.

Recreation Area Types

The City General Plan identifies neighborhood parks, community parks, and landscaped open space corridors (described below) as the three types of parkland that would fulfill the active and passive recreation needs of the community as described in the recreation policies. In addition to identifying these types of parkland, the City General Plan recommends the provision of specialized recreational facilities, such as a senior citizen center, a public golf course, and an auditorium or theater and/or shared facilities with public schools as appropriate.

Neighborhood Parks

A neighborhood park is intended to serve the same area as an elementary school; thus, a neighborhood park is ideally created in conjunction with an elementary school. Where a neighborhood park would not be developed adjacent to a school, the park should occupy an area of between 3 and 5 acres, either free standing or in conjunction with drainage basin sites. All residents of any residential areas should live within 1/3 to 1/2 mile of a neighborhood park.

Community Parks

Community parks are designed to serve the community and may be developed in conjunction with high school facilities and/or specialized facilities. Ideally, all the community parks should be connected by open space corridors. Community parks may include or be adjacent to a sports stadium or public golf course, athletic fields, other sports facilities, family picnic areas, lawn areas, off-street parking, an auditorium or theater, a center for the elderly, or a center for teenagers.

Landscaped Open Space Corridors

A landscaped open space corridor would serve as a linkage between school and park sites, shopping areas, a civic center or cultural center, and other important activity centers in the community. The landscaped open space corridor may be a pedestrian walkway separate from auto traffic, a combined vehicle and pedestrian parkway, a buffer zone between residential and commercial or industrial areas, or a linear park that may connect with other components of the park and recreation system. Communitywide landscaped open space corridors would be publicly owned and maintained. Local facilities may be either publicly or privately owned and maintained.

The City General Plan states that a landscaped open space corridor along the San Joaquin River would function as a community wide open space corridor that may eventually link to regional facilities to the north.

Provision of Recreation Areas

The City General Plan includes the following standards for the provision of neighborhood and community parkland:

- 2 acres of neighborhood parkland per 1,000 City residents and
- 3 acres of community parkland per 1,000 City residents.

The City has no standards for the provision of a landscaped open space corridor on a per-capita basis. However, the City General Plan has designated the location of the landscaped open space corridor along the San Joaquin River as described above.

LATHROP BICYCLE TRANSPORTATION PLAN

The Lathrop Bicycle Transportation Plan is a long-range plan for a comprehensive bikeway system in the City. This plan was developed in coordination with the San Joaquin County Regional Bicycle Master Plan, the City General Plan, and the West Lathrop Specific Plan. The Lathrop Bicycle Transportation Plan includes goals, policies, and programs and provides direction for the development of new bikeways in the City. The plan proposes that bikeways will be provided as a condition of development throughout the City General Plan area and envisions a scenic recreation corridor, including bicycle access, along the San Joaquin River. Bikeways are proposed in the plan that would serve the entire City and lands within its sphere of influence, including the CLSP area. Planned City bike trails would also connect to a regional bike trail system proposed by San Joaquin County linking Lathrop, Stockton, French Camp, Manteca, and Tracy (City of Lathrop 1995). As part of the CLSP project, the Lathrop Bicycle Transportation Plan would be amended to reflect bicycle trails and related facilities included in the CLSP.

4.12.2 EXISTING CONDITIONS

CITY OF LATHROP FACILITIES

The City of Lathrop currently operates four neighborhood parks and one community park throughout the City (Goulart, pers. comm., 2004) (Exhibit 4.12-1). The City also operates other types of recreational facilities including a senior center and a community center. On the basis of the City General Plan standards, the City has a deficit of 6.6 acres of neighborhood parks and 27 acres of community parks (Table 4.12-1). However, the City plans to purchase additional parkland using existing Quimby Act funds.

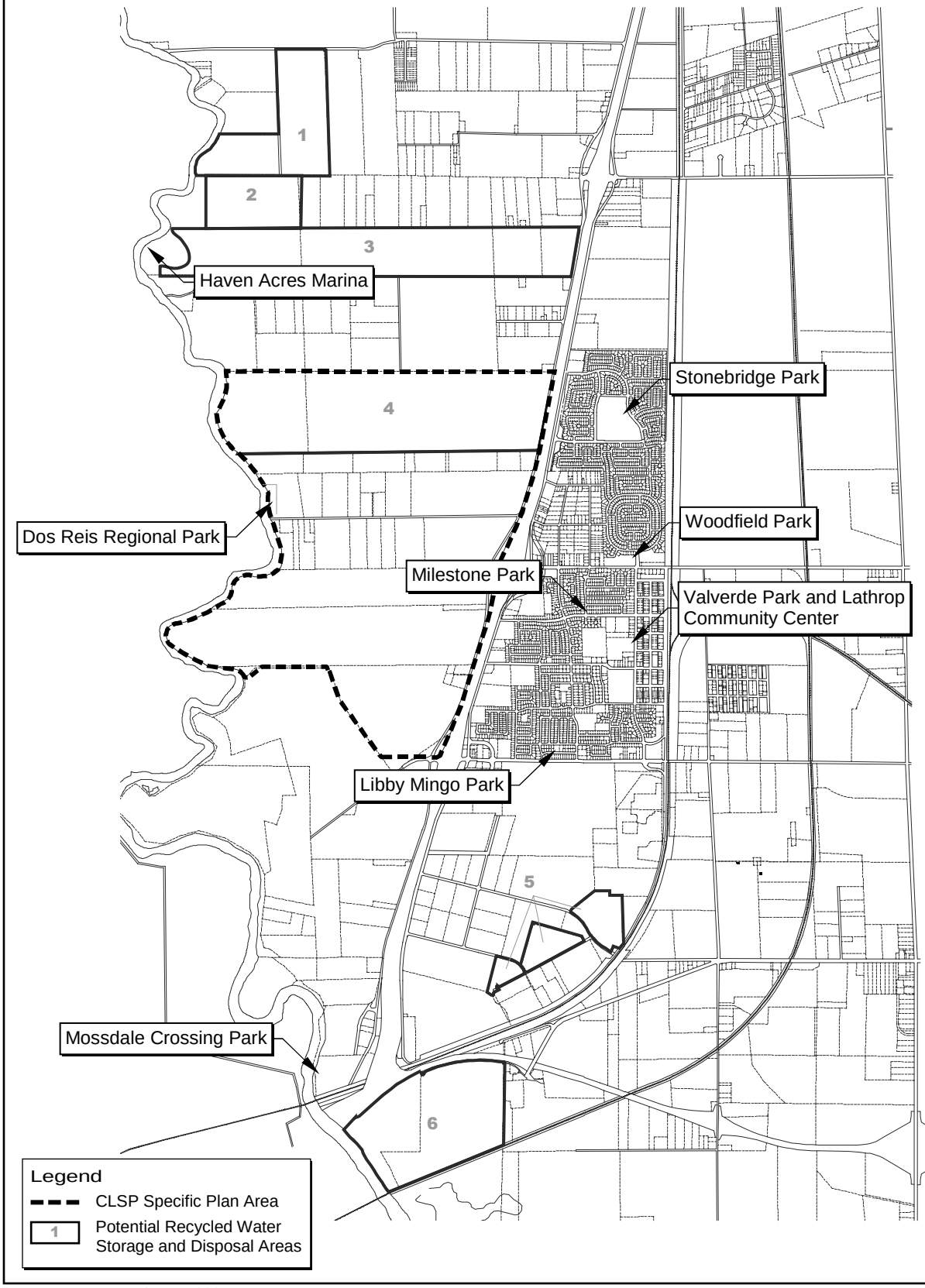
Table 4.12-1
Standards for Provision of Parkland

	Existing Park Acreage [1]	Existing Population [2]	General Plan Standard [3]	Park Acreage to Meet General Plan Standards	Existing Deficiency (acres)
Neighborhood park	18.4	12,427	2 acres per 1,000 people	25	-6.6
Community park	10.00	12,427	3 acres per 1,000 people	37	-27
Total	28.77	12,427	5 acres per 1,000 people	62	-33.6

[1] Source: Goulart, pers. comm., 2004.
[2] Source: California Department of Finance 2004
[3] Source: City of Lathrop 1991.

REGIONAL RECREATIONAL OPPORTUNITIES

The project site is located in the Sacramento-San Joaquin Delta (Delta) (in the Secondary zone of the Delta as described in Section 4.2, Land Use Consistency and Compatibility). The Delta has nearly 1,000 miles of navigable channels. As such, recreation in the project region is generally water oriented, consisting primarily of boating and fishing. Other common activities include waterskiing, wake-boarding, sailing, operating personal watercraft (e.g., jet skis), houseboating, kayaking, swimming, boat camping, and windsurfing. Land-based recreational activities in the Delta include hunting, camping,



Source: MacKay & Somps 2004

City and Regional Recreational Facilities in the Vicinity of the CLSP Area

EXHIBIT 4.12-1

Central Lathrop Specific Plan EIR
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picnicking, walking, bicycling, viewing and photographing wildlife, sightseeing, and attending festivals and special events (DPC 2002).

The existing recreational opportunities at or near the project site primarily involve the use of the San Joaquin River. Both shore and boat fishing on the San Joaquin River are popular in the project region. Except for areas near marinas and other boat access points, segments of the river in the project vicinity provide boating opportunities that are not typically limited by speed restrictions, allowing for water skiing, wake boarding, and similar activities. Boat access to the San Joaquin River located nearest the project site is provided by two County parks and one private facility (described below). The County parks also provide on-shore recreation opportunities.

Dos Reis Regional Park is a 9.85-acre park located where Dos Reis Road terminates at the San Joaquin River (Exhibit 4.12-1). The park is entirely within the CLSP area. Dos Reis Regional Park includes a single-lane boat launch ramp and associated floating dock, vehicle and boat trailer parking, 26 full recreational vehicle (RV) hookup campsites, a tent camping area available on weekends, shower facilities, picnic tables, barbeques, and a children's play area.

The Haven Acres Marina is located on the San Joaquin River approximate 1 mile north of the CLSP area. This small privately owned facility offers boat access to the San Joaquin River via a boat ramp, vehicle and boat trailer parking, and has 10 boat berths (DPC 2002).

Mossdale Crossing Regional Park is located on the San Joaquin River approximately 3 miles south of the CLSP area. This 3.7-acre park provides a two-lane boat launch ramp and an associated floating dock, a picnic area, children's playground, and vehicle and boat trailer parking.

Currently, there are no bicycle trails that pass through the CLSP area. The Lathrop Bicycle Master Plan envisions a comprehensive bikeway system in the City that would connect to a regional bike trail system proposed in the San Joaquin County Regional Bicycle Master Plan (see discussion above in Section 4.12.1, Regulatory Background). The Lathrop Bicycle Transportation Plan proposes that bikeways will be provided as a condition of development throughout the City's General Plan area. The City's Bicycle Transportation Plan also proposes a scenic recreational corridor along the San Joaquin River (City of Lathrop 1995).

4.12.3 ENVIRONMENTAL IMPACTS

ANALYSIS METHODOLOGY

The evaluation of recreational resources is based on a comparison between existing and planned future recreational facilities (including open space) and relevant City General Plan policies to determine whether the existing and proposed facilities would be adequate to meet the demand created by the proposed project. In general, demand for recreational resources was estimated based on City General Plan standards for parkland acreage relative to population size. The number of residents on the project site was estimated based on per-dwelling-unit population generation factors (see Section 4.3, Population, Employment, and Housing). Parklands, trails, open space, and other recreational features included as part of the proposed project (as discussed in Chapter 3.0, Description of the Proposed Project) are the focus of this analysis. This analysis does not address various public and commercial recreational facilities, such as community centers, movie theaters, and gymnasiums, which can be expected to be developed as part of the proposed project but which have not been specifically identified at this time. Because temporary impacts could occur if recreational facilities are not completed concurrently with the residential developments that create the demand for such facilities, an evaluation of project phasing is included. The

impact of the proposed project on water-related recreational opportunities in the project vicinity is also evaluated.

As described previously in Section 3.4.3, Drainage Plan, multi-use stormwater detention basins may be proposed in many of the parks and open space areas in the CLSP area. These multi-use basins would be designed to function as detention basins during storm events and remain available for park uses during the remainder of the year. The multi-use basins would be constructed with gentle slopes so they would grade relatively naturally into the overall neighborhood park facility and would be landscaped with turf or similar vegetation consistent with their use as a park feature. The CLSP acknowledges that park facilities that may be inundated on a regular basis (even for short periods) do not provide the same recreation service benefit as traditional park facilities. Park credit factors ranging from 50% to 100% are provided for the multi-use detention basins based on the ground level elevation above or below various storm event elevations. For example, 2 acres of parkland within a detention basin below the 10-year storm event elevation (i.e., the portion of the detention basin expected to be inundated during a 10-year storm event) would be allocated 50% credit towards meeting the City General Plan park standards. Therefore, these two acres of detention basin area would be accounted for as providing 1 acre of parkland credit.

The total detention basin capacity needed for the proposed project is estimated to be 46.9 acre-feet (see Section 4.11, Public Utilities). However, this storage capacity is a volume, not a surface area. The surface area of parkland within multi-use detention basins is dependent on various factors, such as the depth of the basins, the slope of the basin sides, and the storage capacity potentially provided by other detention facilities, such as linear detention basins outside park areas and underground stormwater storage facilities. It would not be possible to determine the precise acreage of park facilities to be included in multi-use detention basins until well into the engineering and design phase of the proposed project. For this EIR analysis a conservative approach was taken and 5 acres of neighborhood park acreage was removed from the park credit calculations. Using the various park credit formulas, these 5 acres of park credit would be sufficient to provide a large majority of the stormwater detention capacity required for the entire CLSP area.

THRESHOLDS OF SIGNIFICANCE

The proposed project would result in a significant impact on recreational resources if it would:

- increase demand on existing neighborhood and community parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated;
- include new recreational facilities, or require the construction or expansion of existing recreational facilities, which might have a substantial adverse physical effect on the environment; or
- substantially restrict or reduce the availability or quality of existing recreational opportunities in the project vicinity.

IMPACT ANALYSIS

Impact 4.12-a

Recreation – Demand for Neighborhood and Community Parks. *Residential development proposed for Phase 1 of the CLSP would require 16.62 acres of neighborhood parks and 24.93 acres of community parks to meet standards in the City General Plan. Phase 1 of the CLSP would provide 32.25 acres of neighborhood park credit and 50.05 acres of community park credit. Residential development at buildout of the CLSP would require 37.50 acres of neighborhood parks and 56.25 acres of community parks to meet standards in the City*

General Plan. At buildout, the CLSP would provide 40.0 acres of neighborhood park credit and 60.15 acres of community park credit. The CLSP provides sufficient park facilities to meet demand generated by the proposed project. Implementation of the proposed project would not increase demand on existing neighborhood and community parks such that the physical deterioration of existing facilities would occur or be accelerated. This impact is considered ***less than significant****.*

As described above, the City General Plan standard for parklands is 2 acres of neighborhood park and 3 acres of community park per 1,000 residences. The proposed project would increase the population by an estimated 8,311 residents during Phase 1 and 18,750 residents at full buildout (see Section 4.3, Population, Employment, and Housing). To meet the City General Plan standard for neighborhood parks, the proposed development would be required to provide 16.62 acres of neighborhood park by the completion of Phase 1 and 37.50 acres of neighborhood park at buildout. To meet the City General Plan standard for community parks, the proposed development would be required to provide 24.93 acres of community park by the completion of Phase 1 and 56.25 acres of community park at buildout.

The CLSP proposes 35 acres of neighborhood parks at the completion of Phase 1 and 45 acres of neighborhood park at buildout. As described in the Analysis Methodology discussion above, for this analysis 5 acres of neighborhood park credit is being removed to account for the presence of multi-use detention basins in the parks. This deduction is divided evenly among the Phase 1 and buildout neighborhood park acreages. Therefore, based on the park credit deduction, the CLSP provides 32.25 acres of neighborhood park facilities at the completion of Phase 1 and 40 acres of neighborhood park facilities at buildout. These totals exceed the City General Plan requirement for neighborhood park facilities of 16.62 acres for Phase 1 and 37.5 acres at buildout. Therefore, the proposed project would provide neighborhood park facilities in excess of anticipated demand.

The CLSP proposes approximately 59.9 acres of community park area at the completion of Phase 1 and 70 acres of community park area at buildout. Within the proposed community park, the existing 9.85-acre Dos Reis Regional Park would be retained with its existing facilities and services. Because the area covered by Dos Reis Regional Park is an existing facility, for this analysis it is not considered part of the new park facilities within the CLSP area intended to meet demand generated by the project. Dos Reis Regional Park is entirely within the Phase 1 area. Therefore, after removing the 9.85-acre Dos Reis Regional Park from the overall community park acreage, the CLSP would provide approximately 50.05 acres of community park area at the completion of Phase 1 and 60.15 acres of community park area at buildout. These totals exceed the City General Plan requirement for community park facilities of 24.93 acres for Phase 1 and 56.25 acres at buildout. Therefore, the proposed project would provide community park facilities in excess of anticipated demand.

The CLSP provides sufficient park facilities to meet demand generated by the proposed project. Implementation of the CLSP would not increase demand on existing neighborhood and community parks such that the physical deterioration of existing facilities would occur or be accelerated. This impact is considered less than significant.

Impact 4.12-b

Recreation – Reduced Availability of Existing Facilities. *The proposed project would result in the CLSP community park being constructed around the existing Dos Reis Regional Park. However, after project development, Dos Reis Regional Park would remain in County ownership and would continue to provide similar facilities and services. There would be no change to the boat launch facilities and RV and tent camping would be retained. Therefore, the proposed project would not reduce the availability of existing recreational facilities at Dos Reis Regional Park. This impact is considered* ***less than significant****.*

The existing Dos Reis Regional Park is entirely within the CLSP area. The park includes a single-lane boat launch ramp and associated floating dock, vehicle and boat trailer parking, 26 full RV hookup campsites, a tent camping area available on weekends, shower facilities, picnic tables, barbeques, and a children's play area. Implementation of the proposed project would result in the CLSP community park being constructed around Dos Reis Regional Park. However, after project development, Dos Reis Regional Park would remain in County ownership and would continue to provide similar facilities and services. There would be no change to the boat launch facilities and RV and tent camping would be retained. The only foreseeable modifications would be potential improvements or alterations to some picnic and play areas to better integrate the County park with the surrounding City-owned community park facilities. Any modifications to Dos Reis Regional Park would require approval by the County.

Because only minor alterations to Dos Reis Regional Park would occur as part of the CLSP, implementation of the CLSP would not reduce the availability of existing recreational facilities at the park. This impact is considered less than significant.

4.12.4 MITIGATION MEASURES

No mitigation measures are necessary for the following less-than-significant impacts.

- 4.12-a: Demand for Neighborhood and Community Parks
- 4.12-b: Reduced Availability of Existing Facilities

4.12.5 RESIDUAL SIGNIFICANT IMPACTS

All impacts associated with recreation are considered less than significant. Therefore, there are no residual significant impacts.

4.13 Agricultural Resources

4.13 AGRICULTURAL RESOURCES

This section describes existing agricultural resources in the Central Lathrop Specific Plan (CLSP) project area, applicable regulations, and the potential direct and indirect impacts of the proposed project on agriculture.

4.13.1 REGULATORY BACKGROUND

The following regulations, policies, and programs apply to agricultural resources in the CLSP project area.

FEDERAL FARMLAND PROTECTION POLICY ACT

The Natural Resources Conservation Service (NRCS), a federal agency in the U.S. Department of Agriculture (USDA), is the agency primarily responsible for implementing the federal Farmland Protection Policy Act (FPPA). The purpose of the FPPA is to minimize federal contributions to the conversion of farmland to nonagricultural uses by ensuring that federal programs are administered in a manner compatible with state government, local government, and private programs designed to protect farmland. The FPPA established the Farmland Protection Program (FPP) and the Land Evaluation and Site Assessment (LESA) system, which are discussed below in further detail.

NRCS administers the FPP, which is a voluntary program that provides funds to help purchase development rights to keep productive farmland in agricultural uses. The program provides matching funds to state, local, or tribal government entities and nongovernmental organizations with existing farmland protection programs to purchase conservation easements. Participating landowners agree not to convert the land to nonagricultural uses and retain all rights to the property for future agriculture. A minimum 30-year term is required for conservation easements, and priority is given to applications with perpetual easements. NRCS provides up to 50% of the fair market value of the easement (NRCS 2004).

The LESA system helps state and local officials make sound decisions about land use and accurately ranks lands for suitability and inclusion in the FPP. LESA evaluates several factors, including soil potential for agriculture, location, market access, and adjacent land use. These factors are used to rank land parcels for inclusion in the FPP based on local resource evaluation and site considerations (NRCS 2004).

CALIFORNIA LAND CONSERVATION ACT (WILLIAMSON ACT)

The California Land Conservation Act (Williamson Act), administered by the California Department of Conservation (CDC), was enacted in 1965 when population growth and rising property taxes were recognized as a threat to the viability of valuable farmland in California. Authored by Assemblyman John Williamson, the Williamson Act was the Legislature's response to two phenomena observed in California at the time: (1) the rapid and virtually irreversible loss of agricultural land to residential and other developed uses; and (2) the disorderly patterns of suburban development that require extension of municipal services to remote residential enclaves and interfere with agricultural activities. The Legislature perceived as one cause of these problems the self-fulfilling prophecy of the property tax system: taxing land on the basis of its market value compels the owner to put the land to the use for which it is valued by the market. As the urban fringe approaches, the farmer's land became valuable for urban development. Property taxes were therefore increased, although farm-based income was likely to shrink as more costly practices were undertaken, both to avoid interfering with new urban neighbors and to protect crops, livestock, and equipment from their intrusion.

To combat the problem, the Legislature passed the Williamson Act on the basis of the following findings:

- That the preservation of a maximum amount of the limited supply of agricultural land is necessary to the conservation of the state's economic resources, and is necessary not only to the maintenance of the agricultural economy of the state, but also for the assurance of adequate, healthful and nutritious food for future residents of this state and nation.

- That the discouragement of premature and unnecessary conversion of agricultural land to urban uses is a matter of public interest and will be of benefit to urban dwellers themselves in that it will discourage discontiguous urban development patterns that unnecessarily increase the costs of community services to community residents.

- That in a rapidly urbanizing society agricultural lands have a definite public value as open space, and the preservation in agricultural production of such lands, the use of which may be limited under the provisions of this chapter, constitutes an important physical, social, aesthetic and economic asset to existing or pending urban or metropolitan developments.

The act empowers local governments to establish "agricultural preserves" consisting of lands devoted to agricultural uses and other uses compatible therewith. Upon establishment of such preserves, the locality may offer to owners of included agricultural land the opportunity to enter into annually renewable contracts that restrict the land to open space use for at least 10 years. In addition, subdivision of lands under Williamson Act contracts is limited to a minimum of 10-acre parcels and must incorporate a 200-foot setback from incompatible adjacent uses (CDC 2004). In return, the landowner is guaranteed a relatively stable tax base, founded on the value of the land for agricultural/open space use only and unaffected by its development potential.

To deny the tax benefits of the act to short term speculators and developers of urban fringe land, the Legislature deliberately required a long-term commitment to agriculture or other open-space use. If neither party gives timely notice to the other of a contrary intent, the contract automatically renews itself each year, tacking on an additional year to the period of restriction. And although the landowner may opt not to renew the contract at any time by giving notice to the contracting government entity, the landowner may not develop the land for the balance of the contractual period of restricted use. Under a nonrenewal, a notice is filed by the property owner, after which the 10-year contract expires. O, over time the nonrenewal allows for tax rates to gradually increase over the remainder of the contract reaching the market value rate by the end of the term (CDC 2004).

Since 1982, Government Code Section 51282 has provided a mechanism for cancellation of a Williamson Act contract. Cancellation involves an extensive review and approval process, in addition to payment of fees of up to 12.5% of the property value. The local jurisdiction approving the cancellation must make *either one* of the following findings:

- that the cancellation is consistent with the purpose of the California Land Conservation Act (Section 51282(a) of the California Government Code), or

- that the cancellation is in the public interest (Section 51282(b) of the California Government Code).

To support the finding that the cancellation of a Williamson Act contract is consistent with the purpose of the California Land Conservation Act, all of the following sub-findings must be made:

- that the cancellation is for land on which a notice of nonrenewal has been served in accordance with Section 51245,

- that cancellation is not likely to result in the removal of adjacent lands from agricultural use,
- that cancellation is for an alternative use that is consistent with the applicable provisions of the city or county general plan,
- that cancellation will not result in discontiguous patterns of urban development, and
- that there is no proximate noncontracted land that is both available and suitable for the use to which it is proposed the contracted land be put, or that development of the contracted land would provide more contiguous patterns of urban development than development of proximate noncontracted land.

To support the finding that the cancellation of a Williamson Act contract is in the public interest, both of the following sub-findings must be made:

- that other public concerns substantially outweigh the objectives of the Williamson Act; and
- that there is no proximate noncontracted land that is both available and suitable for the use to which it is proposed the contracted land be put, or that development of the contracted land would provide more contiguous patterns of urban development than development of proximate noncontracted land.

Since the early 1980s, approximately 16 million acres of land statewide have been enrolled under Williamson Act contracts (CDC 2004). In 2001 (the most recent year for which data are available), San Joaquin County had 542,916 acres of farmland under Williamson Act contracts, including both continuing contracts and nonrenewals (CDC 2004). This amount is 633 fewer acres (a 0.1% reduction) than the previous year. CDC estimates lands under Williamson Act contracts in San Joaquin County in 1999 and 1998 were 544,252 acres, and 543,549 acres respectively, showing that lands under contract have remained in the 540,000–550,000 range for several years.

CALIFORNIA IMPORTANT FARMLAND INVENTORY SYSTEM AND FARMLAND MAPPING AND MONITORING PROGRAM

The CDC operates a program similar to the federal FPPP. In 1980 it initiated a system for inventorying, mapping, and monitoring the acreage of farmland in California. The CDC inventory system was designed to document how much agricultural land in California was being converted to nonagricultural land or transferred into (or out of) Williamson Act contracts. The CDC classifications in the Important Farmland Inventory System are described below:

- **Prime Farmland –** Land that has the best combination of features for the production of agricultural crops
- **Farmland of Statewide Importance –** Land other than Prime Farmland that has a good combination of physical and chemical features for the production of agricultural crops
- **Unique Farmland –** Land of lesser quality soils used for the production of the state's leading agricultural cash crops
- **Farmland of Local Importance –** Land that is of importance to the local agricultural economy
- **Grazing Land –** Existing vegetation that is suitable for grazing

- **Urban and Built-up Lands –** Land occupied by structures with a density of at least one dwelling unit per 1.5 acres

- **Land Committed to Nonagricultural Use –** Vacant areas; existing lands that have a permanent commitment to development but have an existing land use of agricultural or grazing lands

- **Other Lands –** Land that does not meet the criteria of the remaining categories (CDC 2004)

Prime Farmland, Farmland of Statewide Importance, Unique Farmland, and Farmland of Local Importance are often described together under the term "Important Farmland."

STATE FARMLAND SECURITY ZONES

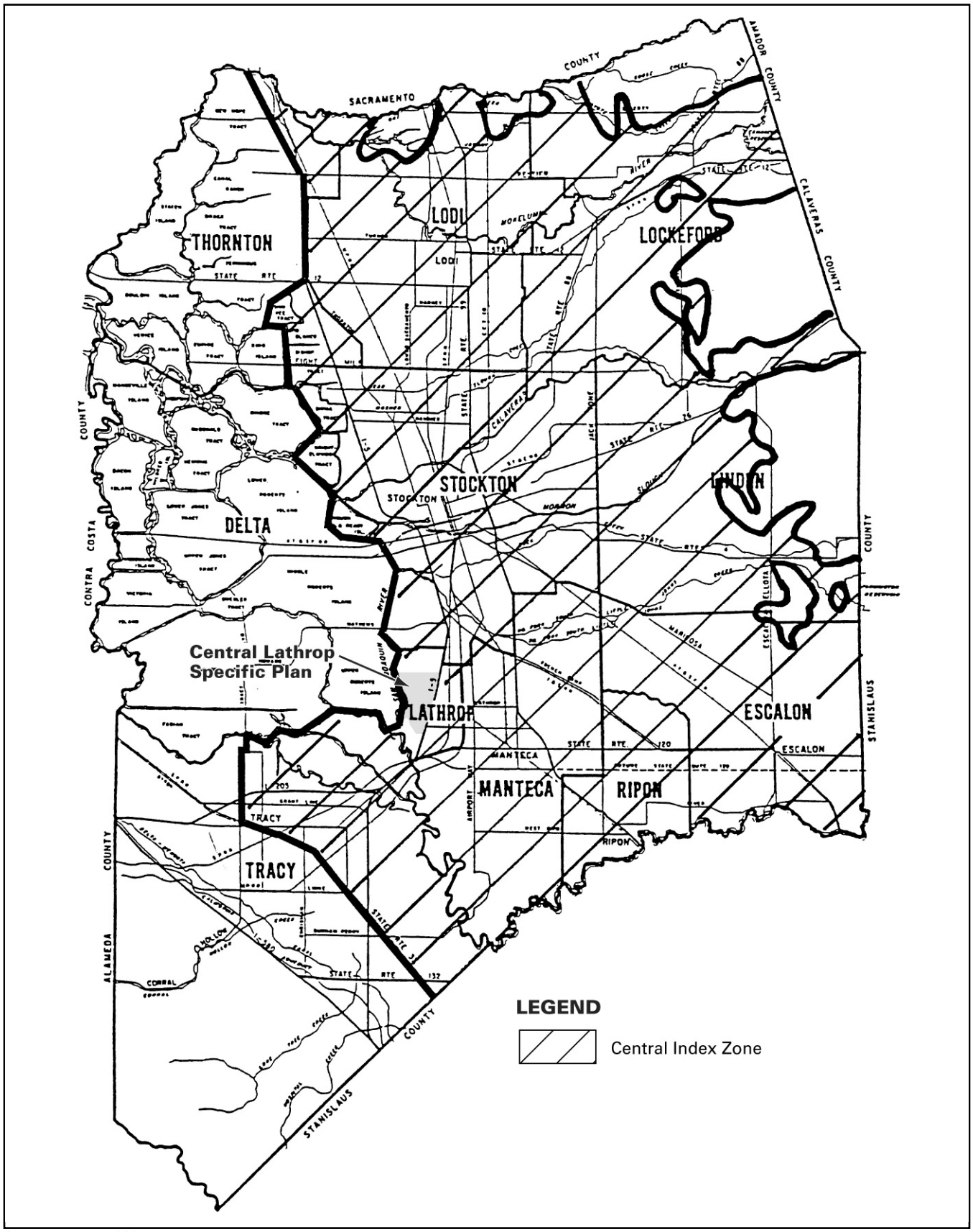
Farmland Security Zones (FSZs) were established by the CDC with the same intent as Williamson Act contracts. An FSZ must be located in an Agricultural Preserve (area designated as eligible for protection under a Williamson Act contract) and designated as Prime Farmland, Farmland of Statewide Importance, Unique Farmland, or Farmland of Local Importance. Agricultural and open space lands are protected for a minimum of a 20-year term under an FSZ designation. Land protected in FSZs is valued for property assessment purposes at 65% of its Williamson Act valuation or 65% of its Proposition 13 valuation, whichever is lower, and cannot be annexed by a city or county government or school district (CDC 2004).

An FSZ can be terminated through nonrenewal or cancellation. The nonrenewal procedure allows for a rollout process to occur over the remainder of the term of the contract, in which the tax rates would gradually rise to the full rate by the end of the 20-year term. A cancellation must be applied for and approved by the director of the CDC, and specific criteria must be met. The cancellation must be in the public interest and consistent with the Williamson Act criteria. If a cancellation is approved, a payment of fees equal to 25% of the full market value of property must be paid (CDC 2004).

SAN JOAQUIN COUNTY MULTI-SPECIES HABITAT CONSERVATION AND OPEN SPACE PLAN

The San Joaquin County Multi-Species Habitat Conservation and Open Space Plan (SJMSCP) provides comprehensive measures for compensation and avoidance of impacts on various biological resources and habitats, including agricultural land. One of the primary goals of the SJMSCP is to preserve productive agricultural where that land goal is compatible with protecting and preserving lands with biological resources and habitat. Conservation lands under the SJMSCP are anticipated to be acquired, in large part, through the purchase of conservation easements on agricultural lands that would allow the landowner to retain ownership of the land and continue agricultural operations. The SJMSCP predicts that the ratio of conservation easements to fee-title lands under the SJMSCP would be approximately 90% conservation easements and 10% fee-title lands (County of San Joaquin 2000).

Funds for purchasing easements are collected from project proponents through development fees calculated on an acre-by-acre basis. For each acre of open space, wildlife habitat, or agricultural land that is converted to development, the proponent pays a fee to the San Joaquin Council of Governments (SJCOG), which administers the SJMSCP. The SJMSCP designates index zones in San Joaquin County. When open space conversions occur in an index zone, compensation must typically be funded at a preserve located in the same index zone. The CLSP area is located in the Central Index Zone (Exhibit 4.13-1). Potential compensation preserves identified in this index zone near the plan area include Tom Paine Slough below its confluence with Old River and Paradise Cut (County of San Joaquin 2000).



Source: EDAW 2004

SJMSCP Central Index Zone

EXHIBIT 4.13-1

Central Lathrop Specific Plan EIR
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SAN JOAQUIN COUNTY RIGHT TO FARM ORDINANCE

As required by Agricultural Lands Implementation Policy 2 in the San Joaquin County General Plan 2010 (County of San Joaquin 1992), the San Joaquin County Right to Farm Ordinance was adopted to preserve, protect, and encourage the development and improvement of agricultural land in San Joaquin County for the production of food and other agricultural products. The purpose of the ordinance is to reduce the loss of the county's commercial agricultural resources by limiting the circumstances under which agricultural operations may be deemed to constitute a nuisance. Existing agricultural lands (in operation for more than one year) may not be considered a nuisance as a result of subsequently changed conditions in the area, such as urbanization. Under the County's current ordinance, building permit applicants are provided a disclosure statement regarding the Right to Farm Ordinance, but there is no mandatory process for notifying prospective property owners. The goal of disclosure is to inform the buyer or owner of the presence of possible irritants, like tractor noise and odors, to prevent future nuisance complaints.

SAN JOAQUIN COUNTY GENERAL PLAN

The County developed three objectives for agricultural lands in the County General Plan (County of San Joaquin 1992):

- to protect agricultural lands needed for the continuation of commercial agricultural enterprises, small-scale farming operations and the preservation of open space;
- to recognize agricultural lands that contain concentrations of small-scale agricultural operations and dwellings; and
- to minimize the impact on agriculture in the transition of agricultural areas to urban development.

The County also established agricultural land use categories to promote a range of agricultural activities and preserve open space. The CLSP project area is currently designated as Urban Reserve because it is within the City of Lathrop's sphere of influence and is expected to become urban. In accordance with the County General Plan, lands designated as Urban Reserve shall be preserved in agricultural uses until the need for additional urban land is demonstrated and infrastructure is available to service the development. In addition, before urban development could be permitted while the area remains within the unincorporated portion of the County, an amendment to the County General Plan would shall be required to allow such before urban development is permitted (County of San Joaquin 1992).

The County's Agricultural Lands Policy 5 states that agricultural areas shall be used principally for crop production, ranching, and grazing and that non-farm uses shall be compatible with agricultural operations. Policy 6 states that lands designated for nonagricultural uses that are not needed for development for 10 years shall be placed in an agricultural preserve and shall be eligible for Williamson Act contracts. Policies 7 and 8 call for no further fragmentation of agricultural land and clustering of nonagricultural uses allowed in agricultural areas. Policy 9 states that agriculture should be protected from nuisance complaints from non-agricultural land uses by appropriate regulatory and land use planning mechanisms. Policy 10 states that nonagricultural land uses at the edge of agricultural areas shall incorporate adequate buffers (e.g., fences and setbacks) to prevent conflicts with adjoining agricultural operations. Policy 11 provides that opportunities for farm-related housing that facilitates efficient agricultural operations shall be provided in agricultural areas (County of San Joaquin 1992).

CITY OF LATHROP RIGHT-TO-FARM ORDINANCE

The City's Agricultural Land Preservation Ordinance, known as the Right-to-Farm Ordinance, was adopted in 1991 to conserve and protect agricultural land in the City and protect agricultural landowners from nuisance complaints related to cultivation, irrigation, spraying, fertilizing, and other activities related to normal agricultural operations. A disclosure statement is required whenever adjacent property is sold or building permit application is submitted, notifying the prospective buyer/applicant of adjacent agricultural land and possible discomforts and nuisance factors related to agricultural operations (City of Lathrop 2001). The focus of the ordinance is to reduce the loss of agricultural resources in the City by clarifying the circumstances under which agricultural operations may be considered a nuisance.

CITY OF LATHROP GENERAL PLAN

The Resource Management Element of the City's General Plan contains the following four agricultural land policies:

- **Policy 2:** Exclusive agricultural zoning shall be continued on agricultural lands outside the boundaries of future urbanization shown on the General Plan Diagram. *[Note: As discussed previously in Section 4.3, Land Use Consistency and Compatibility, the proposed project includes amendment of the City General Plan to modify this sentence to read "Exclusive agricultural zoning shall be continued on agricultural lands outside the boundaries of the three Sub-Plan Areas shown on the General Plan Diagram".]* Existing County agricultural zoning should be continued on lands within Sub-Plan Areas #1 and #2 in accordance with development phasing proposals of the General Plan and applicable Specific Plans.

- **Policy 3:** The protection of agricultural lands outside of the three Sub-Plan Areas shall be reinforced by firm policies of the City to not permit the extension of sewerage and water service to such lands.

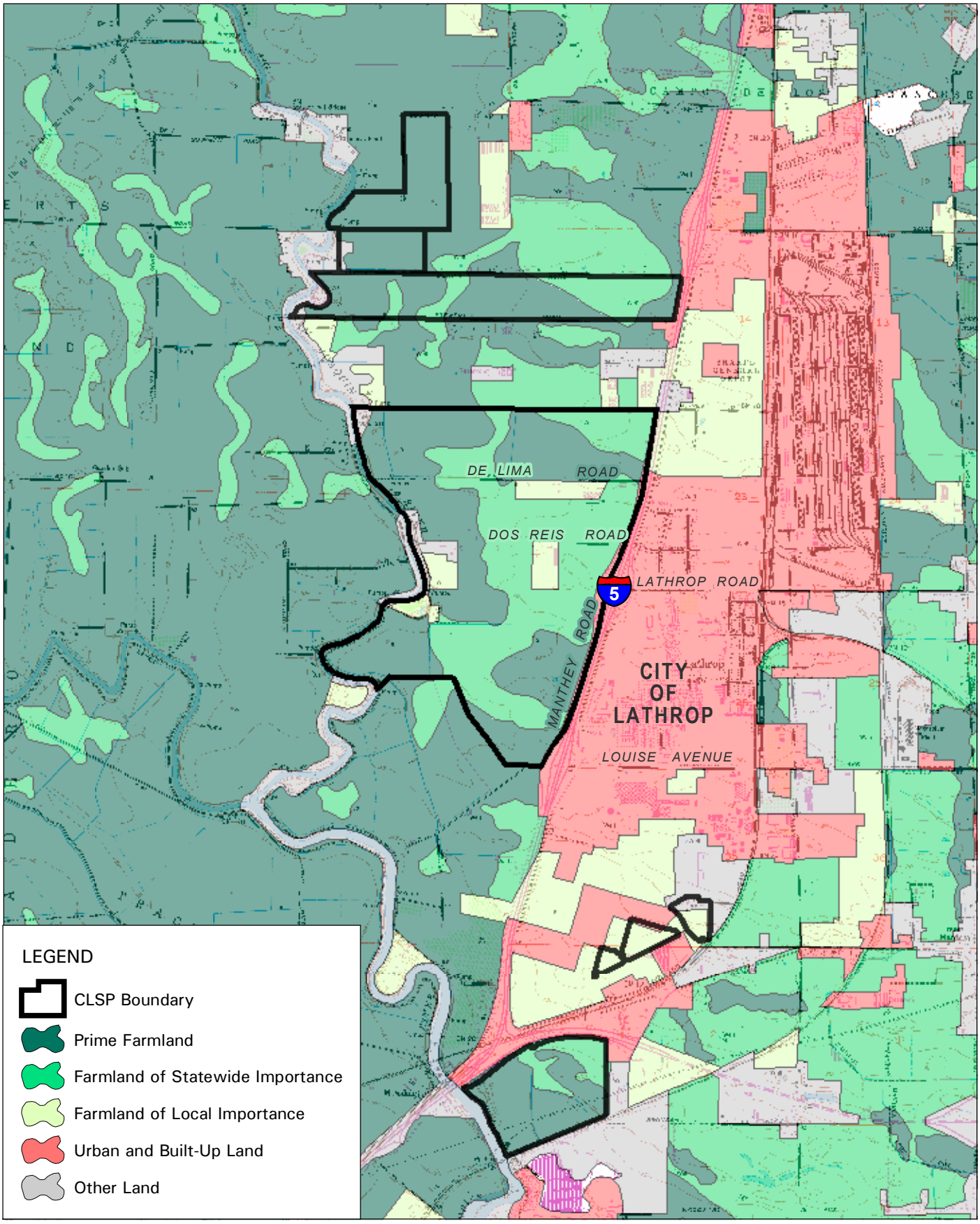
- **Policy 4:** The City, the County and affected landowners should develop a comprehensive approach to the cancellation of Williamson Act contracts on lands needed for early phases of urban development. Projects that are intended to take more than five years to complete shall be phased to allow agricultural operations to continue as long as feasible on lands to be developed after five years.

4.13.2 EXISTING CONDITIONS

CROP PRODUCTION AND FARMABLE LAND

The CLSP area is used predominantly for agriculture. A variety of crops, including alfalfa, tomatoes, corn, squash, and safflower are produced. The fields range in size from more than 150 acres to less than 10 acres, with smaller fields and farmsteads located between Lathrop Road and De Lima Road. Agricultural lands in the plan area cover approximately 1,431 acres. The remaining approximately 90 acres are considered nonfarmable lands and consist of roads, houses, farm structures, channels, Dos Reis Regional Park, and other facilities. In all, approximately 94% of the plan area is farmed.

Of the 1,521 total acres in the CLSP area, the CDC has designated approximately 713 acres as Prime Farmland, 622 acres as Farmland of Statewide Importance, and 96 acres as Farmland of Local Importance (Exhibit 4.13-2, Table 4.13-1). The remaining 90 acres of the plan area are designated as Urban and Built-up land or Other land.



Source: FMMP 2000, U.S.G.S 7.5 Minute Quadrangle, Lathrop CA.

Important Farmland Designations

EXHIBIT 4.13-2

Central Lathrop Specific Plan EIR
City of Lathrop
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Table 4.13-1 Area of CDC Farmland Categories in the CLSP Project Site					
	CDC Farmland Category				
Project Segment	Prime Farmland (acres)	Farmland of Statewide Importance (acres)	Farmland of Local Importance (acres)	Urban Built-Up and Other Lands (acres)	Total (acres)
CLSP Area	713	622	96	90	1,521
North Area (WRP #2 North and Sites 1, 2, and 3)	430	105	0	10	545
South Area (WRP #2 South and Sites 5 and 6)	166	55	45	13	279
Total	1,309	782	141	113	2,345
Source: FMMP 2000					

The WRP #2 North site and northern recycled water storage and disposal areas (Areas 1, 2, and 3 in Exhibit 3-6) are designated as Prime Farmland (approximately 430 acres), Farmland of Statewide Importance (approximately 105 acres), Urban Built-up Land (approximately 1 acre) and Other land (approximately 9 acres) (Table 4.13-1). The WRP #2 South site and southern recycled water storage and disposal areas (Areas 5 and 6 in Exhibit 3-6) are designated as Prime Farmland (approximately 166 acres), Farmland of Statewide Importance (approximately 55 acres), Farmland of Local Importance (approximately 45 acres), Urban and Built-up Land (approximately 3 acres), and Other Land (approximately 10 acres) (Table 4.13-1). The CDC mapping is done on a broad scale; therefore, some smaller unfarmable features, such as farm roads, levees, and agricultural support buildings (e.g., barns, sheds), are included in the agricultural land designations.

In 2000, it was estimated that 630,990 acres of Important Farmland were available in San Joaquin County: 423,158 acres of Prime Farmland, 93,846 acres of Farmland of Statewide Importance, 57,977 acres of Unique Farmland, and 56,009 acres of Farmland of Local Importance (CDC 2004). The CLSP project site (CLSP area plus offsite WRP and recycled water storage and disposal areas) contain a total of 2,232 acres of Important Farmland, approximately 0.3% of the Important Farmland in the County. Over the past decade, the availability of Important Farmland in San Joaquin County has been consistently declining by small increments from year to year, primarily because of conversions to urban and other developed uses. Table 4.13-2 identifies the acreages of Important Farmland in the County calculated by the CDC from 1992 through 2000. Declines have been the greatest for Prime Farmland and Farmland of Statewide Importance. Designation of new areas as Unique Farmland and Farmland of Local Importance has resulted in net increases for these categories between 1992 and 2000.

Table 4.13-2 Acreages of Important Farmland in San Joaquin County					
Land Use Category	1992	1994	1996	1998	2000
Prime Farmland	436,003	434,328	433,130	429,173	423,158
Farmland of Statewide Importance	99,548	99,132	98,162	96,800	93,846
Unique Farmland	47,084	47,202	48,760	52,719	57,977
Farmland of Local Importance	53,020	54,252	53,481	53,677	56,009
Total	635,655	634,914	633,533	632,369	630,990
Sources: CDC 1994, 1996, 1998, 2000, 2002, 2003					

WILLIAMSON ACT CONTRACTS

More than 70% of the CLSP area (11 parcels totaling 1,139.3 acres) is under Williamson Act contract (Table 4.13-3). Notices of nonrenewal were filed in 2001 for two parcels, totaling 413 acres, and their contracts will expire in 2011. Notices of nonrenewal were filed in 2002 for seven parcels, totaling 700.1 acres, and these contracts will expire in 2012. In 2003, a notice of nonrenewal was filed for one more parcel, 9.8 acres, and the contract will expire in 2013. One 16.4-acre parcel under Williamson Act contract has not filed for nonrenewal (Exhibit 4.13-3). The remaining 43 parcels in the CLSP area, totaling 321.31 acres, are not under Williamson Act contracts. In addition, 486.8 acres of the WRP #2 North site and northern recycled water storage and disposal areas are under Williamson Act contract (Table 4.13-3, Exhibit 4.13-3). Notices of nonrenewal were filed in 2001 for two of the parcels, totaling 413 acres, and their contracts will expire in 2011. Notices of nonrenewal were filed in 2004 for six parcels, totaling 487 acres, and their contracts will expire in 2014. The WRP #2 South site and southern recycled water storage and disposal areas are not under Williamson Act contract.

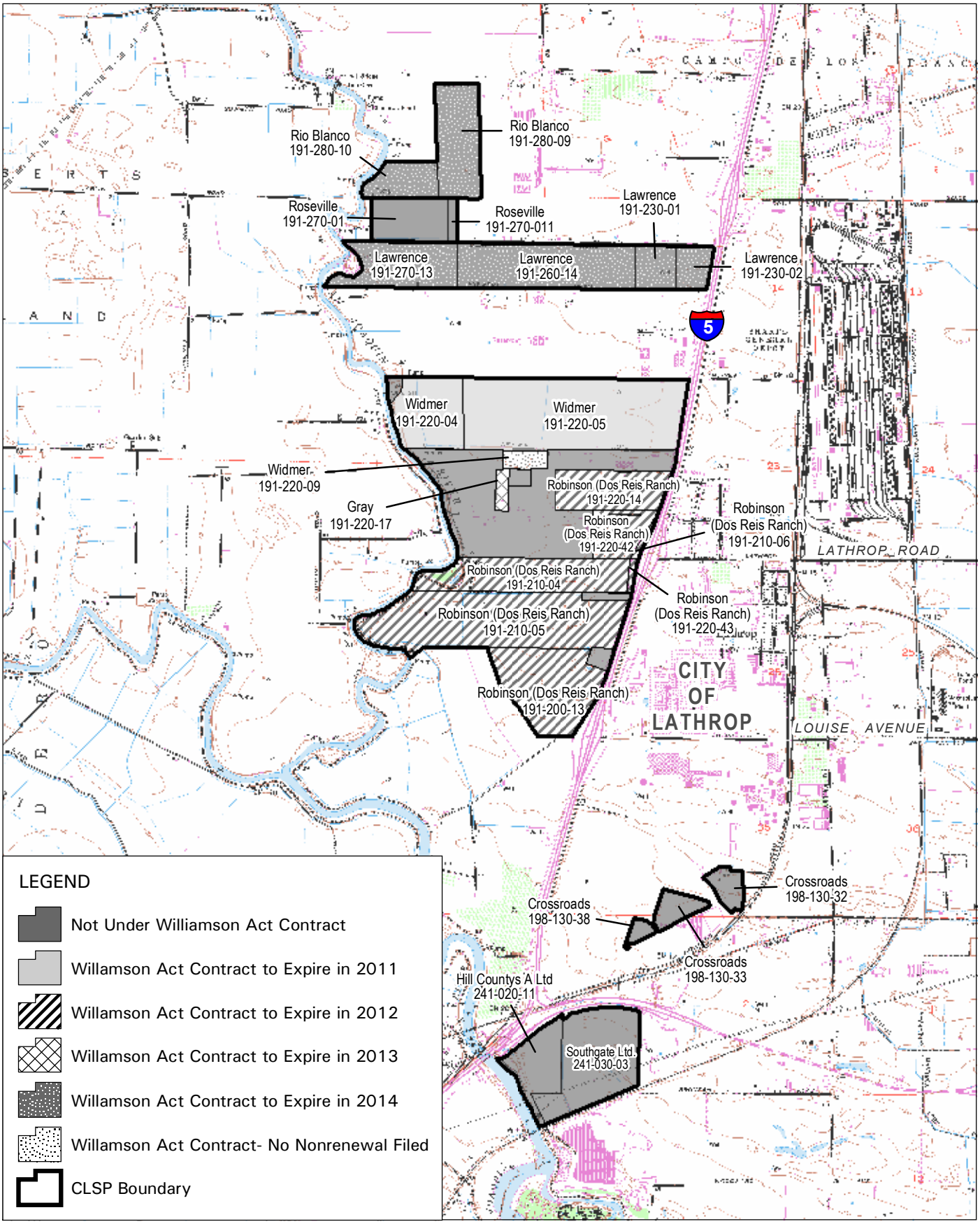
Table 4.13-3
CLSP Williamson Act Contract Lands

Owner	APN Number	Acreage	Status
Robinson	191-200-13	153.6	Nonrenewal Filed in 2002 – Will Expire in 2012
Robinson	191-210-04	130	Nonrenewal Filed in 2002 – Will Expire in 2012
Robinson	191-210-05	272.3	Nonrenewal Filed in 2002 – Will Expire in 2012
Robinson	191-210-06	3.8	Nonrenewal Filed in 2002 – Will Expire in 2012
Widmer	191-220-04	99.1	Nonrenewal Filed in 2001 – Will Expire in 2011
Widmer	191-220-05	313.9	Nonrenewal Filed in 2001 – Will Expire in 2011
Widmer	191-220-09	16.4	No Nonrenewal – Contract Would Not Expire Until at Least 2014
Robinson	191-220-14	89.8	Nonrenewal Filed in 2002 – Will Expire in 2012
Gray	191-220-17	9.8	Nonrenewal Filed in 2003 – Will Expire in 2013
Robinson	191-220-42	47.9	Nonrenewal Filed in 2002 – Will Expire in 2012
Robinson	191-220-43	2.7	Nonrenewal Filed in 2002 – Will Expire in 2012
Lawrence	191-230-01	40	Non-Renewal Filed 2004 – Will Expire in 2014
Lawrence	191-230-02	29.3	Non-Renewal Filed 2004 – Will Expire in 2014
Lawrence	191-260-14	158.8	Non-Renewal Filed 2004 – Will Expire in 2014
Lawrence	191-270-13	108	Non-Renewal Filed 2004 – Will Expire in 2014
Rio Blanco	191-280-09	101.2	Non-Renewal Filed 2004 – Will Expire in 2014
Rio Blanco	191-280-10	49.5	Non-Renewal Filed 2004 – Will Expire in 2014
TOTAL		1,626.1	

Source: Richland Planned Communities and MacKay & Somps, 2004

FARMLAND SECURITY ZONES

No portion of the CLSP project site (i.e., CLSP area, WRP sites, potential recycled water storage and disposal areas) is within an FSZ.



Source: Richland Communities and MacKay & Somps 2004, U.S.G.S. 7.5 Minute Quadrangle, Lathrop CA.

Status of Williamson Act Contracts

EXHIBIT 4.13-3

Central Lathrop Specific Plan EIR
City of Lathrop
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HOMESTEADS AND AGRICULTURAL FACILITIES

There are approximately 35 dwelling units in the CLSP area. These consist of permanent homes, mobile homes and temporary housing for agricultural workers. There are also various agricultural support facilities such as sheds, barns, and farm equipment maintenance and repair shops.

4.13.3 ENVIRONMENTAL IMPACTS

ANALYSIS METHODOLOGY

- The examination of agricultural resources is based on information obtained from reviews of:
- plans for the proposed project;
- existing literature, including documents published by city, county, state and federal agencies, including NRCS, CDC, and the San Joaquin Agricultural Commissioner's office;
- various texts dealing with agriculture in the Central Valley; and
- applicable elements from the County and City General Plans.

THRESHOLDS OF SIGNIFICANCE

The proposed project would have a significant impact on agricultural resources if it would:

- result in a conversion of Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, as shown on the maps prepared under the Farmland Mapping and Monitoring Program of the CDC, to nonagricultural use;
- cause a substantial impairment of the agricultural productivity of Important Farmland;
- cause a conflict with existing zoning for agricultural use or a designated Farmland Security Zone;
- cause a conflict with a Williamson Act contract (i.e., any action on the land that would not be allowed under an existing Williamson Act contract);
- involve other changes in the existing environment that, because of their location or nature, could result in conversion of farmland to nonagricultural use; or
- result in a conflict between existing agricultural lands and adjacent land uses

IMPACT ANALYSIS

The proposed CLSP area does not contain lands in a Farmland Security Zone; therefore no impacts would occur relative to this issue. Potential zoning conflicts are addressed in Section 4.2, Land Use. The potential impact of changes in the existing environment resulting in additional farmland conversion outside the project site is addressed in Chapter 6, Growth-Inducing Impacts.

Impact 4.13-a

Agricultural Resources – Conversion of Important Farmland. *Implementation of the proposed project would result in the permanent conversion of up to approximately 818 acres of Prime Farmland (713 acres on the CLSP site, up to 98 acres associated with construction of recycled water storage ponds, and up to 7 acres associated with WRP #2), 622 acres of Farmland of Statewide Importance, and 96 acres of Farmland of Local Importance (Table 4.13-1, Exhibit 4.13-2), as designated by the NRCS FPP and CDC's Important Farmland Inventory System and Mapping and Monitoring Program. This impact is considered* ***significant****.*

Development of the CLSP area would result in the permanent conversion of approximately 1,431 acres of Important Farmland (i.e., Prime Farmland, Farmland of Statewide Importance, and Farmland of Local Importance) to nonagricultural, urban uses (Table 4.13-1, Exhibit 4.13-2). Although some agricultural lands not currently owned by or under contract to Richland Planned Communities (Richland) may remain in agricultural production, conversion of all agricultural land is assumed for this impact analysis.

Up to an additional 7 acres of existing agricultural land could be converted to development if the one of the WRP #2 North or WRP #2 South options is selected (see Section 3.4.4, Utilities). In addition, up to approximately 98 acres of recycled water storage ponds and up to approximately 220 acres of recycled water disposal sites (e.g., spray fields) would be located on the offsite recycled water storage/disposal areas (Exhibit 3-6). The disposal sites would consist of irrigation of agricultural lands with recycled water and are considered a continuation of the existing use. Therefore, establishment of the recycled water disposal sites would not result in a conversion of agricultural land. The recycled water storage ponds would consist of relatively large areas (1 acre or greater) surrounded by earthen berms to contain/store recycled water when irrigation is not possible (i.e., during rain events). For this analysis construction of the storage ponds is considered a conversion of the underlying agricultural land.

There are various options for the location of WRP #2 and the recycled water storage ponds (Section 3.4.4, Utilities) and it is unclear at this time the precise type and extent of important farmland that might be affected by these facilities. For the purposes of this analysis a worst case scenario is evaluated and it is assumed that WRP #2 and the storage ponds would all be located on Prime Farmland. Therefore, construction of these facilities would result in the conversion of up to 105 acres of Prime Farmland.

Up to 1,536 total acres of Important Farmland would be converted to development from implementation of the CLSP and associated utility development. This impact is considered significant.

Impact 4.13-b

Agricultural Resources – Conflict with Williamson Act Contracts. *Implementation of the proposed project would result in the cancellation of up to 1,244.3 acres of Williamson Act contracts. This impact is considered* ***significant****.*

Eleven parcels in the CLSP area, totaling 1,139.3 acres, are currently under Williamson Act contract (Exhibit 4.13-3). The remaining parcels within the CLSP area, totaling 380.7 acres, are not under Williamson Act contracts. Notices of nonrenewal have been filed for 10 of the 11 parcels under Williamson Act contract (Table 4.13-3). However, development of the proposed project would require cancellation of all Williamson Act contracts prior to their 2011, 2012, 2013, or 2014 expiration dates.

Up to approximately 98 acres of recycled water storage ponds and up to approximately 220 acres of recycled water disposal sites (e.g., spray fields) would be located on the offsite recycled water storage/disposal areas (Exhibit 3-6). The disposal sites would consist of irrigation of agricultural lands with recycled water and are considered a continuation of the existing use. Therefore, no cancellation of a

Williamson Act contract would be required for this activity. Construction of recycled water storage ponds would preclude continued agricultural operations in these areas. Therefore, it is assumed that cancellation of any applicable Williamson Act contracts would be required for this activity. The same is true for construction of the proposed WRP #2 (7-acre disturbance area).

There are various options for the location of WRP #2 and the recycled water storage ponds (section 3.4.4, Utilities) and it is unclear at this time the precise extent to which these activities would occur on lands under Williamson Act contracts. For the purposes of this analysis a worst-case scenario is evaluated and it is assumed that WRP #2 and the storage ponds would all be located on lands under Williamson Act contracts, resulting in the need to cancel contracts on 105 acres of existing farmland. Therefore, the maximum total cancellation area associated with the CLSP project (CLSP area and offsite utilities) would be 1,244.3 acres.

The evaluation of Williamson Act contract cancellations assumes that all Williamson Act contracts in the CLSP area and offsite utility areas could be cancelled simultaneously, after annexation of these areas to the City, although a partial or staged contract cancellation process could still occur. Analysis of a single mass cancellation evaluates the scenario with the greatest potential impact.

Before construction could begin on Williamson Act lands in the project area, the City would be required to make findings supporting the cancellation of all Williamson Act contracts. As explained earlier, cancellation can be supported under either one of two possible scenarios. Under the first, the City would have to find that cancellation is "consistent with the purpose" of the Williamson Act (Gov. Code §51282[a]). Under the second, the City would have to find that cancellation is in "the public interest" (Gov. Code §51282[b]).

To support cancellation under the first scenario, the following findings would need to be made:

- *That the cancellation is for land on which a notice of nonrenewal has been served pursuant to Section 51245.* Notices of Nonrenewal have been filed (by the landowners to the County) for 10 of the 11 CLSP parcels that are under Williamson Act contract (Table 4.13-2). If the one parcel that still remains under contract (APN Number 191-220-09) does not file Notice of Nonrenewal, the City would have to serve written Notice of Nonrenewal to the landowner at least 60 days before the renewal date. Dated copies of all notices would be provided as attachments to the findings. The same process would be followed for offsite utility areas where notices of nonrenewal are required.

- *That cancellation is not likely to result in the removal of adjacent lands from agricultural use.* The cancellation of Williamson Act contracts in the CLSP area would not result in the removal of adjacent lands from agricultural use because the lands to the east are developed with I-5 and the urban areas of the City, the lands abutting the CLSP area to the south either are approved for urban development (i.e., the Mossdale Landing project, which is under construction) or are well into the approval process (i.e., the Mossdale Landing East project), and the lands to the west are separated from the project area by the San Joaquin River, which provides an extensive buffer (see discussion under Impact 4.13-c). Although no substantive physical barrier would separate the CLSP area from adjacent agricultural lands to the north, conversion of these lands to development (i.e., removal from agricultural use) would require various future legislative approvals such as General Plan amendments, annexations, rezones, etc. Because of these legislative and regulatory impediments, the cancellation of Williamson Act contracts in the CLSP is not considered likely to result in removal of adjacent lands to the north from agricultural use.

- *That cancellation is for an alternative use that is consistent with the applicable provisions of the City or County General Plans.* The CLSP development would be consistent with the County General Plan

(2000) Urban Reserve designation because the project would preserve the existing agricultural uses until the need for additional urban land is demonstrated and infrastructure is available to service the development. The CLSP area, which is not currently within the City's corporate boundaries but is within its sphere of influence, would be consistent with the City General Plan (1991) development plan for Sub-Plan Area #2, which allows for urban development in the project area. Government codes/guidelines/regulations pertaining to both the City and County guidelines allow for non-contiguous annexations for provision of utility infrastructure (i.e., WRP #2 and recycled water storage ponds) (see Section 4.2, Land Use Consistency and Compatibility).

- *That cancellation will not result in discontiguous patterns of urban development.* The cancellation of Williamson Act contracts in the CLSP area would not result in discontiguous patterns of urban development. The proposed CLSP development would be consistent with the County and City General Plans and would be located directly west of the existing urban area of Lathrop and directly north of approved WLSP development. WRP #2 and the recycled water storage ponds would be considered utility infrastructure and not urban development.

- *That there is no proximate noncontracted land that is both available and suitable for the use to which it is proposed the contracted land be put, or that development of the contracted land would provide more contiguous patterns of urban development than development of proximate noncontracted land.* Cancellation of Williamson Act contracts and development of the CLSP area would provide a more contiguous pattern of urban development than development of other proximate noncontracted land. Much of the agricultural land in the project region is under Williamson Act contract. The pattern of non-contracted land in the CLSP area (Exhibit 4.13-3) is typical of what is found in the region, with non-contracted parcels interspersed with contract lands. There are no contiguous tracts of non-contracted land in the project vicinity large enough to accommodate the proposed project. Therefore, placing the proposed project on non-contracted land would require dividing it among several non-contiguous parcels. Implementation of the CLSP area would extend the urban area of the City by developing directly west of the existing city limits and directly north of approved WLSP development. If development were proposed on proximate noncontracted lands, it would result in discontiguous development on parcels that are not located adjacent to existing or approved development.

To support a determination that cancellation of Williamson Act contracts is "in the public interest," the following findings would need to be made:

- *That other public concerns substantially outweigh the objectives of the Williamson Act.* This EIR evaluates the physical environmental impacts of the proposed project. The conclusion of whether public concerns substantially outweigh the objectives of the Williamson Act is a social issue. In accordance with the State CEQA Guidelines (particularly CCR Section 15131) social (and economic) effects of a project are not to be treated as environmental effects. Consequently, this EIR does not provide a conclusion with respect to consistency with this finding. Nonetheless, when the Lathrop Planning Commission and City Council consider this project, they will need to decide if public concerns that would support development of the project do indeed outweigh the objectives of the Williamson Act. However, this determination is in the hands of the City's decision makers, and not within this EIR.

- *That there is no proximate noncontracted land that is both available and suitable for the use to which it is proposed the contracted land be put, or that development of the contracted land would provide more contiguous patterns of urban development than development of proximate noncontracted land.* This is a repeat of the last finding associated with the determination that the cancellation is

"consistent with the purpose" of the Williamson Act (see above). Evidence in support of this finding would be the same as provided previously for this finding.

The actual cancellation of each Williamson Act contract would become effective only after satisfaction of all cancellation conditions (i.e., payment of the cancellation fee). If the cancellation fee for a particular contract is made more than one year after the conditional cancellation finding, the fee must be recalculated based on the fair market value of the land at the time.

The cancellation of 1,244.3 acres of Williamson Act contracts is necessary for the CLSP to succeed because the proposed land uses would not be permitted under the existing Williamson Act contracts. Agricultural production would continue on CLSP lands until they are ready to be developed, but the single mass cancellation of Williamson Act contracts would still occur. Therefore, this impact is considered significant.

Impact 4.13-c

Agricultural Resources – Adjacent Landowner/User Conflicts. *Long-term impacts on adjacent offsite landowners and conflicts associated with noise, odor, and dust from agricultural operations are expected to be minimal because the CLSP area is bordered by surrounding development and natural buffers on the east (I-5), south (Mossdale Village development), and west (San Joaquin River). However, proposed development could be located immediately adjacent to agricultural operations to the north and within the CLSP area. WRP #2 and recycle water storage ponds could also be located adjacent to agricultural activities. Potential conflicts between ongoing agricultural operations and development of the CLSP area are considered* ***significant****.*

Agricultural-urban interfaces generally result in the potential for conflicts between agricultural practices and adjacent landowners. Pesticide application, generation of dust and noise from farm equipment, and shared roadways with farm trucks and tractors are common sources of these conflicts. Farmland owners may also suffer increased incidence of trespass, vandalism, and theft.

In most instances, potential long-term conflicts between CLSP residents and adjacent agricultural operators are expected to be minimal. Lands to the east of the plan area consist of I-5 and urban uses in the City. Lands to the south of the plan area are approved for urban development under the West Lathrop Specific Plan, with one project (Mossdale Landing) currently under construction. Along the western border, the San Joaquin River provides a natural buffer that would separate the proposed development from continuing agricultural operations. The distance between homes in the CLSP area and adjacent agricultural activities to the west would exceed 500 feet, given the width of the river and the levees and the planned open space corridor along the levee. The impact of adjacent landowner conflicts along these three sides of the CLSP site is therefore considered less than significant.

As development proceeds throughout the proposed CLSP project, there is potential for conflicts when the development edge is adjacent to ongoing agricultural operations on undeveloped portions of the CLSP area, including the parcels not under the control of Richland. In addition, at buildout of the CLSP, residential uses at the northern edge of the site would border agricultural land. If appropriate buffers cannot be maintained between development and ongoing agricultural operations, conflicts between these two land uses would constitute a significant impact.

Construction of WRP #2 North to serve the wastewater needs of the CLSP area would result in the development of a nonagricultural use surrounded by agricultural operations to the north, east, west, and south. Construction of the recycled water storage ponds could result in a similar condition depending on

where the ponds are ultimately located. However, WRP #2 and the storage ponds do not include residential, commercial, or similar land uses and are less likely to result in conflicts with surrounding agricultural operations. Therefore, the impact of potential adjacent landowner conflicts associated with WRP #2-North and the recycled water storage ponds is considered less than significant.

4.13.4 MITIGATION MEASURES

The following mitigation measures are provided for significant impacts:

4.13-a Conversion of Important Farmland. The City would participate in the SJMSCP. Fees would be paid by the project applicant to the SJCOG on a per-acre basis for lost agricultural land during development of proposed CLSP and associated offsite utility infrastructure. The SJCOG will use these funds to purchase conservation easements on agricultural and habitat lands in the project vicinity (in the Central Index Zone identified in the SJMSCP). The preservation in perpetuity of agricultural lands through the SJMSCP, a portion of which would consist of Important Farmland, would ensure the continued protection of farmland in the project vicinity, partially offsetting project impacts.

Implementation of Mitigation Measure 4.13-a would substantially lessen significant impacts associated with the conversion of Important Farmland on the CLSP site and associated utility sites because funding conservation easements would provide assistance to public and private sectors in protecting other farmland from the pressures of development. The easements are purchased for land exhibiting benefits to wildlife, including a combination of habitat, open space, and agricultural lands, so the compensation provided by the fee contribution for the proposed project would not be applied exclusively to agricultural lands. Therefore, fees contributed to the SJMSCP would only partially offset conversions of Important Farmland associated with project impactsimplementation. In addition, no new farmland would be made available, and the productivity of existing farmland would not be improved as a result of the SJMSCP mitigation. Therefore, full compensation for losses of Important Farmland would not be achieved. Impact 4.13-a is still considered a significant impact after mitigation.

4.13-b Williamson Act Contract Cancellations. Although all Williamson Act contracts in the CLSP area may be cancelled in a single cancellation, the project applicant shall continue to allow/promote farming operations as long as possible on portions of the CLSP plan area until an area is to be developed. This action would minimize impacts on agricultural production associated with the cancellation of Williamson Act contracts.

In addition, the project applicant shall participate in the SJMSCP pursuant to Mitigation Measure 4.13-a. Fees would be paid to the SJCOG on a per-acre basis for agricultural lands converted to nonagricultural uses. The SJCOG uses these funds to purchase conservation easements on agricultural and habitat lands in the project vicinity (in the Central Index Zone identified in the SJMSCP). Participation in the SJMSCP would assist in compensating for Williamson Act contract cancellations by placing farmlands under conservation easements, requiring conservation of agricultural lands in perpetuity. These easements provide much more stringent and longer lasting protections than Williamson Act contracts. However, because easements are also purchased for land exhibiting benefits to wildlife, including a combination of habitat, open space, and agricultural lands, the overall farmland compensation provided by the fee contribution for the proposed project would not be applied exclusively to agricultural lands. Therefore, fees contributed to the SJMSCP would only partially offset the loss of agricultural lands under Williamson Act contract associated with the CLSP project. In addition, no new farmland would be made available. Therefore, full compensation for losses of Williamson Act contracts would not be achieved.

Implementation of Mitigation Measure 4.13-b would substantially lessen significant impacts associated with Williamson Act contract cancellations, but would not reduce those significant impacts although not sufficiently to reduce the impact to a less-than-significant level. Impact 4.13-b is therefore still considered a significant impact after mitigation.

4.13-c Adjacent Landowner/User Conflicts. The project applicant shall phase the development of agricultural lands in the CLSP area in such a way as to avoid the fragmentation of continuing agricultural operations. As development occurs in the CLSP area, fencing, walls, or other suitable barriers shall be constructed or established at the interface between development and adjacent agricultural lands. In addition, a buffer zone or barrier, as determined by the City, shall be provided between the edge of residential or commercial development and the adjacent agricultural land. Roads, greenbelts, and similar facilities can function as these buffers. The City shall include the buffer as a condition of development approval, with the buffer being maintained until development of the adjacent agricultural land is initiated. Growers cultivating lands near or adjacent to urban development in the CLSP area can be expected to comply with all necessary federal, state, and local restrictions regarding buffers between pesticide/herbicide applications and sensitive areas, such as schools, residences, and parks. Required buffer distances may vary depending on the type of chemicals used and the method of application. Residents and other individuals purchasing property near agricultural lands shall be provided information on the types of conflicts that may occur and appropriate means to address these conflicts, consistent with the City's Right-to-Farm Ordinance.

Implementation of Mitigation Measure 4.13-c would reduce impacts associated with conflicts at the agricultural/urban interface to less-than-significant levels.

4.13.5 RESIDUAL SIGNIFICANT IMPACTS

The conversion of Important Farmland and the cancellation of Williamson Act contracts are identified as significant impacts. Because there are no feasible mitigation measures to reduce these impacts to a less-than-significant level, these impacts would be significant and unavoidable.

4.14 Terrestrial Biology

4.14 TERRESTRIAL BIOLOGY

Common and sensitive terrestrial biological resources that occur or potentially occur in the CLSP area and potential offsite recycled water storage and disposal areas (together considered the project area) are discussed in this section, along with potential impacts on these resources. Fisheries resources are discussed separately in Section 4.15, Fisheries. The terrestrial biology evaluation is based on data collected during reconnaissance-level field surveys, supplemented by reviews of aerial photographs and information from previously completed studies and analysis that addressed biological resources in or near the CLSP area. Reconnaissance-level field surveys were conducted by EDAW biologists Anne King and Misa Ward on September 16, 2003, and April 4, 2004, to characterize general biological resources present in the CLSP area and potential recycled water storage and disposal areas and to document areas that could support special-status species and sensitive habitats.

Documents reviewed during preparation of this section include the Draft Environmental Impact Report (DEIR) for the Lathrop Water, Wastewater, and Recycled Water Master Plan (Water Master Plan) (EDAW 2001); the DEIR for the Mossdale Landing Urban Design Concept (EDAW 2002); *Riparian Brush Rabbit Survey: Paradise Cut along Stewart Tract, San Joaquin County, California* (Williams and Hamilton 2002); *Biological Assessment, Riverwalk Project* (Zander Associates 1999a); *Biological Assessment, Riverwalk Water Reclamation Facility* (Zander Associates 1999b); and *San Joaquin Multi-Species Habitat Conservation and Open Space Plan* (San Joaquin County 2000).

4.14.1 REGULATORY BACKGROUND

Biological resources in California are protected and/or regulated by a variety of federal and state laws and policies. In addition, in many parts of California, there are local or regional habitat and species conservation planning efforts in which a project applicant may participate. Key regulatory and conservation planning issues applicable to the proposed project are discussed below.

FEDERAL ENDANGERED SPECIES ACT

The U.S. Fish and Wildlife Service (USFWS) and the National Oceanic and Atmospheric Administration, National Marine Fisheries Service (NOAA Fisheries) have authority over projects that may result in the take of a species listed as threatened or endangered under the federal Endangered Species Act (FESA) (i.e., a federally listed species). In general, persons subject to FESA (including private parties) are prohibited from the "take" of endangered or threatened fish and wildlife species on private property, and from the "take" of endangered or threatened plants in areas under federal jurisdiction or in violation of state law. Under the FESA, 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. If a project would result in take of a federally listed species, either an incidental take permit, under Section 10(a) of the FESA, or a federal interagency consultation, under Section 7 of the FESA, is required prior to the take occurring. Such a permit typically requires various types of mitigation to compensate for or to minimize the take.

SECTION 404 OF THE CLEAN WATER ACT

Section 404 of the federal Clean Water Act (CWA) establishes a requirement for a project applicant to obtain a permit before engaging in any activity that involves any discharge of dredged or fill material into "waters of the United States," including wetlands. Waters of the United States include navigable waters of the United States, interstate waters, all other waters where the use or degradation or destruction of the

waters could affect interstate or foreign commerce, tributaries to any of these waters, and wetlands that meet any of these criteria or that are adjacent to any of these waters or their tributaries. Wetlands are defined as those areas that are inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Jurisdictional wetlands must meet three wetland delineation criteria: hydrophytic vegetation, hydric soil types, and wetland hydrology. Many surface waters and wetlands in California meet the criteria for waters of the United States, including intermittent streams and seasonal lakes and wetlands.

Under Section 404 of the CWA, the U.S. Army Corps of Engineers (USACE) regulates and issues permits for activities that involve the discharge of dredged or fill materials into waters of the United States. Fills of less than ½ acre of nontidal waters of the United States for residential, commercial, or institutional development projects can generally be authorized under the USACE's nationwide permit (NWP) program, provided the project satisfies the terms and conditions of the particular NWP. Fills that do not qualify for a NWP require a letter of permission or an individual permit.

CALIFORNIA ENDANGERED SPECIES ACT

Pursuant to the California Endangered Species Act (CESA) and Section 2081 of the California Fish and Game Code, a permit from the California Department of Fish and Game (DFG) is required for projects that could result in the take of a state-listed threatened or endangered species (i.e., species listed under CESA), except that plants may be taken without a permit pursuant to the terms of the California Native Plant Protection Act (Fish & G. Code, § 1900 et seq.). Under CESA, the definition of "take" is understood to apply to an activity that would directly or indirectly kill an individual of a species, but the definition does not include "harm" or "harass," as the FESA does. As a result, the threshold for take under the CESA is typically higher than that under the FESA.

SECTION 1602 OF THE CALIFORNIA FISH AND GAME CODE

All diversions, obstructions, or changes to the natural flow or bed, channel, or bank of any river, stream, or lake in California that supports wildlife resources are subject to regulation by DFG under Section 1602 of the California Fish and Game Code. Under Section 1602, it is unlawful for any person to substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake designated by DFG, or use any material from the streambeds, without first notifying DFG of such activity. "Stream" is defined as a body of water that flows at least periodically or intermittently through a bed or channel having banks and that supports fish or other aquatic life. This includes watercourses having a surface or subsurface flow that supports or has supported riparian vegetation. DFG's jurisdiction within altered or artificial waterways is based on the value of those waterways to fish and wildlife. A DFG Streambed Alteration Agreement must be obtained for any project that would result in an impact on a river, stream, or lake.

SECTION 401 WATER QUALITY CERTIFICATION

Under Section 401 of the CWA, an applicant for a Section 404 permit must obtain a certificate from the appropriate state agency stating that the intended dredge or fill activity is consistent with the state's water quality standards and criteria. In California, the authority to grant water quality certification is delegated by the State Water Resources Control Board to the nine regional boards. Each of the nine Regional Water Quality Control Boards must prepare and periodically update basin plans for water quality control in accordance with the Porter-Cologne Act. Each basin plan sets forth water quality standards for surface water and groundwater, as well as actions to control nonpoint and point sources of pollution to achieve and maintain these standards. Basin plans offer an opportunity to protect wetlands through the

establishment of water quality objectives. Under the Porter-Cologne Act, wetlands and drainages that are considered waters of the United States by USACE are often classified as waters of the state as well.

CALIFORNIA FISH AND GAME CODE SECTION 3503.5 (PROTECTION OF RAPTORS)

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 raptor nests as a result of tree removal and failure of nesting attempts, resulting in loss of eggs and/or young, because of disturbance of nesting pairs by nearby human activity.

NATURAL COMMUNITY CONSERVATION PLANNING ACT

The Natural Community Conservation Planning Act (NCCPA) authorizes and encourages conservation planning on a regional scale in California through preparation of Natural Community Conservation Plans (NCCPs). NCCPs address the conservation of natural communities as well as individual species. The NCCPA's focus on regional conservation rather than individual project mitigation is appropriate for complex and extensive programs. The CLSP area is not currently covered by an NCCP.

SAN JOAQUIN COUNTY MULTI-SPECIES HABITAT CONSERVATION AND OPEN SPACE PLAN

The San Joaquin County Multi-Species Habitat Conservation and Open Space Plan (SJMSCP) provides a strategy for balancing the desires to conserve open space, maintain the agricultural economy, and allow development in San Joaquin County. It was developed to avoid, minimize, and mitigate impacts on plant and wildlife habitat projected to occur in San Joaquin County between 2001 and 2051, resulting from the anticipated conversion of as much as 109,300 acres of open space land to non-open space uses (San Joaquin County 2000). Ninety-seven species are covered by the SJMSCP, which is intended to provide comprehensive mitigation, in accordance with local, state, and federal regulations, for impacts on these species from SJMSCP-permitted activities. USFWS and DFG participated in development of the SJMSCP, approved the mitigation, and agreed to issue incidental take permits for species and activities covered by the SJMSCP. Therefore, participation in the SJMSCP confers authorization for activities that result in (or may result in) incidental take of covered state-listed or federally listed species, as well as other covered but nonlisted sensitive species, that may otherwise require a federal or state incidental take authorization.

The approach of the SJMSCP is to minimize the potential for take through implementation of take avoidance and minimization measures and compensation for incidental take and habitat conversion through payment of fees (or in-lieu land dedication) for conversion of open space lands. These fees shall be used to preserve and create natural habitats to be managed in perpetuity through the establishment of habitat preserves.

Participation in the SJMSCP is voluntary for local jurisdictions and project proponents. The City of Lathrop (City) adopted the SJMSCP on January 16, 2001, and has signed the implementation agreement. A Section 10(a)(1)(B) permit was issued by USFWS to the City in 2002. This Section 10 permit also constitutes a special purpose permit for species covered by the federal Migratory Bird Treaty Act (MBTA). A Section 2081 permit was also issued by DFG to the City in 2002. As a result of the City's participation in the SJMSCP and issuance of these permits, project proponents within the City's jurisdiction have the opportunity to seek coverage under the SJMSCP. The CLSP project proponent is proposing to seek such coverage.

SAN JOAQUIN COUNTY GENERAL PLAN AND DEVELOPMENT TITLE 9-1505

The San Joaquin County General Plan includes two primary objectives related to terrestrial biology:

- Protect and improve the County's vegetation, fish, and wildlife resources; and
- Provide undeveloped open space for nature study, protection of endangered species, and preservation of wildlife habitat.

Specific Resource Protection and Management policies outlined in the County General Plan that are relevant to implementation of the CLSP include the following:

1. Resources of significant biological and ecological importance in San Joaquin County shall be protected. These include wetlands; riparian areas; rare, threatened and endangered species and their habitats as well as potentially rare or commercially important species; vernal pools; significant oak groves and heritage trees.

4. Development in the vicinity of significant oak groves shall be designed and sited to maximize the long-term preservation of the trees and the integrity of their natural setting.

5. No net loss of riparian or wetland habitat or values shall be caused by development.

7. The County shall support feeding areas and winter habitat for migratory waterfowl.

8. Strips of land along waterways shall be protected for nesting and foraging habitat and for protection of waterway quality.

In addition, San Joaquin County Development Title 9-1505 includes specific policies designed to preserve riparian vegetation and native and heritage oak trees. Among these are restrictions on removal of historical and heritage trees and mitigation requirements for removal of protected trees and riparian vegetation.

CITY OF LATHROP GENERAL PLAN

The following Vegetation, Fish, and Wildlife policies, identified in the Resource Management Element of the City General Plan, are relevant to the CLSP:

1. Habitat Retention – Objectives include preservation of vegetation along waterways that provide habitat; "no net loss" of wetland acreage; and careful introduction of recreation within habitat areas, so as not to disturb natural conditions.

2. Habitat Enhancement – Objectives include improvement of natural habitat along waterways.

5. Land use within areas of riparian habitat shall be restricted to nature-oriented passive recreation.

4.14.2 EXISTING CONDITIONS

VEGETATION

The vegetation of the CLSP area and potential offsite recycled water storage and disposal areas is primarily cropland and other developed or previously disturbed habitats. A relatively small amount of

native vegetation occurs along the San Joaquin River, which borders the western edge of the CLSP area, and within several of the drainage ditches that traverse the CLSP area. Vegetation types present in the project area are classified in this section according to the categories designated in the SJMSCP. These categories are described below. Their locations within the CLSP area are depicted in Exhibit 4.14-1 and within the potential offsite recycled water storage and disposal areas in Exhibits 4.14-2 and 4.14-3.

Cropland

CLSP Area

Cropland is the dominant vegetation type in the CLSP area and accounts for approximately 1,350 acres. The cropland is dominated by row crops and associated agricultural weeds. At the time of the reconnaissance-level survey, crops under cultivation in the CLSP area included tomatoes, alfalfa, hay, squash, safflower, and corn. Some of the fields appeared to have been recently harvested and disked. The small number of fallow fields and pastures present in the CLSP area are also included within this vegetation type. Agricultural ditches that convey water within the cropland areas and lack wetland vegetation were not mapped separately from cropland during the survey and are also included within this category.

Potential Offsite Recycled Water Storage and Disposal Areas

Cropland is the only vegetation type on the potential WRP #2 and recycled water storage and disposal sites. At the time of the reconnaissance-level survey, crops under cultivation in these areas included alfalfa, wheat, and oats. Some of the fields had been recently tilled and did not yet support visible crops. The southern portion of Area 6 was occupied by an almond orchard. It is unclear whether this orchard is still maintained and harvested.

Freshwater Emergent Wetland

CLSP Area

At the time of the survey, freshwater emergent wetland vegetation was limited to approximately 9 acres within three agricultural ditches in the CLSP area, one in the northern portion and two in the southern portion. This plant community occurs in areas that are saturated or inundated for long periods. It is dominated by emergent perennial wetland plants, including broad-leaved cattail (*Typha latifolia*), tule (*Scirpus acutus*), umbrella sedge (*Cyperus eragrostis*), and smartweed (*Polygonum* spp.). Floating aquatic plants, such as duckweed (*Lemna* sp.) and mosquito fern (*Azolla filiculoides*), are common in areas of slow-moving open water.

Potential Offsite Recycled Water Storage and Disposal Areas

No freshwater marsh is present on the potential WRP #2 and offsite recycled water storage and disposal sites.

Great Valley Cottonwood Riparian Forest

CLSP Area

Great Valley cottonwood riparian forest is located in scattered patches of the CLSP area along the San Joaquin River, totaling approximately 10 acres. The canopy of this native plant community is dominated by Fremont cottonwood (*Populus fremontii*) and Goodding's willow (*Salix gooddingiii*). A dense

subcanopy composed of sandbar willow (*S. exigua*) and/or arroyo willow (*S. lasiolepis*) is also characteristic of Great Valley cottonwood riparian forest. Scattered valley oaks (*Quercus lobata*) can occur in this plant community. The understory is typically dominated by California blackberry (*Rubus ursinus*) and wild rose (*Rosa californica*).

Potential Offsite Recycled Water Storage and Disposal Areas

No Great Valley cottonwood riparian forest is present on the potential WRP #2 and offsite recycled water storage and disposal sites.

Great Valley Oak Riparian Forest

CLSP Area

Two remnant patches of Great Valley oak riparian forest, totaling approximately 6 acres, are located along the land side of the levee at the southern end of the CLSP area. This plant community was formerly extensive along rivers in the San Joaquin Valley. Great Valley oak riparian forest is typically characterized by a dense canopy of valley oak. The stands in the CLSP area have been fragmented as a result of agricultural use of the land. At the time of the survey, the grassy understory had been recently disked.

Potential Offsite Recycled Water Storage and Disposal Areas

No Great Valley oak riparian forest is present on the potential WRP #2 and offsite recycled water storage and disposal sites.

Great Valley Riparian Scrub

CLSP Area

Patches of Great Valley riparian scrub, totaling approximately 7 acres, occur along the San Joaquin River bank. This plant community is characterized by an open to dense canopy dominated by shrubs. Dominant species include sandbar willow, Goodding's willow, arroyo willow, and buttonbush (*Cephalanthus occidentalis*). A thicket of wild rose or California blackberry may also be present. Scattered valley oaks are occasionally present on the upland edge of this plant community. Although it shares species in common with Great Valley cottonwood riparian forest, Great Valley riparian scrub does not contain Fremont cottonwood and is therefore characterized by a shorter canopy and more uniform structure.

Potential Offsite Recycled Water Storage and Disposal Areas

No Great Valley riparian scrub is present on the potential WRP #2 and offsite recycled water storage and disposal sites.

Ruderal

CLSP Area

Ruderal habitat includes areas where the native vegetative cover has been removed and weedy species now dominate. These areas account for approximately 45 acres of the CLSP area and are most prevalent on the San Joaquin River levee. Common species in ruderal areas include non-native grasses such as

LEGEND

CLSP Boundary

Habitat Type

- Cropland
- Freshwater Emergent Wetland
- Great Valley Cottonwood Riparian Forest
- Great Valley Oak Riparian Forest
- Great Valley Riparian Scrub
- Park/Residential
- Ruderal

Sources: McKay and Somps 2003, EDAW 2003

Habitat Types

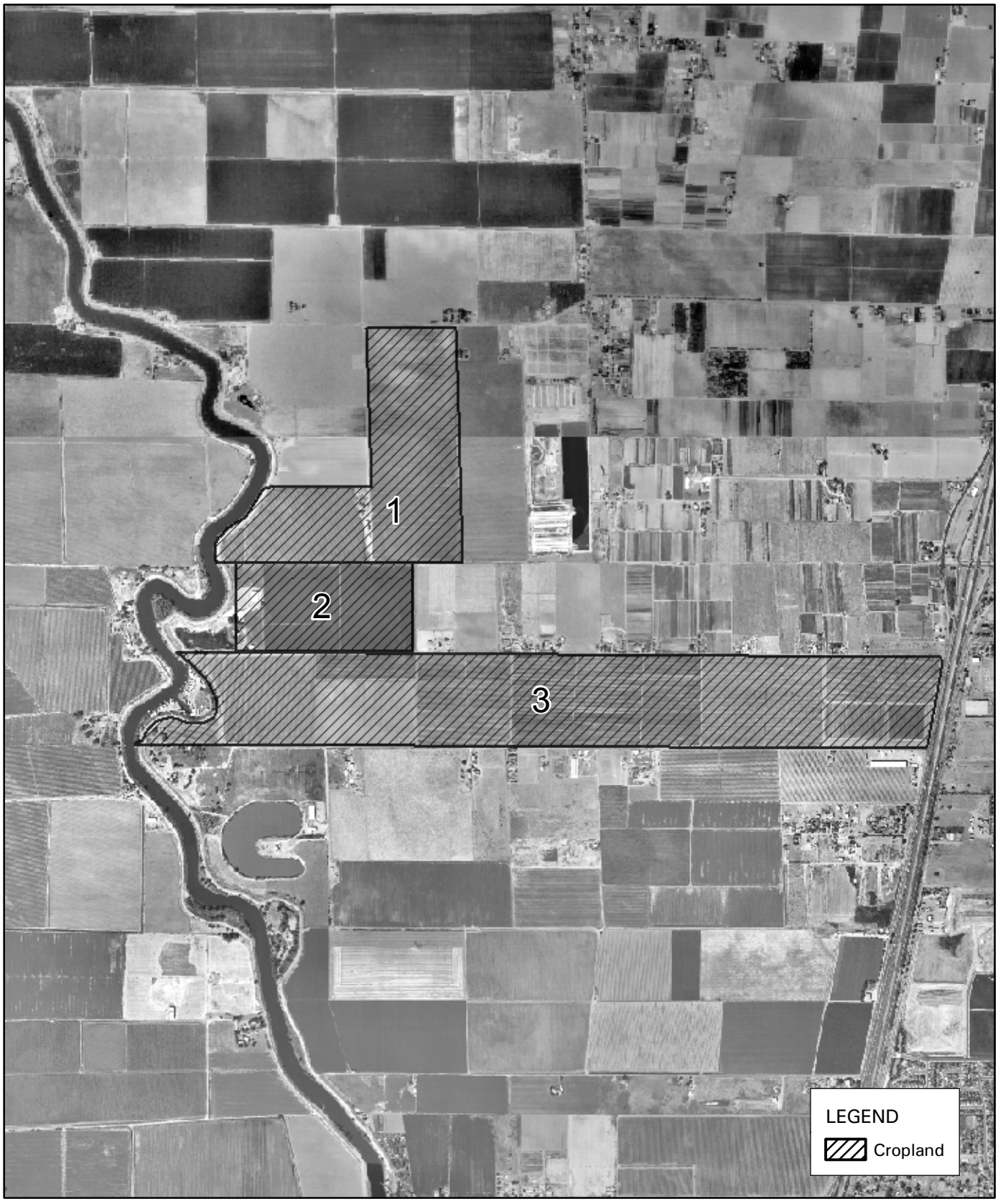
EXHIBIT 4.14-1

Central Lathrop Specific Plan EIR
City of Lathrop
X 3T017.01 3/04

0 1000 2000
FEET

NORTH

EDAW



Sources: MacKay & Somps 2003, EDAW 2004, CASIL (DOQQ) 1996

Habitat Types at Potential WRP #2 North and Northern Recycled Water Storage and Disposal Sites

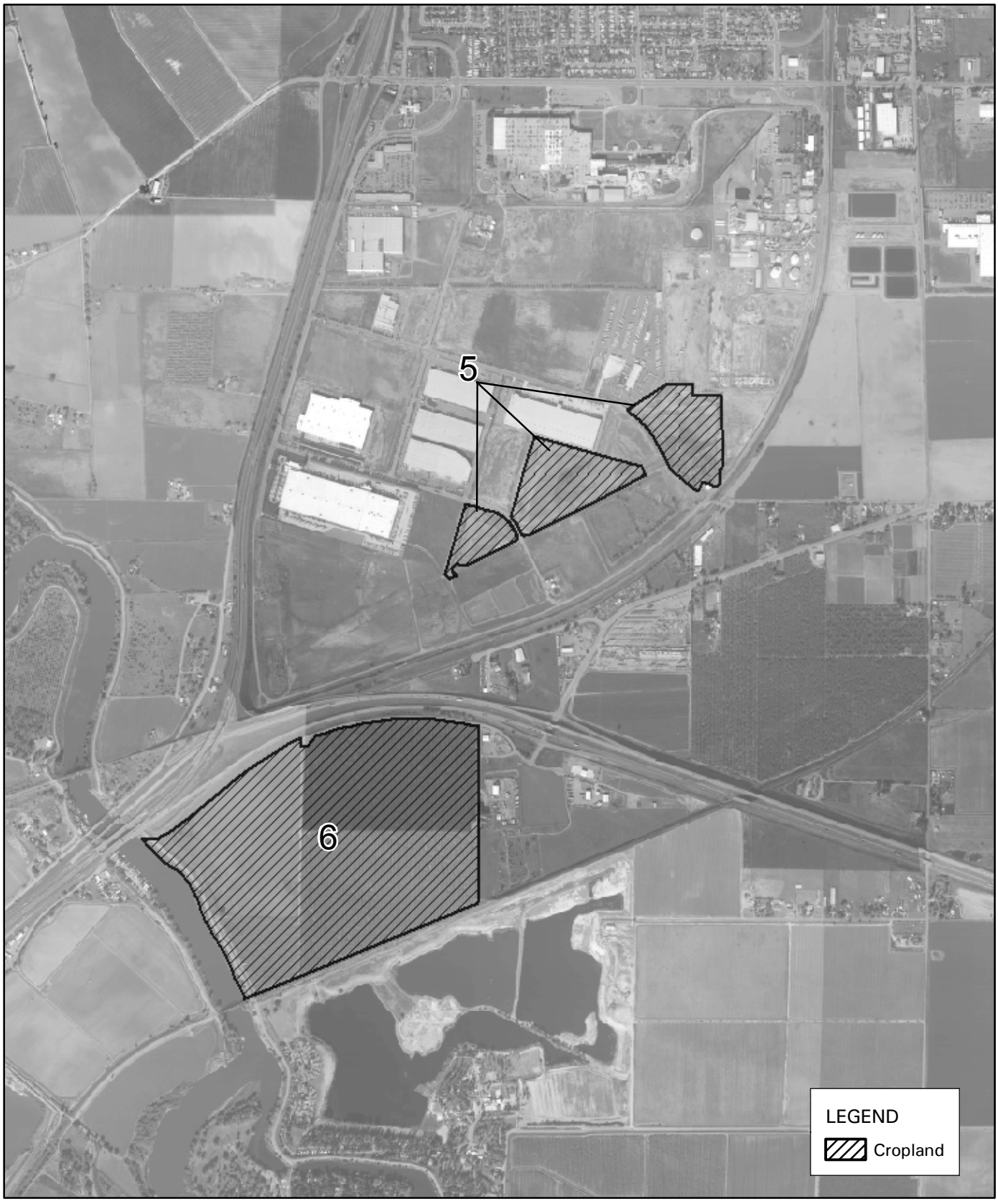
EXHIBIT 4.14-2

Central Lathrop Specific Plan EIR
City of Lathrop
X 3T017.01 7/04

0 1,000 2,000 4,000
FEET

NORTH

EDAW



Sources: MacKay & Somps 2003, EDAW 2004

Habitat Types at Potential WRP #2 South and Southern Recycled Water Storage and Disposal Sites

EXHIBIT 4.14-3

Central Lathrop Specific Plan EIR
City of Lathrop
X 3T017.01 7/04

0 875 1,750 3,500
FEET

NORTH

EDAW

ripgut brome (*Bromus diandrus*), foxtail barley (*Hordeum murinum* ssp. *leporinum*), and Bermuda grass (*Cynodon dactylon*) and weeds such as yellow star-thistle (*Centaurea solstitialis*), shortpod mustard (*Hirschfeldia incana*), and milk thistle (*Silybum marianum*).

Potential Offsite Recycled Water Storage and Disposal Areas

No ruderal habitat is present in the potential WRP #2 and offsite recycled water storage and disposal sites.

Park/Residential

CLSP Area

This category includes areas developed as parks, residential housing, and commercial facilities and their associated landscape plantings and cultivated gardens. Approximately 70 acres of park/residential vegetation are present in the CLSP area, predominantly residences and other buildings along Dos Reis Road and at Dos Reis Regional Park. Landscape trees in the park include sycamore (*Platanus racemosa*), liquidambar (*Liquidambar styraciflua*), and eucalyptus (*Eucalyptus* sp.).

Potential Offsite Recycled Water Storage and Disposal Areas

No park/residential areas are present on the potential WRP #2 and offsite recycled water storage and disposal sites.

WILDLIFE

The overall wildlife habitat value of the CLSP area and the potential offsite recycled water storage and disposal areas are limited by the predominance of agricultural lands, which support a relatively low diversity of wildlife species. However, agricultural fields can be heavily utilized by some species. Alfalfa fields in the project area are expected to support small mammals, such as Botta's pocket gopher (*Thomomys bottae*), western harvest mouse (*Reithrodontomys megalotis*), and California meadow vole (*Microtus californicus*). These small mammals are prey for a variety of raptor species known to occur in the area, including American kestrel (*Falco sparverius*), northern harrier (*Circus cyaneus*), red-tailed hawk (*Buteo jamaicensis*), and Swainson's hawk (*Buteo swainsonii*). A variety of other birds were observed or are expected to forage in project area agricultural fields, including western kingbird (*Tyrannus verticalis*), barn swallow (*Hirundo rustica*), European starling (*Sturnus vulgaris*), western meadowlark (*Sturnella neglecta*), and Brewer's blackbird (*Euphagus cyanocephalus*).

Ornamental vegetation associated with developed areas, such as rural residences and the County park, also supports a relatively low wildlife diversity. These areas are typically utilized by species adapted to highly disturbed and altered environments, such as house sparrow (*Passer domesticus*), house finch (*Carpodacus mexicanus*), raccoon (*Procyon lotor*), and opossum (*Didelphis virginiana*).

Natural habitats within the project area are restricted to narrow patches of riparian vegetation along the San Joaquin River and southwestern CLSP area boundary, marshy vegetation in some agricultural ditches, and scattered individual or small clumps of valley oak trees. Wildlife diversity in agricultural ditches is limited because of the regular disturbance associated with maintenance activities and absence of natural vegetation in uplands adjacent to the ditches (e.g., agricultural lands), but they support marsh-associated species that may include marsh wren (*Cistothorus palustris*), song sparrow (*Melospiza melodia*), and Pacific tree frog (*Hyla regilla*). Riparian vegetation and oak trees provide nesting habitat for a much wider variety of bird species, including black phoebe (*Sayornis nigricans*), western kingbird, western scrub-jay (*Aphelocoma californica*), oak titmouse (*Baeolophus inornatus*), and house wren

(*Thryomanes bewickii*). They also provide nest sites for raptors, such as Swainson's hawk, red-tailed hawk, white-tailed kite (*Elanus leucurus*), and red-shouldered hawk (*Buteo lineatus*).

SENSITIVE BIOLOGICAL RESOURCES

Sensitive biological resources addressed in this section include those that are afforded special protection through the California Environmental Quality Act (CEQA), California Fish and Game Code (including but not limited to CESA), FESA, CWA, and the SJMSCP. Special-status species addressed in this section include plants and animals that are legally protected or are otherwise considered sensitive by federal, state, or local resource conservation agencies and organizations. These include species that are state listed and/or federally listed as rare, threatened, or endangered; those considered as candidates or proposed for listing; species identified by DFG and/or USFWS as species of concern; plants considered by the California Native Plant Society (CNPS) to be rare, threatened, or endangered (Lists 1B and 2); and species covered in the SJMSCP. The USFWS species list for the project area is provided in Appendix L of this DEIR.

Table 4.14-1 provides a complete list of special-status species potentially occurring in the project area. This list was developed through a review of biological studies previously conducted in the CLSP area and vicinity and observations made during field surveys conducted for this project. The DFG's California Natural Diversity Database (CNDDB 2003) and California Native Plant Society database (CNPS 2003) were also reviewed for specific information on documented observations of special-status species in the Lathrop and Union Island U.S. Geological Survey quadrangles. Several of the species listed in Table 4.14-1 do not have any formal state or federal designation as special-status species, but they are addressed in this document because they are covered by the SJMSCP.

Table 4.14-1
Special-Status Species Potentially Occurring in the Central Lathrop Specific Plan Project Area

Species	Status [1]			Habitat and Blooming Period	Potential for Occurrence [2]
	USFWS	DFG	CNPS		
PLANTS					
Suisun marsh aster *Aster lentus*	--	--	1B	Edge of brackish waters with some tidal influence	Could occur; potentially suitable habitat present along San Joaquin River and in agricultural ditches
Slough thistle *Cirsium crassicaule*	--	--	1B	Freshwater marshes, sloughs, and slow-moving water	Could occur; potentially suitable habitat present along San Joaquin River and in agricultural ditches
Delta button-celery *Eryngium racemosum*	--	E	1B	Seasonally flooded clay depressions in riparian scrub	Unlikely to occur; potentially suitable habitat present along San Joaquin River, but considered by CNPS and DFG to be extirpated from San Joaquin County
Rose mallow *Hibiscus lasiocarpus*	--	--	1B	Freshwater marshes and swamps	Could occur; potentially suitable habitat present along San Joaquin River and in agricultural ditches

Table 4.14-1
Special-Status Species Potentially Occurring in the Central Lathrop Specific Plan Project Area

Species	Status [1]			Habitat and Blooming Period	Potential for Occurrence [2]
	USFWS	DFG	CNPS		
Delta tule pea *Lathyrus jepsonii* var. *jepsonii*	--	--	1B	Edge of brackish and fresh waters	Could occur; potentially suitable habitat present along San Joaquin River and in agricultural ditches
Mason's lilaeopsis *Lilaeopsis masonii*	--	R	1B	Freshwater and brackish marshes and riparian habitat	Could occur; potentially suitable habitat present along San Joaquin River and in agricultural ditches
Sanford's arrowhead *Sagittaria sanfordii*	--	--	1B	Shallow freshwater marshes and swamps	Could occur; potentially suitable habitat present in agricultural ditches
Wright's trichocoronis *Trichocoronis wrightii* var. *wrightii*	--	--	2	Meadows, seeps, marshes, swamps, riparian scrub, and vernal pools	Could occur; potentially suitable habitat present along San Joaquin River
INVERTEBRATES					
Valley elderberry longhorn beetle *Desmocerus californicus dimorphus*	T	--	--	Riparian habitat with elderberry shrubs present	Could occur; elderberry shrubs present along San Joaquin River
REPTILES					
Giant garter snake *Thamnophis gigas*	T	T	--	Streams and sloughs	Unlikely to occur; marginally suitable aquatic habitat in agricultural ditches, but nearest known occupied habitat is approximately 10 miles north
Western pond turtle *Clemmys marmorata*	FSC	CSC	--	Ponds, marshes, rivers, streams, sloughs	Could occur; suitable habitat in San Joaquin River
BIRDS					
American white pelican *Pelecanus erythrorhynchos*	--	CSC	--	Marshes and other aquatic habitats	Could occur; suitable habitat in San Joaquin River but not within breeding range
Double-crested cormorant *Phalacrocorax auritus*	--	CSC	--	Nest on isolated islets or in tall lakeside trees near fish-bearing waters	Likely to occur; suitable foraging habitat in San Joaquin River, but not expected to nest

Table 4.14-1
Special-Status Species Potentially Occurring in the Central Lathrop Specific Plan Project Area

Species	Status [1]			Habitat and Blooming Period	Potential for Occurrence [2]
	USFWS	DFG	CNPS		
Great blue heron [3] *Ardea herodias*	--	--	--	Forage in shallow waters and flooded fields; nest in trees or shrubs near water	Likely to occur; suitable foraging habitat present, but no nesting colonies known or expected to occur
Great egret [3] *Ardea albus*	--	--	--	Forage in shallow waters and flooded fields; nest in trees or shrubs near water	Known to occur; suitable foraging habitat present, but no nesting colonies known or expected to occur
Snowy egret *Egretta thula*	FSC	--	--	Forage in shallow waters and flooded fields; nest in trees or shrubs near water	Likely to occur; suitable foraging habitat present, but no nesting colonies known or expected to occur
Black-crowned night-heron [3] *Nycticorax nycticorax*	--	--	--	Forage in shallow waters and flooded fields; nest in trees or shrubs near water	Likely to occur; suitable foraging habitat present, but no nesting colonies known or expected to occur
White-faced ibis *Plegadis chihi*	FSC	CSC	--	Forage and roost in shallow water and flooded fields	Could occur; suitable foraging habitat present but not within breeding range
Aleutian Canada goose *Branta canadensis leucopareia*	FSC	--	--	Forage in agricultural fields and roost in aquatic habitats	Could occur; suitable foraging habitat present, but not within breeding range
White-tailed kite *Elanus leucurus*	FSC	FP	--	Forage in grasslands and agricultural fields; nest in isolated trees or small woodland patches	Likely to occur; suitable foraging and nesting habitat present
Northern harrier *Circus cyanus*	--	CSC	--	Grasslands, agricultural fields, and freshwater marshes	Known to occur; suitable foraging habitat and nesting habitat present
Swainson's hawk *Buteo swainsoni*	FSC	T	--	Nest in riparian forest and scattered trees; forage in grasslands and agricultural fields	Known to occur; suitable foraging habitat and nesting habitat present
Ferruginous hawk *Buteo regalis*	FSC	CSC	--	Forage in grasslands, agricultural fields, and other open habitats	Could occur; suitable foraging habitat present but not within breeding range
Merlin *Falco columbarius*	--	CSC	--	Forages in grasslands, agricultural fields, marshes, and other open habitats	Could occur; suitable foraging habitat present but not within breeding range
Greater sandhill crane *Grus canadensis tabida*	--	T	--	Forage in grain fields and roost in nearby areas with shallow standing water	Could occur; suitable foraging habitat present but not within breeding range

Table 4.14-1
Special-Status Species Potentially Occurring in the Central Lathrop Specific Plan Project Area

Species	Status [1]			Habitat and Blooming Period	Potential for Occurrence [2]
	USFWS	DFG	CNPS		
Mountain plover *Charadrius montanus*	FSC	--	--	Short and/or barren grasslands and agricultural fields	Could occur; suitable foraging habitat present but not within breeding range
Long-billed curlew *Numenius americanus*	FSC	CSC	--	Marshes, grasslands, irrigated, pastures, alfalfa, and fallow fields	Likely to occur; suitable foraging habitat present but not within breeding range
Burrowing owl *Athene cunicularia*	FSC	CSC	--	Grasslands and agricultural fields	Could occur; suitable foraging and nesting habitat present
Loggerhead shrike *Lanius ludovicianus*	FSC	CSC	--	Shrubs and small trees for nesting, grasslands for foraging	Known to occur; suitable foraging and nesting habitat present
Yellow warbler *Dendroica petechia*	--	CSC	--	Riparian habitat, particularly willow thickets	Known to occur during migration; suitable foraging habitat present, but not expected to nest due to low-quality habitat and rarity of breeding pairs in San Joaquin County
Yellow-breasted chat *Icteria virens*	--	CSC	--	Riparian woodland with dense shrub cover	Could occur; suitable foraging habitat present, but not expected to nest due to low-quality habitat and rarity of breeding pairs in San Joaquin County
Tricolored blackbird *Agelaius tricolor*	FSC	CSC	--	Dense cattails and tules, riparian scrub, and other low, dense vegetation for nesting, grasslands and agricultural fields for foraging	Could occur; suitable foraging habitat present, but no nesting colonies known or expected to occur
MAMMALS					
Greater western mastiff bat *Antrozous pallidus*	FSC	CSC	--	Wide variety of habitats; roosts primarily in cliff faces and boulders but occasionally in buildings	Could occur; suitable foraging habitat present, but no potential roost sites
Red bat *Lasiurus blossevillii*	--	CSC	--	Wooded areas at lower elevations; typically roosts in snags and trees with moderately dense canopies	Could occur; suitable foraging and roosting habitat present
Yuma myotis *Myotis yumanensis*	FSC	--	--	Variety of habitats at low to mid elevations; roosts in buildings, trees, mines, caves, bridges, and rock crevices	Could occur; suitable foraging and roosting habitat present

Table 4.14-1
Special-Status Species Potentially Occurring in the Central Lathrop Specific Plan Project Area

Species	Status [1]			Habitat and Blooming Period	Potential for Occurrence [2]
	USFWS	DFG	CNPS		
Townsend's big-eared bat *Corynorhinus townsendii*	FSC	CSC	--	Variety of habitats, including oak savanna, riparian, and grassland; roosts in mines, caves, and buildings	Could occur; suitable foraging habitat present, but no potential roost sites
Riparian brush rabbit *Sylvilagus bachmani riparius*	E	E	--	Riparian forest with dense understory	Known to occur in riparian and ruderal vegetation along the San Joaquin River

[1] **Legal Status Definitions**

U.S. Fish and Wildlife Service (USFWS) Federal Listing Categories
- E Endangered (legally protected)
- T Threatened (legally protected)
- FSC Federal Species of Concern (no formal protection)

California Department of Fish and Game (DFG) State Listing Categories
- E Endangered (legally protected)
- T Threatened (legally protected)
- R Rare (legally protected)
- FP Fully Protected (legally protected, no take allowed)
- CSC California Species of Concern (no formal protection)

California Native Plant Society (CNPS) Categories
- 1B Plant species considered rare or endangered in California and elsewhere (but not legally protected under FESA or CESA)
- 2 Plant species considered rare or endangered in California but more common elsewhere (but not legally protected under FESA or CESA)

[2] **Potential for Occurrence Definitions**

Unlikely to occur: Potentially suitable habitat present but species unlikely to be present on the project site because of current status of the species and very restricted distribution.

Could occur: Suitable habitat is available at the project site; however, there are few or no other indicators that the species might be present.

Likely to occur: Habitat conditions, behavior of the species, known occurrences in the project vicinity, or other factors indicate a relatively high likelihood that the species would occur at the project site.

Known to occur: The species, or evidence of its presence, was observed at the project site during reconnaissance-level surveys or was reported by others.

[3] These species, which have no formal designation as special-status species, are included because they are discussed in the SJMSCP.

Source: EDAW 2003

Reconnaissance-level surveys included a habitat evaluation for all potentially occurring special-status species. Focused surveys for riparian brush rabbit were also conducted. Because the project proponent is proposing to seek coverage under the SJMSCP, comprehensive habitat evaluations and focused surveys, when necessary, would be conducted for all the special-status species as part of the SJMSCP process. After submittal of the application for coverage under the SJMSCP, the Joint Powers Authority would conduct surveys of the project area to verify vegetation types present and determine whether SJMSCP-covered species could be present.

A number of special-status species have been documented elsewhere in San Joaquin County but are not addressed in this document. These include species that occurred historically but are considered to be extirpated from the County; species that are restricted to foothill areas of the County; and species that are restricted to habitats that are not present in the project area, such as vernal pools, saltbush scrub, and mudflats.

Special-Status Plant Species

Based on the database searches, reconnaissance-level surveys, and existing environmental documents, eight special-status plant species have potential to occur in the CLSP area (see Table 14.1-1). These are Suisun marsh aster, slough thistle, Delta button-celery, rose-mallow (also known as California hibiscus), Delta tule pea, Mason's lilaeopsis, Sanford's arrowhead (also known as Sanford's sagittaria), and

Wright's trichocoronis. Of these, two are state listed: Delta button-celery as endangered and Mason's lilaeopsis as rare. In addition, seven of these species are on CNPS List 1B (plants considered by CNPS to be rare, threatened, or endangered in California and elsewhere) and Wright's trichocoronis is on CNPS List 2 (plants considered by CNPS to be rare, threatened, or endangered in California but more common elsewhere). Delta button-celery is unlikely to occur in the CLSP area because it is considered extirpated from San Joaquin County (CNDDB 2003, Toyon Environmental Consulting 1996). However, it is addressed in this document because of its coverage under the SJMSCP.

All of these special-status plant species occur in aquatic habitats associated with rivers, streams, ponds, and marshes, and several of them are known to occur in agricultural ditches (Toyon Environmental Consulting 1996). Potentially suitable habitat for special-status plants in the project area is restricted to agricultural ditches and vegetation along the San Joaquin River. Although the ditches may be regularly cleared of vegetation, patches of freshwater marsh and riparian scrub vegetation persist in some locations (Exhibit 4.14-1).

Special-Status Wildlife Species

A total of 29 special-status wildlife species are known to occur or have the potential to occur in the project area (Table 4.14-1). Five of these species are state listed or federally listed as threatened or endangered: valley elderberry longhorn beetle, giant garter snake, Swainson's hawk, greater sandhill crane, and riparian brush rabbit. The remaining species are federal Species of Concern and/or California Species of Special Concern.

Invertebrates

Valley elderberry longhorn beetles require blue elderberry shrubs for reproduction and survival. Although focused surveys for elderberry shrubs were not conducted, locations of isolated shrubs and clumps of shrubs observed during the reconnaissance-level surveys were recorded. These shrubs are scattered along both sides of the San Joaquin River levee. Based on the presence of blue elderberry shrubs, valley elderberry longhorn beetle could occur in the CLSP area. No elderberry shrubs were observed in any of the potential offsite recycled water storage and disposal areas.

Reptiles

Two special-status reptiles, giant garter snake and western pond turtle, are known to occur in aquatic habitats in San Joaquin County. Giant garter snakes inhabit a variety of aquatic habitats, such as agricultural canals, marshes, sloughs, and ponds. They also require adjacent upland habitat for basking and rodent burrows for wintering sites, which must provide sufficient cover and be at high enough elevations to function as refuges from floodwaters during the snake's inactive season. Giant garter snakes typically are absent from larger rivers and from wetlands with sand, gravel, or rock substrates (USFWS 1999). According to the SJMSCP, known occupied giant garter snake habitat is limited to four sites in San Joaquin County (San Joaquin County 2000); the nearest of these, Rio Blanco, is approximately 10 miles north of the CLSP area. CNDDB records indicate an additional giant garter snake occurrence approximately 5 miles west of these populations, as well as several Contra Costa County and Solano County occurrences 15-25 miles northwest of the CLSP area (CNDDB 2003). The San Joaquin River is unlikely to provide suitable garter snake habitat, and agricultural ditches in the project area are unlikely to support the species because they are relatively isolated from areas of occupied habitat and maintenance activities in the surrounding agricultural fields and on levees greatly limits the potential presence of suitable wintering sites.

Pond turtles also occur in aquatic habitats, such as streams, ponds, freshwater marshes, and lakes. They require still or slow-moving water with instream emergent woody debris, rocks, or other similar features for basking sites. Pond turtle nests are typically located on unshaded upland slopes in dry substrates with clay or silt soils. The San Joaquin River provides suitable aquatic habitat for western pond turtles. However, agricultural ditches in the project area are unlikely to be utilized because the aquatic habitat is very limited and the ditches do not provide basking habitat. Levees along the San Joaquin River could provide suitable nesting sites, but regular disturbance from vegetation removal activities, such as burning, mowing, and herbicide spraying, makes it very unlikely that pond turtles would nest in the levees.

Raptors

A number of special-status raptor species are expected to occur in the project area, including Swainson's hawk, burrowing owl, white-tailed kite, and northern harrier. Agricultural fields in the project area provide suitable foraging and nesting habitat for all of these special-status raptors. Swainson's hawks and white-tailed kites typically nest in riparian habitat or scattered trees adjacent to foraging habitat. Active Swainson's hawk nests have recently been documented immediately south of the CLSP area (EDAW 2002). Trees scattered throughout the project area provide suitable nest sites for both of these species, although the highest quality Swainson's hawk nest sites are likely provided by the few patches of large valley oaks and the scattered cottonwoods, oaks, and Goodding's black willows along the San Joaquin River.

In contrast to the tree-nesting species, harriers nest on the ground in dense, low-lying vegetation (e.g., grassland, marsh, and field crops). Active and fallow agricultural fields in the project area provide suitable nesting habitat for northern harriers.

Burrowing owls nest and roost in burrow systems created by medium-sized mammals (e.g., ground squirrels), artificial sites (e.g., drain pipes and culverts), or self-dug burrows where soil conditions are appropriate. Agricultural field margins and the levee along the San Joaquin River have limited potential to provide suitable burrowing owl burrows because of regular maintenance activities. However, an area of very high ground squirrel activity, including numerous burrow complexes, was observed during field surveys on the south side of Dos Reis Road, immediately east of the levee.

In April 2003, a petition was submitted to the California Fish and Game Commission proposing that burrowing owl be listed as threatened or endangered under CESA. The petition cited evidence of significant declines in local and statewide burrowing owl populations, with the rate of decline accelerating greatly in the past 20 years (Center for Biological Diversity et al. 2003). In December 2003, however, the commission approved DFG's recommendation to reject the petition (California Fish and Game Commission 2004), concluding that although some populations are declining significantly, there is insufficient evidence that the species is threatened over a significant portion of its range. Thus, burrowing owl remains a federal and state Species of Concern with no formal protection under FESA or CESA.

Passerine Birds

Loggerhead shrikes inhabit lowland and foothill areas with scattered shrubs and trees. They nest in shrubs and small trees and typically forage in grasslands and agricultural fields. Suitable foraging habitat is present throughout the project area, and suitable nesting habitat is provided by the relatively small number of trees and shrubs scattered throughout the area, primarily associated with rural residences and along the San Joaquin River.

Yellow warblers and yellow-breasted chats forage and nest in riparian habitats. Yellow warblers typically nest in willow thickets, and yellow-breasted chats typically nest in riparian habitats with a dense shrub

layer. Patches of riparian vegetation along the San Joaquin River and at the southwestern boundary of the CLSP area are very small and unlikely to provide suitable nesting habitat for these species. In addition, breeding pairs of yellow warbler and yellow-breasted chat are very rare in San Joaquin County. Therefore, neither species is expected to nest in the project area.

Tricolored blackbirds nest colonially in patches of dense vegetation, particularly cattails and blackberry. They forage in grasslands and agricultural fields, and suitable foraging habitat is present throughout the project area. However, the small patches of potential nesting vegetation are unlikely to provide suitable habitat because they are very limited in size and are surrounded by agricultural fields subject to high levels of disturbance. In addition, no recent tricolored blackbird colonies have been known to occur in or near the project area. There are records from the 1970s of a colony approximately 5 miles to the east of the CLSP area, but it was extirpated as a result of development. Therefore, tricolored blackbirds are not expected to nest in the project area.

Waterbirds

Several colonially nesting waterbirds could forage in aquatic habitats and/or agricultural fields in the project area: great egret, great blue heron, snowy egret, black-crowned night-heron, and double-crested cormorant. No waterbird nesting colonies are present in the project area, and there are no CNDDB records of past colonies in or near the project area. In addition, potentially suitable nesting habitat is very limited and subject to high levels of disturbance. Therefore, none of these species are expected to nest in the project area.

Other Birds

A variety of additional special-status bird species could use the project area as foraging and roosting habitat: greater sandhill crane, American white pelican, white-faced ibis, Aleutian Canada goose, mountain plover, ferruginous hawk, merlin, and long-billed curlew. All of these species except American white pelican typically forage in grasslands and agricultural fields and could forage in fields present in the project area. Pelicans could forage in the San Joaquin River. None of these species is expected to nest in the project area because it is not in their known nesting range.

Mammals

Special-status bat species that could forage in the project area include greater western mastiff bat, red bat, Yuma myotis, and Townsend's big-eared bat. There are no known roost sites in the CLSP area, although trees and buildings could provide roosting habitat for small numbers of individuals.

Riparian brush rabbits inhabit riparian communities dominated by willow thickets and large clumps of shrubs and vines. They also use dense, tall patches of herbaceous plants adjacent to riparian habitat. Trapping was conducted on February 9, 2004, at six locations along the San Joaquin River within the CLSP area. One riparian brush rabbit was trapped at each of five locations (Vincent-Williams et al. 2004). Riparian brush rabbits are known to occur at only three locations aside from the CLSP area, two of which are a few miles to the south. The third location is Caswell Memorial Park in Stanislaus County, approximately 15 miles southeast of the CLSP area. Although riparian brush rabbits occur in the CLSP area, the small patches of suitable habitat are unlikely to support a long-term viable population of the species (Hamilton, pers. comm., 2004).

Sensitive Habitats

Sensitive habitats include those that are of special concern to resource agencies or are afforded specific consideration through CEQA, Section 1602 of the California Fish and Game Code, and/or Section 404 of the federal CWA, as discussed previously under "Regulatory Background." Habitat types in the project area that could be considered sensitive by regulatory agencies and protected under the County General Plan and Development Title 9-1505 include freshwater emergent wetland, Great Valley cottonwood riparian forest, and Great Valley riparian scrub. Oak trees could also be eligible for protection under the County General Plan and Development Title 9-1505.

The San Joaquin River is a water of the United States and would be subject to USACE jurisdiction. There is also potential for USACE to take jurisdiction over the agricultural ditches in the project area, although they appear to have been excavated in uplands and do not appear to correspond to former natural drainages. Traditionally, USACE has not asserted jurisdiction in such situations. However, there have been recent cases in which USACE has taken jurisdiction over agricultural ditches because they were hydrologically connected to waters of the United States, even if they were pumped. The ditches in the project area represent a similar situation because their flows are likely pumped into and/or out of the San Joaquin River. Therefore, it is difficult to predict whether USACE would consider these ditches to be waters of the United States.

4.14.3 ENVIRONMENTAL IMPACTS

ANALYSIS METHODOLOGY

Information obtained from biological studies previously conducted in the vicinity of the project site (see list of documents at the beginning of this section), field and reconnaissance-level surveys conducted for this project, reviews of aerial photographs, CNDDB records, and CNPS database records were used to assess impacts on biological resources resulting from implementation of the proposed project.

For the impact analysis it was assumed that little to no existing habitat would be retained in its current condition in the project area after project development, although some habitat may ultimately be retained along the San Joaquin River shoreline. For the offsite recycled water storage and disposal areas, it was assumed that as much as 98 acres within these areas would be converted to recycled water storage ponds and as much as 7 acres could be converted to a WRP within the sites described in Chapter 3, Description of the Proposed Project. Development of spray fields for recycled water disposal is, in effect, a continuation of existing agricultural operations. Therefore, creation of offsite recycled water disposal sites was not considered to result in a habitat conversion.

For the purposes of this analysis, the "range" of a species (as used in the Thresholds of Significance below) is defined as "the region throughout which a kind of organism or ecological community naturally lives or occurs" (Merriam-Webster 2004). For migratory species (e.g., many of the bird species), the range includes areas used for various seasonal biological activities, including breeding areas, wintering areas, and migratory routes.

THRESHOLDS OF SIGNIFICANCE

The proposed project would result in significant impacts on terrestrial biological resources if it would:

- have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in any local or regional plans, policies, or regulations, or by DFG or USFWS;

- reduce the number or restrict the range of an endangered, rare, or threatened species;
- have a substantial adverse effect on any species identified as a candidate, sensitive, or special-status species by DFG, USFWS, or NOAA Fisheries or in any local or regional plans, policies, or regulations designed to protect biological resources, including the SJMSCP;
- 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;
- substantially reduce the habitat of a wildlife species, cause a wildlife population to drop below self-sustaining levels, or threaten to eliminate a plant or animal community;
- 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; or
- conflict with the provisions of the SJMSCP.

IMPACT ANALYSIS

The project proponent is proposing to seek coverage under the SJMSCP. Therefore, the following impact statements are presented in a manner consistent with species groupings used in the SJMSCP.

Impact 4.14-a

Terrestrial Biology – General Biological Resources. *Implementation of the proposed project would result in development or conversion of approximately 1,470 acres of agricultural, ruderal, and park/residential habitats in the CLSP area. As much as an additional 105 acres of the same habitat types could be converted to WRP and recycled water storage ponds in potential offsite recycled water storage and disposal areas. Agricultural, ruderal, and park/residential plant communities provide habitat for a limited number of common plant and wildlife species. These habitats are locally and regionally abundant. This impact is considered* ***less than significant.***

Approximately 1,470 acres of agricultural, ruderal, and park/residential habitats would be converted to developed uses as a result of CLSP implementation. As much as an additional 98 acres of these habitat types could be converted to recycled water storage ponds in the proposed offsite recycled water storage/disposal areas, and an additional 7 acres could be converted to WRP if one of the WRP #2 North or South options is selected (see Chapter 3, Description of the Proposed Project). This development would reduce the local populations of several common plant and wildlife species. However, these habitats are locally and regionally abundant and are not considered sensitive natural plant communities. Common plant and wildlife species associated with these habitats are also locally and regionally abundant. Conversion of as much as 1,575 total acres of these habitats would not have a substantial adverse effect on common plant and wildlife species, and impacts for all project and utility options are considered less than significant.

Impact 4.14-b

Terrestrial Biology – Special-status Plants. *Implementation of the CLSP would result in the removal of approximately 15 acres of freshwater emergent wetland, cottonwood riparian forest, and riparian scrub in the CLSP area. Removal of these habitats could result in the loss of eight special-status plants that have potential to occur in these types of habitat. The potential WRP #2 and recycled water storage and disposal sites do not support suitable habitat for special-status plants. This impact is considered* ***significant****.*

Eight special-status plant species have potential to occur in aquatic and riparian habitats associated with the San Joaquin River and some agricultural ditches in the CLSP area; these are Suisun marsh aster, slough thistle, Delta button-celery (State-listed as endangered), rose mallow, Delta tule pea, Mason's lilaeopsis (State-listed as rare), Sanford's arrowhead, and Wright's trichocoronis. No special-status plant occurrences have been reported in the project area, and these species were not observed during the reconnaissance-level survey or past surveys in the area. However, the potential for their occurrence in the CLSP project site cannot be dismissed because protocol-level surveys have not been conducted and suitable habitat is present. Approximately 15 acres of suitable habitat for special-status plants could be removed or converted to development as a result of conversion of agricultural ditches, development of parks, and construction of the outfall along the San Joaquin River. No additional conversion of suitable habitat for special-status plants would result from use of the potential WRP #2 and recycled water storage/disposal sites. Conversion of suitable habitat would result in loss of special-status plants, if they are present. This could include a reduction in the number of two state-listed species, Delta button-celery and Mason's lilaeopsis. Because these species may be present on the project site, loss of special-status plants is considered a significant impact.

Impact 4.14-c

Terrestrial Biology – Valley Elderberry Longhorn Beetle. *Implementation of the CLSP could result in removal and/or disturbance of blue elderberry shrubs, which provide habitat for the valley elderberry longhorn beetle (federally listed as threatened). No elderberry shrubs are anticipated to occur at the potential WRP #2 and recycled water storage/disposal sites. Loss of elderberry shrubs is considered a* ***significant*** *impact.*

Elderberry shrubs provide habitat for the valley elderberry longhorn beetle (federally listed as threatened). Elderberry shrubs are known to occur along the San Joaquin River in the CLSP area. Focused surveys for elderberry shrubs have not been conducted, although approximately 10 elderberry shrubs were observed in the CLSP area during the reconnaissance-level surveys. Removal of elderberry shrubs east of the levee could result from implementation of the CLSP. Shrubs that are not removed could otherwise be affected by nearby grading and other construction activities if such activities alter the environment (e.g., soil compaction, change in drainage patterns) immediately surrounding the shrubs in a manner that threatens their health and/or survival. Elderberry shrubs between the levee and the river could be removed or indirectly affected by development of parks and installation of the outfall structure. No elderberry shrubs were observed and none are anticipated to be present at the potential WRP #2 and recycled water storage/disposal sites. Valley elderberry longhorn beetle occur in various locations throughout the Sacramento Valley and removal of elderberry shrubs on the CLSP project site would not reduce the range of the species. However, loss of elderberry shrubs could result in a reduction in the number of valley elderberry longhorn beetles and is considered a significant impact.

Impact 4.14-d

Terrestrial Biology – Giant Garter Snake. *Agricultural ditches within the CLSP area could provide suitable habitat for giant garter snake (state listed and federally listed as threatened), although the potential for the species to occur in them is very low. No loss of individual giant garter snakes is expected to result from implementation of the CLSP, but potential habitat would be converted to development. The potential WRP #2 and recycled water storage/disposal sites do not support suitable habitat for giant garter snakes. Conversion of suitable giant garter snake habitat is considered a* ***potentially significant*** *impact.*

The giant garter snake is state listed and federally listed as threatened. The nearest known giant garter snake population is approximately 10 miles north of the CLSP area. Approximately 7 acres of potentially suitable aquatic habitat for giant garter snake is provided by agricultural ditches that support freshwater emergent marsh vegetation in the southwestern portion of the CLSP area. The potential for these ditches to support the species is very low because they are not near occupied habitat and are not contiguous with other areas of suitable habitat. Consequently, it is unlikely that giant garter snakes occur in the ditches, and implementation of the CLSP is unlikely to result in loss of individuals. The San Joaquin River and other large rivers typically due not provide suitable habitat for giant garter snake (USFWS 1999). No suitable giant garter snake habitat is present at the potential WRP #2 and recycled water storage/disposal sites. Because giant garter snake is unlikely to occur on the project site, the project is not anticipated to reduce the number or restrict the range of this state and federally listed threatened species. However, suitable habitat for this species could be converted to development by implementation of the CLSP. Conversion of suitable giant garter snake habitat in the CLSP area would be considered a potentially significant impact.

Impact 4.14-e

Terrestrial Biology – Western Pond Turtle. *Suitable aquatic habitat for western pond turtle (a federal and state Species of Concern) would not be converted as a result of CLSP implementation, and turtles are unlikely to nest in the CLSP area. The potential WRP #2 and recycled water storage/disposal sites do not support suitable habitat for western pond turtle. This impact is considered* ***less than significant****.*

Western pond turtles (a federal and state Species of Concern) are known to occur in the San Joaquin River. No conversion of habitat provided by the river would result from implementation of the CLSP, and if turtles are present near construction areas along the river, they are anticipated to move away from areas of disturbance. Agricultural ditches are unlikely to support pond turtles because aquatic and basking habitat is very limited. Levees along the San Joaquin River could provide suitable nesting sites, but regular maintenance activities make it very unlikely that pond turtles would nest in the levees. Therefore, they are unlikely to nest in the CLSP area. No suitable habitat for western pond turtles is present at the potential WRP #2 and recycled water storage/disposal sites. Because no direct loss of turtles is expected to occur, this impact is considered less than significant.

Impact 4.14-f

Terrestrial Biology – Swainson's Hawk. *Implementation of the CLSP would result in conversion of approximately 1,400 acres of foraging habitat for Swainson's hawk (state listed as threatened and a federal Species of Concern) and could result in loss of active nests and removal of potential nest trees. Construction of WRP #2 and recycled water storage ponds would result in conversion of as much as 105 additional acres of foraging habitat and could result in loss of additional active nests. This impact is considered* ***significant****.*

Agricultural and fallow fields in the CLSP area provide suitable foraging habitat for Swainson's hawk (state listed as threatened and a federal Species of Concern). Approximately 1,400 acres of foraging habitat could be converted to development or other uses as a result of CLSP implementation. Loss of foraging habitat near nest sites could adversely affect the success of nests that are active at the time of the conversion and the future suitability of those nest sites. Because San Joaquin County, including the CLSP area, is within the primary Swainson's hawk breeding area in California, such a loss of foraging habitat could have a substantial adverse effect on the species.

Swainson's hawk nests have been recently documented immediately south of the CLSP area, and the hawks could nest within the CLSP area. Suitable nest trees are present within the CLSP area, primarily along the San Joaquin River and in the southwestern corner of the CLSP area, and could be removed during CLSP implementation. Direct nest loss could result from tree removal, and nesting pairs near any construction activities could be disturbed, potentially resulting in nest abandonment and mortality of chicks and eggs. As much as 105 additional acres of foraging habitat would be converted, including 98 acres for recycled water storage ponds and 7 acres for WRP #2. Because disposal areas would continue to support agricultural crops, their use would not result in conversion of foraging habitat. Suitable nest trees are located along the western boundary of the potential WRP #2 North site (Area 3a). Therefore, use of this site could result in disturbance of nesting pairs and subsequent loss of an active nest. Swainson's hawks occur throughout much of the western United States and effects of the CLSP project would not reduce the range of the species. However, the loss of active Swainson's hawk nests, loss of known nest trees, and conversion of suitable foraging habitat near active nest sites could reduce the number of Swainson's hawks and is considered a significant impact.

Impact 4.14-g

Terrestrial Biology – Aleutian Canada Goose and Greater Sandhill Crane. *Implementation of the CLSP would result in conversion of suitable foraging habitat for wintering Aleutian Canada geese (federal Species of Concern) and greater sandhill cranes (state listed as threatened). Construction of WRP #2 and recycled water storage ponds would result in conversion of as much as 105 additional acres of foraging habitat. Similar habitat is locally and regionally abundant. This impact is considered* ***less than significant****.*

Agricultural and fallow fields in the CLSP area provide suitable foraging habitat for Aleutian Canada goose (federal Species of Concern) and greater sandhill crane (state listed as threatened). Approximately 1,400 acres of potential foraging habitat could be converted as a result of CLSP implementation. However, similar agricultural fields are abundant in the immediate vicinity, and these species could relocate their foraging efforts to such fields. Therefore implementation of the CLSP would not reduce the number or restrict the range of the threatened greater sandhill crane. As much as 105 additional acres of foraging habitat would be converted, for recycled water storage ponds (98 acres) and for WRP #2 (7 acres). Because recycled water disposal areas would continue to support agricultural crops, their use would not result in conversion of foraging habitat. As stated above, because these wintering species

could relocate their foraging efforts to abundant nearby fields, this impact is considered less than significant.

Impact 4.14-h

Terrestrial Biology – Burrowing Owl. *Implementation of the CLSP would result in conversion of foraging habitat for burrowing owl (a federal and state Species of Concern) and could result in loss of occupied burrows. Construction of WRP #2 and recycled water storage ponds would result in conversion of as much as 105 additional acres of foraging habitat and could result in additional loss of occupied burrows. This impact is considered* ***significant****.*

Burrowing owls (a federal and state Species of Concern) are not known to nest in the CLSP area, but focused surveys have not been conducted, and suitable burrows were observed during the reconnaissance-level survey. At present, potential burrow habitat in the CLSP area is limited to agricultural field edges, levees along the San Joaquin River, and fallow fields. One concentration of ground squirrel burrows was observed in a fallow field east of the San Joaquin River levee and south of Dos Reis Road. Suitable burrows are expected to be very limited elsewhere in the CLSP area because of the intensive agricultural activity and low numbers of California ground squirrels. If burrows are present, implementation of the CLSP could result in destruction of occupied burrows and nesting owls could be disturbed by nearby construction, potentially resulting in nest abandonment and mortality of chicks and eggs.

Agricultural fields and fallow fields in the CLSP area provide suitable foraging habitat. Loss of foraging habitat near nest burrows could adversely affect the success of nests that are active at the time of the conversion and the future suitability of those nest sites. Because burrowing owl populations have declined substantially in the Central California region, including San Joaquin County, in recent years (23–52% decline in the number of breeding groups and 12–27% decline in the number of breeding pairs between 1986 and 1991) (Center for Biological Diversity et al. 2003), such a loss of foraging habitat could have a substantial adverse effect on the species. As much as 105 additional acres of foraging habitat would be converted, including 98 acres for recycled water storage ponds and 7 acres for WRP #2. Because disposal areas would continue to support agricultural crops, their use would not result in conversion of foraging habitat. Additional disturbance and/or loss of occupied burrows and active nests could also occur on and/or near the potential WRP #2 and recycled water storage sites. Loss of active burrows, individual owls, or substantial amounts of foraging habitat near active nest burrows is considered a significant impact.

Impact 4.14-i

Terrestrial Biology – Colonial Nesting Birds. *Implementation of the CLSP would result in conversion of suitable foraging habitat for tricolored blackbird (federal and state Species of Concern), black-crowned night-heron (SJMSCP species), and great blue heron (SJMSCP species). No nesting colonies of these species are known or expected to occur in the CLSP area. Construction of WRP #2 and recycled water storage ponds would result in conversion of as much as 105 additional acres of foraging habitat, but no suitable nesting habitat is present at the potential WRP #2 and recycled water storage/disposal sites. Suitable foraging habitat for these species is locally and regionally abundant. This impact is considered* ***less than significant****.*

Agricultural and fallow fields in the CLSP area could be used as foraging habitat by the tricolored blackbird (federal and state Species of Concern), black-crowned night-heron (SJMSCP species), and great blue heron (SJMSCP species). Approximately 1,400 acres of potential foraging habitat could be converted as a result of CLSP implementation. Potential nesting habitat for all three species is very

limited in the CLSP area and subject to high levels of disturbance. In addition, the nearest historic tricolored blackbird colony has been extirpated. No nesting colonies of these species are expected to occur in or adjacent to the CLSP area. As much as 105 additional acres of foraging habitat would be converted, including 98 acres for recycled water storage ponds and 7 acres for WRP #2. Because disposal areas would continue to support agricultural crops, their use would not result in conversion of foraging habitat. No suitable nesting habitat is present at the potential WRP #2 and recycled water storage/disposal sites. Potential impacts on these colonial nesting birds are associated only with the conversion of potential foraging habitat, which is locally and regionally abundant. Because the birds could relocate foraging efforts to nearby fields, this impact is considered less than significant.

Impact 4.14-j

Terrestrial Biology – Ground-Nesting or Streamside/Lakeside-Nesting Birds. *Implementation of the CLSP would result in conversion of suitable nesting and foraging habitat for northern harrier (state Species of Concern). Construction of WRP #2 and recycled water storage ponds would result in conversion of as much as 105 additional acres of foraging and nesting habitat. This impact is considered* ***significant****.*

Agricultural and fallow fields in the CLSP area provide suitable foraging habitat for northern harrier (state Species of Concern), and certain field crops (e.g., wheat) provide suitable nesting habitat for this ground-nesting species. Approximately 1,400 acres of suitable nesting and foraging habitat could be converted as a result of CLSP implementation. If active nests are present within the CLSP area, they could be directly destroyed by construction activities, and harriers nesting in the vicinity of any construction activities could be disturbed, potentially resulting in nest abandonment and mortality of chicks and eggs. As much as 105 additional acres of foraging and nesting habitat would be converted, including 98 acres for recycled water storage ponds and 7 acres for WRP #2. Because disposal areas would continue to support agricultural crops, their use would not result in conversion of habitat. Loss of active nests on and/or near the potential WRP #2 and recycled water storage sites could also result. Suitable foraging and nesting habitat is locally and regionally abundant, and harriers could relocate to nearby areas of suitable habitat. However, potential loss of an active harrier nest is considered a significant impact.

Impact 4.14-k

Terrestrial Biology – Birds Nesting in Isolated Trees or Shrubs Outside of Riparian Habitat. *Yellow warblers (state Species of Concern) are not expected to nest in the CLSP area and are unlikely to be affected by implementation of the CLSP. Suitable foraging habitat for loggerhead shrikes (federal and state Species of Concern) would be converted and active shrike nests could be lost as a result of CLSP implementation. Construction of WRP #2 and recycled water storage ponds would result in conversion of as much as 105 additional acres of foraging habitat, but no additional nests are expected to be lost. This impact is considered* ***potentially significant****.*

The small amount of riparian habitat in the CLSP area provides very limited foraging habitat and is unlikely to provide suitable nesting habitat for yellow warbler (state Species of Concern). Therefore, yellow warblers are unlikely to nest in the CLSP area or be adversely affected by implementation of the CLSP.

Loggerhead shrikes (federal and state Species of Concern), however, are expected to forage in a variety of habitats throughout the CLSP area and could nest in any trees and/or shrubs. Approximately 1,500 acres of foraging habitat could be converted as a result of CLSP implementation. All trees and shrubs in the CLSP area provide suitable nesting habitat. These are scattered throughout the CLSP, primarily at rural

residences, along the San Joaquin River, and along the agricultural ditch in the southwest corner of the CLSP area. Active shrike nests could be destroyed if such vegetation is removed during the nesting season, and nesting pairs could be disturbed by nearby project construction, potentially resulting in nest abandonment and mortality of chicks and eggs.

As much as 105 additional acres of foraging and nesting habitat would be converted, including 98 acres for recycled water storage ponds and 7 acres for WRP #2. Because disposal areas would continue to support agricultural crops, their use would not result in conversion of habitat. Shrikes are not expected to nest on or immediately adjacent to the potential WRP #2 and recycled water storage sites. The potential WRP #2 and recycled water storage sites do not provide suitable habitat for yellow warbler. Suitable foraging habitat for loggerhead shrikes is locally and regionally abundant, and shrikes could forage in nearby areas of suitable habitat. However, because all trees and shrubs in the CLSP area provide potential nesting habitat, a relatively large number of active loggerhead shrike nests could be lost as a result of CLSP implementation. This is a potentially significant impact.

Impact 4.14-I

Terrestrial Biology – Birds Nesting along Riparian Corridors. *Yellow-breasted chats (state Species of Concern) are not expected to nest in the CLSP area and are unlikely to be affected by implementation of the CLSP. Suitable foraging habitat for white-tailed kites (federal Species of Concern, state fully protected species) would be converted and active kite nests could be lost as a result of CLSP implementation. Construction of WRP #2 and recycled water storage ponds would result in conversion of as much as 105 additional acres of foraging habitat for white-tailed kite and could result in loss of additional active nests. This impact is considered* ***significant****.*

The small amount of dense riparian shrub habitat in the CLSP area provides very limited foraging habitat and is unlikely to provide suitable nesting habitat for yellow-breasted chat (state Species of Concern). Therefore, yellow-breasted chat is not expected to nest in the CLSP area or be adversely affected by implementation of the CLSP. White-tailed kites (federal Species of Concern, state fully protected species), however, are expected to forage in agricultural and fallow fields throughout the CLSP area and they could nest in trees scattered throughout the CLSP area. Approximately 1,400 acres of foraging habitat could be converted as a result of CLSP implementation, but suitable nesting habitat in the CLSP area is primarily located near rural residences and along the San Joaquin River. Direct nest loss could result from tree removal, and nesting pairs in the vicinity of any construction activities could be disturbed, potentially resulting in nest abandonment and mortality of chicks and eggs. As much as 105 additional acres of foraging habitat would be converted, including 98 acres for recycled water storage ponds and 7 acres for WRP #2. Because disposal areas would continue to support agricultural crops, their use would not result in conversion of foraging habitat. Suitable nest trees are located along the western boundary of the potential WRP #2 North site (Area 3). Therefore, use of this site could result in disturbance of nesting pairs and subsequent loss of an active nest. The potential WRP #2 and recycled water storage sites do not provide suitable habitat for yellow-breasted chat. Suitable white-tailed kite foraging habitat is locally and regionally abundant, and kites could forage in nearby areas of suitable habitat. However, the potential loss of active white-tailed kite nests would be a significant impact.

Impact 4.14-m

Terrestrial Biology – Snowy Egret, American White Pelican, Double-Crested Cormorant, and White-Faced Ibis. *Implementation of the CLSP would result in conversion or disturbance of potential foraging habitat for these species (all federal and/or state Species of Concern), but they are not expected to nest in the CLSP area. Construction of WRP #2 and recycled water storage ponds would result in conversion of as much as 105 additional acres of foraging habitat. Suitable foraging habitat for these species is locally and regionally abundant. This impact is considered* ***less than significant****.*

Agricultural and fallow fields and agricultural ditches in the CLSP area could be used as foraging habitat by snowy egret, American white pelican, double-crested cormorant, and white-faced ibis, all of which are federal and/or state Species of Concern. Approximately 1,400 acres of potential foraging habitat could be converted as a result of CLSP implementation. None of these species are expected to nest on the project site because it is not within their normal nesting range or because potential nesting habitat is very limited in the CLSP area and subject to high levels of disturbance. As much as 105 additional acres of foraging habitat would be converted, including 98 acres for recycled water storage ponds and 7 acres for WRP #2. Because disposal areas would continue to support agricultural crops, their use would not result in conversion of foraging habitat. The potential WRP #2 and recycled water storage sites do not provide suitable nesting habitat for any of these species. Potential impacts on these species are associated with the conversion of potential foraging habitat, which is locally and regionally abundant. Because they could relocate foraging efforts to nearby fields, this impact is considered less than significant.

Impact 4.14-n

Terrestrial Biology – Ferruginous Hawk, Mountain Plover, Merlin, and Long-Billed Curlew. *Implementation of the CLSP would result in conversion of potential foraging habitat for these wintering species (all federal and/or state Species of Concern). Construction of WRP #2 and recycled water storage ponds would result in conversion of as much as 105 additional acres of foraging habitat. Suitable foraging habitat for these species is locally and regionally abundant. This impact is considered* ***less than significant****.*

Agricultural and fallow fields in the CLSP area provide suitable foraging habitat for ferruginous hawk, mountain plover, merlin, and long-billed curlew, all of which are federal and/or state Species of Concern. Approximately 1,400 acres of potential foraging habitat could be converted as a result of CLSP implementation. As much as 105 additional acres of foraging habitat would be converted, including 98 acres for recycled water storage ponds and 7 acres for WRP #2. Because disposal areas would continue to support agricultural crops, their use would not result in conversion of foraging habitat. Because these wintering species could relocate foraging efforts to nearby fields, this impact is considered less than significant.

Impact 4.14-o

Terrestrial Biology – Common Raptors. *Implementation of the CLSP could result in loss of active nests of common raptors (protected under California Fish and Game Code Section 3503.5). Implementation of the WRP #2 North option could result in loss of additional active nests. This impact is considered* ***significant****.*

Several common raptor species, including red-tailed hawk, red-shouldered hawk, American kestrel, and great-horned owl, could nest in trees scattered throughout the CLSP area. Suitable raptor nest trees are primarily located along the San Joaquin River, including the patches of large oak trees in the southwest

portion of the CLSP area. Raptors are protected under California Fish and Game Code Section 3503.5. Trees associated with rural residences could also provide suitable nest sites. Direct loss of an active raptor nest could result from vegetation removal, and nesting pairs in the vicinity of any construction activities could be disturbed, potentially resulting in nest abandonment and mortality of eggs or chicks. Suitable nest trees are located along the western boundary of the potential WRP #2 North site (Area 3a). Therefore, use of this site could result in disturbance of nesting pairs and subsequent loss of an active nest. Loss of an active raptor nest is considered a significant impact.

Impact 4.14-p

Terrestrial Biology – Special-Status Bats. *Implementation of the CLSP could alter the suitability of potential foraging habitat for special-status bats (federal and/or state Species of Concern). Construction of WRP #2 and recycled water storage ponds could alter additional foraging habitat. Bat foraging habitat is locally and regionally abundant, and the CLSP area and potential WRP #2 and recycled water storage pond sites are not expected to contain important roost sites. This impact is considered* ***less than significant****.*

Greater western mastiff bat, red bat, Yuma myotis, and Townsend's big-eared bat (federal and/or state Species of Concern) could forage in the CLSP area. Implementation of the CLSP would result in conversion of agricultural foraging habitat, although the area may continue to provide some foraging habitat following CLSP implementation. There is potential for existing buildings and trees in the CLSP area to provide roost sites for a small number of bats, but these are not expected to support large numbers of individuals or to provide important maternity roost sites. Construction of WRP #2 and recycled water storage ponds would result in additional conversion of agricultural habitat, which could affect the foraging suitability of the site. Because disposal areas would continue to support agricultural crops, their use would not alter foraging habitat. Bat foraging habitat is locally and regionally abundant, and no important roosting sites would be affected. Therefore, the potential impact on special-status bats is considered less than significant.

Impact 4.14-q

Terrestrial Biology – Riparian Brush Rabbit. *Implementation of the CLSP would result in conversion of occupied habitat for riparian brush rabbit and could result in direct impacts on brush rabbits (federally listed and state listed as endangered). The potential WRP #2 and recycled water storage/disposal sites do not support suitable habitat for riparian brush rabbit. This impact is considered* ***significant****.*

Patches of riparian and ruderal vegetation along the San Joaquin River and adjacent levee provide suitable habitat for riparian brush rabbit (federally listed and state listed as endangered) within the CLSP area. Trapping conducted in February 2004 documented riparian brush rabbits at five of the habitat patches along the San Joaquin River (Vincent-Williams et al. 2004). Approximately half of the suitable brush rabbit habitat would be converted for installation of the outfall structure and park development along the San Joaquin River. Fragmentation of the remaining habitat would be increased, potentially affecting the suitability of these habitat patches. Displacement of individuals could result from habitat removal and direct loss of individuals could result from construction activities. Because the range of riparian brush rabbit is restricted to few known populations and the project site is at the northern edge of the range, implementation of the CLSP could restrict the range of this endangered species, as well as reduce the species numbers by removing the population in the CLSP area. No suitable habitat for riparian brush rabbit is present at the potential WRP #2 and recycled water storage/disposal sites. Loss of individual riparian brush rabbits or occupied habitat is considered a significant impact.

Impact 4.14-r

Terrestrial Biology – Sensitive Habitats. *Implementation of the CLSP would result in conversion of riparian habitat and could result in fill of Waters of the United States, including wetlands. These habitats are protected under various regulations. No loss of riparian habitat or waters of the United States would result from use of the potential WRP #2 and recycled water storage/disposal sites. This impact is considered* ***significant****.*

Approximately 6 acres of riparian habitat along the San Joaquin River and in the southwestern portion of the CLSP area could be converted as a result of CLSP implementation. These areas would likely be subject to DFG jurisdiction under Section 1602 of the California Fish and Game Code. Agricultural ditches in the CLSP area, including the 8.6 acres that support freshwater emergent wetland vegetation, would also be converted as a result of CLSP implementation. These ditches could qualify as waters of the United States, subject to USACE jurisdiction under Section 404 of the CWA. They could also be subject to DFG jurisdiction. No riparian habitat or waters of the United States are present at the potential WRP #2 and recycled water storage/disposal sites. Conversion of riparian habitat and/or fill of waters of the United States are considered significant impacts.

Impact 4.14-s

Terrestrial Biology – Wildlife Corridors. *Implementation of the CLSP is not expected to interfere substantially with established wildlife corridors or impede the use of native wildlife nursery sites. However, use of recycled water storage/disposal Area 6 could conflict with the SJMSCP prohibition against development in the San Joaquin River Wildlife Corridor. This impact is considered* ***potentially significant*** *for project options that include conversion of habitat in Area 6.*

The portion of the San Joaquin River and associated habitats within the CLSP area provide a movement corridor for a variety of terrestrial wildlife species, but vegetation along this portion of the river is relatively limited and fragmented and the area is not known to support any wildlife nursery sites. Construction of the outfall is not expected to substantially disrupt use of the corridor. Park development along the San Joaquin River would alter the vegetation to some extent, but animals would still be able to travel through or over these areas and the river's function as a corridor is not expected to be substantially affected.

An approximately 19-mile portion of the San Joaquin River is designated as the San Joaquin River Wildlife Corridor in the SJMSCP (Section 5.5.2.3). This area begins approximately one mile upstream of the CLSP area, at the convergence of the Old River and the San Joaquin River, and extends upstream to the San Joaquin/Stanislaus County line. A portion of potential recycled water storage/disposal Area 6 is within the SJMSCP-designated San Joaquin River Wildlife Corridor, which extends 600 feet outward from the center of the river. Use of Area 6 is not likely to interfere substantially with the movement of terrestrial wildlife species or with established wildlife corridors, because potential habitat conversion would be restricted to agricultural crops on the land side of the levee. Although from a biological standpoint, conversion of this area is not considered significant, it could be considered a conflict with the SJMSCP restriction on development in this area. Therefore, it is considered a potentially significant impact for project options that include conversion of habitat in Area 6.

4.14.4 MITIGATION MEASURES

No mitigation measures are necessary for the following less-than-significant impacts.

- 4.14-a General Biological Resources
- 4.14-e Western Pond Turtle
- 4.14-g Aleutian Canada Goose and Greater Sandhill Crane
- 4.14-i Colonial Nesting Birds
- 4.14-m Snowy Egret, American White Pelican, Double-Crested Cormorant, and White-Faced Ibis
- 4.14-n Ferruginous Hawk, Mountain Plover, Merlin, and Long-Billed Curlew
- 4.14-p Special-Status Bats

The following mitigation measures are provided for significant and potentially significant impacts.

The project proponent would seek coverage under the SJMSCP to mitigate for project impacts and obtain incidental take authorization for SJMSCP-covered species under the City's Section 10(a) and Section 2081 permits. The Section 10(a) permit also serves as a special-purpose permit for the incidental take of those species that are also covered under the MBTA.

Coverage under the SJMSCP would fully mitigate all impacts on special-status species addressed in this section, with the exception of riparian brush rabbit and certain special-status plants (Sanford's arrowhead, Delta button-celery, and slough thistle) (see discussions below). Impacts on sensitive habitats (waters of the United States, riparian habitat, and protected trees) would be mitigated through separate processes (see discussion below). Impacts and mitigation measures for fisheries resources are described separately in Section 4.15, Fisheries.

Compensation for unavoidable impacts on all SJMSCP-covered species would be accomplished through payment of development fees for conversion of open space lands that may provide habitat for these species. These fees would be used to preserve and/or create habitat in preserves to be managed in perpetuity. In addition, incidental take avoidance and minimization measures for species that could be significantly affected as a result of the proposed project would be implemented, as determined by the SJCOG and in accordance with requirements of the SJMSCP. Mitigation Measures 4.14-b through 4.14-l are consistent with those set forth in the SJMSCP. The remaining mitigation measures address impacts not specifically covered by the SJMSCP.

4.14-b Special-Status Plants. The following is a summary and clarification of SJMSCP incidental take avoidance and minimization measures for special-status plants:

(1) Before project construction, surveys for the special-status plants listed in Table 4.14-1 shall be conducted by a qualified botanist at the appropriate time of year when the target species would be in flower or otherwise clearly identifiable. Surveys shall be conducted in accordance with specific methodologies described in Section 5.2.2.5 of the SJMSCP.

(2) If special-status plants are found, the following measures shall be implemented:

a. Sanford's arrowhead, Delta button-celery, and slough thistle: The SJMSCP requires complete avoidance for these species; therefore, potential impacts on these species could not be covered through participation in the plan. If these species are present in the project area and cannot be avoided, a mitigation plan shall be developed, with review and input from the regulatory agencies (e.g., DFG). The mitigation plan shall identify mitigation measures for any populations affected by the project, such as creation of

offsite populations through seed collection or transplanting, preserving and enhancing existing populations, or restoring or creating suitable habitat in sufficient quantities to compensate for the impact. All mitigation measures that the City determines through this consultation to be necessary shall be implemented by the project proponent. These measures shall be designed to ensure that the proposed project does not result in a net reduction in the population size or range of Delta button-celery.

b. Mason's lilaeopsis, rose mallow, Suisun Marsh aster, and Delta tule pea: These species are considered widely distributed species by the SJMSCP, and dedication of conservation easements is the preferred option for mitigation. If these species are found in the project area, the possibility of establishing a conservation easement shall be evaluated. If dedication of a conservation easement is not a feasible option, payment of SJMSCP development fees may be used to mitigate impacts on these species. Use of conservation easements or development fees for establishment of habitat preserves, or a combination of the two mechanisms, shall be sufficient to avoid an overall net reduction in the population size or range of Mason's lilaeopsis.

c. Wright's trichocoronis: This species is considered a narrowly distributed species by the SJMSCP, and dedication of conservation easements is the preferred option for mitigation. If this species is found in the project area, the possibility of establishing a conservation easement shall be evaluated. If dedication of a conservation easement is not an option, the SJMSCP requires a consultation with the permitting agency representatives on the Technical Advisory Committee to determine the appropriate mitigation measures. These may include seed collection or other measures and would be determined on a population basis, taking into account the species type, relative health, and abundance. After the appropriate mitigation has been determined, it shall be implemented by the project proponent.

Implementation of Mitigation Measure 4.14-b and compensation requirements of the SJMSCP would reduce impacts on special-status plants to a less-than-significant level.

4.14-c Valley Elderberry Longhorn Beetle. The following is a summary and clarification of SJMSCP incidental take avoidance and minimization measures for VELB:

(1) Before project construction, a survey shall be conducted in areas where elderberry shrubs could occur within 50 feet of construction areas, including along the banks of the San Joaquin River and along the levee.

(2) For all shrubs that are to be retained on the project site, a setback of 20 feet from the dripline of each elderberry shrub found during the survey shall be established. Brightly colored flags or fencing shall be used to demarcate the 20-foot setback area and shall be maintained until project construction in the vicinity is complete. No construction activities shall occur within the setback area.

(3) For all shrubs without evidence of VELB exit holes that cannot be retained on the project site, all stems of 1 inch or greater in diameter at ground level shall be counted. Compensation for removal of these stems shall be provided in SJMSCP preserves as provided in SJMSCP Section 5.5.4(B). This is designed to avoid a net reduction in the number of VELB by requiring establishment of three new plants for each stem over 1 inch in diameter that would be removed.

(4) All shrubs with evidence of VELB exit holes or other evidence of VELB occupation that cannot be retained in the project area shall be transplanted to VELB mitigation sites during the dormant period for elderberry shrubs (November 1 to February 15). For elderberry shrubs displaying evidence of VELB occupation that cannot be transplanted, compensation for removal of shrubs shall be provided in accordance with SJMSCP Sections 5.5.4(B and C). This is designed to avoid a net reduction in the number of VELB by requiring establishment of six new plants for each stem over 1 inch that displays evidence of VELB occupation but cannot be transplanted.

Implementation of Mitigation Measure 4.14-c and compensation requirements of the SJMSCP would reduce impacts on valley elderberry longhorn beetle to a less-than-significant level.

4.14-d Giant Garter Snake. The SJMSCP requires full avoidance of known occupied giant garter snake habitat. Based on the low quality of habitat in the CLSP area, giant garter snake is not expected to be present. However, if giant garter snake is discovered in the CLSP area, a separate consultation with USFWS under the FESA and with DFG under the CESA may be required. The following is a summary of SJMSCP and USFWS incidental take avoidance and minimization measures for giant garter snake:

(1) Construction within 200 feet of suitable aquatic habitat for giant garter snake shall occur during the active period for the snake, between May 1 and October 1. Between October 2 and April 30, the Joint Powers Authority, with the concurrence of the permitting agencies' representatives on the Technical Advisory Committee, shall determine whether additional measures (e.g., daily presence/absence surveys, exclusion fencing) are necessary to minimize and avoid take.

(2) Preconstruction surveys for the giant garter snake shall be conducted within 24 hours of ground disturbance.

(3) Vegetation clearing within 200 feet of the banks of potential giant garter snake aquatic habitat shall be limited to the minimal area necessary.

(4) The movement of heavy equipment within 200 feet of the banks of potential giant garter snake aquatic habitat shall be confined to existing roadways as much as practicable to minimize habitat disturbance.

(5) Before ground disturbance, all onsite construction personnel shall be given instruction regarding the presence of the giant garter snake and the importance of avoiding impacts on this species and its habitats.

(6) In areas where wetlands, irrigation ditches, or other potential giant garter snake habitats are being retained on the site and are within 200 feet of an active construction area:

a. Temporary fencing or other obvious markers shall be installed around potential garter snake habitat;

b. Working areas, spoils and equipment storage, and other project activities shall be restricted to areas outside of potential garter snake habitat; and

c. Water quality shall be maintained and construction runoff into wetland areas shall be limited through the use of hay bales, filter fences, vegetative buffer strips, or other accepted equivalents.

Other provisions of the USFWS Standard Avoidance and Minimization Measures during Construction Activities in Giant Garter Snake Habitat (USFWS 1997) shall be implemented (excluding programmatic mitigation ratios, which are superceded by the SJMSCP's mitigation ratios).

Implementation of Mitigation Measure 4.14-d and compensation requirements of the SJMSCP would reduce impacts on giant garter snake to a less-than-significant level.

4.14-f Swainson's Hawk. The following is a summary and clarification of SJMSCP incidental take avoidance and minimization measures for Swainson's hawk:

(1) If the project proponent elects to remove nest trees, then nest trees shall be removed between September 1 and February 15, when the nests are unoccupied.

(2) If the project proponent elects to retain a tree with an active nest, all construction activities shall remain a distance of two times the dripline of the tree, measured from the nest. This setback shall be maintained during the nesting season for the period encompassing nest building and continuing until fledglings leave the nest. Setbacks shall be marked by brightly colored temporary fencing or other obvious markers.

These measures would prevent direct reduction in the number of Swainson's hawks. Use of SJMSCP development fees for establishment of habitat preserves is anticipated to avoid an overall net reduction in the number of Swainson's hawks.

Implementation of Mitigation Measure 4.14-f and compensation requirements of the SJMSCP would reduce impacts on Swainson's hawk to a less-than-significant level.

4.14-h Burrowing Owl. The following is a summary and clarification of SJMSCP incidental take avoidance and minimization measures for burrowing owl:

(1) Burrowing owls may be discouraged from entering or occupying construction areas by discouraging the presence of ground squirrels. To accomplish this, the project proponent could prevent ground squirrels from occupying the project site by employing one of several methods outlined in Section 5.2.4.15 of the SJMSCP. These include retention of tall vegetation, regular disking of the site, or use of chemicals or traps to kill ground squirrels.

(2) Preconstruction surveys for burrowing owls shall be conducted within 75 meters of areas of project activity in locations with potential burrow habitat, including field edges, roadsides, levees, and fallow fields. Actively farmed agricultural fields and regularly disked or graded fields do not provide suitable burrow sites and need not be surveyed. The survey shall be conducted within 1 week before the beginning of construction. If burrowing owls are found, the following measures shall be implemented:

a. During the nonbreeding season (September 1 through January 31), burrowing owls occupying the project site shall be evicted from the project site by passive relocation as described in the DFG's Staff Report on Burrowing Owls (DFG 1995).

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

Implementation of Mitigation Measure 4.14-h and compensation requirements of the SJMSCP would reduce impacts on burrowing owl to a less-than-significant level.

4.14-j Ground-Nesting or Streamside/Lakeside-Nesting Birds. The following is the SJMSCP incidental take avoidance and minimization measure for northern harrier:

A setback of 500 feet from northern harrier nesting areas shall be established and maintained during the nesting season for the period encompassing nest building and continuing until fledglings leave nests. This setback applies whenever construction or other ground-disturbing activities must begin during the nesting season in the presence of nests that are known to be occupied. Setbacks shall be marked by brightly colored temporary fencing.

Implementation of Mitigation Measure 4.14-j and compensation requirements of the SJMSCP would reduce impacts on northern harrier to a less-than-significant level.

4.14-k Birds Nesting in Isolated Trees or Shrubs Outside of Riparian Habitat. The following is the SJMSCP incidental take avoidance and minimization measure for loggerhead shrike:

A setback of 100 feet from loggerhead shrike nesting areas shall be established and maintained during the nesting season for the period encompassing nest building and continuing until fledglings leave nests. This setback applies whenever construction or other ground-disturbing activities must begin during the nesting season in the presence of nests that are known to be occupied. Setbacks shall be marked by brightly colored temporary fencing.

Implementation of Mitigation Measure 4.14-k and compensation requirements of the SJMSCP would reduce impacts on loggerhead shrike to a less-than-significant level.

4.14-l Birds Nesting along Riparian Corridors. The following are SJMSCP incidental take avoidance and minimization measures for white-tailed kite:

(1) Preconstruction surveys shall be conducted to investigate all potential nesting trees on the project site (e.g., especially tree tops 15-59 feet above the ground in oak, willow, eucalyptus, cottonwood, or other deciduous trees), during the nesting season (February 15 to September 15), whenever white-tailed kites are noted on or in the vicinity of the site during the nesting season

(2) A setback of 100 feet from white-tailed kite nesting areas shall be established and maintained during the nesting season for the period encompassing nest building and continuing until fledglings leave nests. This setback applies whenever construction or other ground-disturbing activities must begin during the nesting season in the presence of nests that are known to be occupied. Setbacks shall be marked by brightly colored temporary fencing.

Implementation of Mitigation Measure 4.14-l and compensation requirements of the SJMSCP would reduce impacts on white-tailed kite to a less-than-significant level.

4.14-o Common Raptors. The following measures are designed to avoid loss of common tree-nesting raptors:

(1) If project activity would occur during the raptor nesting season (February 15 through September 15), preconstruction surveys shall be conducted during the nesting season in suitable nesting habitat within 100 feet of areas of project activity. Large trees throughout the project area provide suitable habitat. The survey shall be conducted within 1 week before the beginning of construction or tree removal.

(2) A setback of 100 feet from nesting areas shall be established and maintained during the nesting season for the period encompassing nest building and continuing until fledglings leave nests. This setback applies whenever construction or other ground-disturbing activities must begin during the nesting season in the presence of nests that are known to be occupied. Setbacks shall be marked by brightly colored temporary fencing.

Implementation of Mitigation Measure 4.14-o would reduce impacts on common raptors to a less-than-significant level.

4.14-q Riparian Brush Rabbit. The SJMSCP requires full avoidance of riparian brush rabbit habitat in areas of known occupied habitat. No conversion of occupied habitat or mortality to individual riparian brush rabbits is allowed under the SJMSCP. For the proposed project to qualify for coverage under the SJMSCP for riparian brush rabbit, a permanent setback of 300 feet from the outer edge of the dripline of riparian vegetation would be required. Because maintenance of such setbacks may not be feasible, a separate consultation with USFWS under the FESA and with DFG under CESA would be conducted, and an Incidental Take Permit would be required. These actions would be separate from the SJMSCP and would require project-specific authorization and permitting. Specific mitigation measures would be developed during the consultation process.

Because the limited habitat within the CLSP area is not expected to support a viable long-term population of riparian brush rabbits, it may be most appropriate to provide offsite mitigation for adverse effects on occupied habitat. Potential measures to avoid direct take of individuals may include, but would not be limited to, conducting preconstruction surveys, conducting daily surveys of construction areas, installing exclusion fencing to prevent brush rabbits from entering construction areas, and allowing trapping of riparian brush rabbits at the project site in support of the USFWS captive breeding program to establish new populations in appropriate habitat. These measures to minimize direct take in conjunction with compensation for adverse effects are anticipated to avoid a net reduction in the number of riparian brush rabbits. However, the potential loss of riparian brush rabbit population on the project site could restrict the range of this species because it is currently the northernmost known extent of the population.

Implementation of Mitigation Measure 4.14-q would substantially lessen significant impacts on the riparian brush rabbit, but would not necessarily reduce such impacts to a less-than-significant level. For CEQA purposes, impacts to riparian brush rabbit are considered significant and unavoidable because an overall restriction in the range of this endangered species could occur. However, because the project site under existing conditions is not thought to support a long-term viable population of riparian brush rabbits, mitigation developed to compensate for effects on individuals off site are anticipated to have an overall benefit to the species by contributing to enhancement and/or establishment of a riparian brush rabbit population at a more appropriate location.

4.14-r Sensitive Habitats. The following measures are designed to minimize and mitigate impacts on jurisdictional waters of the United States and riparian habitat:

(1) Before project implementation, a delineation of waters of the United States, including wetlands that would be affected by the proposed project shall be made by qualified biologists through the formal Section 404 wetland delineation process. The delineation shall be submitted to and verified by USACE.

(2) If, based on the verified delineation, it is determined that fill of waters of the United States would result from CLSP implementation, authorization for such fill shall be secured from USACE through the Section 404 permitting process.

(3) A DFG Streambed Alteration Agreement and RWQCB water quality certification are also expected to be required for work within existing levees along the San Joaquin River and may be required for fill of agricultural ditches.

(4) The acreage of waters of the United States and riparian habitat that would be removed shall be replaced or restored/enhanced on a "no net loss" basis in accordance with USACE and DFG regulations and Development Title 9-1505. Habitat restoration, enhancement, and/or replacement shall be at a location and by methods agreeable to USACE and DFG, as determined during the permitting processes for CWA Section 404 and California Fish and Game Code Section 1602.

(5) Measures to minimize erosion and runoff into the San Joaquin River shall be included in all drainage plans. Appropriate runoff controls such as berms, storm gates, detention basins, overflow collection areas, filtration systems, and sediment traps shall be implemented to control siltation and the potential discharge of pollutants.

Implementation of Mitigation Measure 4.14-r would reduce impacts on sensitive habitats to a less-than-significant level.

4.14-s Wildlife Corridors. The following measures are designed to address inconsistency with the SJMSCP:

(1) Coordination with the Technical Advisory Committee, Joint Powers Authority, and resource agencies (e.g., USFWS and DFG) shall be conducted, as appropriate, to obtain a minor revision, minor amendment, or major amendment to the SJMSCP. No amendment to the incidental take permit is anticipated, because habitat alteration (with implemented mitigation measures) is not expected to result in significant effects on any state-listed or federally listed species.

(2) During this coordination process, it shall be determined whether any compensation would be required. Compensation may include, but would not necessarily be limited to, onsite or offsite habitat improvements along the San Joaquin River, such as restoration of other areas in the corridor that provide limited habitat for terrestrial wildlife.

Implementation of Mitigation Measure 4.14-s would reduce impacts on wildlife corridors to a less-than-significant level.

4.14.5 RESIDUAL SIGNIFICANT IMPACTS

Impacts related to the reduction in range of riparian brush rabbit are considered significant, and no feasible mitigation is available for this impact. Therefore, this impact is considered significant and unavoidable.

4.15 Fisheries

4.15 FISHERIES

This section describes the fisheries resources in the vicinity of the proposed Central Lathrop Specific Plan (CLSP) area and in the greater Sacramento-San Joaquin Delta and evaluates the potential project impacts on these resources. This evaluation uses existing information from several previously completed documents that addressed fishery resources in the Sacramento-San Joaquin Delta: (1) West Lathrop Specific Plan Fishery Resources Assessment, Technical Appendix for the West Lathrop Specific Plan EIR (A.A. Rich and Associates 1994); (2) Draft Environmental Impact Report and Environmental Impact Statement: Delta Wetlands Project, Volume 2 (SWRCB and USACE 1995); (3) Contra Costa Future Water Supply Implementation Draft Environmental Impact Report (EDAW 1998); (4) Mitigated Negative Declaration and Initial Study, Temporary Barriers Project 2001-2007 (California Department of Water Resources 2000); (5) Environmental Impact Report for the Lathrop Water, Wastewater, and Recycled Water Master Plan (EDAW 2001); (6) Draft Environmental Impact Report for the Mossdale Landing Urban Design Concept (EDAW 2002a); and (7) Draft Subsequent Environmental Impact Report for the River Islands at Lathrop Project (EDAW 2002b).

4.15.1 REGULATORY BACKGROUND

Many biological resources in California are protected and/or regulated by a variety of laws and policies. Before project implementation, the proposed project must comply with these regulations. In addition, in many parts of California, there are local or regional habitat and species conservation planning efforts that a project may participate in. Key regulatory and conservation planning issues applicable to the proposed CLSP project are discussed below.

FEDERAL ENDANGERED SPECIES ACT

Pursuant to the federal Endangered Species Act (FESA), the U.S. Fish and Wildlife Service (USFWS) and the National Oceanic and Atmospheric Administration, National Marine Fisheries Service (NOAA Fisheries) have authority over projects that may result in the take of a species federally listed as threatened or endangered. In general, persons subject to the FESA (including private parties) are prohibited from the "take" of endangered or threatened fish and wildlife species on private property, and from the "take" of endangered or threatened plants in areas under federal jurisdiction or in violation of state law. Under the FESA, 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 and NOAA Fisheries have also interpreted the definition of "harm" to include significant habitat modification that could result in a take. If a project would result in take of a federally listed species, either an incidental take permit, under Section 10(a) of the FESA, or a federal interagency consultation, under Section 7 of the FESA, is required prior to the take occurring. Several fish species in the project vicinity are covered under the FESA.

MAGNUSON-STEVENS FISHING CONSERVATION AND MANAGEMENT ACT

The Magnuson Stevens Fishing Conservation and Management Act (Magnuson-Stevens Act) is primarily concerned with sport and commercial harvest of major fisheries. In addition to the effects from fishing activities, the act recognizes the adverse effects of habitat alterations and dam and hatchery operations as major contributors to the decline of some fish species. The act mandates a consultation process for federal agencies whose activities may adversely affect Essential Fish Habitat (EFH). This consultation process is intended to provide those agencies with technical assistance in making their activities consistent with conservation of EFH. The purpose of identifying adverse effects and companion conservation measures is to provide general guidance for consultations and to make this information available ahead of time to federal and non-federal entities so that they may proactively include habitat conservation in their

planning. NOAA Fisheries is the primary agency responsible for administering the Magnuson-Stevens Act and EFH requirements.

FISH AND WILDLIFE COORDINATION ACT

The Fish and Wildlife Coordination Act requires federal agencies to consult with USFWS, NOAA Fisheries, and applicable state fish and wildlife agencies (e.g., the California Department of Fish and Game [DFG]) before they undertake or approve projects that control or modify surface water. The consultation is intended to prevent the loss of or damage to fish and wildlife in connection with water projects and to develop and improve these resources. Compliance with the Fish and Wildlife Coordination Act is incorporated into a project's National Environmental Policy Act (NEPA) process and therefore is relevant to the proposed project only if NEPA compliance has been triggered.

CALFED MULTI-SPECIES CONSERVATION STRATEGY

The CALFED Bay-Delta Program (CALFED) is a cooperative state and federal effort to improve conditions in the Sacramento-San Joaquin Delta (Delta) relative to ecosystem quality, water supply reliability, water quality, and levee system integrity. In support of the ecosystem quality element of CALFED, the CALFED Multi-Species Conservation Strategy (MSCS) outlines a comprehensive strategy for conservation of numerous species of fish, wildlife, and plants and their habitats during implementation of CALFED projects. The MSCS provides background information on CALFED's species and habitat goals; prescriptions and conservation measures for achieving species goals; and streamlined regulatory processes for compliance with FESA, with the California Endangered Species Act (CESA) (described below), and the Natural Community Conservation Planning Act (NCCPA). The MSCS is specific to CALFED and is not regulatory. It does not apply to the proposed project. However, MSCS goals, strategies, and conservation measures could potentially affect project activities if those activities were to alter hydrologic, water quality, or aquatic or terrestrial habitat conditions in the project vicinity.

CALIFORNIA ENDANGERED SPECIES ACT

In accordance with CESA, of which Section 2081 of the California Fish and Game Code is a component, a permit from DFG is required for projects that could result in the take of a state-listed threatened or endangered aquatic species (i.e., aquatic species listed under CESA). Under CESA, the definition of "take" is understood to apply to an activity that would directly or indirectly kill an individual of a species but does not include "harm" or "harass" as the FESA does. As a result, the threshold for a take under CESA is typically higher than that under the FESA. Several fish species in the project vicinity are covered under CESA.

NATURAL COMMUNITY CONSERVATION PLANNING ACT

The Natural Community Conservation Planning Act (NCCPA) authorizes and encourages conservation planning on a regional scale in California through preparation of Natural Community Conservation Plans (NCCPs). NCCPs address the conservation of natural communities as well as individual species. The NCCPA's focus on regional conservation rather than individual project mitigation is appropriate for complex and extensive programs. The CLSP area is not currently covered by a NCCP.

CENTRAL VALLEY REGIONAL WATER QUALITY CONTROL BOARD

Each of the nine regional water quality control boards (RWQCBs) in California prepares Basin Plans providing goals, policies, and standards for the protection of surface water and groundwater in the plan area. The Central Valley RWQCB Basin Plan for the region encompassing the CLSP project designates

the following fisheries-related beneficial uses of basin surface waters: warm and cold freshwater fisheries habitat, migration of warmwater and coldwater fish species, and spawning of warmwater fish species. The RWQCB provides protection to fisheries resources primarily through its regulatory authority for protecting water quality.

SAN JOAQUIN COUNTY MULTI-SPECIES HABITAT CONSERVATION AND OPEN SPACE PLAN

The San Joaquin County Multi-Species Habitat Conservation and Open Space Plan (SJMSCP) was developed to minimize and mitigate impacts on plant and wildlife species and habitat resulting from conversion of open space to non-open space projected to occur in San Joaquin County (SJMSCP 2000). The SJMSCP is focused almost exclusively on terrestrial animals and plants and therefore has little applicability to fishery resources. A description of the SJMSCP, its function, and its implementation methods is presented in Section 4.14, "Terrestrial Biology."

4.15.2 EXISTING CONDITIONS

SAN JOAQUIN RIVER PHYSICAL ENVIRONMENT

The CLSP area is located along the east bank of the San Joaquin River (SJR). The SJR is approximately 330 miles long and flows through portions of Fresno, Madera, Merced, San Joaquin, Stanislaus, Sacramento, and Contra Costa Counties. The lower SJR experiences flows as low as 1,500 cubic feet per second (cfs) in dry years, and exceeds 40,000 cfs in wet years. At the Vernalis gauging station a short distance upstream of the project area, the mean flow rate is approximately 4,700 cfs (EDAW 2001).

Water quality in the SJR has degraded significantly since the 1940s, due in part to reservoir developments for agricultural purposes in tributaries of the SJR and in its upper watershed. Degradation of water quality has also been caused by use of pesticides and fertilizers in the SJR watershed, agricultural return flows, municipal discharges, channelization of the SJR, and drainage passing over and through upslope saline soils on the west side of the San Joaquin Valley.

The CLSP area includes portions of the east levee of the SJR. The levee is actively maintained by Reclamation District 17 (RD 17), including placement/replacement of rock riprap and other armoring and regular removal of woody vegetation that could compromise the integrity of the levee. Due primarily to maintenance activities, the levee surface and river shoreline in the project area is dominated by ruderal herbaceous species, such as non-native grasses (see Section 4.14, Terrestrial Biology). Although there are patches of riparian habitat along the SJR in the CLSP area, they are typically located in areas along the levee or river shoreline well above normal river flows. Therefore, they provide little shading or other benefits to the aquatic community except when water levels are relatively high.

Adjacent to the CLSP area the SJR is approximately 200 feet wide and 10 or more feet deep (depending on flows) and is tidally influenced. Because of the steep banks of the levees along the SJR, there is limited shallow-water habitat available in the vicinity of the project site. Shallow-water habitat is favored by numerous fish species.

HYDROLOGY

The aquatic habitat in the reach of the SJR adjacent to the CLSP area is a tidally influenced riverine community. A typical tidal cycle causes an oscillation of the water surface elevation of about 3 feet (EDAW 2001). River current velocities vary with the tidal cycle and depend on total river flow. Flow reversals may occur at lower flow levels.

Hydrologic conditions in the San Joaquin Basin are dominated by snowmelt from the Sierra Nevada. Before completion of major water storage projects on the SJR and its major tributaries, the hydrograph peaked in spring and early summer and dropped to low levels in the fall (Exhibit 4.15-1). Since the completion of Friant Dam in 1947, McClure Reservoir in 1960 (on the Merced River), Don Pedro Reservoir in 1970 (on the Tuolumne River), and the New Melones Reservoir in 1978 (on the Stanislaus River), the hydrograph has been greatly altered (Exhibit 4.15-2).

Before 1947, peak flows ranged between 20,000 and 50,000 cfs from March through June. Median flows (50% exceedance) peaked in May at over 13,000 cfs and declined rapidly to summer and fall levels in the range of 1,000–1,500 cfs. Since 1978, peak flows in the SJR typically occur in January and February and range between 30,000 and 50,000 cfs. Median flows (50% exceedance) range from about 4,300 cfs in March to 1,700 cfs in July (see Exhibits 4.15-1 and 4.15-2).

Changes to flows have affected fish populations, particularly migratory salmonids including special-status native fish such as chinook salmon (*Oncorhynchus tshawytscha*) and steelhead (*Oncorhynchus mykiss*). Reductions in spring peak flows that enhance the ability of young fish to migrate downstream to and through the Delta have been especially detrimental. There has also been a substantial increase in summer flows since completion of water management projects. Significant flows are transferred from reservoir storage areas, through agricultural irrigation systems, and back into the SJR in the summer months.

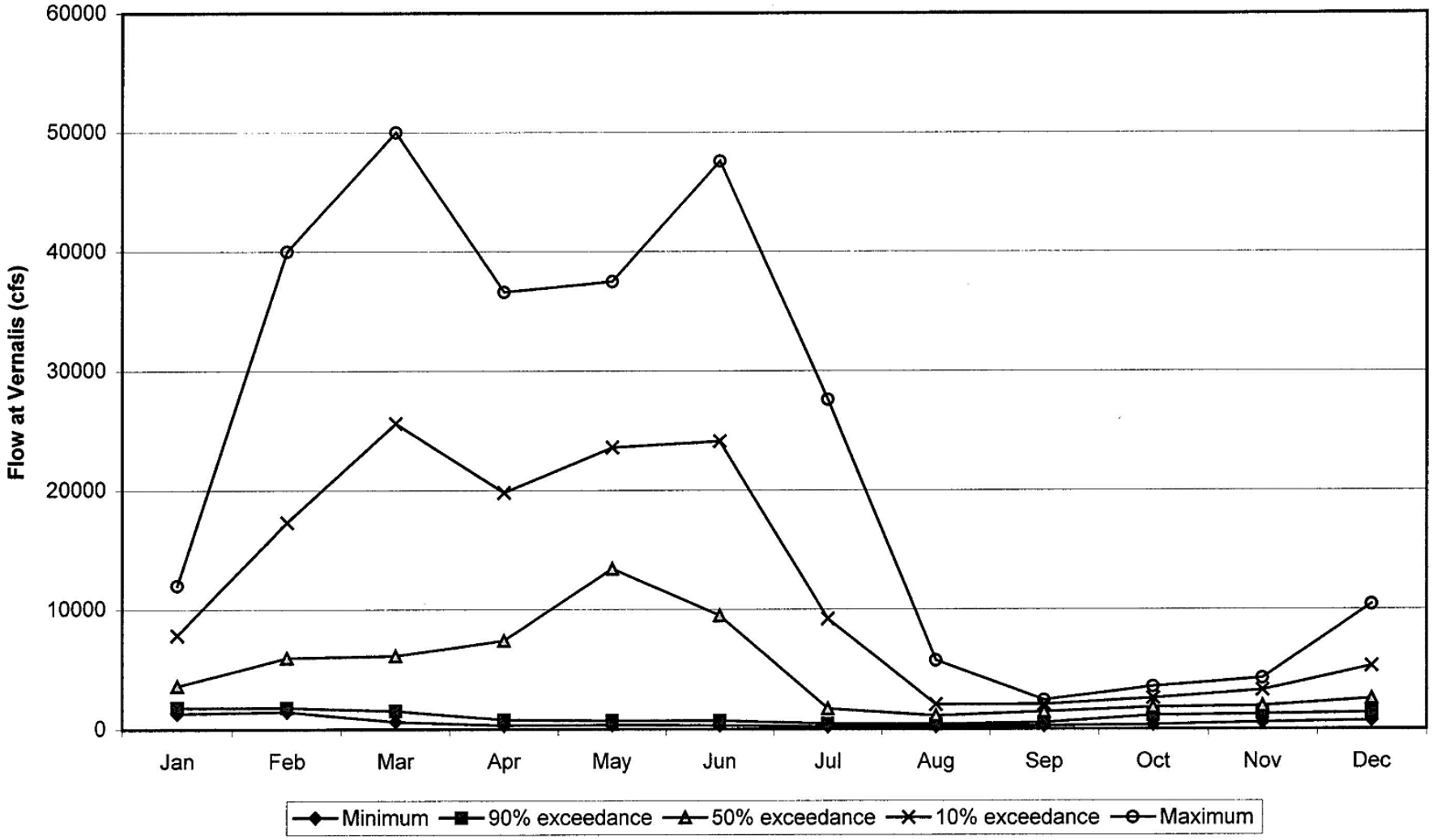
FISH COMMUNITIES

Monitoring Surveys

The lower SJR and Delta support a diverse fish community composed of both native and introduced exotic species. Substantial amounts of information documenting fishery resources of the Delta are currently collected by several resource agencies. Several data sources were used to evaluate fishery resources in the vicinity of the CLSP area. These include mid-water trawl surveys, egg and larval surveys, beach seine surveys, and real-time monitoring data. Each of these surveys was developed to meet specific information needs and each has its own methods and uses. None of these surveys was specifically developed to address impacts of the CLSP, although they provide useful information for this analysis.

DFG has conducted monthly mid-water trawl surveys from September through December since 1967, and from January through April since 1992, at a number of standard sites throughout San Pablo Bay, Suisun Bay, and the Delta. DFG uses these surveys to index the abundance and distribution of young-of-year and other age groups of fishes that inhabit the estuary. The closest mid-water trawl location to the CLSP area is Station 912 on the SJR about 20 miles downstream from the proposed site (Exhibit 4.15-3). Given the distance to this trawl location, it may have a different subset of fish species, abundance, and/or seasonal timing than in the SJR adjacent to the CLSP area. No sampling is conducted between May and September, and species occurrence and relative abundance during the summer and fall may be different from that indicated by the mid-water trawl surveys. Species captured and relative abundance of species may be skewed since smaller fish in the open water of deeper mid-channel areas have a higher probability of being sampled.

Egg and larval surveys are conducted by the California Department of Water Resources (DWR) and DFG as part of the Southern Delta Entrainment Monitoring program to estimate annual entrainment losses of targeted species to the State Water Project (SWP) and Central Valley Project (CVP) intakes in the southern Delta. The survey measures abundance and distribution of egg and larval fish species in the southern Delta and impacts of the SWP/CVP operations and the South Delta Temporary Barriers Project. Samples are collected from early February to mid-July. The closest egg and larval sample location to the CLSP area is Station 98 on Salmon Slough near the junction of Old River with the Grant Line Canal,



Data Source: U.S. Geological Survey Water Resources Data Reports, 9/2000.

San Joaquin River Hydrograph, pre-1947

EXHIBIT 4.15-1

Central Lathrop Specific Plan EIR
CITY OF LATHROP

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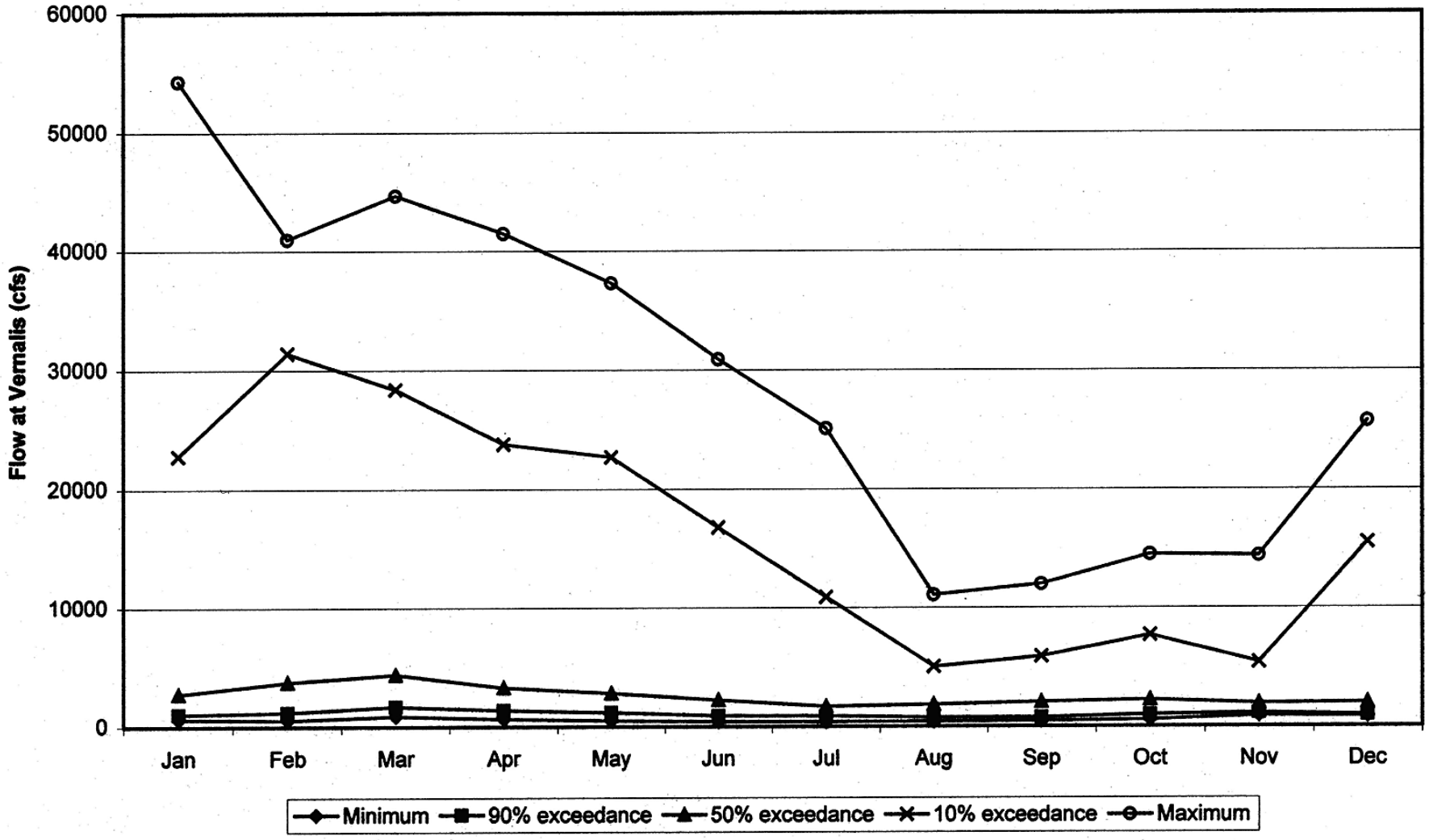

Data Source: U.S. Geological Survey Water Resources Data Reports, 9/2000 .

San Joaquin River Hydrograph, post-1978

EXHIBIT 4.15-2

Central Lathrop Specific Plan EIR
CITY OF LATHROP

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approximately 8.5 river miles from the project site (Exhibit 4.15-3). This location is off the main SJR channel and may not be representative of fish species occurrence and abundance near the proposed project site.

Beach seine surveys are conducted by USFWS in the Lower SJR, Delta, and Lower Sacramento River from January through June. The primary objective of these surveys is to monitor abundance and distribution of juvenile chinook salmon, but other fishes inhabiting shallow near-shore areas are also sampled. Beach seine surveys are not conducted between July and December and may not be representative of fish species presence and abundance during summer and fall months. There are several beach seine sites in the vicinity of the CLSP area and these surveys are probably the best indicator of fish species occurrence and seasonal abundance near the project site. The Mossdale beach seine site is located near river mile 56, immediately downstream of the I-5 bridge and approximately 4 miles upstream from the CLSP area (Exhibit 4.15-3). The Wetherbee site is located approximately 4.5 miles upstream of the plan area, and the Big Beach and Durham sites are approximately 6.5 miles and 11.5 miles upstream of the plan area, respectively.

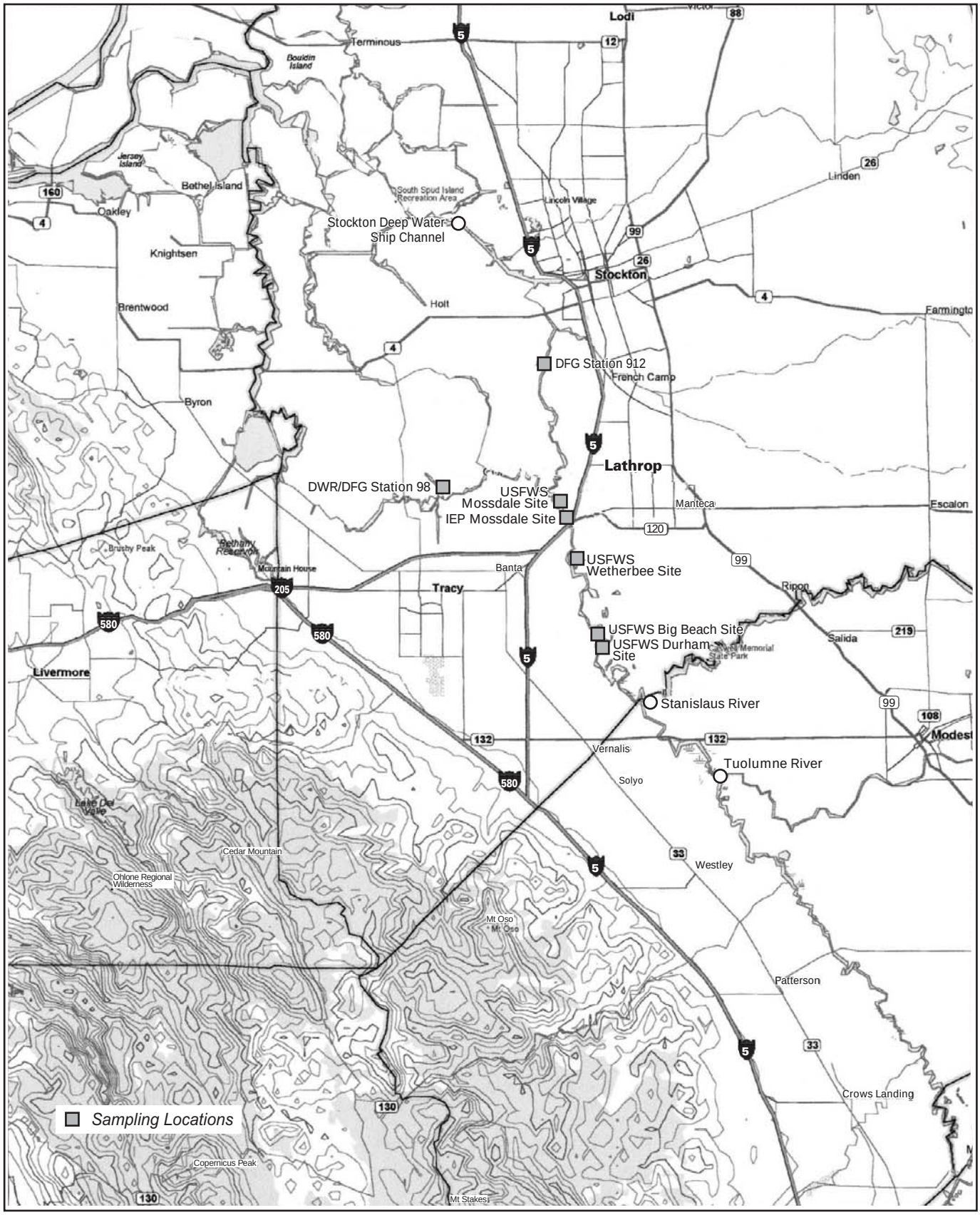
Since 1996, the Interagency Ecological Program (IEP) Real Time Monitoring Project has conducted daily sampling at various sites during the period from April 1 through June 30 using Kodiak trawls. One of theses sites is at Mossdale, a location approximately 4 miles upstream from the CLSP area (Exhibit 4.15-3). Kodiak trawls sample fish in the water column in main channel locations. Species occurrence and relative abundance may be substantially different during the period between July and March when sampling does not occur.

Species Composition

Table 4.15-1 lists fish species expected to occur in the vicinity of the CLSP area based on monitoring surveys in the South Delta and Lower SJR. Table 4.15-2 shows the relative abundance of many of these fish species at the sampling locations near the CLSP area. The majority of fish found near the plan area are introduced species that have native ranges in warm water habitats of the eastern U.S. or are species native to Asian waters. For example, striped bass (*Morone saxatilis*) and American shad (*Alosa sapidissima*) are anadromous species native to the East Coast of the U.S. that support popular recreational fisheries.

Steelhead have been reported in the vicinity of the CLSP area only from the real-time monitoring surveys. Historically, there were spawning populations of steelhead in the Stanislaus, Tuolumne, and Merced Rivers (EDAW 2001) and small remnant populations may still persist in the SJR (McEwan and Jackson 1996). Migrating steelhead would be expected to pass by the CLSP area, with adults primarily moving up or downstream in the winter and juveniles moving downstream in the spring.

In entrainment monitoring studies assessing larval fishes in the south Delta conducted by DWR, the most common species captured are chameleon goby (*Tridentiger trigonocephalus*), prickly sculpin (*Cottus asper*), threadfin shad (*Dorosoma petenense*), and striped bass (EDAW 2001, Spaar 1993). These species made up 99% of the larval catch during monitoring in 1991-1994. Delta smelt (*Hypomesus transpacificus*) have not comprised more than 0.5%, and longfin smelt (*Spirinichus thaleichthys*) and splittail (*Pogonichthys macrolepidotus*) have made up less than 0.1% of the total larval catch.



Source: EDAW, Inc., 2001.

Fish Sampling Locations

EXHIBIT 4.15-3

Central Lathrop Specific Plan
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Table 4.15-1
Fish Species Reported in the Vicinity of the Central Lathrop Specific Plan Area

Common Name	Scientific Name	Midwater Trawl Survey	Egg and Larval Survey	Beach Seine Survey	Real-Time Monitoring
Native Species					
Hitch	*Lavinia exilicauda*			X	X
Sacramento blackfish	*Orthodon microlepidotus*		X		
Sacramento splittail	*Pogonichthys macrolepidotus*			X	X
Sacramento pikeminnow	*Ptychoch eilus grandis*			X	
Sacramento sucker	*Catostomus occidentalis*		X	X	X
Delta smelt	*Hypomesus transpacificus*		X		X
Longfin smelt	*Spirinichus thaleichthys*				X
Steelhead/Rainbow trout	*Oncorhynchus mykiss*				X
Chinook salmon	*Oncorhynchus tshawytscha*	X		X	X
Threespine stickleback	*Gasterosteus aculeatus*				X
Prickly sculpin	*Cottus asper*		X	X	
Tule perch	*Hysterocarpus traski*			X	X
Introduced Species					
American shad	*Alosa sapidissima*	X			X
Threadfin shad	*Dorosoma petenense*	X	X	X	X
Goldfish	*Carassius auratus*			X	
Red shiner	*Cyprinella lutrensis*			X	
Carp	*Cyprinus carpio*	X		X	
Golden shiner	*Notemigonus chrysoleucas*	X		X	X
Rosyface shiner	*Notropis rubellus*			X	
Fathead minnow	*Pimephales promelas*			X	X
White catfish	*Ameiurus catus*	X			X
Black bullhead	*Ameiurus melas*				X
Channel catfish	*Ictalurus punctatus*	X		X	X
Wakasagi	*Hypomesus nipponensis*				X
Western mosquitofish	*Gambusia affinis*			X	
Inland silverside	*Menidia beryllina*	X	X	X	X
Striped bass	*Morone saxatilis*	X	X	X	X
Bluegill	*Lepomis macrochirus*	X		X	X
Redear sunfish	*Lepomis microlophus*			X	X

Table 4.15-1
Fish Species Reported in the Vicinity of the Central Lathrop Specific Plan Area

Common Name	Scientific Name	Midwater Trawl Survey	Egg and Larval Survey	Beach Seine Survey	Real-Time Monitoring
Smallmouth bass	*Micropterus dolomieu*			X	
Largemouth bass	*Micropterus salmoides*			X	X
White crappie	*Pomoxis annularis*	X		X	X
Black crappie	*Pomoxis nigromaculatus*	X		X	X
Bigscale logperch	*Percina macrolepida*		X	X	
Yellowfin goby	*Acanthogobius flavimanus*	X			
Shimofuri goby	*Tridentiger bifasciatus*	X			X
Chameleon goby	*Tridentiger trigonocephalus*		X		
Source: EDAW 2001					

Table 4.15-2
San Joaquin River Species Relative Abundance in Beach Seine Surveys Near the Central Lathrop Specific Plan Area

Species	Mossdale	Wetherbee	Big Beach	Durham
Red Shiner	56%	51%	68%	86%
Inland Silverside	33%	39%	2%	1%
Threadfin Shad	4%	3%	0.1%	0.02%
Chinook Salmon	3%	1%	0.4%	0.1%
Sacramento Splittail	1%	1%	26%	0.3%
Western Mosquitofish	1%	0.2%	0.1%	0.1%
Sacramento Sucker	1%	2%	3%	12%
Golden Shiner	1%	0%	0%	0%
Fathead Minnow	0.1%	1%	0.2%	0.1%
Sacramento Blackfish	0.1%	0.1%	0.005%	0%
Largemouth Bass	0.1%	0.1%	0%	0.05%
Bluegill	0.1%	0.1%	0.05%	0.1%
Redear Sunfish	0.1%	0.1%	0.05%	0.02%
Sacramento Pikeminnow	0.1%	0.5%	0.1%	0.02%
Black Crappie	0.1%	0%	0%	0%
Bigscale Logperch	0.1%	0.2%	0.01%	0%
Bass Unknown	0.03%	0.1%	0.05%	0%
Hitch	0%	0%	0%	0%

Table 4.15-2 San Joaquin River Species Relative Abundance in Beach Seine Surveys Near the Central Lathrop Specific Plan Area				
Species	Mossdale	Wetherbee	Big Beach	Durham
Striped Bass	0.03%	0.05%	0%	0%
Prickly Sculpin	0.02%	0.2%	0.1%	0%
Goldfish	0%	0%	0%	0%
Rosyface Shiner	0%	0%	0.03%	0%
White Crappie	0%	0%	0%	0%
Tule perch	0%	0.1%	0.1%	0%
Common Carp	0%	0.05%	0.005%	0%
Channel Catfish	0%	0%	0.005%	0%
Smallmouth Bass	0%	0%	0%	0.05%
Source: EDAW 2001				

Special-Status Fish Species in the Project Region

Special-status fish species addressed in this section include species that are legally protected or that are otherwise considered sensitive by federal, state, or local resource conservation agencies and organizations. These include species that are state and/or federally listed as threatened or endangered or that are proposed for listing; those considered as candidates for listing as threatened or endangered; and species identified by DFG, USFWS, or NOAA Fisheries as Species of Concern. In some cases, it is an Evolutionarily Significant Unit (ESU) of a fish species, rather than the entire population, that is listed. Under the FESA, an ESU is considered a population (or group of populations) that is reproductively isolated from other populations of the same species and that contributes substantially to the ecological/genetic diversity of the species (Waples 1991). Different runs of the same salmon species (fall run, spring run) often are considered separate ESUs because the populations are reproductively isolated due to different spawning times.

Eight special-status fish species are potentially present in the SJR in the vicinity of the CLSP area as listed below:

- Steelhead (federally listed as threatened)
- Central valley spring-run chinook salmon (federally and state listed as threatened)
- Central Valley fall/late fall run chinook salmon (federal candidate species and California species of special concern)
- Sacramento winter-run chinook salmon (federally and state listed as endangered)
- Delta smelt (federally and state listed as threatened)
- Longfin smelt (federal species of concern and California species of special concern)

- Sacramento splittail (de-listed from federal threatened status, California species of special concern)
- Green sturgeon (federal species of concern and California species of special concern)

None of the special-status species, except possibly Sacramento splittail, is resident in the vicinity of the project site (see discussions below). Although no special-status species are known to be resident in the vicinity of the project site, the eight special-status fish species listed above migrate through or stay temporarily in the SJR in the project area for periods during their life cycle. Provided below is a summary of the status and general habitat requirements of each of these eight special-status fish species.

The seasonal timing of significant life history stages for these special-status species is presented in Exhibit 4.15-4. The content of this exhibit does not reflect the relative magnitude of populations in the South Delta or San Joaquin River. Consequently, numerous life stages are rarely present in the study area but still potentially occur there in a particular month.

***Steelhead – Central Valley ESU* (Oncorhynchus mykiss)**

Steelhead (Central Valley ESU) are federally listed as threatened. This fish has been captured in the vicinity of the Mossdale sampling station in the real-time monitoring surveys. There is limited information available concerning the historical or present abundance and distribution of steelhead within the SJR and its tributaries. McEwan and Jackson (1996) indicate that a small, remnant run persists in the Stanislaus River, and that steelhead were observed in the Tuolumne River in 1983. Also, a few large rainbow trout that appear to be steelhead enter the Merced River Hatchery annually. Steelhead in the San Joaquin drainage are included by the NOAA Fisheries in the Central Valley ESU. The project site is located within USFWS designated critical habitat for the Central Valley ESU. The major factor influencing steelhead populations in the San Joaquin system is loss of habitat due to construction of impassable dams on the major tributaries. Juvenile steelhead reside in nursery streams for one to two years before migrating to the ocean and suitable coldwater habitat exists primarily upstream of the present dam sites.

Adult steelhead migrate upstream to spawning habitat in the tributaries during the winter and early spring. Steelhead smolts migrate from rearing areas in the tributaries to the ocean primarily in the spring. The SJR in the vicinity of the project site would be used by adult and juvenile steelhead primarily as a migration corridor between the ocean and coldwater habitat in the tributaries.

***Chinook Salmon – Spring Run* (Oncorhynchus tshawytscha)**

Chinook salmon (Central Valley spring run) are listed under both CESA and FESA as threatened. Central Valley spring-run chinook salmon were federally listed as a threatened species on September 16, 1999. Spring-run chinook salmon historically inhabited the upper reaches of tributaries to the SJR and other Central Valley streams. They are now extirpated from all tributaries of the SJR Basin, representing a large portion of the historic range and abundance of the Central Valley ESU.

The Central Valley ESU includes all naturally spawned populations of spring-run chinook salmon in the Sacramento River and its tributaries in California. The only streams in the Central Valley currently considered to have wild spring-run chinook salmon populations are Mill and Deer Creeks, and possibly Butte Creek, all tributaries of the Sacramento River. Most of the spring-run salmon in the Central Valley originate from the Feather River and Butte Creek Hatcheries. Much of this production is released off station in the Sacramento River Delta and San Francisco Bay. Although the project site occurs outside of the designated ESU, spring-run fish, particularly juveniles can be found in the lower SJR.

Exhibit 4.15-4
Life History Schedules and Distributions of Evaluation Fish Life Stages in Lower San Joaquin River and South Delta

Life Stage/Location	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Fall-Run Chinook Salmon												
Adult Migration												
Lower San Joaquin River												
South Delta												
Rearing/Emigration												
Lower San Joaquin River												
South Delta												
Late Fall-Run Chinook Salmon												
Rearing/Emigration												
South Delta												
Winter-Run Chinook Salmon												
Rearing/Emigration												
South Delta												
Spring-Run Chinook Salmon												
Rearing/Emigration												
South Delta												
Steelhead Trout												
Adult Migration												
Lower San Joaquin River												
South Delta												
Rearing/Emigration												
Lower San Joaquin River												
South Delta												
Green Sturgeon												
Adult Migration and Foraging												
Lower San Joaquin River												
South Delta												
Eggs and Larvae												
Lower San Joaquin River												
South Delta												
Rearing												
Lower San Joaquin River												
South Delta												
Delta Smelt												
Adult Migration and Foraging												
Lower San Joaquin River												
South Delta												

Exhibit 4.15-4
Life History Schedules and Distributions of Evaluation Fish Life Stages in Lower San Joaquin River and South Delta

Life Stage/Location	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Spawning												
Lower San Joaquin River												
South Delta												
Larvae												
Lower San Joaquin River												
South Delta												
Juveniles												
Lower San Joaquin River												
South Delta												
Sacramento Splittail												
Adult Migration and Foraging												
Lower San Joaquin River												
South Delta												
Spawning												
Lower San Joaquin River												
South Delta												
Larvae												
Lower San Joaquin River												
South Delta												
Juveniles												
Lower San Joaquin River												
South Delta												
Longfin Smelt												
Adult Migration and Foraging												
Lower San Joaquin River												
South Delta												
Spawning												
Lower San Joaquin River												
South Delta												
Larvae												
Lower San Joaquin River												
South Delta												
Juveniles												
Lower San Joaquin River												
South Delta												

= period of potential occurrence.
= period of peak occurrence.

Source: DWR and USBR 1996

Spring-run chinook salmon leave the ocean and enter rivers between March and May in immature condition. They hold over the summer and spawn between late August and mid-October (Moyle et al. 1995). The embryos hatch after a 5 to 6-month incubation period. Some juveniles may migrate downstream soon after emerging in March-April and others may move downstream the following fall as yearlings. The out migrants may spend some time in the Sacramento River or estuary to gain additional size before going out to sea but most have presumably left the system by mid-May (Moyle et al. 1995).

Spring-run chinook salmon are reported in real-time monitoring surveys from the Mossdale sampling station, to locations near the project site. Since some spring-run salmon may hatch at around the same time as some of the fall-run salmon, there may be little difference in size to distinguish them. In addition, many spring-run and fall-run salmon are reared in hatcheries and will have different growth characteristics from wild fish. Many of the spring-run salmon reported in real-time monitoring at the Mossdale sampling station are likely to be of hatchery origin since large numbers are released into the Delta. Many of the fish reported as spring-run may in fact be fall-run fish. The federal proposal to list Central Valley spring-run chinook as endangered (as opposed to its current status as threatened) applies only to naturally spawned, non-introduced fish. Spring-run salmon occurring in the vicinity of the CLSP area, which originate from hatcheries, would not necessarily be considered special-status species.

Chinook Salmon – Central Valley Fall/Late Fall Run **(Oncorhynchus tshawytscha)**

Chinook salmon (Central Valley fall/late fall run) are designated as federal candidate species and California species of special concern. Neither designation provides direct legal protection pursuant to CESA or FESA. Chinook salmon are regularly captured in beach seine surveys and real-time monitoring surveys in the SJR near the City of Lathrop.

On September 16, 1999, the National Marine Fisheries Service (now called NOAA Fisheries) determined that listing the Central Valley fall/late fall run chinook salmon was not warranted for this ESU. The ESU includes all naturally spawned populations of fall-run chinook salmon in the Sacramento and SJR Basins and their tributaries, east of Carquinez Strait.

Habitat for fall-run chinook salmon within the SJR system exists only in three tributary streams, the Stanislaus River, the Tuolumne River, and the Merced River. Annual production of fall-run chinook salmon from these streams over the period 1967-91 averaged about 40,000 fish including 11,000 in the Tuolumne, 19,000 in the Stanislaus, and 10,000 in the Merced. About 10% of the Merced River production was from hatcheries and the rest was natural production. Production estimates include adult fish returning to spawn and those harvested in both ocean and instream fisheries (EDAW 2001). Production of fall-run chinook salmon in the SJR system over the 1967-91 period accounted for about 7% of the Central Valley fall-run chinook total production and about 10% of the Central Valley fall-run chinook natural production.

Adult fall-run chinook salmon migrate from the ocean to upstream spawning areas in the late summer and fall. In the SJR system, adults migrate somewhat later than those in the Sacramento River system, generally reaching spawning areas between September and December. Eggs incubate until March. Fall-run fry generally emerge from the streambed from December through March and rear in the river for a short period. Some fry may rear as far downstream as the Delta, particularly in wet years. Fall-run juveniles emigrate as smolts from April through June. There is a small percentage of fall-run juveniles (about 5%) that may not emigrate until the fall or winter following hatching. Fall-run chinook salmon would be expected to occur in the vicinity of the proposed project only during periods when they are migrating between the ocean and habitat in the three tributary streams and during the late winter and early spring when fry may be rearing in the vicinity. Beach seine samples in the vicinity indicate the presence of rearing fry in January through March and smolts in April and May.

NOAA Fisheries has determined that abundance of fall-run chinook salmon in the SJR system is low relative to historic levels due to severe habitat degradation (EDAW 2001). NOAA Fisheries attributes habitat degradation to agricultural and municipal water use activities in the Central Valley, which result in point and non-point pollution, elevated water temperatures, diminished flows, and smolt and adult entrainment into poorly screened or unscreened diversions (EDAW 2001). High harvest rates in the ocean fisheries also contribute to reduced abundance. In the San Joaquin Basin, many of these factors are being evaluated and addressed in a collaborative effort between water interests and state/federal agencies in a scientifically based adaptive management plan known as the Vernalis Adaptive Management Plan (VAMP). Initial plan elements involve operational changes at the Delta pumping plants during the peak salmon smolt out migration period (April 15 to May 15); additional river flows for adult fall-run chinook salmon upstream migration in October; and installation and operation of barriers to improve the survival of juvenile chinook emigrating from the Lower SJR (EDAW 2001).

Chinook Salmon – Sacramento Winter Run **(Oncorhynchus tshawytscha)**

Chinook salmon (Sacramento winter run) are listed as endangered under both the state and federal ESAs. Sacramento winter-run chinook salmon were originally federally listed as a threatened species on April 6, 1990. Critical habitat for the species was designated on June 16, 1993. Sacramento winter-run chinook salmon were re-classified as an endangered species on January 4, 1994. The status applies to all Sacramento River winter-run chinook salmon, wherever found. Although the project site occurs outside of the designated ESU, winter-run fish have been observed in the vicinity of the CLSP area.

Historically, winter-run chinook salmon inhabited the Upper Sacramento River and its tributaries, the McCloud, Pit, and Little Sacramento rivers. Construction of Shasta Dam in the 1940s eliminated access to all historic spawning habitats for winter-run salmon in the Sacramento River Basin. A single spawning population persists in the main stem of the Sacramento River immediately downstream of Keswick Dam (EDAW 2001).

Adult winter-run salmon migrate up the Sacramento River to spawn from December through May, and peak spawning occurs from May to June. Fry are known to pass by the Red Bluff Diversion Dam from mid-September to mid-October (Moyle et al. 1989). Winter-run chinook juveniles emigrate from the upper Sacramento River as smolts from January through May. Peak migration of smolts through the Delta is primarily from January through March.

Winter-run salmon are reported in real-time monitoring surveys at the Mossdale sampling station based on their length at the time of capture. Since most winter-run fry emerge by the end of August, whereas fall-run and spring-run fry do not begin emerging until December, winter-run juveniles captured in the Delta in the spring will generally be larger than fall-run or spring-run juveniles. There is some hatchery production of winter-run fish in Battle Creek. These fish are released in the Upper Sacramento River.

Delta Smelt **(Hypomesus transpacificus)**

Delta smelt are listed as threatened under both the state and federal ESAs. The USFWS administers protective measures for this species with respect to FESA. Delta smelt have been recorded in real-time monitoring surveys at the Mossdale sampling station and in egg and larval surveys in the vicinity of Salmon Slough and Old River. Delta smelt are endemic to the upper Sacramento-San Joaquin estuary. They occur primarily in open, surface waters of Suisun Bay, in the Sacramento River upstream to Isleton, and in the SJR downstream of the Mossdale sampling station. Since the early 1980s, they have been most abundant in the northwestern Delta in the channel of the Sacramento River (Moyle et al. 1995). Delta smelt spawn at one year of age and most adults die after spawning. They generally reach a maximum size of about 2-3 inches.

Delta smelt spawn in freshwater but at other times can tolerate salinity up to about 10 to 12 parts per thousand (ppt) (a level considered to be approximately 1/3 that of ocean water). Spawning occurs between February and June. Most spawning appears to occur in dead-end sloughs and shallow edge-waters of the channels in the upper Delta and in the Sacramento River above Rio Vista (Moyle et al. 1995). After hatching, larvae drift downstream with the currents and congregate in the zone where out-flowing freshwater mixes with incoming seawater. They feed primarily on zooplankton.

Delta smelt populations have fluctuated greatly in the past. Their short lives and relatively low fecundity make populations susceptible to depression following periods when conditions are unfavorable, such as during droughts. The delta smelt population fell to very low levels in the early 1980s. The declines have been attributed to reduction in Delta outflow in some years, excessively high outflow in other years, entrainment losses to water diversions, changes in food organisms, toxic substances, loss of genetic integrity, and habitat destruction (particularly loss of shallow water habitat) (Moyle et al. 1989).

The project site is near the upper limit of known distribution of delta smelt in the SJR. Delta smelt do not generally occur in mid-water trawls or beach seining in the vicinity of the proposed project. However, the project site is within USFWS designated critical habitat for the delta smelt (USFWS 1995). Larval delta smelt have been sampled, generally in low numbers, in southern Delta entrainment monitoring at Salmon Slough. Salmon Slough is near where Old River joins the Grant Line Canal and is the closest station to the Mossdale sampling station for egg and larval sampling.

***Longfin Smelt* (Spirinichus thaleichthys)**

Longfin smelt are designated as a federal species of concern and California species of special concern. These status designations do not provide direct protections for the species pursuant to CESA or FESA. Longfin smelt have been documented in the SJR in the vicinity of the project site only in real-time monitoring surveys. They were taken on a single day of sampling between 1996 and 1998. Distribution of longfin smelt is centered in the west Delta, Suisun Bay, and San Pablo Bay. In wet years, they are distributed more toward San Pablo Bay and in dry years more toward the west Delta. Peak spawning occurs between February and April in upper Suisun Bay and the lower and middle Delta. Spawning rarely occurs upstream of Medford Island in the SJR and Rio Vista in the Sacramento River. The project area is outside the primary distribution area of longfin smelt in the Sacramento-San Joaquin Delta.

Larval longfin smelt are generally collected below Medford Island in the SJR and below Rio Vista on the Sacramento River, indicating that spawning rarely occurs above these locations (Moyle et al. 1995). The proposed project is located well upstream of Medford Island, and longfin smelt eggs and larvae are generally not expected to occur in the vicinity of the project.

***Sacramento Splittail* (Pogonichthys macrolepidotus)**

USFWS de-listed Sacramento splittail from the FESA list of threatened and endangered species in September 2003 (USFWS 2003). Sacramento splittail was previously listed as threatened by the USFWS in February 1999. After analyzing splittail population information and threats to the species, USFWS determined that Sacramento splittail is not likely to become endangered in the foreseeable future. The Service found that threats to Sacramento splittail are being addressed through habitat restoration actions such as the CALFED Bay-Delta Program and the Central Valley Project Improvement Act. Although Sacramento splittail is no longer federally listed, it is considered a California species of special concern.

Sacramento splittail have been captured in beach seine surveys in the SJR in the vicinity of the project site and in real-time monitoring surveys at the Mossdale sampling station. In beach seine surveys conducted by the USFWS, splittail abundance was comparable at the Weatherbee and Mossdale sites

(Exhibit 4.15-3, Table 4.15-2). Splittail typically comprise approximately 1% of the total catch at both locations. Catch of splittail at the Big Beach beach seine site exceeded catch at both Mossdale and Wetherbee sites but was dominated by large catches on a few dates in 1995 and 1998, including a catch of over 3,900 on a single sample date in June 1998. These large catches may represent an unusual concentration of splittail or may be representative of a natural variation in local abundance of the species during the reproductive period. In either case, it appears to be transient.

Splittail are large minnows that live for up to seven years and reach lengths of 12 inches or more. The species is found only in California's Central Valley. Their range in the Central Valley has been restricted since the arrival of Europeans and their abundance has declined, particularly during drought periods. Decline in abundance has been attributed to changed estuarine hydraulics (especially reduced outflows), modification of spawning habitat, climatic variation, toxic substances, introduced species, predation, and exploitation.

Splittail are primarily found in freshwater and appear to prefer shallow water habitat in slow-moving sections of rivers and sloughs. Splittail are currently most abundant in and around Suisun Marsh (Moyle et al. 1995). Historic distribution included the Sacramento River as far as Redding, including lower reaches of the Feather and American rivers, and the SJR as far south as the present site of Friant Dam.

Splittail spawn in the lower reaches of rivers, dead-end sloughs, and in larger sloughs such as Montezuma Slough (Moyle et al. 1995). Spawning peaks between February and April in the upper Delta. Larvae initially remain in close proximity to spawning sites and move into deeper water as they mature. Splittail are presently found primarily in the Delta, Suisun Bay, Suisun Marsh, and other parts of the Sacramento-San Joaquin estuary. In the SJR, splittail have been found below the Merced River confluence (Brown and Moyle 1993), and successful spawning has been observed in the Tuolumne River during wet years in the 1980s (Moyle et al. 1995).

***Green Sturgeon* (Acipenser medirostris)**

The green sturgeon are designated as a federal species of concern and a California species of special concern. These status designations do not provide direct protections for the species pursuant to CESA or FESA. Green sturgeon have been found from Ensenada, Mexico, to the Bering Sea and Japan (Miller and Lea 1972). They are also found along the North Pacific coasts of Korea, China, and the Amur River of the USSR (Berg 1948). Green sturgeon have been reported in San Francisco Bay (Aplin 1967), San Pablo Bay (Ganssle 1966; Miller 1972), and the lower SJR and the Delta (Radtke 1966).

At present, biologists are unsure of the spawning locations of the green sturgeon. Spawning has been reported approximately 1-mile above Orleans on the Klamath River (Moyle 1976) and in the upper inland streams of large rivers such as the Sacramento and Klamath rivers (Fry 1973). The early developmental biology of this species is essentially unreported. In the Sacramento Delta, the diet of juvenile sturgeon consists mostly of amphipods and mysid shrimps (Radtke 1966). Little is known about the age and growth of the green sturgeon.

4.15.3 ENVIRONMENTAL IMPACTS

ANALYSIS METHODOLOGY

Information obtained from previous environmental compliance documents (see the list of documents at the beginning of this section), biological studies conducted in the Delta, fish monitoring surveys, and California Natural Diversity Data Base (CNDDB) records were used to assess impacts on fisheries resources from the proposed project.

A large number of fish species can occur in the project area. Many of these species have the same or similar ecological requirements; therefore, a representative sample of key species was selected for evaluation that would adequately reflect potential impacts for all species. Species were selected if they have been identified by state or federal agencies as special-status species and/or have experienced substantial population declines/changes in recent years. Impacts on the following key and representative species were considered when evaluating project effects:

- Central Valley fall-/late-fall-run chinook salmon, Central Valley winter-run chinook salmon, and Central Valley spring-run chinook salmon;
- steelhead trout;
- delta smelt;
- Sacramento splittail;
- longfin smelt; and
- green sturgeon.

For the purposes of this analysis, the "range" of a species (as used in the Thresholds of Significance discussion below) is defined as "the region throughout which a kind of organism or ecological community naturally lives or occurs" (Merriam-Webster 2004). For fish species, the range would include areas used for various biological activities such as migration routes and spawning areas. For anadromous fish (e.g., salmon, steelhead), the range includes regions within the Pacific Ocean where these species are known to occur.

THRESHOLDS OF SIGNIFICANCE

The proposed project would cause a significant impact on fisheries resources if it would result in one or more of the following:

- reduce the number or restrict the range of an endangered, rare, or threatened species;
- have a substantial direct adverse impact on any species identified as a candidate, sensitive, or special-status species by DFG, USFWS, or NOAA Fisheries or in any local or regional plans, policies, or regulations designed to protect biological resources, including the SJMSCP;
- substantially reduce the habitat of a fish species;
- cause a fish population to drop below self-sustaining levels;
- threaten to eliminate a fisheries/aquatic community;
- substantially alter the abundance, diversity, or fish species composition such that it reduces the viability of a special-status, native, or sport fish species; or
- substantially interfere with the movement of any resident or migratory special-status, native, or sport fish population.

IMPACT ANALYSIS

Impact 4.15-a

Fisheries – Construction Sediment on the Landward Side of the SJR Levee. *General construction activities in the proposed CLSP area on the landward side of the SJR levee and at potential sites for recycled water storage ponds could result in the release of sediment and other water quality constituents into the SJR, which could adversely affect fish species locally. However, given the location of construction activities relative to the levee and the requirements for erosion control during construction, limited to no sediment releases would occur. This impact is considered* ***less than significant****.*

General construction activities within the CLSP area would result in approximately 943 acres of soil surface area disturbed in Phase 1 and approximately 578 acres affected during construction in the Phase 2 area. Up to an additional 98 acres would be disturbed during construction of the recycled water storage ponds and up to an additional 7 acres would be disturbed during construction of one of the offsite WRP #2 options. These activities could potentially cause sediment to enter and become temporarily suspended in adjacent water bodies (i.e., the SJR). Therefore, temporary impacts on aquatic biota and special-status fish species in the immediate vicinity of the construction zone could occur. These temporary, construction-related impacts could include, but would not be limited to, reduced visibility and subsequent impairment of feeding success, gill abrasion, respiratory distress, habitat modification through the introduction of fines, and smothering of benthic organisms. Any species in the area during the construction activities could be adversely affected, including chinook salmon, delta smelt, and Sacramento splittail.

A key consideration in evaluating this potential impact is that these construction activities would occur on the landward side of the SJR levee (potential impacts associated with project activities on the water side of the levee are addressed below). Therefore, opportunities for release of sediments and other harmful water quality constituents into the SJR by passing over the levee would be minimal to nonexistent. The existing levee creates a barrier, preventing sediment and other water quality constituents from reaching the river. Construction sediment could enter agricultural drainage ditches located near the construction site and could ultimately be pumped into the SJR. However, the construction contractors would be required to comply with a Storm Water Pollution Prevention Plan (SWPPP) during project construction and implement Best Management Practices (BMPs) included in the SWPPP to minimize potential erosion and sedimentation and meet the requirements for the California General Permit for construction projects regulated under the National Pollutant Discharge Elimination System (NPDES) (See Mitigation Measure 4.8-c in Section 4.8, Hydrology and Water Quality). Given the sediment containment function provided by the SJR levee and the additional sediment controls provided by SWPPP and associated BMP implementation, sediment releases into the SJR and subsequent potential adverse effects to fishery resources are not anticipated. This impact is considered less than significant.

Impact 4.15-b

Fisheries – Design and Construction of Project Facilities on the River Side of the SJR Levee. *Construction/grading activities and design of open space areas on the river side of the SJR levee may cause temporary sediment releases into the SJR and create depressions that may strand fish during flood events. This impact is considered* ***significant****.*

Limited park facilities landscaping may be located in the open space areas proposed along the river side of the SJR levee. Facilities would be restricted to those tolerant of inundation during high river flows, such as picnic areas. Construction/grading landscaping activities in these areas could cause sediment to enter the SJR via erosion. If the proposed open space areas become inundated with flood flows from the

SJR during construction/grading activities, flood waters could carry additional sediment into the SJR. Temporarily suspended sediment in the SJR could result in temporary impacts on aquatic biota and special-status species including, but not be limited to, reduced visibility and subsequent impairment of feeding success, gill abrasion, respiratory distress, habitat modification through the introduction of fines, and smothering of benthic organisms. If open space areas are designed with soil depressions, fish may also get stranded in these areas after flood waters recede and the depressions become isolated pools of water. Fish trapped in these pools would then be subject to predation and ultimately desiccation as the depressions dry out. Fish species that use shallow water edge habitat (i.e., juvenile chinook salmon and steelhead, Sacramento splittail, delta smelt) could be particularly susceptible to this impact mechanism. Mortality of stranded fish and the related potential reduction in numbers of threatened/endangered fish species and/or substantial direct adverse impacts to other special-status fish species would be considered a significant impact.

Impact 4.15-c

Fisheries – Degradation of Aquatic Habitat from Construction of the Proposed Stormwater Outfall. *Construction of the proposed stormwater outfall to the San Joaquin River could result in the removal of riparian vegetation that may benefit fishery resources, sediment releases to the river associated with soil disturbing activities, fish mortality during in water construction (if required), and habitat removal from installation of slope armoring on the levee below the ordinary high water mark. Although installation of the outfall would affect a relatively small area and would incorporate design features to minimize disruption of aquatic habitat, impacts to fishery resources are considered* ***significant****.*

As part of the CLSP, a stormwater outfall facility would be constructed to discharge stormwater drainage from the CLSP area to the SJR. The precise location of the CLSP outfall has not been determined; however, the area considered for the outfall is restricted to approximately the southern 1/3 of river shoreline adjacent to the CLSP area (see Exhibit 3-5). For this analysis it is assumed that the CLSP outfall would have a similar design and would be subject to similar construction guidelines as the planned Stonebridge outfall to be installed near the western terminus of Dos Reis Road (see Section 3.4.3, Drainage Plan) as part of a separate City project. The CLSP outfall would consist of six or seven 30-inch outfall pipes. In order to avoid obstruction of the existing service road on top of the SJR levee, the pipes would be buried within the top of the levee in accordance with (RD 17) guidelines.

On the riverside surface of the levee, a single concrete platform would be constructed for the outfall pipes, and a spillway would be constructed with slope armoring to ensure that the discharge does not erode the levee. Stormwater would run down the spillway into the river. Discharge flows down the spillway would be considered too shallow and rapid flowing to be suitable for fish migration; therefore, flows would not constitute an attractive nuisance causing migrating fish to approach the outfall pipes. In the rare occasion when water levels in the SJR are high enough to inundate the discharge ports when the outfall is in use, the velocity of water leaving the ports would be too high for fish to enter, and flap-gates tide-flux valves, or similar equipment at each outfall port would prevent fish entering when the outfall is not in operation.

Although the exact location of the CLSP outfall is not known, there is the potential that riparian vegetation may be removed from the bank of the SJR during construction of the facility. Although the riparian vegetation in the CLSP area does not provide a great deal of benefit to aquatic species in the SJR (see Section 4.15.2, Existing Conditions, above), under high water conditions the patches of riparian vegetation can provide shade and cooling at the water's edge which may benefit fish, and provide cover for prey species and general habitat diversity when the vegetation is inundated. If riparian vegetation is

removed during outfall construction, a relatively small degradation of habitat quality for fishery resources would occur along the CLSP area shoreline.

Soil disturbance associated with the pipeline and outfall installation could result in sediment releases to the SRJ that could adversely affect aquatic biota and special-status species, including, but not be limited to, reduced visibility and subsequent impairment of feeding success, gill abrasion, respiratory distress, habitat modification through the introduction of fines, and smothering of benthic organisms.

Only minimal in-water work is anticipated during outfall construction since it is expected that construction would occur during the summer months when water levels would be at or below the lowest extent of the spillway. Where in-water work is required, construction activities in the aquatic environment could result in direct mortality to both common and special-status fish species which may be in the vicinity.

The steep banks and limited vegetation along the SJR levee reduce the value of the aquatic habitat along the levee surface, both in areas that are regularly inundated and areas that are only inundated during high water conditions. Installation of the CLSP stormwater outfall would further reduce habitat values by replacing any existing vegetated levee surface (if it is constructed on a vegetated surface) with an armored spillway and the outfall itself.

Construction of the CLSP stormwater outfall could result in habitat degradation associated with the modification of the levee surface and potential removal of riparian vegetation, the discharge of sediment into the aquatic environment during construction, and the potential direct mortality of nearby fish where in water construction is required. All these activities could have a substantial adverse affect on special-status fish species and could reduce the numbers or restrict the range of the threatened and endangered species with potential to occur in the project vicinity (Chinook salmon, steelhead, delta smelt). Therefore, this impact is considered significant.

Impact 4.15-d

Fisheries – Stormwater Discharges. *Stormwater from the CLSP area would be discharged into the SJR and could adversely affect special-status fish species. However, the overall water quality of discharges into the SJR would be improved under the proposed project compared to the agricultural discharges experienced under existing conditions. This impact is considered* ***less than significant and potentially beneficial****.*

The drainage plan developed for the CLSP identifies various management and structural stormwater Best Management Practices (BMPs) that would be implemented to collect, filter, and detain stormwater under the proposed project (see Section 3.4.3, Drainage Plan). These include items such as drop inlet filters, vault filters, hydrodynamic separators, surface detention basins, and underground detention facilities. These BMPs would reduce the amount of sediments and contaminants in stormwater discharged from the CLSP area into the SJR.

As described in Section 4.8, Hydrology and Water Quality, an analysis was conducted (Appendix F of this DEIR) to evaluate preproject and postproject discharges to the SJR. Under postproject conditions, with use of the various stormwater BMPs, mass loading and concentrations for the majority of constituents would be reduced compared to discharges associated with the existing agricultural land uses. Diazinon concentration may increase due to the shift from agricultural to residential uses. However, diazinon use for residential application is now restricted and use is expected to decline in the future; hence, concentrations in stormwater discharges are also expected to decline.

Because the postproject condition is considered to improve water quality for almost all constituents, and therefore not adversely affect habitat conditions for fisheries in the project vicinity relative to existing conditions, this impact is considered less than significant and potentially beneficial.

Impact 4.15-e

Fisheries – Reduction in Unscreened SJR Diversions. *Currently much of the irrigation water used for agricultural operations in the CLSP area, and several of the potential recycled water storage/disposal areas, is diverted from the SJR at various unscreened agricultural intakes. These intakes have the potential to draw in special-status fish species as irrigation water is diverted to the agricultural fields. Operation of these unscreened intakes would cease, or screens would be installed, as agricultural lands are replaced by development in the CLSP area and recycled water storage ponds off site. Demand for water from the SJR would also be reduced in the recycled water disposal areas as recycled water would support all, or a majority, of the irrigation demand. This impact is considered* ***beneficial****.*

Under existing conditions, a vast majority of the water used for agricultural irrigation in the CLSP area is diverted from the SJR via various unscreened agricultural intakes. The same is true for potential recycled water storage/disposal areas 1, 2, 3, 4, and 6 (Exhibit 3-6) (note that Area 4 is within the CLSP area). Potential storage/disposal area 5 is currently irrigated with recycled water generated by the City's existing WRP. Unscreened agricultural intakes have the potential to draw in both common and special-status fish species as irrigation water is diverted to the agricultural fields.

As agricultural lands in the CLSP area are converted to development, there will no longer be a demand for irrigation water from the SJR in these areas. Operation of unscreened agricultural intakes currently supporting the CLSP area would be reduced. However, withdrawals would be equal to or less than existing conditions. Conversion of agricultural lands to recycled water storage ponds would result in a similar reduction/elimination of intake use. Demand for irrigation water from the SJR would also be reduced in the recycled water disposal areas as all, or a majority, of the existing agricultural irrigation demand would be met through the use of recycled water. Note that Richland will retain riparian water rights associated with lands in the CLSP area and there is a possibility that intakes would be screened and converted to other uses.

Implementation of the proposed project would result in a reduction in the number of unscreened agricultural intakes used on the SJR, a reduction in the use of unscreened intakes supporting recycled water disposal areas, and potentially an overall reduction in agricultural diversion volumes in the project area. The net effect of the proposed project would be a decrease in fish entrainment associated with SJR diversions. This impact is considered beneficial.

4.15.4 MITIGATION MEASURES

No mitigation measures are necessary for the following less-than-significant or beneficial impacts.

- 4.15-a: Construction Sediment on the Landward Side of the SJR Levee
- 4.15-d: Stormwater Discharges
- 4.15-e: Reduction in Unscreened SJR Diversions

The following mitigation measures are provided for significant impacts.

4.15-b Design and Construction of Project Facilities on the River Side of the SJR Levee. The project applicant shall design and construct open space areas on the riverside of the SJR levee

without any ground depressions that could retain/pool high water flows from the SJR which could strand fish, especially juvenile chinook salmon and steelhead, delta smelt, and Sacramento splittail. During construction/grading activities on the riverside of the SJR levee, all applicable erosion avoidance and minimization measures, and erosion control BMPs shall be implemented. In addition, guidelines from Mitigation Measure 4.8-c (included in Section 4.8, Hydrology and Water Quality) and Mitigation Measure 4.15-c below, shall be implemented.

Implementation of Mitigation Measure 4.15-b, together with Mitigation Measures 4.8-c and 4.15-c, would minimize adverse impacts to special-status fish species, and specifically would prevent project related mortality (i.e., reduction in numbers) of Threatened and Endangered fish species, associated with construction of project facilities on the river side of the SJR levee, reducing this impact to a less-than-significant level.

4.15-c Degradation of Aquatic Habitat from Construction of the Proposed Stormwater Outfall. The project applicant, possibly through a permitting process conducted by a federal agency (e.g., the U.S. Army Corps of Engineers) shall consult with NOAA Fisheries and USFWS regarding the design of the proposed outfall station. If required by NOAA Fisheries and/or USFWS, incidental take permits shall be acquired prior to installation of the outfall station. Permits from the U.S. Army Corps of Engineers related to Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act shall also be obtained as necessary and all permit requirements shall be implemented. Project engineers shall design the proposed outfall consistent with the NOAA Fisheries Guidelines for Salmonid Passage at Stream Crossings (2000). In addition, the following actions shall be implemented:

- Remove the minimum amount of vegetation on the levee to accommodate the outfall facility.

- All trees and shrubs that are removed and that shade the SJR shall be replaced. Conceivably, through careful siting of the outfall and various construction practices, most impacts to these canopy species could be avoided. However, any loss of canopy vegetation shall be compensated for by replacement plantings on the river side of the levee on the project site. Each tree or shrub impacted shall be replaced with three trees or shrubs of the same species, or a California native equivalent. Plantings shall have a temporary irrigation system that shall be maintained a minimum of three years or until the planted trees/shrubs are established. Trees/shrubs shall be planted in the fall, no later than one year after the outfall station is installed, but not before water and electricity is available for the temporary irrigation system.

- Flap gates, tide flux valves, or similar equipment shall be installed on each outfall pipe.

- Implement erosion control BMPs during construction. These measures include: (1) revegetation before the rainy season of all barren soils resulting from the outfall construction or any other construction-related activities if the barren areas could contribute silt runoff into the SJR; (2) keep silt and silt laden water from entering the SJR during the construction period (including isolating the outfall work area [i.e., dewatering the work area] from the SJR via construction of a sheet pile wall or similar barrier if needed), pumping silt-laden waters in the isolated work area to a desiltation basin on the land side of the levee; and (3) collection and disposing of silt and water collected in the desiltation basins to land (i.e., use as soil supplements, irrigation water, etc.).

- Restrict construction activity within the river side of the levee to periods when migrating anadromous fish would not be expected to be in the SJR near the project site based on consultation with NOAA Fisheries.

- Construct the outfall to follow the topographic contour of the existing levee so as to not reduce the original volume of the SJR.

- Remove all surplus material in the channel upon completion of the outfall.

- No curing concrete shall have contact with SJR waters. Allow any concrete material installed below the water line of the river to cure a minimum of 30 days without an appropriate sealer, or 7 days with an appropriate sealer, prior to coming in contact with SJR waters.

- Restrict all equipment refueling and maintenance to designated containment areas below the outside wall (non-river side) of the levee.

Implementation of Mitigation Measure 4.15-c would minimize adverse impacts to special-status fish species, and specifically would prevent project related mortality (i.e., reduction in numbers) and loss of habitat (restriction of range) of threatened and endangered fish species associated with construction of stormwater outfall, reducing this impact to a less-than-significant level.

4.15.5 RESIDUAL SIGNIFICANT IMPACTS

There would be no residual significant impacts associated with fishery resources after implementation of the mitigation measures recommended in this section.

4.16 Cultural Resources

4.16 CULTURAL RESOURCES

This section evaluates the potential impacts on cultural resources from implementation of the Central Lathrop Specific Plan (CLSP) and potential water recycling plant (WRP) and recycled water storage/disposal area options. The analysis is based on a series of archaeological surveys performed on the project site in the summer and fall of 2003 and the winter and spring of 2004. Of the 68 parcels within the CLSP project area, 28 were surveyed in their entirety for archaeological resources and in four, surveys covered part of the parcel area. For several reasons, the remaining parcels were not surveyed (e.g., that access to the property was denied, the property was planted with thick vegetation or overgrown, or no authorization was obtained for entry onto the parcel).

Given the confidentiality requirements of the State of California and the California Historical Resources Information System (CHRIS), references to the locations of cultural resources sites in this EIR are provided in general rather than specific terms. The archaeological report, which identifies specific locations of cultural resources sites in the project area, is on file for review by authorized individuals with the Central California Information Center of the CHRIS and at the City of Lathrop City Community Development/Planning Department, 16775 Howland Road, Suite One, Lathrop, California 95330 (209/858 2860, extension 327).

4.16.1 REGULATORY BACKGROUND

STATE CEQA GUIDELINES

The California Environmental Quality Act (CEQA) offers directives regarding impacts on historical resources and unique archaeological resources. CEQA states that if implementation of a project would result in significant environmental impacts, then public agencies should determine whether such impacts can be substantially lessened or avoided through feasible mitigation measures or feasible alternatives. However, only significant cultural resources (e.g., "historical resources" and "unique archaeological resources") need to be addressed. State CEQA Guidelines define a historical resource as, among other things "a resource listed or eligible for listing on the California Register of Historical Resources" (CRHR) (State CEQA Guidelines §15064.5(a)(i); Public Resources Code §§5024.1, 21084.1). A historical resource may be eligible for inclusion on the CRHR, as determined by the State Historical Resources Commission or the lead agency, if the resource:

- is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage; or
- is associated with the lives of persons important in our past; or
- embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or
- has yielded, or may be likely to yield, information important in prehistory or history.

State CEQA Guidelines §15064.5(a)(1), (a)(3). In addition, a resource is presumed to constitute a "historical resource" if it is included in a "local register of historical resources" unless "the preponderance of evidence demonstrates that it is not historically or culturally significant." (State CEQA Guidelines §15064.5(a)(2)).

In addition, the State CEQA Guidelines require consideration of unique archaeological sites (§15064.5) (see also Public Resources Code §21083.2). A "unique archaeological resource" is defined as:

an archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria: (1) Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information. (2) Has a special and particular quality such as being the oldest of its type or the best available example of its type. (3) Is directly associated with a scientifically recognized important prehistoric or historic event or person. [Public Resources Code §21083.2(h)].

If an archaeological site does not meet the criteria for inclusion on the CRHR but does meet the definition of a unique archeological resource as outlined in the Public Resource Code (§21083.2), it is entitled to special protection or attention under CEQA. Treatment options under §21083.2 of CEQA include activities that preserve such resources in place in an undisturbed state. Other acceptable methods of mitigation under §21083.2 include excavation and curation or study in place without excavation and curation (if the study finds that the artifacts would not meet one or more of the criteria for defining a "unique archaeological resource").

Public Resources Code §15064.5(e) of the State CEQA Guidelines requires that excavation activities be stopped whenever human remains are uncovered and that the county coroner be called in to assess the remains. If the county coroner determines that the remains are those of Native Americans, the Native American Heritage Commission must be contacted within 24 hours. At that time, §15064.5(d) of the State CEQA Guidelines directs the lead agency to consult with the appropriate Native Americans as identified by the Native American Heritage Commission and directs the lead agency (or applicant), under certain circumstances, to develop an agreement with the Native Americans for the treatment and disposition of the remains.

For historic structures, §15064.5(b)(3) of the State CEQA Guidelines indicates that a project that follows the Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings, or the Secretary of the Interior's Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings (1995), shall mitigate impacts to a level of less than significant. Potential eligibility also rests upon the integrity of the resource. Integrity is defined as the retention of the resource's physical identity that existed during its period of significance. Integrity is determined through considering the setting, design, workmanship, materials, location, feeling and association of the resource.

SAN JOAQUIN COUNTY GENERAL PLAN 2010

San Joaquin County contains a number of identified historic and prehistoric resources. The San Joaquin County General Plan 2010 (County General Plan) includes a list of objectives and policies to protect and preserve these resources. These policies, of course, would not govern the CLSP site if it is successfully annexed into the City of Lathrop.

Objective

1. To protect San Joaquin County's valuable architectural, historic, archaeological and cultural resources.

Policies

1. The County shall continue to encourage efforts, both public and private, to preserve its historical and cultural heritage.

2. Significant archaeological and historical resources shall be identified and protected from destruction. If evidence of such resources appears after development begins, an assessment shall be made of the appropriate action to preserve or remove the resources.

3. No significant architectural, historical, archaeological or cultural resources shall be knowingly destroyed through County action.

4. Reuse of architecturally interesting or historical buildings shall be encouraged.

5. The County shall promote public awareness of and support for historic preservation.

CITY OF LATHROP GENERAL PLAN

The City of Lathrop General Plan (City General Plan) contains two policies in the Open Space for Health, Welfare, and Well-Being Element that relate to archeological and cultural resources. The first policy addresses known cultural resources sites. The City is required to evaluate potential conflicts with known sites when an application for development in the City General Plan area is filed. Confidentiality shall be maintained between the City and the developer to prevent uninvolved parties from obtaining information on the location of the resource and potential vandalism. Alternatives for development design intended to protect cultural resources shall be reviewed by a Native American having competence in understanding and interpreting the importance of the resources and of the most desirable methods to ensure their preservation.

The second General Plan policy addresses previously unrecorded or unknown cultural resource sites that may be unearthed during project construction. The City and the developer shall take note when projects are located near natural water courses or known archaeological or cultural resources. In such cases, the City shall instruct the developer, construction foreman, and City inspectors of the potential for damage to artifacts and sites, as well as provide written instructions requiring a halt to all excavation work in the event of any find until the significance of the find can be evaluated by competent archaeological and Native American specialists.

4.16.2 EXISTING CONDITIONS

The following sections contain a summary of the existing cultural resources within the project site, including the CLSP area, potential offsite WRP #2 sites, potential recycled water storage and disposal sites, and locations in the immediate vicinity of the project site that might be indirectly affected by project activities. These specific areas were examined as a whole and are presented here as a whole, referred to as the project area.

The analysis of the project area is based in part on a review of previous survey and recordation efforts in the vicinity. Data from previous surveys were collected during a records search conducted by the Central California Information Center (CCIC) of the California Historical Resource Information System (CHRIS). The records search indicated that there were several known historic and prehistoric resources near the project area documented during previous surveys. Most of these resources were not considered significant under the specifications of CEQA and are not discussed in this document.

ARCHAEOLOGICAL SETTING

The earliest well documented entry and spread of humans into California occurred at the beginning of the Paleo Indian Period (10,000–6000 B.C.). Social units are thought to have been small and highly mobile. Because of the plentiful resources and temperate climate, the Central Valley was well populated

prehistorically and served as the location for some of the more substantial village sites known in California. Known sites have been identified within the contexts of ancient pluvial lake shores and coast lines evidenced by such characteristic hunting implements as fluted projectile points and chipped stone crescent forms. Prehistoric adaptations over the ensuing centuries have been identified in the archaeological record by numerous researchers working in the area since the early 1900s, as summarized by Fredrickson (1974) and Moratto (1984).

Beardsley (1948) and Lillard, Heizer, and Fenenga (1939) and others conducted numerous studies that form the core of our early understanding of upper Central Valley archaeology. Little has been found archaeologically that dates to the Paleo Indian (10,000–6000 B.C.) or the Lower Archaic time periods; however, archaeologists have recovered a great deal of data from sites occupied by the Middle Archaic period. The lack of sites from earlier periods may be attributable to high sedimentation rates that left the earliest sites deeply buried and inaccessible. During the Middle Archaic Period (3000–1000 B.C.), the broad regional patterns of foraging subsistence strategies gave way to more intensive procurement practices. Subsistence economies were more diversified, possibly including the introduction of acorn-processing technology. Human populations were growing and occupying more diverse settings. Permanent villages that were occupied throughout the year were established, primarily along major waterways. The onset of status distinctions and other indicators of growing sociopolitical complexity mark the Upper Archaic Period (1000 B.C. to A.D. 500). Exchange systems become more complex and formalized. Evidence of regular, sustained trade between groups was seen for the first time.

Several technological and social changes characterized the Emergent Period (A.D. 500–1800). The bow and arrow were introduced, ultimately replacing the dart and atlatl (a spear-throwing device). Territorial boundaries between groups became well established. It became increasingly common that distinctions in an individual's social status could be linked to acquired wealth. Exchange of goods between groups became more regularized with more goods, including raw materials, entering into the exchange networks. In the latter portion of this period (A.D. 1500–1800), exchange relations became highly regularized and sophisticated. The clamshell disk bead became a monetary unit for exchange, and increasing quantities of goods moved greater distances. Specialists arose to govern various aspects of production and exchange.

Three periods were well represented in archaeological assemblages in the general vicinity of the project area. These assemblages are discussed in detail in Moratto (1984) and summarized here. The Windmiller Pattern (3000–500 B.C.) of archaeological assemblages included an increased emphasis on acorn use as well as a continuation of hunting and fishing activities. Ground and polished charmstones, twined basketry, baked clay artifacts, and worked shell and bone were hallmarks of Windmiller culture. Widely ranging trade patterns brought goods in from the Coast Ranges and trans Sierran sources as well as closer trading partners. Distinctive burial practices identified with the Windmiller Pattern also appeared in the Sierra Nevada foothills, indicating possible seasonal migration into the Sierra Nevada. The Berkeley Pattern (500 B.C. to A.D. 700) represented a greater reliance on acorns as a food source than was seen previously. Distinctive stone and shell artifacts distinguished it from earlier or later cultural expressions. The Berkeley Pattern appears to have developed in the Bay Area and was spread through the migration of Plains Miwok Indians. Dating of the Berkeley Pattern varies across central California; in the Stockton region, the Windmiller Pattern continued longer than in other areas, gradually giving way to the changes that marked the Berkeley Pattern and which might represent the emergence of the Northern Valley Yokuts in this area. The Meganos Aspect of the Berkeley Pattern represented a localized intrusion of Windmiller people into the Stockton District (Bennyhoff 1982). These people combined Windmiller and Berkeley pattern traits, as seen in mortuary practices and the stone tool industry. A particular aspect of Meganos culture was a predilection for burials placed in non-midden cemeteries in the tops of sand mounds near the mouths of the Sacramento and San Joaquin rivers (Bennyhoff 1968). The Augustine Pattern (A.D. 700 to 1800) may have been stimulated by the southern migration of Wintuan people from

north of the Sacramento Valley. Their culture was marked by increasing populations resulting from more intensive food procurement strategies, as well as a marked change in burial practices, increased trade activities, and a well defined ceramic technology.

ETHNOGRAPHIC SETTING

Ethnographically, the Northern Valley Yokuts occupied the project vicinity–that is, the land on either side of the San Joaquin River from the Delta to south of Mendota. The Diablo range probably marked the Yokuts' western boundary (Wallace 1978); the eastern edge would have lain along the Sierra Nevada foothills. Yokuts occupation of the northern parts of the range 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 historic and prehistoric artifact assemblages. The late prehistoric Yokuts may have been the largest ethnic group in pre-contact California. The triblet, populated by a few hundred to a few thousand occupants, served as the basic political unit (Moratto 1984). Structures ranged from single family dwellings to multifamily communal structures and included sweat houses and ceremonial lodges.

Euroamerican contact with the Northern Valley Yokuts began with infrequent excursions by Spanish explorers traveling through the Sacramento San Joaquin Valley in the late 1700s to early 1800s. Many Yokuts were lured or captured by missionaries and scattered among the various missions. Many escaped and returned to the valley. Yokuts raiding parties targeting the Spanish (and later Mexican) cattle herds became prevalent, leading to retaliatory action by the settlers. The malaria epidemic of 1833 decimated the Yokuts population, killing thousands of the tribesmen. The influx of Europeans during the Gold Rush era further reduced the population through disease and violent relations with the miners. Although there was no gold within the Yokuts territory, miners passing through on their way to the diggings caused a certain amount of upheaval. Many former miners who had seen the richness of the San Joaquin Valley on their way east later returned to settle and farm the area (Wallace 1978).

HISTORIC SETTING

The first known European settlers in the San Joaquin County area were trappers with the Hudson's Bay Company, mainly of French descent, many of whom settled in the area still known today as French Camp. In 1829, Spaniards attempted to find a new location for a mission in the area. They were defeated in a battle on the banks of the Stanislaus River by Chief Estanisloa, Chief of the Si-yak-um-na (Cook 1975).

Captain C. M. Weber was a German immigrant who left his native land in 1836. After stays in New Orleans and Salt Lake City, Weber struck out on his own and made his way to Sutter's Fort, where he was employed as overseer and general assistant to Sutter. He made a trip to San Jose sometime during 1841, where he struck up a partnership with Guillermo Gulnac. In 1842, they built and opened a flourmill and made sea biscuits (hardtack). In 1843, Gulnac obtained a land grant of 48,000 acres near French Camp and raised cattle (Cook 1975). This became known as Campo de los Franceses (Beck and Haase 1974).

Weber moved from San Jose to Stockton in 1847, after Gulnac gave Weber a half interest in the rancho. Weber could not himself obtain a land grant because he was not a Mexican citizen. He later purchased the other half interest from Gulnac. Weber also convinced several other settlers to locate to this area by offering them land (Cook 1975). In 1868, the Central Pacific Railroad (CPRR) announced its intentions to build a rail yard in Lathrop. Chinese labor was brought in to do the work, and a settlement grew up around the rail yard (Cook 1975).

Although propelled by a combination of economic factors, proponents of a transcontinental railroad did not gain serious headway until the mid 19th century. Between 1853 and 1855, a series of comprehensive surveys was conducted by Army engineers to identify possible routes. Construction of the railroad began in Sacramento, California, in January 1863 (VanMoorleghem 1994), although at that point only the Sacramento-to-Omaha segment had been authorized.

The two companies building the line were the CPRR and the Union Pacific Railroad (UPRR). The CPRR was managed by the "Big Four," namely Leland Stanford, Collis Huntington, Charles Crocker, and Mark Hopkins. The UPRR was run by Thomas Durant, Oakes Ames, Oliver Ames, and Grenville Dodge (known as America's greatest railroad builder). The meeting of the rails occurred on May 10, 1869, in Promontory, Utah. The driving of the golden spike uniting the CPRR and UPRR, in May 1869, is commonly perceived as the final step in construction of the first Transcontinental Railroad. However, completion of the drawbridge spanning the San Joaquin River at Mossdale in September 1869 actually completed the link to San Francisco (Kyle 1990). An iron truss replaced the original structure in 1895. The current drawbridge was completed in 1942 (Hillman and Covello 1985). The site has been designated as California Historical Landmark 780-7 and is eligible for listing on the CRHR.

The CLSP project area and surrounding locales have been used for agricultural purposes since the turn of the century. Before this, the location that now comprises the project area was depicted as "Swamp and Overflow Land" on an 1865 GLO Plat Map. A 1915 map of the area depicts four buildings within the project area, situated primarily adjacent to the San Joaquin River. The buildings are spaced approximately ½ mile to 1 mile apart. By 1952, approximately 30 more buildings had been added throughout the entire project area. Sometime after 1915, Dos Reis Road was extended west into the CLSP area, facilitating vehicle access.

Development in recent decades in the form of single-family residences, light industrial areas, and a mobile home lot has altered the original spatial organization. At the time of this writing, a two-story residence, dissimilar from the existing vernacular architecture in the area, is under construction on Dos Reis Road. The contiguous urban areas of Lathrop, east of the project area, have encroached steadily over the years. Between 1915 and 1952, a significant amount of development took place in locations adjacent to the project area, such as the area directly east of I-5.

ARCHAEOLOGICAL RESOURCES

Survey Methods

Before field surveys were conducted, two information requests were submitted by EDAW to the CCIC. Data also were used from earlier records searches requested by EDAW in 2002 and Peak & Associates in 1999. The records searches included reviews of sites listed in the National Register of Historic Places, California Historical Landmarks, and other government-designated cultural resource sites, as well as a review of information center maps and files of the findings of previous cultural resource surveys conducted in the project area.

The only significant finding from the record search is that Potential Recycled Water Storage/Disposal Area 6 (Exhibit 3-6) may include the southern portions of site CA-SJO-3. This is a prehistoric occupation and burial site that was investigated in the early 1970s, and again in 2001-2003. Portions of the site are deeply buried but intact under I-5 road berms. The site has been found eligible for listing on the NRHP and, therefore, also qualifies for listing on the CRHR.

The records search information was supplemented with a field survey performed by a team of archaeologists. The field survey covered all accessible portions of the project area that had not been

subject to previous archaeological survey (Exhibit 4.16-1, Table 4.16-1). The pedestrian portion of the archaeological surveys was conducted during the summer and fall of 2003 and the winter and spring of 2004. Staggered field visits were utilized to gain access to farm fields as they were harvested, tilled, or otherwise allowed the greatest mineral soil exposure. Some properties were not surveyed because of thick grasses that allowed less than 5% surface visibility, the presence of unharvested crops during survey periods, or lack of authorized access. Surface visibility where surveys occurred ranged from good to excellent, although stubble from harvested alfalfa partially obscured soils in some fields. The archaeological survey team did not discover or record any cultural resources sites during this effort.

Historic Buildings and Structures

EDAW's evaluation of historic buildings and structures was begun by establishing a historic context with which to evaluate the potential resources. Research was conducted at the following libraries and repositories: the San Joaquin County Assessor's Office, the San Joaquin County Building Department, the California State Library's California History Room, and the California State University, Sacramento Library. Preliminary background research for buildings was done through the First American Real Estate Solutions commercial database.

The architectural investigation was undertaken to identify buildings and structures within the project area that are more than 45 years old, and therefore considered potential historic resources. The investigation was conducted on January 5 and May 3, 2004. An EDAW architectural historian photographed and recorded these buildings on the appropriate California Department of Parks and Recreation (DPR) forms. A map depicting the buildings that were identified as potential historic resources is provided in Exhibit 4.16-2. These older structures were then evaluated for qualities such as integrity, setting, design, workmanship, materials, location, feeling and association of the resource, which influence the significance and historic value of the structure.

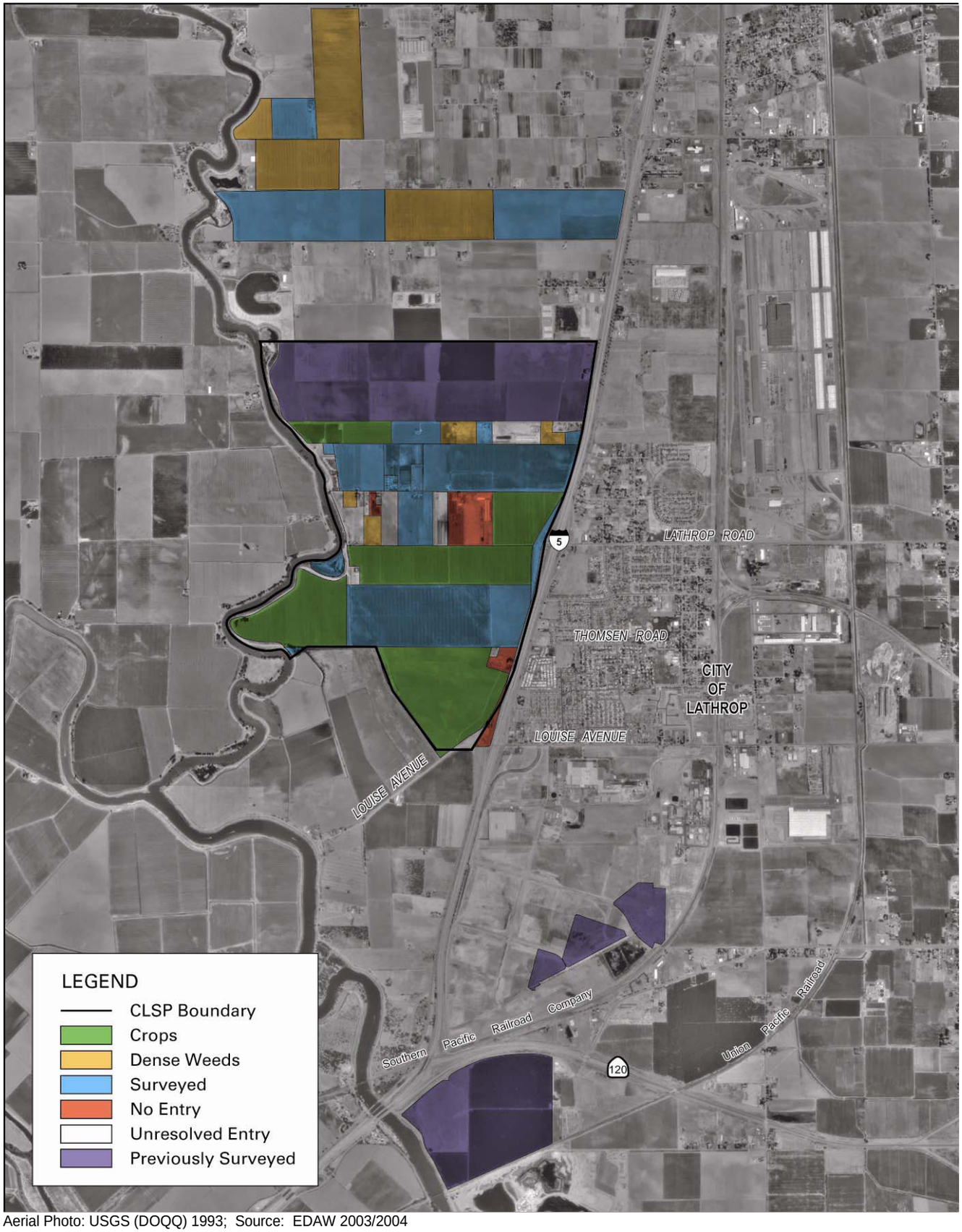
RESULTS

Archaeological Sites

No new archaeological sites have been identified within the current project area. As stated previously, the records search identified potential Recycled Water Storage/Disposal Area 6 as possibly overlapping the southern portions of site CA-SJO-3.

Historic Buildings and Structures

The architectural inventory of the project area resulted in the identification of 68 parcels. Of those parcels, 10 contain buildings that are at least 45 years old. The remaining 58 parcels either contain no buildings, or contain buildings that were constructed after 1959 (the 45-year cut-off date). Table 4.16-2 lists all of the Assessor's Parcel Numbers (APNs), addresses, and construction dates of the buildings within the CLSP area and potential offsite WRP #2 and recycled water storage/disposal sites. The inventory numbers within the table correspond to the numbers on the architectural resource map (Exhibit 4.16-2).



Aerial Photo: USGS (DOQQ) 1993; Source: EDAW 2003/2004

Portions of the CLSP Area Surveyed for Cultural Resources

EXHIBIT 4.16-1

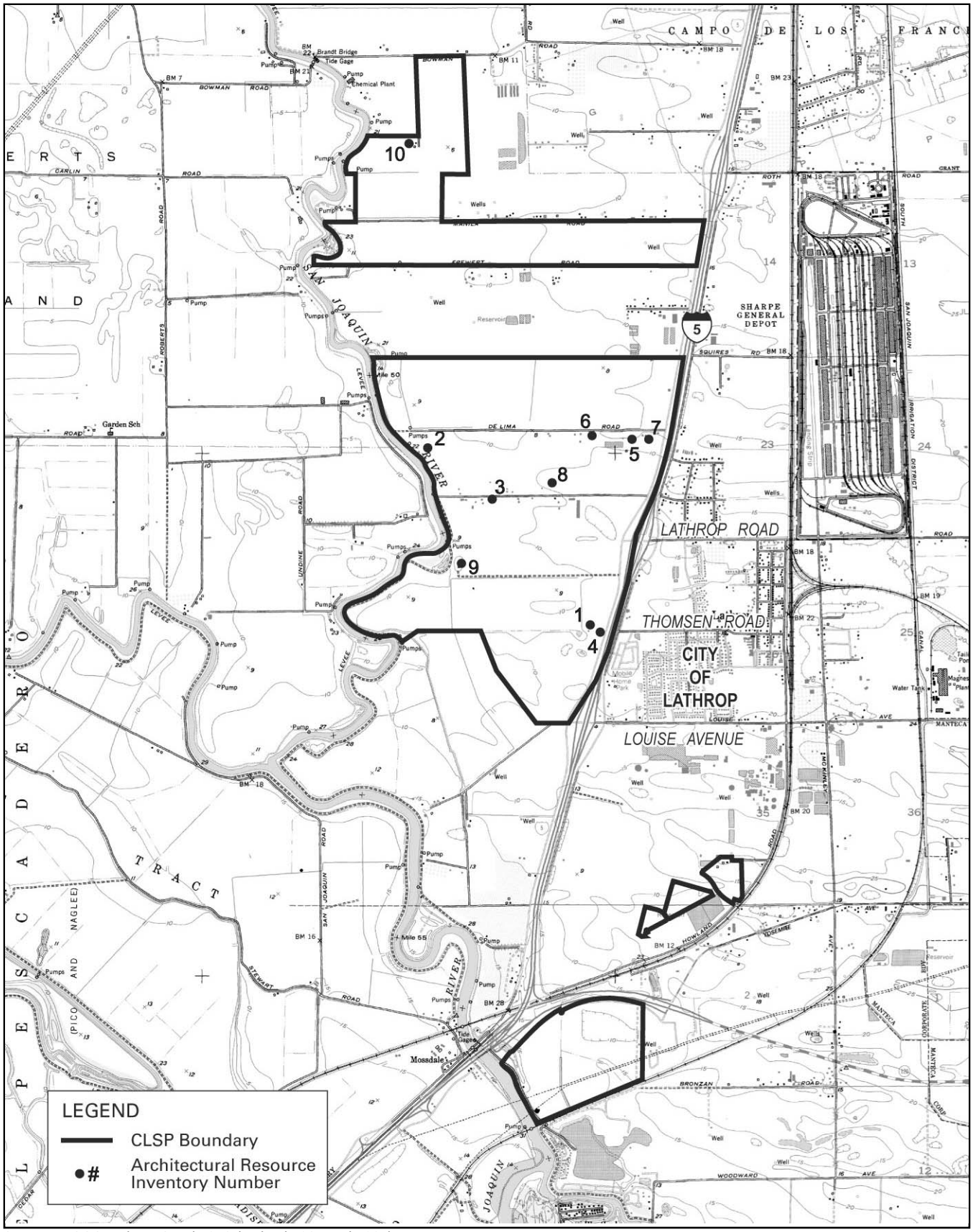
Central Lathrop Specific Plan Draft EIR
City of Lathrop
P 3T017.01 06/04

NORTH

EDAW

Table 4.16-1 Surveyed Properties at the CLSP Project Site				
Assessor's Parcel Number	Owner	Acreage	Surveyed (Yes/No)	Comments
191-270-13	Lawrence	107.9	Yes	Surveyed by Jensen 2001
191-220-05	Widmer	313.9	Yes	Surveyed by Self & Assoc. 2000
191-220-38	Khinda	5	Yes	
191-220-37	Derose	7.72	No	Overgrown
191-220-13	Hayres	16.38	No	No entry authorization
191-220-12	Calderira	.96	No	
191-220-11	Khinda	10.43	Partial	West half overgrown, east half surveyed
191-220-10	Singh	5.15	No	Overgrown
191-220-09	Widmer	16.38	Yes	
191-220-04	Widmer	99.1	No	
191-220-06	Leal	15.2	No	Overgrown
191-220-22	Aurelio	5	Yes	Planted
191-220-01	Schendel	1.98	No	
191-220-02	Schendel	.77	No	
191-220-03	Grover	.86	No	
191-220-8	Widmer	14.85	No	Overgrown
191-220-7	Widmer	1.48	No	
191-220-42	Dos Reis Ranch, Inc.	47.91	No	Planted
191-220-32	TA, Rumulo & Purita	25.87	No	Denied access
191-220-40	TA, Rumulo & Purita	12.28	No	Denied access
191-220-15	Romena	19.48	Yes	
191-220-39	Castro	12.28	No	No entry authorization
191-220-35	Gray	8.96	Yes	
191-220-16	Menor	5	Yes	
191-220-30	De los Angeles	14.73	Yes	
191-220-29	Mitchell	30.73	No	No entry authorization
191-220-17	Gray	9.8	Partial	North 2/3 overgrown, south 1/3 surveyed
191-220-36	Menor	5	Yes	
191-220-28	Jucutan	0.86	Yes	
191-220-27	Rock	3.13	No	Denied access
191-220-26	Coffman	9.82	No	Overgrown
191-220-18	Rio Blanco Ranch	19.61	Yes	
191-220-25	Samorano	5	No	No entry authorization
191-220-44	Ristrim	1.73	Yes	Overgrown
191-220-45	Ristrim	1.26	Yes	
191-220-19	Doyle	8.4	Yes	

Table 4.16-1 Surveyed Properties at the CLSP Project Site				
Assessor's Parcel Number	Owner	Acreage	Surveyed (Yes/No)	Comments
191-220-20	Doyle	8.61	Yes	
191-220-47	Stanley	11.77	No	No entry authorization
191-220-21	State of California	9	No	Developed/plantings
191-220-14	Dos Reis Ranch, Inc.	89.82	Yes	
191-220-43	Robinson	2.65	Yes	
191-210-06	Robinson	3.76	Yes	
191-210-04	Robinson	130.01	No	Planted
191-210-02	Robinson	3.61	Yes	
191-210-05	Robinson	272.27	Yes	
191-200-04	Cotton	0.99	No	No entry authorization
191-200-11	Seus	2.57	No	Denied access
191-200-14	Seus	1.53	No	Denied access
191-200-10	Seus	3.02	No	Denied access
191-200-08	Edwards	0.37	No	Denied access
191-190-19	Edwards	1.96	No	Denied access
191-200-12	Robinson	3.94	No	Planted
191-200-13	Robinson	153.61	No	Planted
191-200-15	Seus	0.01	No	Denied access
191-220-46	Stanley	5.23	No	No entry authorization
191-280-09	Rio Blanco Ranch	101.2	No	No entry authorization
191-280-10	Rio Blanco Ranch	49.49	No	No entry authorization
191-270-01	Roseville Invest.	98.5	No	No entry authorization
191-270-11	Roseville Invest.	1.5	No	No entry authorization
191-260-14	Lawrence Trust	158.79	No	No entry authorization
191-230-02	Lawrence Trust	29.33	No	No entry authorization
191-230-01	Lawrence Trust	40	No	No entry authorization
191-190-18	Castro	1.77	No	No entry authorization
198-130-32	Crossroad Crea LLC	25.15	Yes	
198-130-33	Crossroad Crea LLC	20.69	Yes	
198-130-38	Crossroad Crea LLC	9.75	Yes	
241-030-03	Florida Southchase	161.42	Yes	
241-020-11	Hill Country S A	62.7	Yes	
Locations Considered for Recycled Water Storage and Disposal Facilities				
Area 1	Rio Blanco Ranch, Inc.	150.71	Partial	Overgrown
Area 2	Roseville Investments LLC	60.0	No	Overgrown
Area 3	Lawrence	336.1	Partial	Overgrown
Area 4	Widmer Trust	412.98	Yes	In CLSP area
Area 5	Crossroad Crea LLC	55.59	Yes	
Area 6	Hill Countrys A Ltd. and Southgate Ltd.	224.12	Yes	



Source: USGS Lathrop Quad 1952 (revised 1987 and 1994)

Architectural Resources

EXHIBIT 4.16-2

Central Lathrop Specific Plan Draft EIR
City of Lathrop
P 3T017.01 07/04

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FEET

NORTH

EDAW

Table 4.16-2
Buildings and Structures at the CLSP Project Site

Inventory Number	Assessor's Parcel Number	Address	Construction Date
1	191-200-04	15791 Manthey	1955
2	191-220-22	1050 W. De Lima	1957
3	191-220-28	644 W. Dos Reis	1950
4	191-200-10	15933 S. Manthey	1951
5	191-220-11	322 W. De Lima	1944
6	191-220-10	456 W. De Lima	1945
7	191-220-12	310 W. De Lima	1949
8	191-220-15	443 W. Dos Reis	1953
9	191-210-04	15225 S. Manthey	1900
10	191-280-10	10999 S Holmes	1940
11	191-190-19	16444 S. Manthey	1979
12	191-270-01	1481 W. Manila	1989
13	191-220-05	12965 S. Manthey	1968
14	191-220-32	240 W. Dos Reis	ca. 1960
15	191-220-40	410 Dos Reis	ca. 1960
16	191-220-39	468 W. Dos Reis	1960
17	191-220-30	526 W. Dos Reis	1968
18	191-220-27	700 W. Dos Reis	1960
19	191-220-25	790 W. Dos Reis	1965
20	191-220-36	631 W. Dos Reis	1979
21	191-220-16	525 W. Dos Reis	1972
22	191-220-37	88 De Lima	1960
23	191-220-29	600 W. Dos Reis	1969
24	191-220-26	732 W. Dos Reis	1990
25	191-220-17	627 W. Dos Reis	1975
26	191-220-44	808 W. Dos Reis	1962
27	191-220-09	600 W. De Lima	1989
28	191-220-06	1020 W. De Lima	1992
29	191-220-38	42 W. De Lima	ca. 1990
30	191-220-01	1287 W. De Lima	1987
31	191-200-09	15929 S. Manthey	ca. 1969
32	191-200-12	No Address Listed	Field/Seed
33	191-200-08	16250 S. Manthey	Field/Seed
34	191-200-13	No Address Listed	Field/Seed
35	191-200-15	No Address Listed	Utilities
36	191-200-14	15929 S. Manthey	Acreage
37	191-200-11	15919 S. Manthey	Acreage
38	191-190-18	99 W. Louise Ave.	Acreage
39	191-210-05	15501 S. Manthey	Field/Seed
40	191-210-02	15321 S. Manthey	Acreage

Table 4.16-2 Buildings and Structures at the CLSP Project Site			
Inventory Number	Assessor's Parcel Number	Address	Construction Date
41	191-210-06	15150 S. Manthey	Field/Seed
42	191-220-43	14700 S. Manthey	Field/Seed
43	191-220-42	110 W. Dos Reis	Field/Seed
44	191-220-46	No Address Listed	Field/Seed
45	191-220-14	14101 S. Manthey	Field/Seed
46	191-220-35	513 W. Dos Reis	Acreage
47	191-220-18	751 W. Dos Reis	Field/Seed
48	191-220-20	869 W. Dos Reis	Field/Seed
49	191-220-21	915 W. Dos Reis	State of CA
50	191-220-13	220 W. De Lima	Mobile Home Lot
51	191-220-08	750 W. De Lima	Field/Seed
52	191-220-07	910 W. De Lima	Field/Seed
53	191-220-04	1001 W. De Lima	Field/Seed
54	191-220-45	808 Dos Reis	Field/Seed
55	191-280-09	1240 W. Bowman	Field/Seed
56	191-230-01	250 W. Manila	Field/Seed
57	191-230-02	90 W. Manila	Field/Seed
58	191-270-13	1301 W. Frewert	Field/Seed
59	191-270-11	1481 Manila	Field/Seed
60	191-260-14	700 W. Manila	Field/Seed
61	191-220-02	1295 W. De Lima	Easement
62	191-220-03	1305 W. De Lima	No Buildings
63	191-220-47	890 W. Dos Reis	Field/Seed
64	198-130-32	No Address Listed	Industrial Acreage
65	198-130-33	No Address Listed	Industrial Acreage
66	198-130-38	No Address Listed	Industrial Acreage
67	241-030-03	800 E State Rt. 120	No Buildings
68	241-020-11	200 E State Rt. 120	No Buildings

The buildings and structures located within the project area are representative of the type of home construction that emerged during the mid-20th century. Domestic building within the United States drastically slowed between 1941 and 1945 as America prepared for and fought World War II. When construction resumed in 1946, house styles based on historical precedent, such as the European revival styles, were largely abandoned in favor of the new variations that had begun to emerge in the years before the war. House types such as the Ranch, Split-level, and Minimal Traditional styles became the American architectural vernacular (McAlester 1984:477-482).

Common features many of these contemporary styles exhibit include low-pitched roofs, aluminum sliding windows, and built-in garages. These modern residential designs often replaced the regional variation that was once prevalent, and have since become ubiquitous nationwide. Elements of these styles, which include many variations, are visible in buildings throughout the project area. However, none of these

structures appear to be associated with persons or events significant to our past, nor do they possess artistic values or data potential that would make them eligible for listing on the CRHR.

4.16.3 ENVIRONMENTAL IMPACTS

ANALYSIS METHODOLOGY

The following analysis is based on a combination of background research, archaeological pedestrian surveys, and an assessment of historic structures. Potential effects are evaluated for development in the CLSP area and use of potential offsite WRP sites and recycled water storage and disposal areas.

THRESHOLDS OF SIGNIFICANCE

The CLSP project would cause a significant impact on cultural resources if it would:

- cause a substantial adverse change in the significance of a unique archaeological resource or a historical resource as defined in §21083.2 of CEQA and §15064.5 of the State CEQA Guidelines, respectively, or

- disturb any human remains, including those interred outside of formal cemeteries.

Section 15064.5 of the State CEQA Guidelines defines "substantial adverse change" as physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings.

Section 21083.2 of CEQA defines "unique archaeological resource" as 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 or more of the following criteria: (1) that it contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information; (2) that it has a special and particular quality, such as being the oldest of its type or the best available example of its type; or (3) that it is directly associated with a scientifically recognized important prehistoric or historic event or person.

Section 15064.5 of the State CEQA Guidelines defines "historical resource" as a resource (1) listed on, or determined to be eligible by the State Historical Resources Commission for listing on, the CRHR; (2) listed in a local register of historic resources or as a significant resource in a historical resource survey, or (3) considered to be "historically significant" by a lead agency as supported by substantial evidence in the record. Generally, a resource shall be considered by the lead agency to be "historically significant" if it meets any of the following criteria for listing on the CRHR: (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 value; or (4) has yielded, or may be likely to yield, information important in prehistory or history.

To be eligible for listing on the CRHR, a property must have both historic significance and integrity. Integrity is judged by considering the property's retention of location, design, setting, workmanship, materials, feeling, or association.

IMPACT ANALYSIS

Impact 4.16-a

Cultural Resources – Recorded Archaeological Sites. *Construction of the proposed project may affect one recorded prehistoric archaeological site, CA-SJO-3, if recycled water storage ponds are constructed in Area 6. This impact is considered* ***significant****.*

Area 6 of the potential recycled water storage and disposal options appears to include the southern portion of site CA-SJO-3. Site CA-SJO-3, a prehistoric occupation and burial site underlying I-5, has been determined eligible for listing on the NRHP and therefore is eligible for listing on the CRHR as well (Public Resources Code §5025.1). Construction of storage ponds in Area 6 could affect this resource. Use of the area for recycled water disposal sprayfields should not affect the resource because it would constitute continued agricultural use of an existing agricultural area. Because a recorded resource could be affected, this impact is considered significant.

Impact 4.16-b

Cultural Resources – Historic Properties. *Project construction would result in the removal of several existing structures. None of these structures appears to be eligible for listing on the California Register of Historical Resources. This impact is considered* ***less than significant****.*

Each of the properties within the study area has been influenced by the growth and expansion of the San Joaquin Valley during the mid-20th century. Although the area is predominately agricultural in nature, suburban-style development has steadily encroached over the years. While the properties within the project area can be associated with local agricultural and development trends (CRHR Criterion 1), none is significant within those contexts. None of the properties is associated with any known historic persons (CRHR Criterion 2). None embodies distinctive architectural or engineering qualities (CRHR Criterion 3), and none has yielded, or appears likely to yield, important information on historic construction technology (CRHR Criterion 4). Furthermore, while some of the buildings within the project area do retain historic integrity, many of them have undergone extensive modifications that have compromised their original physical features. Therefore, none of the 10 properties with historic-era buildings in the plan area appears to be eligible for listing on the CRHR. The more recently constructed buildings, or buildings built within the last 45 years, would need to be of exceptional historical importance to be considered for potential eligibility (California Code of Regulations 4852[d][2]). The buildings within the project area do not rise to that level of importance. Impacts to any of the structures in the project area would be considered less than significant.

Impact 4.16-c

Cultural Resources – Undiscovered/Unrecorded Archaeological Sites. *Construction of the proposed project may affect as-yet-undiscovered or- unrecorded archaeological sites. This impact is considered* ***potentially significant****.*

As-yet-undiscovered or -unrecorded cultural resource sites may be uncovered by project construction activities. This is true in particular for the parcels within the project area that could not be surveyed for this EIR. The potential exists for previously unidentified archaeological sites to be identified during pre-construction or construction-related ground disturbing activities. If such resources were to represent "historical resources" or "unique archaeological resources" as defined by CEQA, any substantial change to or destruction of these resources would be considered a significant impact.

Impact 4.16-d

Cultural Resources – Undiscovered/Unrecorded Archaeologically Significant Human Remains. *Project-related construction activities could affect as yet undiscovered or unrecorded human remains. This impact is considered* ***potentially significant***.

Although no human remains have been listed or recorded in the project area, they are known to occur in the project vicinity. As-yet-undiscovered archaeologically significant human remains may be uncovered by project construction activities. Any disturbance of human remains would be a potentially significant impact.

4.16.4 MITIGATION MEASURES

No mitigation measures are provided for the following less than significant impact:

- 4.16-b: Historic Properties

The following mitigation measures are provided for significant and potentially significant impacts.

4.16-a Recorded Archaeological Sites. The northern portions of potential recycled water storage/disposal Area 6 may include a portion of site CA-SJO-3, a prehistoric site found eligible for listing on the NRHP and CRHR. Intact portions of this site have been found below the I-5/State Route 120 interchange embankment and additional portions may extend to the south. Therefore, project-related subsurface disturbances should be avoided in this area. It is recommended that Area 6 be utilized for a sprayfield only. If any subsurface disturbances are required to turn this area into a sprayfield, those disturbances shall be monitored by a qualified professional archaeologist.

If project planning calls for construction of any facilities other than a sprayfield for Area 6, then the City shall retain a qualified professional archaeologist to conduct Phase II testing at site CA-SJO-3 to confirm whether site CA-SJO-3 extends into Area 6, the boundary of site CA-SJO-3 in Area 6 (if it extends into this area), and the significance of any resources related to site CA-SJO-3 that may occur in Area 6. The investigations shall be conducted before construction begins at this site. If any archaeological resources found in Area 6 are concluded by the archaeologist to represent deposits from site CA-SJO-3, the archaeologist shall recommend additional actions deemed necessary for the protection of these resources. Such actions may include additional testing, data recovery, mapping, capping, or avoidance of the resource. The City will be responsible for approval of recommended mitigation as it deems appropriate. The City shall ensure that approved protection actions (if needed) are implemented before construction begins at this site.

Implementation of Mitigation Measure 4.16-a would reduce the impact on recorded archeological sites to a less-than-significant level.

4.16-c Undiscovered/Unrecorded Archaeological Sites. Before the initiation of construction or ground-disturbing activities associated with the proposed project, the parcels that have not been surveyed during previous efforts shall be plowed or disked, or the soil surface otherwise exposed as necessary, and surveyed by a qualified professional archaeologist. If any unique archaeological resources or historical resources are found, they will be treated in a manner consistent with the impact evaluation and mitigation measures provided in this section.

At the onset of construction, all construction personnel shall be alerted to the possibility of buried cultural resources. If artifacts or unusual amounts of stone, bone, or shell are uncovered during construction activities, work within 50 feet of the specific construction site at which the suspected resources have been uncovered shall be suspended, and the City of Lathrop Community Development Department/Planning Division shall be immediately contacted. At that time, the City or the project proponent shall retain a qualified professional archaeologist who shall conduct a field investigation of the specific site and recommend mitigation deemed necessary for the protection or recovery of any cultural resources concluded by the archaeologist to represent historical resources or unique archaeological resources. The City will be responsible for approval of recommended mitigation as it deems appropriate. The City or the project proponent shall implement the approved mitigation before the resumption of construction activities at the construction site.

Implementation of Mitigation Measure 4.16-c would reduce the potential impact on undiscovered/ unrecorded archaeological sites to a less-than-significant level.

4.16-d Undiscovered/Unrecorded Human Remains. If human remains are discovered at any project construction sites during any phase of construction, work within 50 feet of the remains shall be suspended immediately, and the City of Lathrop Community Development Department/Planning Division and the county coroner shall be immediately notified. If the remains are determined by the county coroner to be Native American, the Native American Heritage Commission (NAHC) shall be notified within 24 hours, and the guidelines of the NAHC shall be adhered to in the treatment and disposition of the remains. The City or the project proponent shall also retain a qualified professional archaeologist with Native American burial experience who shall conduct a field investigation of the specific site and consult with the Most Likely Descendant, if any, identified by the NAHC who responds in timely manner (i.e., within 24 hours after being notified by NAHC). As necessary, the archaeologist may provide professional assistance to the Most Likely Descendant including the excavation and removal of the human remains. The City will be responsible for approval of recommended mitigation as it deems appropriate, taking account of the provisions of state law, as set forth in State CEQA Guidelines §§15064.5(e) and Public Resources Code §§5097.98. The City or the project proponent shall implement approved mitigation before the resumption of activities at the site where the remains were discovered.

Implementation of Mitigation Measure 4.16-d would reduce the potential impact on undiscovered/ unrecorded human remains to a less-than-significant level.

4.16.5 RESIDUAL SIGNIFICANT IMPACTS

No residual significant cultural resource impacts would occur with implementation of the recommended mitigation measures.

4.17 Paleontological Resources

4.17 PALEONTOLOGICAL RESOURCES

Paleontological resources (fossils) are the remains or traces of prehistoric animals and plants. This section assesses the potential that earth-moving activities associated with development in the proposed CLSP project area and construction of recycled water storage ponds in potential recycled water storage/disposal areas could adversely affect scientifically important fossil remains. The analysis presented in this section conforms to Society of Vertebrate Paleontology criteria.

4.17.1 REGULATORY BACKGROUND

FEDERAL, STATE, AND LOCAL LAWS, ORDINANCES, AND REGULATIONS

Paleontological resources are classified as non-renewable scientific resources and are protected by several federal and state statutes, most notably by the 1906 Federal Antiquities Act (PL 59-209; 16 United States Code 431 et seq.; 34 Stat. 225), which calls for protection of historic landmarks, historic and prehistoric structures, and other objects of historic or scientific interest on federal lands. The proposed project currently does not involve such lands. Consideration of paleontological resources is required by CEQA (see Appendix G). Other state requirements for paleontological resource management are found in Public Resources Code Chapter 1.7, Section 5097.5, *Archeological, Paleontological, and Historical Sites*. This statute specifies that state agencies may undertake surveys, excavations, or other operations as necessary on state lands to preserve or record paleontological resources. The statute would apply to the CLSP project site only if the state or a state agency were to obtain ownership of project lands.

No state or local agencies have specific jurisdiction over paleontological resources. No state or local agency requires a paleontological collecting permit to allow for the recovery of fossil remains discovered as a result of construction-related earth moving on state or private land in a project site.

Neither San Joaquin County (the County) nor the City of Lathrop (the City) has adopted General Plan goals or policies relating to the protection of paleontological resources.

PROFESSIONAL STANDARDS

The Society of Vertebrate Paleontology (1995, 1996), 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. Most practicing professional paleontologists in the nation adhere to the Society of Vertebrate Paleontology assessment, mitigation, and monitoring requirements, as specifically spelled out in its standard guidelines.

4.17.2 EXISTING CONDITIONS

GEOGRAPHIC LOCATION AND PHYSIOGRAPHIC ENVIRONMENT

The proposed project area is located at the northern end of the San Joaquin Valley on the easternmost edge of the Sacramento-San Joaquin River Delta (the Delta). Together, the San Joaquin Valley and the Sacramento Valley constitute the Great Valley of California. The Great Valley Physiographic Province is located between the Sierra Nevada Physiographic Province on the east and the Coast Range Physiographic 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. During the Jurassic and Cretaceous periods of the

Mesozoic era (timeframes for various eras, periods, and epochs are provided in Table 4.17-1), 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. Geologic evidence surrounding the Stockton Arch suggests that the Sacramento Valley and San Joaquin Valley gradually separated into two separate water bodies as uplift and sedimentation continued. 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 epoch (approximately 5 million years ago).

Table 4.17-1
Geologic Time

Era	Periods and Systems	Epochs and Series	Beginning of Interval*	Biological Forms
Cenozoic	Quaternary	Holocene	0.01	
		Pleistocene	1.6	Earliest humans
	Tertiary	Pliocene	5	
		Miocene	24	Earliest hominids
		Oligocene	37	
		Eocene	58	Earliest grasses
		Paleocene	65	Earliest large mammals
Cretaceous-Tertiary boundary (65 million years ago): extinction of dinosaurs				
Mesozoic	Cretaceous	Upper	98	
		Lower	144	Earliest flowering plants; dinosaurs in ascendance
	Jurassic		208	Earliest birds and mammals
	Triassic		245	Age of Dinosaurs begins
Paleozoic	Permian		286	
	Carboniferous			
	Pennsylvanian		320	Earliest reptiles
	Mississippian		360	Earliest winged insects
	Devonian		408	Earliest vascular plants (e.g.,ferns and mosses) and amphibians
	Silurian		438	Earliest land plants and insects
	Ordovician		505	Earliest corals
	Cambrian		570	Earliest fish
Precambrian			2500	Earliest colonial algae and soft-bodied invertebrates
			4000	Life appears; earliest algae and primitive bacteria

* In millions of years before the present
Source: Merriam-Webster 2001

Most of the surface of the Great Valley is covered with recent (Holocene) (less than 10,000 years ago) and Pleistocene alluvium. This alluvium is composed of sediments from mountains of 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.

The project area is located entirely within San Joaquin County and within the U.S. Geological Survey (USGS) Lathrop quadrangle (mapped at 1:24,000 scale).

REGIONAL GEOLOGIC SETTING

Geology of the San Joaquin Valley has been described in some detail by authors such as Graham and Olson (1988), Bartow (1991), Page (1986), and Bailey (1966), among others. Geologic history and conditions are relevant to the evaluation of paleontological resources in that they influence the type of fossils that may be found (i.e., aquatic vs. terrestrial organisms) and the probability that any prehistoric remains would be subject to fossilization rather than normal decay. The depositional history of the Delta during the late Quaternary period included several cycles related to fluctuations in regional and global climate that caused periods of deposition alternating with periods of subsidence and erosion. Thus, the Delta region during the Pleistocene epoch consisted of stages of wetland and floodplain creation as tidewaters rose in the valley from the west, areas of erosion when tidewaters receded, deposition of alluvial fans that were reworked by wind to create extensive sand dunes, and alluvial fan deposition from streams emanating from the adjacent mountain ranges (Atwater 1982, Bartow 1991).

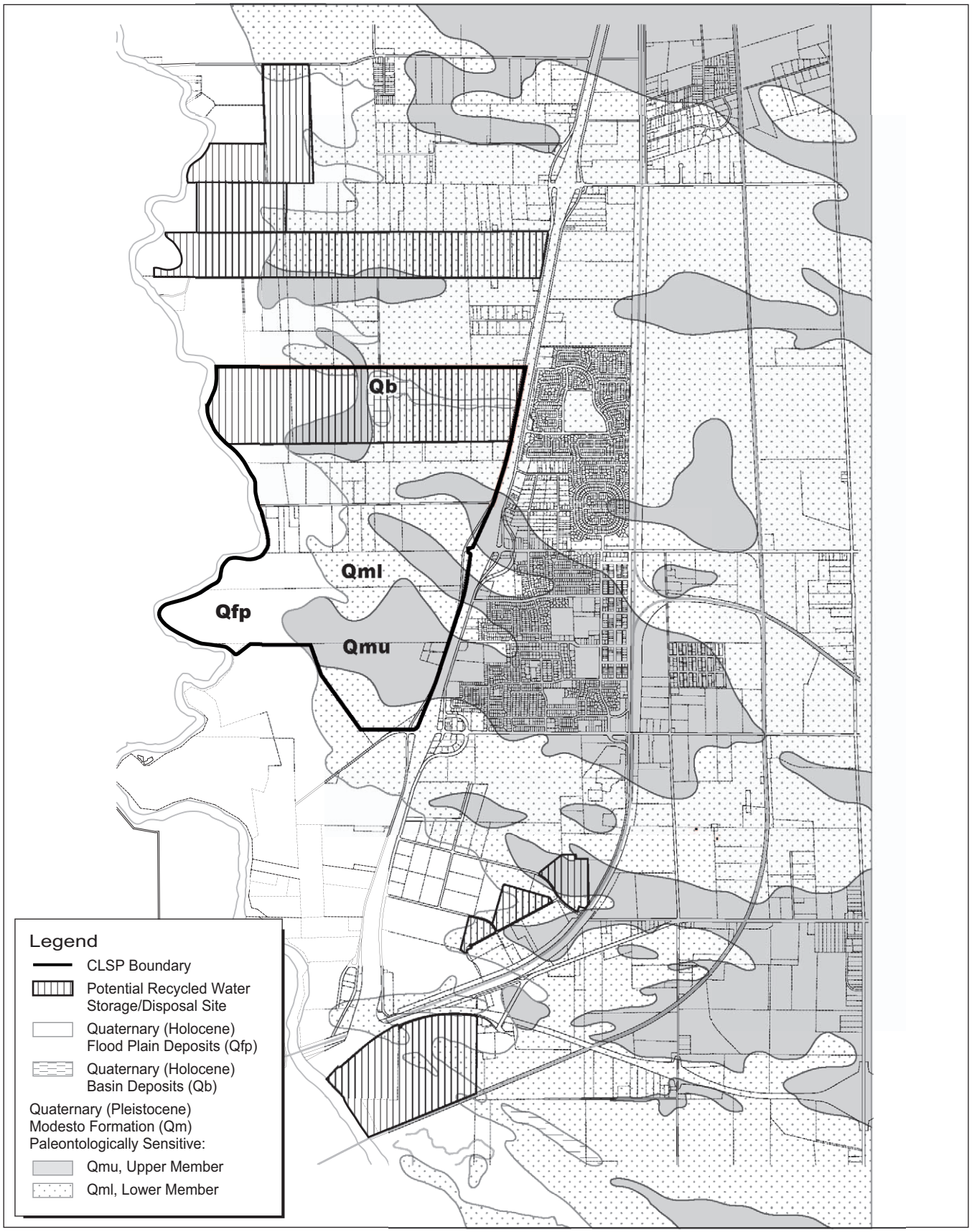
Holocene Alluvium

Sediments in the western portion of the project area, adjacent to the San Joaquin River, are composed of recent (10,000 years Before Present [BP] to present day) alluvial floodplain deposits (approximately 45% of the project area) (Exhibit 4.17-1). In general, these deposits consist primarily of unconsolidated sand and silt. In some places, portions of these floodplain deposits were historically covered with tidal-wetland peat—for example, the lower portions of Roberts Island immediately west of the project area. A small area in the northern portion of the project site is mapped as Holocene basin deposits, composed of silty clay, clayey silt, and silt (Exhibit 4.17-1). Holocene alluvial deposits overlie an older alluvial fan system composed of Pleistocene-age sediments.

Modesto Formation

Gale et al. (1938) and Piper et al. (1939) were the first to publish detailed geologic maps in the southern Sacramento/northern San Joaquin Valley areas, and they designated the older alluvial Pleistocene deposits as the Victor Formation. However, in 1959, Davis and Hall proposed a subdivision of the Victor Formation into the Turlock Lake (oldest), Riverbank (middle), and Modesto (youngest) formations. The type section of Modesto was designated along the south bluff of the Tuolumne River south of Modesto. Marchand and Allwardt (1981) proposed that the name Victor Formation be abandoned and that the Turlock Lake, Riverbank, and Modesto Formations be adopted as formal nomenclature for Quaternary deposits in the Sacramento and San Joaquin Valleys. Most later researchers have followed this recommendation.

In the San Joaquin Valley and at the proposed project site in particular, the Modesto Formation forms alluvial fans of the Stanislaus River and can be divided into upper and lower members. Researchers differ as to the age of this formation: Marchand and Allwardt (1981) place the age between approximately 12,000 and 42,000 years BP, Atwater (1982) places the age from 9,000 to 73,000 years BP, while Helley and Harwood (1985) follow Marchand and Allwardt's dating scheme. In the proposed project area, the upper member is composed primarily of unconsolidated, unweathered, coarse sand and silt; this unit



Base Map: MacKay & Somps 2004; Data Source: Atwater 1982

Geologic Formations in the Project Area

EXHIBIT 4.17-1

Central Lathrop Specific Plan EIR
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underlies approximately 35% of the central and southern portions of the project area, and may range in age from 9,000 to 26,000 years BP (Exhibit 4.17-1). The lower member of the Modesto Formation underlies approximately 20% of the project area and is composed of consolidated, slightly weathered, well-sorted silt and fine sand, locally containing gravels (Exhibit 4.17-1). Age estimates for the lower member range from 29,000 to 73,000 year BP.

PALEONTOLOGICAL RESOURCE INVENTORY METHODS

A stratigraphic inventory and paleontological resource inventory 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. Research methods included a review of published and unpublished literature and a cursory field survey. These tasks complied with Society of Vertebrate Paleontology (1995) guidelines.

Stratigraphic Inventory

Geologic maps and reports covering the geology of the project site and surrounding study area were reviewed to determine the exposed rock units and to delineate their respective distributions in the project study area.

Paleontological Resource Inventory

Published and unpublished geological and paleontological literature was reviewed to document the number and locations of previously recorded fossil sites from rock units exposed in and near the proposed project site and the surrounding region, as well as the types of fossil remains each rock unit has produced. The literature review was supplemented by an archival search conducted at the University of California, Museum of Paleontology (UCMP) in Berkeley, California, on February 24, 2004.

Field Survey

The field reconnaissance was conducted during various site visits from February through May 2004 to document the presence of any previously unrecorded fossil sites and of strata that might contain fossil remains. The field reconnaissance was conducted concurrently with cultural resources surveys described previously in Section 4.16, Cultural Resources. The survey area is shown in Exhibit 4.16-1. Reconnaissance was limited to inspection of the visible ground surface in parcels at the CLSP project site where access was available. Some areas could not be surveyed because of various factors (e.g., access to the property was denied, the property was planted with thick vegetation or overgrown). Thus, a complete pedestrian survey of the entire area of potential effect for paleontological resources was not possible. However, no exposures of potentially fossiliferous strata were observed in the areas surveyed.

PALEONTOLOGICAL RESOURCE ASSESSMENT CRITERIA

The potential paleontological importance of the proposed project site can be assessed by identifying the paleontological importance of exposed rock units within the project area. Because the areal distribution of a rock unit can be easily delineated on a topographic map, this method is conducive to delineating parts of the project site that are of higher and lower sensitivity for paleontological resources.

A paleontologically important rock unit is one that has a high rating for potential paleontological productivity and is known to have produced unique, scientifically important fossils. The potential paleontological productivity rating of a rock unit exposed at the project site refers to the abundance and densities of fossil specimens and/or previously recorded fossil sites in exposures of the unit in or near the

project site. If exposures of a specific rock unit at the project site yield fossils, they are most likely to yield fossil remains representing particular species in quantities or densities similar to those previously recorded from the unit near the project site.

An individual vertebrate fossil specimen may be considered unique or significant if it is:

- identifiable;
- complete;
- well preserved;
- age diagnostic;
- useful in paleoenvironmental reconstruction;
- 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, or
- a skeletal element different from, or a specimen more complete than, those now available for its species.

For example, identifiable vertebrate marine and terrestrial fossils are generally considered scientifically important because they are relatively rare. 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 for a research project). Marine invertebrates are generally common, the fossil record is well developed and well documented, and they would generally not be considered a unique paleontological resource.

The following tasks were completed to establish the paleontological importance of each rock unit exposed at 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 for a rock unit exposed at the project site to contain a unique paleontological resource was considered.

RESOURCE INVENTORY RESULTS

Stratigraphic Inventory

Regional and local surficial geologic mapping and correlation of the various geologic units in the vicinity of the proposed project site has been provided at a scale of 1:500,000 by Bartow (1991), 1:250,000 by Wagner et al. (1991), and 1:62,500 by Atwater (1982).

Paleontological Resource Inventory and Assessment by Rock Unit

Vertebrate mammalian fossils have proved helpful in determining the relative age of alluvial fan sedimentary deposits (Albright 2000, Louderback 1951, Savage 1951). 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. Surveys of late Cenozoic land mammal fossils in northern California have been provided by Hay (1927), Lundelius et al. (1983), Jefferson (1991a, 1991b), Savage (1951), and Stirton (1939). On the basis of his

survey of vertebrate fauna from the non-marine late Cenozoic deposits of the San Francisco Bay region, Savage (1951) concluded that two major divisions of Pleistocene-age fossils could be recognized: the Irvingtonian (older Pleistocene fauna) and the Rancholabrean (younger Pleistocene and Holocene fauna). These two divisions of Quaternary Cenozoic vertebrate fossils are widely recognized today in the field of paleontology. The age of the later Pleistocene, Rancholabrean fauna was based on the presence of bison and on the presence of many mammalian species that are inhabitants of the same area today. In addition to bison, larger land mammals identified as part of the Rancholabrean fauna include mammoths, mastodons, camels, horses, and ground sloths.

Holocene Alluvium

Project-related activities that would occur within floodplain or basin deposits identified in Exhibit 4.17-1 would be located within Holocene (10,000 years BP and younger) alluvial sediments. By definition, an object must be more than 10,000 years old to be considered a fossil; therefore, activities in these deposits would not have an impact on paleontological resources.

Modesto Formation

Remains of land mammals have been found in the project region at various localities in alluvial deposits referrable to the Modesto Formation. Jefferson (1991a, 1991b) compiled a database of California late Pleistocene vertebrate fossils from published records, technical reports, unpublished manuscripts, information from colleagues, and inspection of museum paleontological collections at more than 40 public and private institutions. He listed a number of sites in San Joaquin County that have yielded Rancholabrean vertebrate fossils, which could be referrable to the Modesto Formation. For example, localities UCMP V-74136, V-48004, V-48067, and V-66150 near Tracy, approximately 10 miles southwest of the proposed project site, have yielded remains of mammoth, ground sloth, and horse. Specimens from the Modesto Formation have been reported by Marchand and Allwardt (1981) near Modesto, as well as at other locations throughout the Central Valley (UCMP 2004). The Tranquility site in Fresno County (UCMP V-4401), for example, has yielded more than 130 Rancholabrean-age fossils of fish, turtles, snakes, birds, moles, gophers, mice, wood rats, voles, jack rabbits, coyote, red fox, grey fox, badger, horse, camel, pronghorn antelope, elk, deer, and bison from sediments referrable to the Modesto Formation.

The closest identified vertebrate fossils to the proposed project site are located just over 5 miles to the southeast, near Manteca, and include Rancholabrean-age mammoth, bison, and horse remains (UCMP V-51007 and V-70073). Approximately 7 miles north of the proposed project site, in Stockton, locality UCMP V-5107 yielded seven Pleistocene vertebrate fossil specimens, including mammoth and horse species. Hay (1927) reported remains of camel, horse, and mammoth at another site in Stockton. Locality UCMP V-4822, approximately 9 miles north of the proposed project site in Lincoln Village, yielded a Pleistocene horse tooth.

Results of a paleontological record search at the UC Berkeley Museum of Paleontology indicated no fossil remains within the immediate vicinity of the proposed project site, and no fossils were observed during the reconnaissance field visit.

4.17.3 ENVIRONMENTAL IMPACTS

ANALYSIS METHODOLOGY

In its standard guidelines for assessment and mitigation of adverse impacts on paleontological resources, the Society of Vertebrate Paleontology (1995) 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. In areas of high sensitivity that are likely to yield unique paleontological resources, full-time monitoring is typically recommended during any project-related ground disturbance. 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 and monitoring is usually not needed during project construction. Areas that have not had any previous paleontological resource surveys or fossil finds are considered to be of undetermined sensitivity until surveys and mapping are performed to determine their sensitivity. After reconnaissance surveys, observation of exposed cuts, and possibly subsurface testing, a qualified paleontologist can determine whether the area should be categorized as having high or low sensitivity. In keeping with the significance criteria of the Society of Vertebrate Paleontology (1995), all vertebrate fossils are generally categorized as being of potentially significant scientific value.

The significance of potential adverse impacts on paleontological resources under CEQA, resulting from project-related activities at the CLSP project site, was determined using the criteria discussed above.

THRESHOLDS OF SIGNIFICANCE

Significance thresholds can be drawn from the questions poised in the sample Initial Study Checklist form found in Appendix G of the State CEQA Guidelines (California Code of Regulations, Title 14, Section 15000 et seq.). Based on that appendix, viewed in light of the Society of Vertebrate Paleontology described above, the City of Lathrop concludes that significant adverse environmental impacts on paleontological resources would result if a project would directly or indirectly destroy a unique paleontological resource or site or a unique geologic feature. For the purposes of this EIR, a unique resource or feature is one that is significant under the Society of Vertebrate Paleontology criteria identified above.

IMPACT ANALYSIS

The CLSP project would have no impact associated with the following issues, and no further analysis of these topics is necessary:

- By definition, sediments associated with Holocene-age alluvium do not contain paleontologically sensitive resources. Therefore, ground disturbance in areas within this rock unit would not result in significant impacts on paleontological resources.

The CLSP project may have a significant impact associated with the following issue:

Impact 4.17-a

Paleontological Resources – Disturbance of Paleontological Resources During Earth-Moving Activities. *Although no previously recorded paleontological sites occur within the proposed project area, unknown paleontological resources could occur in sediments of the Modesto Formation that underlie portions of the project site, as shown in Exhibit 4.17-1. Therefore, construction activities in these areas could disturb unknown subsurface paleontological resources. This impact is considered* ***potentially significant****.*

Based on the record search conducted at UCMP, there are no previously recorded fossil sites at the proposed project site. However, a large portion of the proposed project site is located within sediments of the Modesto Formation, which is a paleontologically sensitive rock unit under the Society of Vertebrate Paleontology guidelines (1995, 1996). In addition, the occurrence of Pleistocene vertebrate fossil remains

in sediments referrable to the Modesto Formation from the nearby cities of Manteca, Stockton, and Tracy suggests that the potential exists for uncovering additional similar fossil remains during construction-related earth-moving activities at the proposed project site. Therefore, earth-moving activities in the paleontologically sensitive areas shown in Exhibit 4.17-1 could adversely affect paleontological resources. This impact is considered potentially significant.

4.17.4 MITIGATION MEASURES

The following mitigation measure is provided for a significant impact:

4.17-a: Disturbance of Paleontological Resources During Earth-Moving Activities. For earth-moving activities in the paleontologically sensitive areas identified in Exhibit 4.17-1, the project applicant shall implement the following measures:

(1) Before the start of construction activities, construction personnel involved with earth-moving activities shall be informed of the possibility of encountering fossils, the appearance and types of fossils likely to be seen during construction activities, and proper notification procedures should fossils be encountered. This worker training shall be prepared and presented by a qualified paleontologist.

(2) If paleontological resources are discovered during earth-moving activities, the construction crew shall immediately cease work in the vicinity of the find. The City or the project applicant shall retain a qualified paleontologist to evaluate the resource and prepare a proposed mitigation plan in accordance with Society of Vertebrate Paleontology guidelines (1995). The proposed mitigation plan may include a field survey, construction monitoring, sampling and data recovery procedures, museum storage coordination for any specimen recovered, and a report of findings. Recommendations determined by the City to be necessary and feasible shall be implemented by the project applicant before construction activities can resume at the site where the paleontological resources were discovered.

Implementation of Mitigation Measure 4.17-a would reduce potential impacts associated with paleontological resources to a less-than-significant-level.

4.17.5 RESIDUAL SIGNIFICANT IMPACTS

No residual significant impacts to paleontological resources would occur with implementation of the recommended mitigation measure.

4.18 Aesthetic Resources

4.18 AESTHETIC RESOURCES

This section describes the existing aesthetic setting of the Central Lathrop Specific Plan (CLSP) project site, the regulatory background that applies to the proposed project, and the potential impacts on aesthetic resources from implementation of the CLSP and potential water recycling plant (WRP) and recycled water storage/disposal area options.

4.18.1 REGULATORY BACKGROUND

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 the land adjacent to highways.

There are no state-designated scenic highways in the vicinity of the project site (Caltrans 2004). Approximately 17 miles to the south of the CLSP area, Interstate 5 (I-5) from Interstate 580 (I-580) to the Stanislaus County line is an officially designated state scenic highway. In addition, I-580 from I-5 to the Alameda County line is officially designated a state scenic highway. The nearest portion of this highway segment is approximately 13 miles away from the CLSP area. Neither of these highway segments is visible from the proposed project area.

SAN JOAQUIN COUNTY GENERAL PLAN 2010

The San Joaquin County General Plan 2010 (County General Plan) includes the following objectives and policies relevant to aesthetic resources in the project vicinity:

Community Organization and Development Pattern—Growth Accommodation

- **Objective 5:** To create a visually attractive County.

Infrastructure Services—Stormwater Drainage

- **Objective 1:** To collect and dispose of stormwater in a manner that least inconveniences the public, reduces potential water-related damage, and enhances the environment.
  - **Policy 5:** Recreational and visual opportunities shall be considered in the design of stormwater ponds.

Open Space

- **Objective 1:** To preserve open space land for the continuation of commercial agricultural and productive uses, the enjoyment of scenic beauty and recreation, the protection and use of natural resources, and for protection from natural hazards.
  - **Policy 11:** Outstanding scenic vistas shall be preserved and public access provided to them whenever possible.
  - **Policy 12:** The County should recognize the roads shown in Figure VI-2 [of the County General Plan] as scenic routes and as valuable in enhancing the recreational experience for County

residents and non-residents. *[NOTE: None of these roads are in the vicinity of the CLSP area.]* Criteria for selection of additional routes should specify that the route:

(a) leads to a recreational area,
(b) provides a representative sampling of the scenic diversity within the County,
(c) exhibits unusual natural or man-made features of interest,
(d) provides opportunities to view activities outside the normal routine of most people,
(e) provides a route for people to view the Delta waterways, and
(f) links two scenic routes or connects with scenic routes of cities or other counties.

– **Policy 13:** Development proposals along scenic routes shall not detract from the visual and recreational experience.

Implementation Measures for Objective 5, Urban Open Space.

(a) Open space and landscaping provisions shall be included in the Development Title for developments in urban communities.

(b) Density bonuses shall be offered to encourage high-quality planned development that, among other things, incorporate and integrate open space throughout the site.

(c) Landscaping, to serve as a visual buffer, shall be required for all non-residential uses along Minor Arterials and higher classification roadways.

(d) The County shall work with the cities to ensure retention of open space between communities.

CITY OF LATHROP GENERAL PLAN

The City of Lathrop General Plan (City General Plan) identifies visual and scenic resources in the City and recommends mitigation measures to protect these resources. The City General Plan identifies the following scenic resources in the Lathrop area:

- views of agricultural lands to the west and south and
- views of the Coast Ranges to the west.

The City General Plan recognizes that views of the San Joaquin River also could be considered a scenic resource. However, views of the river are obscured by the surrounding levee system. Thus, the San Joaquin River can be viewed only from the tops of levees and bridge crossings.

In addition to these scenic resources, the City General Plan suggests that the current "degree of darkness" in the City, especially in residential neighborhoods, is an important visual resource. The current degree of darkness allows clear views of the nighttime sky (stars, constellations) as weather permits.

The following City General Plan policies in the Resource Management Element for achieving visual and scenic quality in new developments apply to the proposed project:

- An architectural design review shall be required of all planned developments and of all multifamily, office, commercial, institutional, and industrial uses.

- The visual interface between commercial/industrial areas and residential areas shall be designed and developed so as to avoid obtrusive visual impacts of commercial or industrial activities on nearby residential areas.

- All outdoor storage areas shall be visually screened with ornamental fencing or walls and with landscaping.

- The regional open space system should include 20-50 feet of landscaped buffer corridors, which serve as buffer zones between two types of conflicting land uses, such as residential and commercial or residential and industrial.

- All gas, electrical, telephone, and cable distribution lines should be placed underground; if overhead transmission line rights-of-way are required, they should be incorporated into open space corridors so as to minimize their visual impacts on the urban environment.

CITY OF LATHROP ZONING ORDINANCE

Chapter 193, Landscaping and Screening Standards, of the City Zoning Ordinance contains several sections that regulate aesthetic or visual standards for development in the City. These include standards for landscaping of single-family and multi-family residential developments; standards for landscaping of commercial and industrial developments; requirements for the contents of landscape plans; street, road, and parkway landscaping standards; requirements for a tree and shrub schedule; and planting and maintenance standards. Some of these standards would be applicable to the proposed project, including the following:

- A landscape plan is required for all new residential, commercial, and industrial developments. These plans would include landscape materials, trees, shrubs, groundcover, turf, etc.

- Site development shall incorporate the surrounding topography and provide for the preservation of natural features such as water courses, wooded areas, and rough terrain.

- Parking lots located on the proposed project site shall include a landscape strip buffer installed continuously along the property line unless it is adjacent to an area that is designated on the general plan for residential use, zoned for residential use or where an existing residential use exists or abuts a street frontage.

- All outside storage areas shall be screened so as not to be visible from adjacent properties and public rights-of-way. Screening shall be a minimum of six feet in height, and consist of a solid material. Outside storage is not permitted in front or street side yards, or in front of structures.

- Roof mounted mechanical equipment, tanks, ventilating fans and similar equipment shall be screened from the view of adjacent properties and public rights-of-way at grade. The required screens shall be architecturally compatible with the building or structure on which they are used.

All streets, roads, and parkways within the City shall meet the following standards:

- In residential, commercial and industrial zones, trees shall be planted in accordance with the landscape and screening standards. In addition, the following requirements shall apply:

  - Trees shall be planted between four feet and ten feet from a public right-of-way. Trees should also be a minimum of ten feet from any driveway.

- Trees planted on street frontages where noise attenuation is required shall be planted in a minimum five foot landscape strip or in tree wells. Each tree shall be spaced no farther than 20 feet apart.

4.18.2 EXISTING CONDITIONS

The following text contains a summary of the existing visual character of the proposed project site and surrounding land. The descriptions of existing conditions are accompanied by exhibits that provide photographs of representative views taken during site visits in March and June 2004. The locations where these photographs were taken are shown in Exhibit 4.18-1. All exhibits are provided together at the end of this section.

VISUAL CHARACTER OF THE PROJECT SITE

The CLSP area is generally flat with elevations at +3 to +16 feet above mean sea level. The plan area slopes slightly from east to west (from I-5 toward the San Joaquin River) at less than a 1% gradient. The area is almost entirely undeveloped; agricultural uses dominate the landscape. Scattered over the plan area are structures that typically would be found in agricultural settings, such as equipment storage facilities, sheds, single-family dwellings, and irrigation equipment. The western edge of the CLSP area rises to levees, beyond which is the San Joaquin River (not visible unless one is atop the levee). To the east, much of I-5 is elevated above ground level, obstructing views into and out of the CLSP area.

The San Joaquin River levee is characterized by low vegetative ground cover near the river, transitioning into a grassy ground cover topped with a gravel access road. There is little variation in appearance along the levee faces other than occasional agricultural water intake structures and isolated pockets of trees and shrubs.

The visual character of potential recycled water storage and disposal Areas 1, 2, and 3 (Exhibit 3-6) is generally consistent with the CLSP area. Recycled water storage/disposal Area 4 is in the CLSP area, and its visual character is the same as for the CLSP area as described above. Potential recycled water storage/disposal Area 5 consists of agricultural row crops irrigated with recycled water from the City's existing WRP #1. Area 5 is located east of I-5 in the Crossroads Industrial Park. Several large industrial and warehouse facilities are nearby and chain link fence surrounds the three parcels that make up Area 5. Storage/disposal Area 6 is comprised primarily of agricultural fields, but also contains an orchard in the southern portion of the site. Area 6 is bounded by State Route (SR) 120 and the I-5/SR-120 interchange to the north and Union Pacific Railroad (UPRR) tracks to the south. The San Joaquin River (and associated levee) provides the western boundary of this site and several industrial facilities are visible to the east.

VISUAL CHARACTER OF THE SURROUNDING AREA

The land surrounding the CLSP area is mostly agricultural, consisting of irrigated field and row crops and orchards, along with a few farmsteads and outbuildings. The general character of the surrounding area is described below and can be seen in the exhibits associated with viewpoints in the project area.

- **North:** Agricultural lands interspersed with farmsteads and associated outbuildings form the northern edge of the CLSP area. These visual characteristics continue north into potential recycled water storage/disposal Areas 1, 2, and 3 (Exhibit 3-6) and beyond.

- **East:** To the east of the CLSP area is I-5, and the developed portion of the City of Lathrop east of the interstate. Recycled water storage and disposal Areas 5 and 6 are in, or adjacent to these existing developed areas east of I-5.

- **South:** Agricultural lands interspersed with farmsteads and associated outbuildings form the southern edge of the plan area. These lands are approved for residential and commercial development as part of the West Lathrop Specific Plan. The Mossdale Landing project, which includes residential and commercial development on 480 acres of land south of the proposed project site, is currently under construction.

- **West:** The San Joaquin River forms the western boundary of the plan area, beyond which are agricultural lands. Levees form a visual barrier between the project site and the land beyond the river. Scattered trees and vegetation are along the levee banks.

VIEWS OF AND FROM THE PROJECT AREA

Views of the proposed project site (i.e., the CLSP area and the potential WRP #2 sites and recycled water storage and disposal areas) are limited because of the flatness of the topography and the obstruction of views by elevated features such as I-5 and the levees. Because I-5 is elevated, the project site is most visible from this vantage point. This highway also provides the most common views because drivers on I-5 far outnumber any other group that might see the site from the surrounding agricultural or industrial lands. However, this segment of I-5 is not considered a state scenic highway. A vast majority of the project site is not visible to boaters on the San Joaquin River because views are blocked by the levee. Views from the river consist almost exclusively of levee faces dominated by heavily managed (mowed or burned) vegetation or riprap, with occasional small areas of trees or brush and isolated structures, such as agricultural water intakes. Although the portions of the project site west of I-5 are visible from the vantage of agricultural lands and isolated farmsteads within and surrounding the site, these views are often relatively distant and are exclusively from limited numbers of privately owned properties. These properties are dispersed throughout the project area and have typical views of flat agricultural fields, as well as views of I-5. Views of the portions of the project site east of I-5 (i.e., recycled water storage/disposal Areas 5 and 6) are limited almost exclusively to the nearby elevated highways (I-5 and SR 120), and adjacent industrial facilities. Viewpoints discussed below were chosen to represent areas that were most sensitive to visual change (Exhibit 4.18-1). The general nature of the views is described.

Views from Dos Reis Regional Park

Dos Reis Regional Park, a County facility, is located in the CLSP area where Dos Reis Road ends at the San Joaquin River levee. The park includes RV and tent campsites on the land side of the San Joaquin River levee and a boat launch ramp and associated floating dock on the water side of the levee (see Section 4.12 Recreation for additional information on Dos Reis Regional Park). There are unimpeded views of agricultural fields to the north, east, and south from the park and campground area (Viewpoint 1, Exhibit 4.18-2). These agricultural lands contain scattered residential dwellings with row crops and farm animals. Views from the levee are described below.

Views from the San Joaquin River and Levees

The San Joaquin River forms the western boundary of the CLSP area. Flood control levees comprise both river banks. The levees contain short to tall herbaceous vegetation with scattered trees and shrubs on the east and west banks (Viewpoint 2, Exhibit 4.18-2). The top of the levee is approximately 25 feet above sea level and approximately 20 feet above the river during typical flows. Boaters and recreational users frequent the river, but cannot see beyond the levee banks while on the water. From the top of the

levees, the Diablo Range is visible in the background to the west, and agricultural lands and scattered residential dwellings and farm buildings are visible to the east. A utility road parallels the river on top of the levees.

Views from the Louise Avenue/Manthey Road Intersection

The view to the northwest from the Louise Avenue/Manthey Road intersection is of flat agricultural fields (Viewpoint 3, Exhibit 4.18-3). A portion of the site to the west is being used as a staging area for construction of the Mossdale Landing project, which is immediately south of Louise Avenue and is under construction. The background view to the north is of private residences along Dos Reis Road. Manthey Road runs north–south paralleling I-5. Louise Avenue runs east–west and is a main exit off of I-5. The City of Lathrop is located east of I-5 and is not visible from this location because of the elevation of I-5.

Views from I-5

Motorists along I-5 have unobstructed views of the CLSP area (Viewpoint 4, Exhibit 4.18-3), which is at a lower elevation than the interstate. Potential recycled water storage areas 1, 2, 3, 4, and 6 are also visible. I-5 is a heavily used route for motorists traveling to and from the Bay Area and north and south through California. Typical foreground views of the project area along I-5 include flat agricultural land. Several scattered residences are located along Manthey Road, which parallels I-5. The middleground views are also of flat agricultural land and some residences and farm buildings. The background view includes a silhouette of the Diablo Range. This mountain range is not readily visible in the background and is not a prominent component of background views for motorists along I-5.

View from Holmes Road

The view from Holmes Road facing east includes the location of potential recycled water storage and disposal area 1. Agricultural outbuildings are in the background view (Viewpoint 5, Exhibit 4.18-4). Trees are also in the distant view. I-5 is not visible from this location because of distance, intervening trees and structures, and because I-5 is not as prominently elevated in this area. Potential recycled water storage/disposal Area 1 is an agricultural field. Three residences are located along Holmes Road and would have views of Area 1. In addition, some residents along Bowman Road, located in the immediate vicinity of Area 1, would have views of the site. Portions of the potential recycled water storage/disposal Areas 2 and 3 are visible to the south of Holmes Road. These areas also currently consist of agricultural fields with scattered homes and structures.

View from Residences on De Lima Road

Residences on De Lima Road, facing north, have a view of the northern portion of the CLSP area (Viewpoint 6, Exhibit 4.18-4). This area currently consists of agricultural fields with very limited structures. Residences along De Lima Road also have unobstructed views of the CLSP area to the south.

Views from the Frewart Road/Manthey Road Intersection

From the Frewart Road/Manthey Road Intersection the location of proposed recycled water storage/disposal area 3 is readily visible to the northeast (Viewpoint 7, Exhibit 4.18-5). Area 3 is currently in agricultural production and is visible to motorists traveling on I-5 and residents along De Lima Road, as well as from some residences along Dos Reis Road and Frewert Road.

View of Potential Recycled Water Storage/Disposal Area 5

Potential recycled water storage/disposal area 5 is located in the Crossroads Industrial Park. The industrial nature of the area provides screening from adjacent major roadways. Area 5 is not visible from I-5 or from SR 120. The Southern Pacific Railroad tracks are located south and southeast of the storage area, providing a screening berm in these locations. Area 5 currently consists of agricultural fields used for disposal of recycled water generated by the nearby WRP #1 and the area is protected with chain-link security fencing (Viewpoint 8, Exhibit 4.18-5).

4.18.3 ENVIRONMENTAL IMPACTS

ANALYSIS METHODOLOGY

This visual impact analysis is based on a comparison of the project description provided in Chapter 3, Description of the Proposed Project, of this DEIR and additional design information included in the CLSP with applicable policies in the City and County General Plans and City Zoning Ordinance. Although the proposed project site would be annexed to the City before development occurs, County regulations are considered in this section because some project features would be visible from and/or surrounded by County lands (e.g., recycled water storage and disposal areas 1, 2, and 3). In addition, the proposed project was reviewed for its overall visual impacts using the standards of quality, consistency, and symmetry typically used for a visual assessment. The visual impacts were compared against the thresholds of significance discussed below.

Recycled water disposal sites would consist of irrigation of agricultural fields with recycled water. This would be a continuation of existing uses on the potential recycled water storage/disposal areas and would not alter the visual character of these areas. Therefore, effects on aesthetic resources from establishment of recycle water disposal areas are not analyzed further in this chapter.

The proposed project would be developed in two phases, as described in Chapter 3. For the purposes of the visual impact analysis, a phase-by-phase evaluation was not conducted. Rather, visual impacts of the proposed project were evaluated for full project buildout. This approach was taken because certain impacts, such as light and glare, would be greatest only at full buildout.

THRESHOLDS OF SIGNIFICANCE

The CLSP project would cause a significant impact related to aesthetic resources if it would:

- have a substantial adverse effect on a scenic vista;
- substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway;
- substantially degrade the existing visual character or quality of the site and its surroundings;
- cause a substantial inconsistency between the proposed project and guidelines in the City or County General Plan; or
- create a new source of substantial light or glare that would adversely affect day or nighttime views in the area.

IMPACT ANALYSIS

Information regarding the visual and architectural characteristics of the proposed project is based on the project description provided in this DEIR and additional information pertaining to the projects' design and aesthetic character provided in the CLSP. The CLSP identifies various design principles that would be followed during implementation of the CLSP project. Examples of these principles, which address the form, appearance, and visual effects of the project, include:

- Use strong form, massing and authentic detailing to express styles, rather than paste-on details and superficial exterior decorating.
- Create a visual balance between green spaces, landscape and built form.
- All exterior light fixtures that are affixed to the building should be compatible with the architectural style of the building.
- Building colors should be mainly subtle, neutral or muted earth tones. The use of high reflective or glossy materials should be limited and is not appropriate in many contexts.
- Screening devices, site walls, enclosed services, loading and refuse areas should be designed to be an integral part of the building architecture.

Impact 4.18-a

Aesthetic Resources – Impacts on a Scenic Vista. *No views on or near the CLSP project site would be considered a scenic vista. Therefore, development of the proposed project would not alter or obscure a scenic vista. This impact is considered* ***less than significant.***

A scenic vista is generally considered a view of an area that has remarkable scenery or a resource that is indigenous to the area. The CLSP project site itself does not provide any aesthetic resources that would be considered a scenic vista. The agricultural lands and rural residences that make up the project site do not provide scenery of a remarkable character. Because the project site has been developed for agricultural production and other uses (i.e., parks, homes), it does not provide views of the indigenous natural landscape. Although the current land uses provide views of an agricultural landscape that is representative of the project region, the project site does not contain resources that are exemplary of the agricultural history of the area (i.e., historic structures or landmarks) (see Section 4.16 Cultural Resources). Views of the project site are not unique in the region.

Many of the views of, and from the CLSP project site are obscured by elevated features such as I-5, the San Joaquin River levee, and railroad berms (recycled water storage/disposal Areas 5 and 6). Therefore, there is little opportunity for project activities to obscure views of scenic vistas that may be located outside the project site. A potential exception would be background views of the Diablo Range from I-5. Depending on the height of project buildings and the elevation of I-5 near these buildings, development of the proposed project could briefly obscure existing views of the Diablo Range from I-5. However, because of the distance between the project site and the Diablo Range, these mountains are not readily visible from the portions of I-5 near the CLSP area and are not a prominent component of background views for motorists in this area.

In the project vicinity, background views of the Diablo Range from the San Joaquin River levee are typically of higher quality than those from I-5 because of closer proximity and because stationary vantage points are available (i.e., views are not restricted to only those from a moving vehicle). The proposed

project would not obstruct views to the west from the San Joaquin River levee, and would enhance viewing opportunities from this area by increasing public access to the levee through development of the Community Park, open space areas, and the multi-use trail. Although views of the Diablo Range from the San Joaquin River levee likely would not qualify as a significant scenic vista (because of distance between the levee and the mountain range), increasing public access to views from this area is considered a benefit relative to aesthetic resources.

Because the proposed project would not have a substantial adverse effect on a scenic vista, this impact is considered less than significant.

Impact 4.18-b

Aesthetic Resources – Damage to Scenic Resources within a State Scenic Highway. *The proposed project is not visible from a state scenic highway and would not damage scenic resources. This impact is considered* ***less than significant****.*

A scenic resource is generally a resource, landmark, or area that has been noted for its outstanding scenic qualities and is thereby protected because of those qualities. A scenic resource within a state scenic highway is a resource that is noted for its outstanding scenic qualities and is visible from a state-designated scenic highway. No scenic resources have been identified o the CLSP project site. The designated scenic highway segment closest to the project site is a portion of I-580 approximately 13 miles away. The project site is not visible from the scenic highway segment. Therefore, the proposed project would have a less-than-significant impact on scenic resources.

Impact 4.18-c

Aesthetic Resources – Degradation of Visual Character. *Implementation of the proposed project would substantially alter the visual character of the project site through conversion of agricultural land to developed urban uses, potential construction of an offsite WRP, and construction of offsite recycled water storage ponds. Assessment of visual quality is a subjective matter and reasonable people can disagree as to whether such an alteration in the visual character of the project site would also be considered a substantial degradation of the visual character. For this analysis a conservative approach is taken and the potential for degradation of the visual character of the project site are considered a* ***significant*** *impact.*

The CLSP project site consists primarily of agricultural land and rural residential uses. Implementation of the proposed project would result in the conversion of these uses in the 1,521 acre CLSP area to urban development and supporting land uses (e.g., parks, open space). In the CLSP area the conversion from agricultural and rural residential uses to urban development would result in a substantial alteration of the visual character of the plan area. Because of the San Joaquin River levee to the west of the CLSP area and the elevated segment of I-5 to the east, the altered visual condition of the plan area after development would only be visible to residents in the planned Mossdale Landing development to the south, travelers on I-5 to the east, and scattered residents in agricultural lands to the north.

Only residents in the northernmost portions of the Mossdale Landing project would be able to view development in the CLSP area from their homes (Exhibit 3-4). The Mossdale Landing project is currently under construction, and views of existing agricultural lands to the north would only be visible to residents for a relatively short period (1-3 years) until development in the CLSP area abuts the Mossdale Landing project. After the CLSP area is developed, views to the north from the Mossdale Landing project would be consistent with views of the residential development in Mossdale Landing to the south. Implementation of design, architectural, development, and maintenance standards in the CLSP would

ensure that the general visual quality and character of development in the CLSP area would be consistent with that in the Mossdale Landing area. For these reasons, the conversion of agricultural land to urban development in the CLSP area is not considered to translate to a substantial degradation of visual character as seen from the Mossdale Landing project site; rather, it would be a continuation of urbanization in the area.

Where the CLSP area is visible from I-5, the plan area consists of a common agricultural viewshed found in many locations in San Joaquin County. After development of the CLSP area, visual conditions in the plan area would be similar to existing views of urban settings found elsewhere in the project vicinity as seen from I-5, I-205, and SR 120 (e.g., Tracy, Stockton, Manteca). Implementation of design, architectural, development, and maintenance standards in the CLSP would ensure that the general visual quality and character of development in the CLSP area would be consistent with viewer expectations for similar urban environments. Therefore, although views of the CLSP area from I-5 would be substantially altered as agricultural land is replaced by urban development, many travelers on this highway segment may not perceive this as a substantial degradation of the visual character or quality of the site because one common type of viewshed found in the area (agriculture) would be replaced by another common local viewshed (urban). The presence of urban development would also be consistent with, and appear as a continuation of development on the Mossdale Landing site to the south and the existing developed portion of Lathrop to the east.

However, reasonable people may also consider the conversion of agricultural land to urban development on this scale (1,521 acres) as a loss of an aesthetically pleasing and valuable viewshed. Agricultural lands can be considered a valuable aesthetic resource that is representative of the visual character of much of San Joaquin County. The City General Plan identifies agricultural lands to the west and south of the City as scenic resources. Because reasonable people may differ as to the aesthetic value of the agricultural lands in the CLSP area, and whether development of urban uses in the plan area would constitute a substantial degradation of the existing visual character or quality of the site and its surroundings, a conservative approach was taken for this analysis and the alteration of views of the CLSP area from I-5 is considered a significant impact.

Development in the northern portion of the CLSP area would be visible from a limited number of rural residences to the north of the plan area. These scattered residences range in distance from approximately 1,000 feet to over one mile from the plan area. Therefore, although views to the south from these homes would be altered by project development, project features would not constitute prominent foreground views, but would be seen as relatively distant structures in the midground or background. Similar to the discussion above, implementation of design, architectural, development, and maintenance standards in the CLSP would ensure that the general visual quality and character of development in the CLSP area would be consistent with viewer expectations for similar urban environments. Therefore, because of the distance from potential viewers and the nature of the project, conversion of agricultural land to urban development in the CLSP area would result in an alteration of the visual character as seen from rural residences to the north, but would not translate to a substantial degradation of visual character.

The CLSP project also includes two potential offsite locations for WRP #2 and 5 potential offsite areas for recycled water storage ponds (Exhibit 3-6) (The WRP #2 Onsite location and potential recycled water storage/disposal Area 4 are considered part of the overall CLSP area discussion above). WRP #2 is estimated to cover approximately 7 acres with a typical industrial visual character associated with these types of utility infrastructure facilities. A majority of the storage capacity associated with the recycled water storage ponds is above ground and the ponds would appear as earthen berms 10-12 feet above natural grade. Up to 98 acres of area would be needed for the recycled water storage ponds. It is assumed that the exterior slopes of the ponds would be vegetated with herbaceous species for erosion control purposes. It is also assumed that some type of security fencing, such as a 6-foot-high chain-link

fence, would surround the pond areas. Although the ponds would look man-made, their general color and visual texture could blend with the existing agricultural lands in the area.

The proposed site for the WRP #2 South options (stand alone or integrated) and the entirety of potential recycled water storage and disposal Area 5 (Exhibit 3-6) are in the existing Crossroads Industrial Park. These areas currently consist of agricultural fields surrounded by chain link fencing and are used for disposal of recycled water currently generated nearby at WRP #1 (Exhibit 4.18-5, Viewpoint 8). Development of WRP #2 or recycled water storage ponds at these sites is not considered to cause a substantial degradation in the visual character of the area as both types of facilities would be consistent with the existing industrial nature of surrounding area.

The visual condition at potential recycled water storage and disposal Area 6 (Exhibit 3-6) also has an industrial character because of the presence of railroad tracks and SR 120 to the north and south and existing industrial facilities to the east. Although Area 6 currently consists of agricultural fields and an orchard, the surrounding land uses do not provide an agricultural or open space context to the area. Therefore, development of recycled water storage ponds in Area 6 is not considered to cause a substantial degradation in the visual character of the area or its surroundings.

Potential recycled water storage and disposal Areas 1, 2, and 3, and the proposed location for the two WRP #2 North options (stand alone and scalping) (Exhibit 3-6) are in an area that currently consists of agricultural fields and scattered rural residences. Because the exact location of the recycled water storage ponds has not been determined, there is potential for one or more ponds to be placed in close proximity to existing residences. Although the WRP #2 North site would not abut any existing residences, it would interject an industrial facility into a rural and agriculturally focused visual environment. Construction of either of the WRP #2 North options or installation of recycled water storage ponds in close proximity to existing residences are considered to cause a substantial degradation in the visual character of this area. This impact is considered significant.

Impact 4.18-d

Aesthetic Resources – Impacts from Lighting. *The proposed project would require lighting of new development that could inadvertently cause light and glare for motorists on I-5. In addition, the degree of darkness in the City of Lathrop and on the proposed project site would diminish as a result of development, effectively obscuring views of stars, constellations, and other features of the night sky. Implementation of lighting guidelines included in the CLSP would substantially reduce the potential level of light generated by the proposed project, thereby minimizing the potential for these effects. This impact is considered* ***less than significant.***

Under current conditions the CLSP project site has only scattered development that generates no significant sources of light, glare, or light trespass into the night sky. Development of the CLSP would require lighting of roadways, parks, schools, and other facilities. A substantial increase in the amount of nighttime light and glare would result from the development of the CLSP project, potentially obscuring views of stars, constellations, and other features of the night sky. In addition, nighttime lighting in the office/commercial areas, or the presence of reflective surfaces on buildings in this area (e.g., reflective window glazing), may result in light and glare shining onto motorists on I-5. However, lighting guidelines focus on balancing the safety of residents with the value of darkness. Accordingly, the guidelines require that light fixtures have light sources that are aimed downwards. In addition, the use of harsh mercury vapor, low-pressure sodium, or fluorescent bulbs is prohibited for public lighting in residential neighborhoods. Guidelines are also provided regarding appropriate building materials, lighting, and signage in the office/commercial areas to prevent light and glare from adversely affecting

motorists on I-5. These guidelines are consistent with other planning documents in the City and would effectively minimize potential light and glare impacts. Therefore, impacts related to nighttime light and glare and views of the night sky are considered less than significant.

4.18.4 MITIGATION MEASURES

No mitigation measures are necessary for the following less-than-significant impacts:

- 4.18-a Impacts on a Scenic Vista
- 4.18-b Damage to Scenic Resources within a State Scenic Highway
- 4.18-d Impacts from Lighting

The following mitigation measure is provided for the only significant impact associated with aesthetic resources:

4.18-c Degradation of Visual Character. Because of the scale and location of the CLSP, there is no feasible mitigation available to address aesthetic resource impacts associated with the conversion of agricultural land to urban development. Although design, architectural, development, and maintenance standards are included to ensure that urban development in the plan area remains within certain aesthetic guidelines, there is no mechanism to allow implementation of the project while avoiding the conversion of the local viewshed from agricultural to urban development.

Impacts related to the degradation of the local viewshed through conversion of agricultural lands to urban development are considered significant and unavoidable.

Regarding localized visual impacts to residents in the northern utility areas, if one of the WRP #2 North options is constructed, or recycled water storage ponds are constructed in potential recycled water storage/disposal areas 1, 2, or 3, these facilities shall be designed to incorporate a landscape buffer to shield the facilities from the view of nearby residents. The following measures shall be incorporated into the design of the landscape buffer:

(a) **Screen Planting:** Trees and/or shrubs and, if appropriate, ground cover shall be planted and maintained around each pond area to screen the berm and security fencing as much as possible. Similar plantings would be placed around the WRP #2 North site.

(b) **Site Preparation and Plant Selection:** Landscaping activities shall incorporate:

- the use of heavily mulched planting beds to reduce evapotranspiration;
- the use of native plant materials, preferably those endemic to the site;
- no high-maintenance plant selections;
- no lawn in high-shade areas or areas difficult to access; and
- the use of ground covers to act as "green mulch."

(c) **Planting:** All planting shall occur in fully prepared areas, free of weeds, with existing soil reused as extensively as possible. A slow-release fertilizer and a soil saturation aid will be used, if appropriate, to improve tree growth rates and tree guards will be used if necessary to protect the plantings.

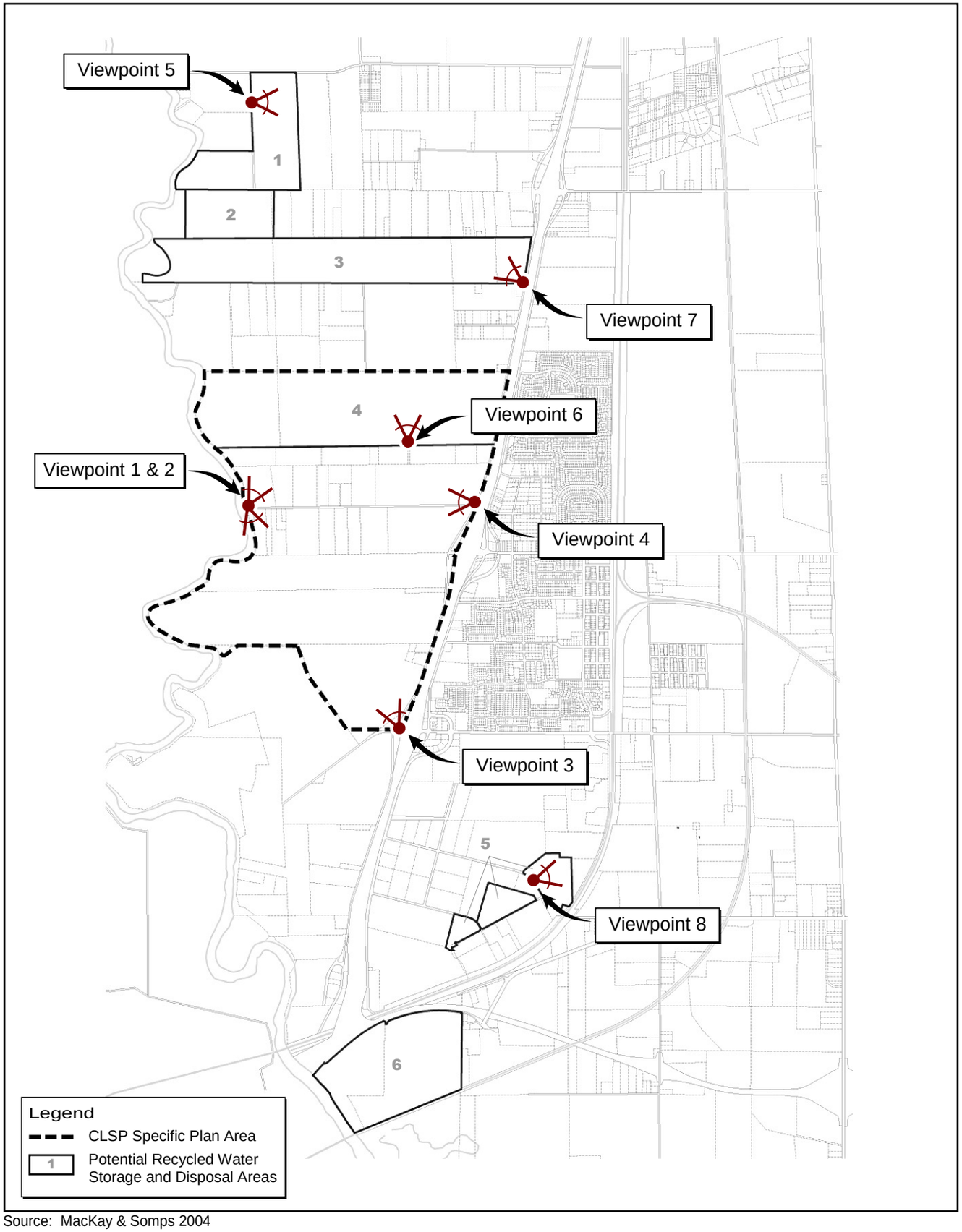
(d) **Retention of Existing Trees:** Although there are few existing trees in the area where this mitigation measure applies, a landscaping plan shall be prepared during the detailed design phase to address issues associated with the retention of existing native trees where possible.

Protection measures during construction may include temporary fencing around driplines, minimizing vehicle movements around trees, and preventing soil and equipment stockpiling under tree canopies. All contractors involved with construction activities shall be thoroughly briefed on the importance and techniques of tree protection before any work.

Implementing Mitigation Measure 4.18-c would reduce aesthetic impacts associated with activities in recycled water storage/disposal Areas 1, 2, and 3 to a less-than-significant level.

4.18.5 RESIDUAL SIGNIFICANT IMPACTS

The conversion of the agricultural viewshed in the CLSP area to urban development is identified as a significant impact. Because there is no feasible mitigation measure to reduce this impact to a less-than-significant level, this impact is considered significant and unavoidable.



Source: MacKay & Somps 2004

Viewpoint Locations

EXHIBIT 4.18-1

Central Lathrop Specific Plan EIR
City of Lathrop
P 3T017.01 06/04

0 2000 4000
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NORTH

EDAW

Viewpoint 1 ñ View to the east from Dos Reis Regional Park

Viewpoint 2 ñ View to the south from the San Joaquin River levee at Dos Reis Regional Park

Source: EDAW 2004

Viewpoints 1 and 2

EXHIBIT 4.18-2

Viewpoint 3 ñ View to the northwest from the Louise Avenue/Manthey Road Intersection

Viewpoint 4 ñ View to the west from Interstate 5 near Dos Reis Road

Source: EDAW 2004

Viewpoints 3 and 4

EXHIBIT 4.18-3

Viewpoint 5 ñ View from Holmes Road facing east; agricultural outbuilding in far view

Viewpoint 6 ñ View from residences on De Lima Road facing northeast

Source: EDAW 2004

Viewpoints 5 and 6

EXHIBIT 4.18-4

Viewpoint 7 ñ View to the northeast from Frewart Road/Manthey Road Intersection

Viewpoint 8 ñ View of potential recycled water storage and disposal Area 5.

Source: EDAW 2004

Viewpoints 7 and 8

EXHIBIT 4.18-5

5 Cumulative Impacts

5 CUMULATIVE IMPACTS

5.1 INTRODUCTION

This draft environmental impact report (DEIR) provides an analysis of overall cumulative impacts of the Central Lathrop Specific Plan (CLSP) project taken together with other past, present, and probable future projects producing related impacts, as required by §15130 of the California Environmental Quality Act Guidelines (State CEQA Guidelines). The goal of such an exercise is twofold: first, to determine whether the overall long-term impacts of all such projects would be cumulatively significant; and second, to determine whether the CLSP itself would cause a "cumulatively considerable" (and thus significant) incremental contribution to any such cumulatively significant impacts. (See State CEQA Guidelines §§15130[a]-[b], §15355[b], §15064[h], §15065[c]; *Communities for a Better Environment v. California Resources Agency* [2002] 103 Cal.App.4th 98, 120.) In other words, the required analysis intends to first create a broad context in which to assess the project's incremental contribution to anticipated cumulative impacts, viewed on a geographic scale well beyond the project site itself, and then to determine whether the project's incremental contribution to any significant cumulative impacts from all projects is itself significant (i.e., "cumulatively considerable" in CEQA parlance).

Cumulative impacts are defined in State CEQA Guidelines §15355 as "two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts." A cumulative impact occurs from "the change in the environment which results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time" (State CEQA Guidelines §15355[b]).

Consistent with State CEQA Guidelines §15130(a), the discussion of cumulative impacts in this draft EIR focuses on significant and potentially significant cumulative impacts. State CEQA Guidelines §15130(b), in part, provides the following:

> The discussion of cumulative impacts shall reflect the severity of the impacts and their likelihood of occurrence, but the discussion need not provide as great detail as is provided for the effects attributable to the project alone. The discussion should be guided by the standards of practicality and reasonableness, and should focus on the cumulative impact to which the identified other projects contribute rather than the attributes of other projects which do not contribute to the cumulative impact.

5.2 PROJECTS CONTRIBUTING TO POTENTIAL CUMULATIVE IMPACTS

The State CEQA Guidelines identify two basic methods for establishing the cumulative environment in which the project is to be considered: the use of a list of past, present, and probable future projects or the use of adopted projections from a general plan, other regional planning document, or a certified EIR for such a planning document. For this DEIR, both the list and the plan approach have been combined to generate the most reliable future projections possible. A list approach is used to define the local project environment and includes projects within the City of Lathrop (City). Because the proposed project is large and directly influences, and is influenced by, regional development activities, the plan approach is also used, to allow a cumulative analysis on this regional scale. Projects and plans included in these two approaches are described below.

5.2.1 CUMULATIVE CONTEXT

The Lathrop area and City of Lathrop have grown moderately since the City's origin as a railroad maintenance yard in the late 1860s to its gradual and now more rapid urbanizing condition. Lathrop's development history was dominated by the railyards, agriculture, the establishment of Sharpe Army Depot in the 1940s (with its peak employment of more than 1,400), and the opening of Libby-Owens-Ford glass manufacturing and Best Fertilizer in the 1950s (with their more than 1,200 total employees).

While records are scant, the area history suggests that agriculture has been the driving force over the decades in the conversion of natural lands in Lathrop to utilitarian purposes. This conversion of natural land removed biological habitat and has resulted in such environmental effects as air quality degradation (attributable to dust from cultivation and emissions from farm equipment) and runoff of pesticide-contaminated sediments to the San Joaquin River.

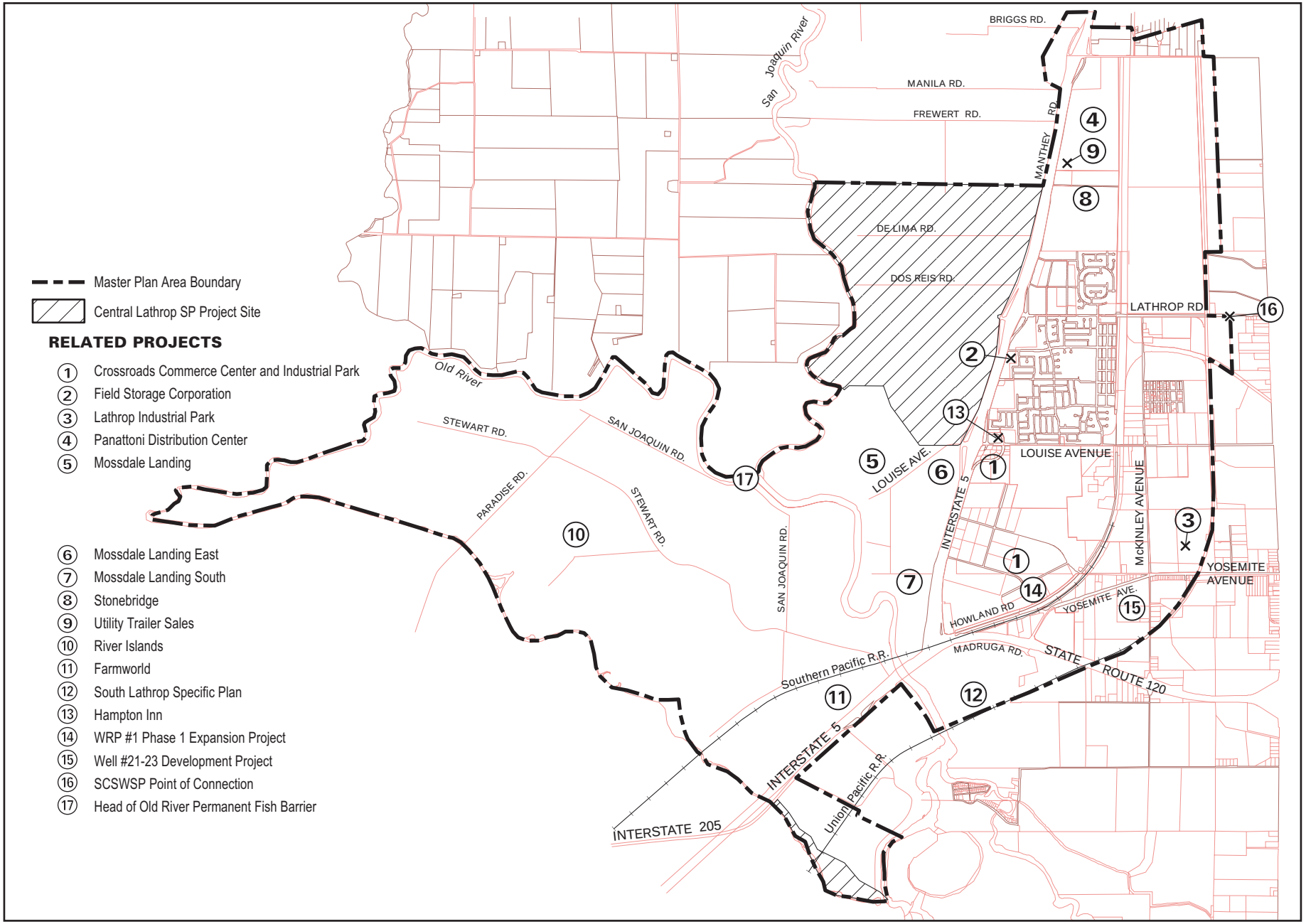
According to U.S. Census records, the population in Lathrop grew from around 6,800 in 1990 to more than 10,000 in 2000. This increase in population has come as a result of moderate urbanization over the decade, particularly the development of single-family residences and large-scale warehouses and distribution centers. This urbanization has resulted in increased traffic, particularly on increasingly crowded local freeways such as Interstate 5 (I-5) and I-205; increased air pollution (from vehicles and construction); and loss of farmland. Even with this growth, however, Lathrop accounted for only 2% of the total San Joaquin County population in 2000 (approximately 563,600), although this is an increase from 1% in 1990.

San Joaquin County (County) has grown substantially in recent years, particularly in the cities of Tracy and Stockton. Between 1990 and 2000, Tracy added more than 23,000 residents and Stockton added 33,000 residents. Together, these two cities represent 69% of the County's population gain between 1990 and 2000; by comparison, Lathrop's growth equaled 4% of the total County population gain. This growth in Tracy and Stockton has resulted in environmental changes similar to those occurring in Lathrop, although at more pronounced levels than in Lathrop. The County is addressing numerous regional issues pertaining to severe air quality degradation, traffic congestion, biological habitat loss, loss of farmland, and other urban-related environmental changes.

5.2.2 LIST OF RELATED PROJECTS

The list of past, present, and probable future projects used for this cumulative analysis is restricted to those projects that have occurred or are planned to occur within the City. For the purposes of this discussion, these projects that may have a cumulative effect on the resources in the project area will often be referred to as the "related projects." These related projects are identified in Exhibit 5-1 and Table 5-1 and are described below; the numbering corresponds to the numbers used in the exhibit and table.

1. Crossroads Commerce Center and Industrial Park: Located on a site south of Louise Avenue between Howland and Harlan Roads in East Lathrop, Crossroads is an industrial/commercial area comprising 450 acres of Industrial and 48 acres of Highway Commercial-designated land. The industrial area includes an existing 750,000-square-foot Del Monte distribution warehouse, a 430,770-square-foot Daimler Chrysler facility, three 250,000-square-foot warehouses, a 435,000-square-foot Longs Drugs warehouse, a plastic extrusion plant for Fuel Total Systems, a sausage-making company (Swiss American), a cross dock and warehouse for Home Depot, and a trucking terminal for Swift Trucking. The Freeway Commercial area contains the existing 138,000-square-foot Lathrop Business Park, four fast-food restaurants, a sit-down restaurant, and a 31,886-square-foot hotel.



Source: EDAW 2002

Related Projects

EXHIBIT 5-1

Central Lathrop Specific Plan
CITY OF LATHROP
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NORTH

EDAW

Table 5-1
Related Projects in the City of Lathrop

Project No. in Exhibit 5-1	Project Name	Status	Acreage	Undeveloped Land Use [1]	Proposed/Existing Use (P)/(E)		
					Residential Units	Industrial S.F.	Commercial/ Office S.F. [2]
1	Crossroads Commerce Center and Industrial Park	Approved/partially developed	498	Agriculture/open space	--	Approx. 4.3 million (E)	178,000 (E)
2	Field Storage Corporation	Developed	5	Vacant	--	86,000 (E)	--
3	Lathrop Industrial Park	Approved/partially developed	59	Vacant	--	587,124 (E) 374,976 (P)	--
4	Panattoni Distribution Center	Approved/partially developed	33	Vacant	--	436,800 (E) 263,200 (P)	--
5	Mossdale Landing	Approved/partially developed	477	Agriculture/open space	1,690 (P)	--	653,000 (P)
6	Mossdale Landing East	Approved	150	Agriculture/open space	440	--	435,000 (P)[3]
7	Mossdale Landing South	Proposed	104	Agriculture/open space	219	--	406,524
8	Stonebridge	Approved/partially developed	260	Agriculture/open space	757 (E) 128 (P)	--	--
9	Utility Trailer Sales	Approved/under construction	24	Vacant	--	75,000	--
10	River Islands	Approved	4,905	Agriculture/open space	11,000 (P)	--	4,753,000 (P)
11	FarmWorld	Proposed	101	Agriculture/open space	--	--	272,500, 120-rm hotel (P)
12	South Lathrop Specific Plan	Proposed	220	Vacant	Unknown [4]	Unknown [4]	Unknown [4]
13	Hampton Inn	Approved	2	Vacant	--	--	45,000
14	WRP #1 Phase 1 Expansion Project	Approved/Phase 1 expansion under construction	16	Vacant	--	--	--
15	Well #21–23 Development Project	Well #21 approved/under construction; Wells #22 and #23 proposed	5	Agriculture/open space	--	--	--
16	SCSWSP Point of Connection	Approved/under construction	N/A	N/A	--	--	--
17	Head of Old River Permanent Fish Barrier	Proposed	N/A	N/A	--	--	--
Project Site	Central Lathrop Specific Plan	Proposed	1,521	Agriculture/Open Space	6,790 (P)	--	4,981,304 (P)
Totals			8,380	Approximately 8,020 total acres with approximately 7,000 acres currently supporting agriculture/ open space uses	21,024 units	713,176 (P) 4,413,251 (E)	11,546,328 (P) 178,000 (E)

[1] This represents current land uses if undeveloped or prior (undeveloped) land uses if the site is partially/fully developed.
[2] Does not include school, park buildings.
[3] Based on a floor-area ratio of 0.20.
[4] Formal application has not been submitted; land uses only conceptually proposed.
(E) = existing; (P) = planned

2. Field Storage Corporation: Field Storage Corporation was recently completed and consists of an 85,000-square-foot mini-storage facility, with 1,025 square feet of office located on the east side of Harlan Road, south of J Street. The adjacent parcel to the north contains a 3,024-square-foot car wash.

3. Lathrop Industrial Park: Lathrop Industrial Park was approved by the Lathrop Planning Commission to contain four industrial warehouses. The first warehouse provides 231,840 square feet of warehouse space with supporting offices. The recently completed second warehouse contains 322,560 square feet. The third and fourth warehouses are proposed but not yet constructed; together, they will contain 374,976 square feet of space. The project is located at 2725 Yosemite Avenue in East Lathrop.

4. Panattoni Distribution Center: This approved project would add (when completed) 263,200 square feet of warehouse space to an existing 436,800-square-foot warehouse located at 11190 Harlan Road in East Lathrop.

5. Mossdale Landing: Located between I-5 and the San Joaquin River and south of Lathrop Road, the Mossdale Landing project is a 477-acre residential and mixed-use commercial development that will consist at buildout of 1,690 dwelling units, approximately 653,000 square feet of village and service commercial uses, parks, two kindergarten through grade 8 (K–8) schools, a fire station, and open space. Mossdale Landing includes segments of River Islands Parkway and Golden Valley Parkway, which would also serve the River Islands project. The project is within the area identified as Mossdale Village in the West Lathrop Specific Plan (WLSP) and is consistent with that plan. Currently, this project is under construction.

6. Mossdale Landing East: This proposed residential/commercial mixed-use development is located within the Mossdale Village area. This project would include construction of 440 dwelling units, 435,000 square feet of village/service/highway commercial development, and 9.4 acres of parks and open space on the 150-acre project site. Generally, the project site is located west of the proposed Golden Valley Parkway alignment and south of Louise Avenue; however, the project consists of two separate units. Unit one (122 acres) is immediately south of Louise Avenue and adjacent to I-5, and unit two (28 acres) is approximately 0.5 mile south of unit one and adjacent to I-5. This project has been approved by the City and does not require additional regulatory approvals, but is not yet under construction at this time.

7. Mossdale Landing South: This proposed residential/commercial mixed-use development is located within the Mossdale Village area. This project would include construction of 219 dwelling units and 406,524 square feet of commercial development on the 104-acre project site. Generally, the project is located south of Mossdale Landing East unit two, north of the proposed Golden Valley Parkway, west of I-5, and east of the San Joaquin River. A DEIR for this project is currently undergoing public review.

8. Stonebridge: On Harlan Road north of Warren Avenue in East Lathrop, Stonebridge is an approved 260-acre, 885-unit single-family residential subdivision that includes a 7.6-acre park facility and an elementary school. Currently, approximately 86% of the units have been developed.

9. Utility Trailer Sales: Utility Trailer Sales will sell new and used truck trailers. Located at 12608 Harlan Road in East Lathrop, this retail establishment will include 54,056 square feet of sales area, with a shop and office, and 19,572 square feet of parts storage area. This project is anticipated to employ 150 persons (75 persons per shift). This project was approved by the City in July 2002 and is currently under construction.

10. River Islands: This project includes 300 acres of business park development, 1,800 acres (11,000 units) of residential development, a town center and other commercial development (4.75 million square feet), 200 acres of parks, and 600 acres of lakes and other open space uses. River Islands was approved by the City in January 2003 but is not yet under construction. Because the project site is located on an island surrounded by Delta waters, and thus is dependent on enhanced levees for its success, the project requires further regulatory approvals from the U.S. Army Corps of Engineers and the California Reclamation Board. At the time of release of this DEIR, those regulatory approvals had not yet been granted.

11. FarmWorld: FarmWorld is a proposed retail entertainment project on 101.5 acres adjacent to the west side of I-5 on Stewart Tract. The development would include 250,000 square feet of specialty retail shops and retail uses; a 5,000-square-foot restaurant; a 14.5-acre entertainment area to include an arena, themed rides, food service, and educational exhibit areas; a 120-room hotel with conference facilities; a highway commercial area with restaurants, service stations, and a 17,500-square-foot convenience market; and an open-air farmer's market. This project was included in the WLSP, which was approved in 1996, but is currently on hold at the request of the developer.

12. South Lathrop Specific Plan: The South Lathrop Specific Plan (SLSP) area covers 220 acres near the intersection of I-5 and State Route 120 (SR 120), north of the Union Pacific Railroad (UPRR) tracks and east of the San Joaquin River. The proposed development is called the Landmark Logistic Center and would be oriented toward the professional trucking industry. Facilities would include vehicle-related services; a hotel; medical services; financial services; and retail and entertainment facilities. The project is currently on hold, and all or a portion of the plan area is proposed for recycled water storage or disposal as part of the CLSP project or the WRP #1 Phase 1 Expansion project. However, the proposed SLSP is included in this evaluation to provide the most development-intensive cumulative scenario.

13. Hampton Inn: This approved development will consist of a three-story, 45,000-square-foot motel on 1.9 acres east of I-5 and north of Louise Avenue.

14. Water Recycling Plant #1 (WRP #1) Phase 1 Expansion Project: Approved in 2003, this expansion project would allow the construction of a parallel facility adjacent to the City's existing Schreiber-process treatment facility located at 18800 Christopher Way. The facility, using membrane biologic reactor (MBR) technology, has been approved to provide up to 3.0 million gallons per day (mgd) of treatment capacity. This capacity will treat effluent to tertiary levels and is allocated to serve future growth. The first stage of 0.75 mgd is currently under construction. Under the Lathrop Water, Wastewater, and Recycled Water Master Plan (Water Master Plan), WRP #1 could ultimately be expanded to 6.1 mgd of treatment capacity.

15. Well #21-23 Development Project: The City is proposing to construct three water wells (Wells #21, #22 and #23) and approximately 3,000 feet of water transmission pipeline to convey groundwater from the new wells to the City's water distribution system. The project also includes proposals to construct associated well and pump houses, telemetry facilities, and pipelines. Each well would produce 1,200–1,500 gallons per minute (gpm) from the Sacramento-San Joaquin Delta groundwater sub-basin. The project is consistent with the facilities planned for in the Water Master Plan and would help meet the City's water demand from future planned growth as projected in the Water Master Plan. Once surface water deliveries to the City from the South San Joaquin Irrigation District's (SSJID's) South County Surface Water Supply Project (SCSWSP) commence, the wells would be used to supplement City water supplies during peak demand and to provide required fire flow. Wells #21-#23 were approved and Well #21 is currently under construction.

16. SCSWSP Point of Connection: The SCSWSP is a joint project of SSJID and the cities of Manteca, Escalon, Lathrop, and Tracy to supply treated potable surface water to these participating cities. The primary objective of the SCSWSP is to provide a safe, reliable drinking water supply to these cities in the south County. The project involves construction and operation of a new water treatment plant at Woodward Reservoir in Stanislaus County and a 36.5-mile, 20- to 54-inch water transmission pipeline with pumping facilities to deliver treated water to turnouts for each city. The SSJID's source of water is the Stanislaus River, based on its rights for direct diversion and diversion to storage. SSJID proposes to develop the project in two phases: Phase I (2003–2011) would supply approximately 31,000 acre-feet per year (AFY) to the participating cities, and Phase II (2011–2025) would increase the total supply to approximately 44,000 AFY. Two points of connection (POCs) to the City of Lathrop's municipal water system are proposed as part of the SCSWSP: one west of the UPRR tracks between the San Joaquin River and Paradise Cut, and the other (which would be in operation first) along Lathrop Road east of the UPRR tracks. A third potential POC is proposed along Yosemite Avenue east of the UPRR tracks. The SCSWSP has been approved and adopted and is currently under construction (EDAW 2001).

17. Head of Old River Permanent Fish Barrier: As part of the CALFED South Delta Improvement Program, a permanent operable barrier is proposed to replace the temporary rock barrier currently installed at the Head of Old River (HOR). The existing HOR temporary barrier is installed and removed twice each year, in the spring and in the fall, to improve water quality conditions and prevent migrating salmon from entering Old River. The proposed permanent barrier would serve similar purposes but would be in place all year, with gates to control water and fish passage. Various design alternatives are being considered for the permanent barrier, including the use of locks to allow continued boat passage. The California Department of Water Resources (DWR) is leading this project effort, in cooperation with several other public agencies. A draft environmental impact report/environmental impact statement (EIR/EIS) is currently being prepared for the entire South Delta Improvement Program (which would involve installation of operable barriers to ensure water of adequate quantity and quality to agricultural diverters and increase pumping capacities), of which the HOR operable barrier is a part.

The 17 projects described above and the CLSP either have recently resulted in or are proposed to result in development of approximately 8,380 acres in Lathrop (or its sphere of influence, in the case of the SLSP and the CLSP). A total of approximately 7,000 acres are currently in agricultural or open space uses. Approximately 83% of this cumulative development is either within the existing developed portion of the City east of I-5 or would be within the boundaries of the previously approved WLSP (which includes Sub-Plan Area #3 and the Mossdale Village area, as shown in Exhibit 4.3-1).

The "related projects" described above are proposed to add 20,069 new residences, in addition to 757 that have been constructed recently. New industrial development would add 713,176 square feet to the 4,413,251 square feet of industrial development already developed recently. A total of 11,546,328 square feet of commercial/office/employment uses (plus a 120-room hotel) are proposed to be added to the 178,000 square feet of these uses that have been constructed recently.

5.2.3 REGIONAL PLANNING ENVIRONMENT

Because the proposed project is large and directly influences, and is influenced by, regional development activities, the "plan" approach was used to evaluate cumulative impacts on a regional scale. The regional cumulative analysis area covers San Joaquin County and included an evaluation of the following plans:

- San Joaquin County General Plan 2010, adopted in 1992 and as amended;

- San Joaquin County Multi-Species Habitat Conservation and Open Space Plan (SJMSCP) (2000);
- City of Lodi General Plan, adopted in 1990;
- City of Stockton General Plan, adopted in 1990 and as amended through November 3, 1998;
- City of Lathrop General Plan, adopted in 1991 and as amended through January 28, 2003;
- Manteca General Plan, adopted in 1988 and as amended through December 20, 1993;
- City of Tracy Urban Management Plan/General Plan and Urban Management Plan, adopted in 1993;
- Draft General Plan, City of Ripon, 1996;
- 2001 Regional Transportation Plan, prepared by the San Joaquin Council of Governments in 2001; and
- Sacramento and San Joaquin River Basins, California, Comprehensive Study (Draft Interim Report), prepared by the U.S. Army Corps of Engineers and California Reclamation Board, July 22, 2002.

Much of the information on the overall planning and project environment in the County was found in the SJMSCP, which evaluated current conditions and anticipated future development throughout the County based on the individual City and County General Plan documents listed above. Additional information on conditions in the County was obtained from the San Joaquin Council of Governments (SJCOG) Research and Forecasting Center (RFC). A summary of the cumulative planning environment in the County used for the regional cumulative impact analysis is provided below.

San Joaquin County covers approximately 909,000 acres, with approximately 808,000 acres, or nearly 90% of the County, used or available for agriculture (row and field crops, orchards, vineyards, and grazing lands). The remaining lands are dominated by various types of development (approximately 60,000 acres), natural habitats (woodlands, riparian), and open water (lakes, rivers, Delta waterways). The County population in 2000 was approximately 563,600 (U.S. Census Bureau 2000), with most County residents and development located in the incorporated cities (Escalon, Lathrop, Lodi, Manteca, Ripon, Stockton, and Tracy).

As stated in the SJMSCP, it is anticipated that 147,000 acres of various categories of open space lands (including agriculture, range lands, and natural areas) in the County (including Lathrop) will be converted to non-open space uses between 2001 and 2051, based on full buildout of each of the general plans in the County and construction of all anticipated transportation and other public projects. In addition, approximately 59,000 acres of infill of urban lands would occur in this 50-year timeframe. Population in the County is expected to more than double by 2040, increasing to 1.26 million (California Department of Finance 1998).

Residential development constitutes the majority of planned future developed uses in the County. New residential development is expected to occur in four primary areas in the County: the incorporated cities, the unincorporated areas near the cities where services are available, new communities (e.g., Mountain House, New Jerusalem), and existing unincorporated communities (e.g., Acampo, Banta, Chrisman, Glennwood, French Camp, Lockeford, Linden, Thornton, Vernalis). Commercial development would be concentrated in these same areas as well as along major transportation routes.

5.3 CUMULATIVE IMPACT ANALYSIS

The following sections contain a discussion of the cumulative effects anticipated from implementation of the proposed project, together with the related projects and regional development, for each of the 18 environmental issue areas evaluated in this DEIR. The analysis conforms with §15130(b) of the State CEQA Guidelines, which specifies that the "discussion of cumulative impacts shall reflect the severity of the impacts and their likelihood of occurrence, but the discussion need not provide as great a detail as is provided for the effects attributable to the project alone."

5.3.1 LAND USE CONSISTENCY AND COMPATIBILITY

As described in Section 4.2 of this DEIR, implementing the proposed project would not physically divide a community. It therefore also would not contribute to a cumulative impact regarding this issue. (See *Santa Monica Chamber of Commerce v. City of Santa Monica* [2002] 101 Cal.App.4th 786, 799 ("[j]ust as zero when added to any other sum results in no change to the final amount, so, too, when no environmental impacts cognizable under CEQA are added to the alleged environmental impacts of past projects, there is no cumulative increased impact"); see also State CEQA Guidelines §15130[a] ("[a]n EIR should not discuss impacts which do not result in part from the project evaluated in the EIR").)

Impacts involving land use plans or policies and zoning generally would not combine to result in cumulative impacts. The determination of significance for impacts related to these issues, as considered in Appendix G of the State CEQA Guidelines, is whether a project would conflict with any applicable land use plan or policy adopted for the purpose of reducing or avoiding environmental impacts. Such a conflict is site specific; it is addressed on a project-by-project basis. As described in Section 4.2 of this DEIR, implementing the proposed project would not result in significant land use planning impacts, and the project's ultimate consistency with local land use plans, policies, and zoning is ensured through entitlements to revise the City General Plan. The project is also consistent with the SJMSCP, a regional-scale planning document. Further, related projects in the City are, to the extent that proposed land uses have been identified, apparently consistent with environmental plans and policies. Because no land use impacts would occur on a project-specific basis, the project would not contribute to any potential cumulative land use impacts.

5.3.2 POPULATION, EMPLOYMENT, AND HOUSING

The proposed project is anticipated to contribute jobs in excess of the number of employable residents that would be expected to live on the project site. As such, the project would have a beneficial effect on the jobs-housing balance of San Joaquin County because the County currently has more housing units than jobs (jobs-housing balance index of approximately 1.22) and the imbalance is expected to intensify through 2025 (project jobs-housing balance of 1.48) (Table 4.3-3). Therefore, the proposed project would assist in alleviating a countywide cumulative impact.

More locally, the City is considered to have a housing shortage (vacancy rates below 5%). Although the excess of jobs associated with the proposed project might be considered as contributing to this shortage (through increased housing demand), when looked at in conjunction with related current and future housing projects in the City, overall housing opportunities in the City are anticipated to increase.

Population growth, by itself, is not considered a significant cumulative effect because it is not an environmental impact. However, population growth, and related housing and infrastructure, does lead to conversion of land to other uses, the impacts of which are considered in the appropriate sections of this document.

5.3.3 TRANSPORTATION AND CIRCULATION

Section 4.4, Transportation and Circulation, of this DEIR evaluates both project-specific and cumulative traffic impacts. Project-only impacts are addressed in the discussions of Existing Plus Phase 1 and Existing Plus Buildout scenarios. Cumulative impacts are addressed in the 2010 Plus Phase 1 and 2020 Plus Buildout scenarios, which assume buildout of the proposed project in combination with cumulative development in the City and the region. Summarizing from Section 4.4, significant cumulative impacts would occur at study area intersections, freeway segments, and freeway ramps under both the 2010 Plus Phase 1 and 2020 Plus Buildout scenarios. All cumulative intersection impacts would be mitigated to less-than-significant levels except for impacts at the following intersections:

- Cumulative impacts related to intersection operations at the Lathrop Road/Airport Way and Louise Avenue/Airport Way intersections are considered significant and unavoidable because these intersections are located in the City of Manteca, and to date Manteca has not established a program by which it can receive moneys from projects in Lathrop and ensure that such funds will be devoted to the intended mitigation.

- Cumulative impacts related to intersection operations at the Lathrop Road/Old Harlan Road, Lathrop Road/New Harlan Road, and Louise Avenue/Old Harlan Road intersections are considered significant and unavoidable because, due to physical constraints at each intersection, feasible mitigation is not available to reduce the impact to a less-than-significant level.

Of the 49 total freeway segments evaluated on I-5, SR 99, SR 120, and I-205, all but three segments on I-5 would be subject to significant cumulative traffic impacts. Where significant cumulative impacts related to freeway segment operations occur, the impacts cannot be fully mitigated and are considered significant and unavoidable for one or both of the following reasons:

- Projects to be funded by Transportation Impact Fees may not be completed by Caltrans by the time demand for these facilities would occur.

- Development of needed improvements is outside the scope of the proposed project (i.e., regional improvements) and cannot realistically be implemented by the project applicant.

Three freeway ramp facilities were evaluated in the traffic analysis: Roth Road/I-5, Louise Avenue/I-5, and Lathrop Road/I-5. Each of these ramps would be subject to significant cumulative impacts. Although in some instances the planned construction of an additional ramp lane would mitigate the impact to a less-than-significant level, under most circumstances the degradation of ramp operation is attributable to poor LOS on nearby segments of I-5 rather than to the capacity of the ramp itself. Mitigation for impacts to freeway ramp operations under these circumstances would require that improvements to I-5 be implemented. However, such improvements may not be completed by Caltrans by the time demand for these facilities would occur, and such improvements cannot realistically be implemented by the project applicant. Therefore, these cumulative impacts are considered significant and unavoidable.

5.3.4 AIR QUALITY

Past development in the County and throughout the San Joaquin Valley has resulted, in combination with meteorological conditions and transport of pollutants from other air basins, in substantial to severe air quality problems in the San Joaquin Valley Air Basin (SJVAB). As described in Section 4.5, Air Quality, the SJVAB is in severe nonattainment with state and federal ozone standards and nonattainment with state and federal standards for respirable particulate matter 10 microns or less in diameter (PM_{10}). As a

consequence, the San Joaquin Valley Air Pollution Control District (SJVAPCD) is required to submit a plan demonstrating reductions in the emissions inventory of 300 tons per day by 2005–2010. However, a voluntary reclassification to extreme nonattainment for ground-level ozone is in process and, if adopted, would allow additional time to implement emission reduction measures.

SJCOG projects population in the County to grow from 563,600 in 2000 to 900,300 in 2025, an increase of 330,700. The City of Lathrop is projected to grow by nearly 14,000 people over this same period. SJCOG bases its air quality attainment planning on projections of countywide growth and has indicated (along with SJVAPCD staff) that, in general, higher-than-projected growth in one community, such as Lathrop, usually translates to lower-than-projected growth in another and that countywide growth trends would not be likely to change on the basis of development in one community (Klob, pers. comm., 2003). Thus, if Lathrop does add more than 21,000 dwelling units (as indicated in Table 5-1) and the City builds out by 2025, Lathrop would triple its projected population growth, but projected growth would likely be commensurately reduced, compared to what has been anticipated, elsewhere in the County. Conversely, if growth occurs throughout the County, by community, as projected by SJCOG, the level of cumulative development shown in Table 5-1 probably would not be achieved in Lathrop. In short, SJCOG and the SJVAPCD have assumed a substantial level of cumulative development over the next 25 years in their air quality planning, and individual project development would not alter attainment of air district plans. It is important to recognize that the SJVAPCD has already seen substantial progress in meeting attainment status for ozone; federal ozone standards were exceeded more than 70 days per year between 1980 and 1990, and the number of exceedances has been steadily reduced to an average of approximately 30 days per year over the past 5 years, despite substantial population growth. Still, it is uncertain whether, despite best efforts of regulators and constantly improving control technologies, attainment will be reached on schedule.

Much of the past development in the project region has occurred to meet demands for more affordable housing for people employed in the Bay Area. Increased commuting associated with this development scenario has contributed substantially to existing air quality problems in the SJVAB. Although the proposed project would counter this trend to a small degree by generating more jobs than employable residents (see Section 4.3, Population, Employment, and Housing), it would still result in an individual significant air quality impact with respect to long-term regional emissions. Emissions attributable to the proposed project, along with emissions from other reasonably foreseeable future projects in Lathrop and the SJVAB as a whole, would continue to contribute to long-term increases in emissions that would exacerbate existing and projected nonattainment conditions in the SJVAB. Thus, the proposed project would contribute to a significant and unavoidable cumulative air quality impact. The CLSP's incremental contribution to that cumulatively significant impact, therefore, is itself cumulatively considerable.

Because of the nonattainment status of the SJVAB and the large disturbance area associated with the CLSP project, the proposed project is considered to result in significant and unavoidable construction-related air quality impacts, even with implementation of mitigation measures required by the SJVAPCD, as identified in Section 4.5, Air Quality. Assuming that all related projects also implement all feasible construction emission control measures consistent with SJVAPCD guidelines, construction emissions on a project-by-project basis could be less than significant, or significant and unavoidable, depending on the scale of the project and other factors. Because of the large scale and number of related projects, taken in total and combined with the nonattainment status of the SJVAB for PM_{10}, construction-related emissions would result in a significant and unavoidable cumulative air quality impact. The proposed project would cause a cumulatively considerable (significant) incremental contribution to this cumulatively significant impact from the CLSP together with all related projects. Given that compliance with applicable rules and regulations would be required for the control of stationary-source emissions of toxic air contaminants (TACs), both on and off the site, the project's contribution to long-term cumulative increases in stationary-

source TAC concentrations would be considered minor. However, please note that specific stationary-source TAC emissions at a local level are considered a potentially significant impact in this DEIR because there is a theoretical potential for a sensitive receptor to be located near a stationary TAC source (see Impact 4.5-b). In addition, exposure to TACs from mobile sources, specifically diesel exhaust PM, is of growing concern within the San Joaquin Valley. A major transportation corridor (i.e., I-5) involving the operation of diesel-fueled vehicles is present in the project area. Agricultural activities in the area also result in the operation of heavy diesel-powered equipment. Thus, background diesel PM concentrations within the CLSP area could be relatively high. Sensitive receptors, such as inhabitants of residential dwelling units, proposed for construction under the CLSP could be exposed to substantial diesel PM emissions given the site's proximity to these nearby transportation corridors. In addition, although specific land uses are not yet identified, development of land uses that involve extensive use of diesel-powered equipment or vehicles could contribute to an exceedance of the SJVAPCD thresholds at nearby sensitive receptors. Consequently, this cumulative impact is considered significant. The proposed CLSP would result in a cumulatively considerable incremental contribution to this cumulatively significant impact from the CLSP and related projects.

Cumulative traffic data (proposed project plus foreseeable future development) were used to specifically evaluate local mobile-source carbon monoxide (CO) concentrations for future conditions (i.e., 2010 and 2020). The analysis was conducted for intersections projected to operate at unacceptable level of service (LOS E or F). Both 1-hour and 8-hour CO concentrations were estimated based on worst-case meteorological conditions, p.m. peak-hour traffic volumes as presented in the traffic analysis, and emission factors modeled using the EMFAC2002 computer model. Intersections located within 1,000 feet of each other were modeled together to account for the possibility of exposure of the same receptor to potentially high CO concentrations from more than one location. As indicated in Table 5-2, the estimated maximum 1-hour and 8-hour CO concentrations for the 2020 cumulative condition (full project buildout plus traffic resulting from regional development) would not exceed the significance thresholds of 20 parts per million (ppm) and 9 ppm. Consequently, the cumulative impact of the CLSP and related projects is considered less than significant.

Table 5-2
Localized Mobile Source Carbon Monoxide Concentrations under 2020 Cumulative Conditions

	Maximum CO Concentrations (ppm)[1]	
	1-Hour	8-Hour
Significance Thresholds[2]	20.0	9.0
Intersection(s)		
Lathrop Road/Airport Way	9.1	6.5
Lathrop Road/Fifth Street	9.0	6.4
Lathrop Road/I-5 southbound ramps/I-5 northbound ramps/New Harlan Road	9.5	6.8
Louise Avenue/River Islands Boulevard/Golden Valley Parkway	9.1	6.5
Main Street/Golden Valley Parkway	9.1	6.5

[1] 1-hour and 8-hour CO concentrations were estimated using the CALINE4 model based on the assumptions outlined above, 2020 composite emission factors from EMFAC2002, a persistence factor of 0.7, and 1-hour and 8-hour CO background concentrations of 8.4 ppm and 6.0 ppm (the highest background concentrations from the Stockton-Hazelton air quality monitoring station data between 2000 and 2003).

[2] Based on the more stringent California Ambient Air Quality Standards.

Source: EDAW 2004

5.3.5 NOISE

Implementing the proposed project would result in significant noise impacts before mitigation associated with construction activities and noise generated by onsite land uses, such as residential, commercial, schools, parks, and wastewater treatment facilities (on and off the site). These impacts would be reduced to less-than-significant levels with implementation of the mitigation measures recommended in Section 4.6, Noise. However, impacts associated with onsite exterior noise levels resulting from adjacent land uses (e.g., I-5, nearby agricultural activities) are considered significant and unavoidable.

Noise is a localized occurrence and attenuates with distance. Therefore, only future cumulative development projects in the direct vicinity of the project site would have the potential to add to anticipated stationary project-generated noise, thus resulting in cumulative noise impacts. Two related projects are planned in the vicinity of the proposed project: Mossdale Landing and Mossdale Landing East (Exhibit 5-1). Each of these projects would generate types of noise similar to that of the proposed project and, as with the proposed project, each would have the potential to affect nearby residences and other sensitive receptors proposed at each project site.

The City's noise regulations limit construction activities to daytime hours. For the CLSP, it was determined that adherence to these noise regulations alone would not be sufficient to avoid significant construction noise impacts. It is similarly anticipated that compliance with these regulations alone would not avoid significant construction noise impacts associated with the related projects. Therefore, significant cumulative noise impacts associated with construction activities could occur. However, as explained in Section 4.6, Noise, noise levels are not directly additive and attenuate rapidly with distance. Because no related projects would be under construction in the direct vicinity of the project site concurrently with the proposed project and because the proposed project would not result in significant construction noise impacts after mitigation, it would not cause a cumulatively considerable incremental contribution to any such significant cumulative noise impacts.

Stationary-source noise associated with the proposed and related projects could potentially result in exceedance of the City's noise regulations at sensitive receptors. While the noise from any stationary noise sources associated with the related projects could be controlled at the source (by means of noise walls, enclosures, site planning, and so on), there is no guarantee that all the related projects would include such noise controls as part of their proposals. Hence, significant cumulative noise impacts associated with stationary noise sources could occur. However, noise levels are not directly additive and attenuate rapidly with distance. Because no related projects are in close enough proximity to the project site to have an additive affect from stationary noise sources and because the proposed project would not result in significant stationary noise impacts after mitigation, it would not cause a cumulatively considerable incremental contribution to any such significant cumulative noise impacts.

While construction and stationary-source noise can be controlled onsite at the point of origin, traffic noise may extend beyond a project site along existing and proposed offsite roadways and result in significant traffic noise impacts on sensitive uses along these roadways. Because full buildout of the proposed CLSP would result in a perceptible increase in traffic noise on several roadways (Impact 4.6-c in the noise analysis), the proposed CLSP would contribute to a cumulative impact. Furthermore, the combined cumulative increase in traffic on I-5, SR 120, and local arterials anticipated for 2020 resulting from the CLSP and regional growth would extend the 60-dBA noise contour distances for these roadway segments, resulting in a substantial number of additional existing and proposed sensitive receptors falling within this contour. Thus, the traffic noise impacts from the CLSP and related projects, taken together, are considered cumulatively significant. Construction of sound walls and other noise-attenuating features (e.g., berms, dual-pane windows) throughout the region would require a regional program and may not be feasible to

implement. Because it is considered infeasible to sufficiently reduce noise at every existing and proposed sensitive receptor that would be affected, this cumulative traffic noise impact is considered significant and unavoidable, and the project's incremental contribution to the significant cumulative impact is itself cumulatively considerable (significant) and unavoidable.

5.3.6 GEOLOGY, SOILS, AND MINERAL RESOURCES

Various areas in the City of Lathrop and the project region are subject to ground shaking, liquefaction, lateral spreading, settlement, levee failure, and other seismically induced hazards (City of Lathrop 1991, 1996). Although the City is located in an area of low seismic activity, faults in the greater San Joaquin Valley could cause moderate ground shaking throughout the region. Implementation of the various related projects could expose additional structures and people to seismic hazards. Projects close to the San Joaquin River and Old River (e.g., west of I-5) may be exposed to the additional risk of flooding associated with seismically induced levee failures. The potential seismic and soil hazards in the City of Lathrop, therefore, could represent a significant cumulative impact if projects are not developed to the latest building standards and do not incorporate recommendations from site-specific geotechnical reports and grading/erosion plans prepared for these projects.

As discussed in Section 4.7, Geology, Soils, and Mineral Resources, the CLSP project site would be exposed to potentially significant seismic hazard impacts. However, these impacts would be mitigated 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. Each of the related projects must individually meet building code requirements, and no additive effect would result from the combination of the related projects and the CLSP. Implementation of the proposed project, therefore, would not create additional facilities under increased risk of hazards and would not result in any cumulatively considerable incremental contributions to any significant cumulative impacts.

Four related projects, Mossdale Landing, River Islands, FarmWorld, and the SLSP, occur in areas of potential mineable sand deposits classified as MRZ-2 by the California Department of Mines and Geology (Exhibits 5-1 and 4.7-3). Potential recycled water storage and disposal area 6, included as part of the CLSP project, overlaps the SLSP area, and therefore also occurs in an area containing potential mineable sand deposits. The total MRZ-2 area in the project region covers approximately 1,100 acres, with several locations already developed. Assuming that approximately 1,000 acres of mineable area are available, up to 35% of this area (about 325–350 acres) could be excluded from future mining through development of the related projects. Although there currently is not a large market demand for these sand deposits, there may be increased demand in the future. Construction of buildings or other facilities (e.g., recycled water storage ponds) on top of these deposits could permanently remove access, or erect barriers to access, to more than one-third of the mineable area, either permanently or in the short term. This impact is therefore considered a significant cumulative impact. However, the proposed project's incremental contribution to this cumulatively significant impact would occur only if recycled water storage/disposal area 6 is chosen for development of storage ponds and/or spray fields. Mitigation measures would allow the City to later approve mineral extraction activities, as long as an equal replacement area of recycled water storage and disposal capacity is provided elsewhere. Therefore, the CLSP project would not result in any cumulatively considerable incremental contribution to this significant cumulative impact.

5.3.7 HYDROLOGY AND WATER QUALITY

Because the CLSP area is adjacent to the San Joaquin River, which is part of the larger Sacramento-San Joaquin Delta (Delta) system, local hydrology and water quality conditions are often affected by regional activities in the Delta. Past and present projects from the Sierra Nevada (dams and reservoirs, mining

operations, logging, urban development) through the Delta (water supply diversions, agricultural diversions, flood control projects, urban development, river channelization) affect hydrology and water quality conditions in the project vicinity. The capacity of the San Joaquin River near the project site to accommodate changes resulting from the proposed project and related projects is directly influenced by the effects of other activities in the Delta. The following evaluation of cumulative hydrology and water quality impacts is made in light of the interrelated nature of the Delta system. However, the focus is on effects on water bodies in the project vicinity (e.g., the San Joaquin River) and how the proposed project and related projects may alter hydrologic and water quality conditions in the area.

SURFACE WATER QUALITY

The proposed project, along with several of the related projects (e.g., River Islands, Mossdale Landing, Mossdale Landing East, Stonebridge) would discharge stormwater runoff to the nearby Delta waterways and would potentially degrade water quality of the system. As indicated under Impact 4.8-d of this DEIR, the existing agricultural uses at the project site currently discharge stormwater and agricultural runoff from the site. Under the proposed project, implementation of structural and nonstructural best management practices (BMPs) (described in Section 4.8) would substantially improve runoff water quality compared with existing agricultural runoff. Although the project could result in an increase in the total annual amount of nitrogen (i.e., TKN [total Kjeldahl nitrogen]), dissolved zinc, and diazinon discharged from the drainage system, these additional loads would not cause a significant project-specific environmental water quality effect for reasons described in detail in Section 4.8.

While there are no assurances that the related projects would incorporate the same degree or methods of treatment as the CLSP project, several of the related projects would phase out existing agricultural runoff discharges from their respective sites and, similar to the proposed project, could provide some level of water quality improvement. Also, each related project that would discharge stormwater runoff would be required to comply with National Pollutant Discharge Elimination System (NPDES) discharge permits from the Regional Water Quality Control Board (RWQCB), which adjusts requirements on a case-by-case basis to avoid significant degradation of water quality. Therefore, while a greater quantity of urban runoff may be discharged to the Delta system with implementation of the related projects because of an increase in impervious surfaces, the associated surface water quality impacts would be expected to be less than significant because of improved or similar quality of runoff compared to existing conditions. This is especially true in light of the CALFED Bay-Delta Program, the State of California Total Maximum Demand Load (TMDL) Program, and other programs and regulations currently being reviewed, adopted, and/or implemented to reduce regional water quality impacts on the Delta.

The proposed project along with several of the related projects (e.g., Mossdale Landing, Mossdale Landing East, River Islands, Stonebridge) would, or may, require construction activities and facilities, such as, stormwater outfalls, utility crossings under the river, discharges into the river from storm drains, and accidental overflows, that could result in sediment or contaminant releases in the San Joaquin River. Mitigation measures are included in Section 4.8, Hydrology and Water Quality, of this DEIR to reduce or eliminate the potential for releases of sediment and contaminants as well as specific requirements to be included in stormwater pollution prevention plans prepared for project development. These measures would reduce impacts on water quality from construction activities associated with the proposed project to less-than-significant levels by reducing releases of contaminants below applicable water quality protection standards. Thus, the proposed project would not result in a cumulatively considerable incremental contribution to any significant cumulative impacts.

While there are no assurances that the related projects would incorporate the same degree of mitigation as the CLSP project, each related project that would include construction within the levees of the San Joaquin

River would, at a minimum, be required to obtain and comply with permits from the USACE, RWQCB, the California Department of Fish and Game (DFG), the State Lands Commission, and the appropriate reclamation district (RD). Permits would likely be required from these same agencies for utilities bored under the river. Each permit would include measures to protect water quality in the San Joaquin River during construction. Therefore, any potential for construction-related sedimentation or contamination would be reduced, for each individual project, to below the applicable water quality protection standards and the cumulative effect would be considered less than significant.

SURFACE DRAINAGE

The proposed drainage facilities identified as part of the CLSP project would be constructed to safely control and convey stormwater runoff. In summary, the drainage plan designates five separate drainage sub-basins within the CLSP area (see Exhibit 3-5). Each sub-basin would be served by gravity conveyance of stormwater drainage to detention basins (and/or other appropriate detention facilities), and a pump station and force main that would collect and pump stormwater to one of two centralized pump stations and discharge outfalls along the bank of the San Joaquin River for discharge to the river. Therefore, the proposed project would not divert runoff to adjacent properties or result in drainage impacts on such properties. In other words, the CLSP would not contribute at all to any significant cumulative impacts that might be caused by related projects outside the City that are not subject to the same drainage requirements.

FLOOD CONTROL

The proposed project is located outside the 100-year floodplain. The only related projects in the City that would remove new areas from the 1-in-100-AEP floodplain are River Islands and Farmworld. Therefore, the proposed project and the remainder of the related projects could not contribute to a cumulative increase in flood elevations through the removal of areas from the 100-year floodplain. However, several related projects would result in additional discharges of stormwater into the San Joaquin River during storm events (e.g., Mossdale Landing, Mossdale Landing East, Stonebridge). In theory, this could lead to an incremental increase in peak stormwater runoff to the San Joaquin River and potential increases in downstream flood elevations. However, the City requires that the maximum allowable discharge into the San Joaquin River must not exceed 30% of the estimated 100-year peak developed-condition runoff rate. In addition, when water levels in the San Joaquin River exceed a design elevation of 21.0 feet, discharges must be restricted to predevelopment rates. To meet this requirement, new development must be designed to accommodate excess runoff from a 48-hour, 100-year storm while river discharges are limited to predevelopment rates. Therefore, the CLSP would not create any incremental addition of stormwater to the San Joaquin River during flood events. In other words, the CLSP would not contribute at all to any significant cumulative impacts that might be caused by related projects outside the City that are not subject to the same regulatory limitations.

GROUNDWATER QUALITY

The proposed project would include construction activities that could affect shallow groundwater, would generate urban runoff that could come into contact with groundwater, and would dispose of recycled water on land. Each of these elements would represent a potential source of groundwater quality degradation. However, the proposed project would implement multiple measures to prevent contaminants from reaching the groundwater. These include implementation of BMPs to reduce potential contamination during construction, tertiary treatment of wastewater to Title 22 standards for unrestricted use to avoid potential contamination of the environment, application of recycled water at agronomic rates to minimize percolation of recycled water below the root zone, and compliance with discharge and application

regulations and permits. Therefore, percolation of pollutants to potable groundwater used for local private or municipal wells would not occur.

The related projects would be developed at multiple locations with varying depths to groundwater, would generate varying degrees of construction and urban runoff, would likely implement varying levels of application rates for the land disposal of recycled water, and would likely implement varying levels of BMPs to protect groundwater. Some of the related projects, such as the WRP #1 Phase 1 Expansion, the Crossroads Industrial Park, and the South Lathrop Specific Plan, would include industrial components that could potentially involve the use and/or storage of untreated wastewater and/or hazardous materials that, if allowed to percolate to the groundwater, could result in groundwater quality degradation. Although there would likely be considerable variation among the related projects, and thus potentially varying levels of possible groundwater impacts, there are a considerable number of regulatory safeguards in place to ensure that groundwater contamination does not occur. These include, but are not limited to, treated wastewater discharge requirements, separation distance requirements between wastewater storage ponds and groundwater, storage pond lining requirements, and hazardous materials handling requirements. Furthermore, most of the related projects would replace existing agricultural operations that use pesticides, herbicides, and fertilizers over large areas. Therefore, it is anticipated that less-than-significant cumulative impacts would occur, and if such impacts were to occur, the proposed project would not contribute to them.

The proposed project does not include the development of new wells, nor do the proposals for most of the related projects. However, the proposed project along with some of the related projects (e.g., Mossdale Landing, Mossdale Landing East, River Islands) would rely on new City wells for potable water. Impacts associated with supplying future citywide water demands were evaluated in the Water Master Plan EIR. The Water Master Plan EIR found that the planned groundwater use would result in a significant impact associated with the advancement eastward of the 500 milligrams per liter (mg/l) groundwater concentration front for total dissolved solids (TDS). However, this impact would be mitigated to a less-than-significant level through site-specific analysis and well design to maximize the quality of water produced by each well, monitoring of water produced by each well, water treatment, blending with surface water sources (i.e., SSJID deliveries), or other actions to improve water quality if monitoring showed that water produced by the well did not meet applicable drinking water standards. In addition, the City's participation (along with other cities in the region) in the SSJID SCSWSP will reduce the dependence on groundwater, and potentially the eastward advancement of higher TDS concentrations. Because impacts associated with groundwater production on a citywide basis would not be significant after mitigation, cumulative impacts associated with groundwater use in the City are not considered significant. Since cumulative impacts from the CLSP and related projects are not significant, the CLSP, by itself, cannot cause a cumulatively considerable incremental impact.

5.3.8 HAZARDOUS MATERIALS AND PUBLIC HEALTH

The proposed project and related projects would all involve the storage, use, disposal, and transport of hazardous materials to varying degrees during construction and operation. Impacts related to these activities are considered less than significant under the proposed project because the storage, use, disposal, and transport of hazardous materials are extensively regulated by various federal, state, and local agencies, and it is assumed that those involved with the project would implement and comply with these existing hazardous materials regulations. Therefore, significant hazards to the public would not occur. Because these laws and regulations would also apply to each related project, this impact would be considered less than significant on both an individual project and cumulative basis. Although some of the related projects would include industrial components that could result in the use and storage of relatively large quantities of hazardous materials, such as the WRP #1 Phase 1 Expansion, the Crossroads Industrial Park, and the

SLSP, these larger users are subject to more stringent regulation and monitoring, resulting in reduced risk and the same less-than-significant impact conclusion.

The proposed project includes the use of recycled water to irrigate public and private landscaping. If wastewater recycling facilities do not operate properly, the public could come into contact with contaminated water, resulting in a public health hazard. Some of the related projects would also irrigate public landscaping areas with recycled water (e.g., Mossdale Landing, Mossdale Landing East, River Islands), increasing the overall risk of the public being exposed to contaminated water. However, recycled water treated in the City would comply with Title 22 requirements for unrestricted use (i.e., disinfected tertiary treatment). Locations and methods of application for irrigation would also meet Title 22 requirements. Therefore, the risk of a public health hazard associated with the use of recycled water is considered less than significant on both an individual project and cumulative basis.

5.3.9 PUBLIC SERVICES

The proposed project would generate a significant increase in demand for fire, police, animal control, and school services and facilities and could significantly impede the provision of emergency services during construction. Significant project impacts would be mitigated to less-than-significant levels through implementation of mitigation measures identified in Section 4.10, Public Services, of this DEIR. These mitigation measures include, but are not limited to, preparing and implementing traffic control plans during construction to prevent obstruction of emergency vehicles; limiting occupancy of structures until fire stations are available to provide 3- to 4-minute emergency response times to the structures; limiting occupancy of structures until adequate minimum fire flows have been confirmed; requiring payment by the applicant of fees and equipment costs to provide new police officers; and requiring payment by the applicant of fees and start up costs to provide animal control services.

In terms of cumulative impacts, the City and the appropriate service providers are responsible for ensuring adequate provision of public services within their jurisdictional boundaries. At this time, it is unclear whether sufficient police, fire, animal control, and school facilities are planned to serve all of the related projects identified earlier in this chapter. It is a City policy to ensure that balanced fiscal resources are available to fund public services for new development. While some of the related projects include proposals for the construction of service facilities, others do not. However, it is clear that sufficient police and animal control facilities, fire stations, and schools would need to be constructed to serve the related projects. State law provides that payment of school impact fees constitutes adequate CEQA mitigation for all project-specific and cumulative effects relating to adequacy of school facilities due to residential development.

Although a cumulative shortage of public services and facilities would not represent a significant environmental impact because these are not, strictly speaking, "environmental effects," such a shortage would lead to the need to develop additional public services facilities, which could lead to significant construction- and operation-related environment effects. It is assumed that the development of the related projects, and/or development of the additional public service facilities required to serve them, would be preceded by the required CEQA review. However, conducting the required CEQA review would not necessarily guarantee that significant environmental effects associated with construction of new fire, police, animal control, and school facilities would not occur. Hence, significant cumulative environmental effects associated with the development of new fire, police, animal control, and school facilities could potentially occur associated with the cumulative impacts of related projects.

Although the proposed project would not create a significant demand for public services after implementation of the mitigation measures identified above, and although the development of the proposed

project, including the proposed schools, would result in less-than-significant impacts for the majority of environmental issues evaluated in this DEIR, development of the proposed project, including the schools, would result in significant and unavoidable traffic, air quality, noise, and farmland conversion impacts (see Chapter 7). It would also contribute incrementally to significant and unavoidable cumulative traffic, air quality, and noise impacts (see Chapter 7). Therefore, the proposed project would result in cumulatively considerable incremental contributions to significant cumulative environmental effects associated with the development of new public service facilities required to serve the project and cumulative development, and thus would result in a cumulatively considerable incremental contribution to significant cumulative public services impacts.

Project impacts related to increased generation of solid waste would be considered less than significant. The receiving landfill, the Foothill Sanitary Landfill, has approximately 40 million tons of capacity remaining and is expected to remain open until 2048, including provision for growth in its service area (EDAW 2002). Because this landfill would have adequate capacity to serve the project and other development in its service area, impacts from the CLSP and related projects are not cumulatively significant, and the proposed project therefore would not cause an incremental impact on solid waste disposal that, by itself, is cumulatively considerable.

5.3.10 PUBLIC UTILITIES

As indicated in Section 4.11, the proposed project would generate less-than-significant impacts associated with development of new city wells, construction of SSJID's demand for recycled water storage and disposal capacity, stormwater/surface runoff management, and demand for electricity and natural gas. Without mitigation, however, significant impacts could occur with respect to demand for potable water and demand for wastewater treatment capacity. These potential impacts, however, can be reduced to less-than-significant levels with implementation of recommended mitigation measures. Mitigation for significant impacts involves limiting the amount of project development that would generate demand for these services until such time as the service is made available, including adequate water infrastructure and wastewater treatment capacity.

As indicated in Section 4.11, utility infrastructure projects currently being planned or under way in accordance with the City's adopted Water Master Plan would provide water, and potentially wastewater treatment and recycled water disposal capacity (if a WRP #2 scalping plant or integrated option is chosen), to the proposed project. These include the City's Well #21–23 Development Project, the SSJID SCSWSP, and the WRP #1 Phase 1 Expansion project. Project-level EIRs or mitigated negative declarations have been completed for all of these projects and each one (except for Wells #22 and #23) is under construction. These projects would provide sufficient services and water for the CLSP. When these facilities are complete, the environmental effects associated with providing these utility services would be expected to be the same as those described in their respective EIRs and as outlined in Impacts 4.11-b, 4.11-c, and 4.11-e in this DEIR.

In terms of cumulative impacts, the City is responsible for ensuring that water, wastewater, and recycled water services are adequately provided within its jurisdictional boundaries and that development within the City can be adequately served by electrical and natural gas providers. The City General Plan identifies goals, policies, and mitigation measures associated with providing water, wastewater, recycled water, stormwater conveyance, electricity, and natural gas to new development, including many of the related projects identified in this chapter. The Water Master Plan provides for all the water and wastewater needs for cumulative City development (see discussion below). For this cumulative analysis, it has been assumed that the following current and future utility projects would be implemented: WRP #1 Phase 1 Expansion,

SSJID SCSWSP, the Well #21–23 Development Project, and other projects outlined in the Water Master Plan.

WATER, WASTEWATER, AND RECYCLED WATER

In 2001, the City completed the Water Master Plan, which programmatically plans for the provision of adequate water and wastewater treatment/disposal capacity to serve City growth through 2030. Under this plan, Well #21 is currently under construction near the southwestern corner of Yosemite Avenue and McKinley Avenue in what is planned to be an expanded City well field to provide required water capacity to serve currently planned growth in the City. Other facilities are included in the Water Master Plan to provide for buildout of the City, and the Water Master Plan EIR evaluates related impacts. It is assumed that the development of related projects, and/or the development of the additional utility systems required to serve them, would be preceded by the required CEQA review. However, it cannot be assumed that all potential environmental impacts associated with the development of the additional water and wastewater capacity and infrastructure required to serve these related projects would necessarily be mitigated to less-than-significant levels. Therefore, potentially significant cumulative utilities impacts could occur related to water and wastewater treatment/disposal capacity.

As discussed in Section 4.11 of this DEIR, a Senate Bill (SB) 610 water supply assessment report has been prepared for the proposed project (Appendix J of this DEIR). The assessment evaluates the adequacy of existing and future water supplies to meet the water demand created by the CLSP project in conjunction with existing development in the City and future related projects: River Islands, Mossdale Landing, and Mossdale Landing East. The Water Master Plan addresses provision of water for full buildout of the City.

As indicated in the water supply assessment and Table 4.11-1 of this DEIR, future water supply for the City would consist of groundwater from the City's existing and planned municipal wells and surface water deliveries from the SCSWSP. Groundwater pumping during normal precipitation years would range from 2,700 AFY in 2005 to 5,100 AFY in 2025. Deliveries from the SCSWSP would begin in 2005 and, assuming normal precipitation years, would range from 8,007 AFY in 2005 to 11,791 AFY in 2025. Of the amount available in 2005, 5,200 ac-ft is anticipated to be required for use by the City. At the same time, it is projected that future water demand (i.e., proposed project plus existing plus future cumulative development) would range from 4,514 AFY in 2005 to 15,868 in 2025. As indicated in Table 4.11-1, future water supply available to the City during normal precipitation years, as well as multiple-dry years, would be adequate to meet future water demand during all horizon (2005, 2010, 2015, 2020, 2025) years. In addition, the SSJID SCSWSP provides a dependable water supply for Lathrop and then other cities in the region. Therefore, the CLSP and related projects would not result in cumulative impacts related to water supply.

STORMWATER CONVEYANCE

The CLSP project includes an extensive stormwater management system to collect, detain, and discharge stormwater runoff generated in the CLSP area. As evaluated in Impact 4.11-g, the project's planned stormwater system is sufficient to prevent flooding through detention, and pumping when necessary. As a result, no adverse project-specific impacts, significant or otherwise, would occur. Therefore, the proposed project would not incrementally contribute to any cumulative impacts relating to the provision of stormwater conveyance. In other new developments within the City, stormwater conveyance would also consist of surface runoff to detention ponds or other detention facilities, with subsequent conveyance to the San Joaquin River. Such new development, like the CLSP, would be required to comply with the policies of the City's drainage master plans. In addition, cumulative impacts of related projects would undergo separate environmental review to ensure that adequate conveyance facilities are included as part of those

projects. As such, it is expected that future development would result in less-than-significant cumulative stormwater conveyance impacts. As noted above, moreover, the CLSP would not contribute at all to any cumulative impacts.

ELECTRICITY AND NATURAL GAS

The City obtains its electrical and natural gas supply from the Pacific Gas and Electric Company (PG&E). As evaluated in Impact 4.11-h, the energy demands to be created by the proposed project would not be considered substantial in relation to the total amount of energy supplied. Cumulative development would increase the amount of demand for electrical and natural gas supply. PG&E has acknowledged that it has adequate electricity and natural gas supplies to support the project without affecting service to existing customers. In addition, new power plants have come on line and other power plants are in the planning and construction stages since the state's energy crisis of early summer 2001. The total amount of energy supplied by PG&E in its northern and central California service area was estimated to be 81,923 million kilowatts per day of electricity and 887 million cubic feet per day of natural gas in 2000. Additional energy is expected to be available as power plants come on line in the future. Therefore, sufficient electricity and natural gas supplies are available to support cumulative development and cumulative electricity and natural gas impacts from the CLSP and related projects are considered less than significant.

5.3.11 RECREATION

Planned residential development in the City and associated increases in population would result in a cumulative increase in the demand for parkland. The project, as proposed, could provide more developed parkland per 1,000 residents than required by the City General Plan standard. If so, the project would provide a net surplus of park facilities and result in a beneficial impact with regard to parkland. Since this impact is beneficial rather than adverse, the project cannot contribute to a cumulatively considerable impact.

The proposed project would include a network of trails and open space corridors that would connect to the Mossdale Landing project to the south and potentially to a regional network of similar facilities to the north. Future development of recreational facilities in and around the City may extend trails and open space corridors beyond the project site and increase regional recreation opportunities. Because the proposed project facilitates the development of a regional network of trails and open space corridors, the CLSP project would result in a beneficial impact with regard to regional recreational opportunities.

5.3.12 AGRICULTURAL RESOURCES

According to the most recent Agriculture Census for San Joaquin County, conducted in 1997, 3,862 farms occupy approximately 809,000 acres of farmland in the County; this is approximately 90% of the County's 909,000-acre total land area. The percentage of agricultural land has fluctuated, according to recent agriculture censuses, from approximately 824,000 acres (91%) in 1987 to approximately 784,000 acres (86%) in 1992 and then back up again in 1997 to the figures mentioned above. In 1997, total cropland in the County was approximately 559,000 acres, and in this area, approximately 519,000 acres were irrigated lands. The California Department of Conservation (CDC) also estimates that in 1999, the County had approximately 548,000 acres of land under Williamson Act contracts (CDC 2001).

Among the agricultural lands in San Joaquin County, the CDC Division of Land Resource Protection estimates that the County has 630,990 acres of Important Farmland, further classified as 423,158 acres of Prime Farmland, 93,846 acres of Farmland of Statewide Importance, 57,977 acres of Unique Farmland, and 56,009 acres of Farmland of Local Importance (CDC 2001). According to the CDC land conversion

tables for the County, 4,665 acres of Important Farmland were converted to other uses between 1992 and 2000 (Table 4.13-2). Lands classified as Unique Farmland and Farmland of Local Importance actually increased during this period (likely attributable more to designation of existing farmland as unique or important rather than to new farmland being put into production). However, an overall loss of Important Farmland occurred as a result of conversions of Prime Farmland (12,845 acres) and Farmland of Statewide Importance (5,702 acres) to other uses. On average, these combined categories lost approximately 2,300 acres per year over the 8-year period. The County reports 8,733 acres of farmland to be slated for nonagricultural use in the near future; more than half of this is Prime Farmland.

The California Department of Finance projects the County's population to grow from 563,600 to 920,900 by 2020, putting continued pressure on agricultural lands for conversion (CDC 2002). The San Joaquin County General Plan 2010 Review (County of San Joaquin 2000) estimates that between 2000 and 2040, 110,000 acres of Important Farmland in the County (17%) could be converted to urban uses. Additional conversions can be expected from implementation of habitat restoration and water storage projects associated with CALFED, the SJMSCP, and other regional efforts.

The loss of an estimated 2,232 acres of Important Farmland at the CLSP site is considered a cumulatively considerable (i.e., significant) impact when considered in connection with the significant cumulative losses that will occur as a result of the project, past farmland conversions, and planned future development proposed in the City (which could result in the conversion of up to approximately 7,000 acres of agricultural and open space lands), the surrounding cities, and the County as a whole. The CLSP project applicants would participate in the SJMSCP by contributing fees, on a per-acre basis, for agricultural lands that are developed. The SJCOG would use these fees, in part, to purchase conservation easements on agricultural lands, providing greater protection to these farmlands in the County. However, this measure cannot fully mitigate the project's cumulatively considerable contribution to the loss of agricultural land in San Joaquin County; therefore, cumulative impacts are significant and the project's incremental contribution to them is significant as well.

5.3.13 TERRESTRIAL BIOLOGY

Most of the native vegetation in the project area and the larger region has been lost in the past 150 years, primarily as a result of conversion to agricultural and urban land uses. This habitat conversion has substantially affected many plant and wildlife species, resulting in various species being listed as threatened or endangered under the California and federal Endangered Species Acts, although some species that use agricultural habitats and others that can thrive in developed areas have benefited. Future conversions of open space lands in the County would primarily consist of converting agricultural lands to residential and urban development.

The SJMSCP anticipates conversion of up to approximately 109,000 acres of open space land to non-open space uses in the County between 2001 and 2051 (County of San Joaquin 2000). The proposed project and related projects in the City would contribute to this countywide conversion. In Lathrop, related projects (including the proposed project) would convert up to approximately 7,000 acres of agricultural and open space lands to developed uses. However, the SJMSCP was developed to minimize and mitigate impacts on plant and wildlife habitat (and associated species) resulting from this regional loss of open space lands. The SJMSCP relies, in part, on compensation for such conversion through preservation of agricultural lands and preservation and creation of natural habitats to be managed in perpetuity through the establishment of conservation easements and preserves. The goal of the SJMSCP is to provide approximately 101,000 acres of agricultural and habitat preserve. The SJMSCP concludes that this would adequately compensate for cumulative impacts on plant and wildlife species covered by the plan. Because the SJMSCP potentially provides a streamlined mechanism to mitigate for impacts on resources covered

under the plan, it is assumed that most qualifying projects within the County would use the SJMSCP for mitigation. Therefore, cumulative impacts on terrestrial biological resources covered under the SJMSCP are considered less than significant.

Terrestrial biological impacts resulting from the proposed project that are not expected to be compensated for by coverage under the SJMSCP are the loss of riparian brush rabbit habitat and loss of U.S. Army Corps of Engineers (USACE) jurisdictional habitats (wetlands and waters of the United States). Mitigation measures outlined in Section 4.14 are expected to fully compensate for these losses. The riparian brush rabbit has a very limited range, with populations known only from Caswell State Park, the CLSP area, the River Islands project area, and a riparian reserve along the San Joaquin River near the Mossdale Landing project site. Therefore, implementation of most of the related projects would have no effect on riparian brush rabbit. The CLSP project's impact on riparian brush rabbit would reduce the range of the species and is therefore significant and unavoidable; however, the project site under existing conditions is not thought to support a long-term viable population, and mitigation to compensate for effects on individuals offsite are anticipated to have an overall net benefit to the survival and recovery of the species and are in keeping with the USFWS recovery plan for the species.

If planned mitigation measures for the River Islands project are implemented, there would be an overall increase in the amount and quality of riparian brush rabbit habitat on the River Islands project site. At the time of release of this DEIR, however, such planned mitigation measures had not yet become binding legal obligations. The Mossdale Landing project, in contrast, is legally committed to fully mitigate for its potential impacts on riparian brush rabbit in the nearby riparian reserve. If the mitigation planned for River Islands is implemented, the related projects and the CLSP, taken together, would result in a substantial enhancement of the recovery prospects of the species. Another result would be that, despite the small loss of range associated with the CLSP, overall cumulative development, due to habitat enhancement associated with other projects, the CLSP and these other projects, taken together, would not result in any net loss of the existing range of riparian brush rabbit. Because, however, it remains uncertain whether the River Islands mitigation will be implemented as currently anticipated, the City concludes that there would be a cumulative reduction in the range of the riparian brush rabbit, and that the CLSP's contribution would be cumulatively considerable. With implementation of the proposed River Islands mitigation, the cumulative impact would be less than significant.

The USACE requires no net loss of wetland functions and values for impacts on jurisdictional habitats, including waters of the United States. It is assumed that this requirement would be applied to all related projects that may affect wetlands; therefore, no cumulative net loss of wetlands should occur. Therefore, potential cumulative impacts on riparian brush rabbit and wetlands are considered less than significant.

Because the project applicant would participate in the SJMSCP and would implement mitigation measures to compensate for riparian brush rabbits, wetlands, and waters of the United States, the CLSP and related projects would not result in cumulative impacts on terrestrial biological resources.

5.3.14 FISHERIES

The proposed project, without mitigation, would result in significant impacts on local aquatic habitat and on sensitive fish species before mitigation. These impacts, however, would be attributable to proposed construction activities near the San Joaquin River associated with improvements to open space areas and construction of stormwater outfall facilities. These impacts, however, would be reduced to less-than-significant levels with implementation of mitigation measures identified in Section 4.15, Fisheries, and Section 4.8, Hydrology and Water Quality, of this DEIR. The mitigation measures include BMPs to avoid, minimize, and clean up (if necessary) any releases of sediments or contaminants into the San Joaquin River

during project construction and include consultation with the National Oceanic and Atmospheric Administration, National Marine Fisheries Service (NOAA Fisheries); the U.S. Fish and Wildlife Service; and the USACE.

Potential fisheries impacts associated with construction activities in the CLSP area on the landward side of the San Joaquin River levee and at potential sites for recycled water storage ponds were all considered less than significant. The proposed project would result in several beneficial fisheries impacts resulting from implementation of BMPs to reduce the amount of sediments and contaminants in stormwater discharged from the CLSP area into the river, a reduction in the number of unscreened agricultural intakes used on the San Joaquin River, a reduction in the use of intakes supporting recycled water disposal areas, and an overall reduction in agricultural diversion volumes in the project area.

One or more of the related projects (e.g., River Islands, SLSP, Stonebridge) may require construction activities that could result in impacts on fisheries in the San Joaquin River, such as stormwater outfalls and utility crossings under the river. Any proposed construction activities and operation of stormwater outfalls or other devices on the river side of the levees would require regulatory review and/or permitting by DFG, NOAA Fisheries, USACE, and/or the RWQCB, with one of the intended goals being to protect sensitive fish species. Permits would likely be required from these same agencies for utilities bored under the river. Also, any such activities would be required to undergo CEQA review, which is anticipated to include the identification of mitigation measures (e.g., construction and operational BMPs) to avoid or minimize impacts on sensitive fish species. Even with such measures, activities under the related projects could result in the take of listed fish species, releases of sediment or contaminants into the Delta, and/or removal of riparian and aquatic habitat.

Although these impacts would likely not be significant on a project-by-project basis after the aforementioned regulatory review and implementation of associated permitting and mitigation, the combined effect of multiple such incursions into the river and the associated impacts on listed fish species and their habitat could result in a significant cumulative fisheries impact. However, the proposed project would not result in a cumulatively considerable contribution to this impact and, in fact, would serve to mitigate this cumulative impact to a small degree through the beneficial effects on water quality and fisheries habitat associated with the project. On a cumulative level, further mitigation would need to be developed in conjunction with the related projects that would contribute impacts or through ongoing large-scale regional efforts, such as CALFED.

Because the related projects would result in less-than-significant water quality impacts on the San Joaquin River associated with stormwater discharges and recycled water use, as evaluated in subsection 5.3.7, "Hydrology and Water Quality," of this chapter, any stormwater discharges to the San Joaquin River and/or the land application of recycled water associated with the related projects would result in less than cumulatively considerable impacts on fisheries resources.

The related projects could include the disposal of a portion of their treated wastewater via discharge to the San Joaquin River. As evaluated in the Water Master Plan EIR, the discharge of tertiary-treated wastewater to the river by cumulative development in Lathrop could add a small increment (calculable but likely not measurable) of biochemical oxygen demand (BOD) and other pollutants of concern to the San Joaquin River and consequently the Stockton Deep Water Ship Channel (where low dissolved oxygen [DO] levels occur). These discharges could incrementally contribute to significant cumulative surface water quality impacts and, hence, potentially significant cumulative impacts on fisheries. If a portion of the treated wastewater generated by the proposed project is disposed to the river instead of to land (i.e., through treatment of wastewater at WRP #1 through the use of the scalping plant or integrated WRP #2 options), the proposed project would contribute to these impacts. Regulatory agencies are currently

preparing and reviewing proposed TMDLs for DO and other pollutants of concern in the Delta. If these TMDLs are adopted and prove effective in reducing DO to acceptable levels, these potentially significant cumulative surface water quality impacts and associated impacts on fisheries would be avoided. Otherwise, significant and unavoidable cumulative adverse fisheries impacts would occur.

5.3.15 CULTURAL RESOURCES

Cultural resources in the project region generally consist of prehistoric sites, isolated artifacts, and agricultural features. During the 19th and 20th centuries, intensive agricultural use of the region resulted in 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, the creation and enforcement of various 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.

Farmsteads and various agriculture-related historic features in the region are relatively common, and continued removal of some of these features does not significantly reduce or eliminate the resource in the region. Prehistoric sites, however, are relatively rare, and cumulative impacts from the loss of these resources in the region increase proportionately as the resource base dwindles.

The results of the cultural resources record searches conducted for the proposed project indicate that the project site, specifically potential recycled water storage and disposal area 6, may contain a portion of one previously recorded prehistoric cultural resource site (CA-SJO-3). No new archaeological sites were identified within the current project site during field surveys. The architectural inventory of the project area resulted in the identification of 10 buildings that are at least 45 years old. None of these structures appears to be eligible for listing in the California Register of Historical Resources. Cultural resources have been identified on the sites of two of the related projects (e.g., Mossdale Landing, River Islands) and more may be found as surveys are conducted at the locations of future projects. As-yet-undiscovered subsurface cultural resources might also underlie the CLSP area and offsite utility areas. Mitigation measures are outlined in Section 4.16 of this DEIR, Cultural Resources, to mitigate impacts on important cultural resources to less-than-significant levels. Implementing these mitigation measures also would ensure that implementing the proposed project would not incrementally contribute to any significant cumulative impacts on important cultural resources in the project region. These measures are fairly standard to ensure compliance with State CEQA Guidelines Section 15064.5 and related provisions of the Public Resources Code, and it is assumed that similar measures would be applied to related projects as appropriate. Where federal agency approvals are required to implement related projects, moreover, additional protection would also be anticipated under the National Historic Preservation Act, which, as commonly implemented by federal agencies, making measures such as those described herein fairly standard as well.

Common structures not eligible for listing in the California Register of Historical Resources would be removed during project construction. However, these less important sites are relatively common in the region, and the cumulative loss from this project and other projects would not adversely affect the ability of archaeologists and historians to study and collect data regarding the history and prehistory of the area.

Because important sites in the project area are protected and the loss of other sites is not significant, implementing the proposed project would not incrementally contribute to a significant cumulative effect on cultural resources.

5.3.16 PALEONTOLOGICAL RESOURCES

Results of a paleontological record search at the UC Berkeley Museum of Paleontology indicated no fossil remains within the immediate vicinity of the proposed project site, and no fossils have been observed on surface soils during various field visits. The closest identified vertebrate fossils to the proposed project site are located approximately 5 miles to the southeast near Manteca, approximately 7 miles north of the proposed project site in Stockton, and approximately 9 miles north of the proposed project site in Lincoln Village.

Important fossil finds in the project region have been isolated and rare. No concentrations of fossils or areas with relatively high densities of fossils have been identified in the project region. Although fossils may have been unknowingly disturbed or destroyed during past projects in the region, no evidence is available of this occurring with any frequency (as is the case with disturbance of many archaeological sites). Often fossil discoveries, and the subsequent opportunities for data collection and study, result from excavations and soil moving associated with development. Because of the low potential for projects to intersect fossils, and the ability to collect data from fossils when they are encountered, development of the related projects and other development in the region is not considered to result in a significant cumulative impact on paleontological resources.

As-yet-undiscovered subsurface paleontological resources might also underlie the CLSP area and related project sites. Mitigation measures are outlined in Section 4.17 of this DEIR, Paleontological Resources, to reduce impacts on previously undiscovered paleontological resources to less-than-significant levels. Implementing these mitigation measures also would ensure that implementing the proposed project would not incrementally contribute to cumulative impacts on important paleontological resources in the project region.

5.3.17 AESTHETIC RESOURCES

Past development along the I-5, I-205, and SR 120 corridors has increasingly changed the visual character along these corridors from agricultural and open space uses to urban uses, thus altering and limiting the views available to motorists on these roadways. This trend would continue as future projects are implemented in the region, and the proposed project would contribute to this cumulative change in views. As development proceeds in the project region as a whole, substantial changes in visual conditions would continue as agricultural lands and open space are replaced by urban development. Increased urban development would also lead to increased nighttime light and glare in the region and more limited views of the night sky. The cumulative effect of these changes on aesthetic resources from past and planned future projects, as well as the contribution from the proposed project, is considered significant. Although these cumulative impacts can be minimized to a degree through vegetative and topographic screening of structures, use of outdoor lighting that limits glare, appropriate building design, and other measures, the significant cumulative impact cannot be fully mitigated. Therefore, the cumulative change of agricultural and open space views in the project region to urban land uses and the associated increase in nighttime light and glare are considered significant and unavoidable impacts. In addition, the project's incremental contribution to these impacts is cumulatively considerable (i.e., significant in and of itself).

5.3.18 INDIRECT CUMULATIVE IMPACTS

The proposed CLSP project area would not be able to be constructed or occupied without previous or concurrent implementation of at least one, and potentially two, of the related projects that would provide services to existing development, the CLSP area, and other projects: the Well #21–23 Development Project and the WRP #1 Phase 1 Expansion Project (if one of the scalping plant options is selected for WRP #2).

While not directly causing any cumulative impacts associated with implementation of these projects, the CLSP project would indirectly contribute to the cumulative impacts of these projects because they would be needed to serve this area.

The expansion of WRP #1 and development of Wells #21-23 were evaluated in the Water Master Plan and its EIR. The Water Master Plan EIR indicated that expansion of WRP #1, along with the development of two other WRPs planned for in the Water Master Plan, and the planned disposal of treated wastewater from all three of these WRPs to the San Joaquin River, would result in significant and unavoidable cumulative impacts on odor, surface water quality, and fisheries. The Water Master Plan EIR further indicated that development of the planned wells would result in less-than-significant cumulative groundwater impacts. Because the proposed project would not be able to be constructed or occupied without construction of the new City wells and potentially the expansion of WRP #1, the proposed project would indirectly contribute to the significant and less-than-significant impacts identified above (i.e., indirect cumulative impacts). Below is a summary of each of these cumulative impacts from the Water Master Plan.

AIR QUALITY (ODORS)

Expansion of WRP #1 would contribute to significant and unavoidable cumulative odor impacts associated with new storage and treatment processes. These impacts would occur at the existing and future land uses adjacent to WRP #1.

SURFACE WATER QUALITY

Expansion of WRP #1 would contribute to minor and potentially immeasurable (downstream) amounts of mercury and BOD entering the San Joaquin River if and when tertiary-treated wastewater is discharged to the river. The inclusion of mercury in discharges would contribute to cumulative violations of mercury standards, and the BOD could contribute to low dissolved oxygen (DO) levels in the Stockton Deep Water Ship Channel. As to both waterwys, TMDL programs are being established that, if effective, would eliminate violations of water quality standards for these constituents. If the TMDLs are not effective, however, the contribution of mercury and BOD would represent a potentially cumulatively considerable contribution to a significant cumulative impact on surface water quality that would be unavoidable.

FISHERIES

Expansion of WRP #1 would generate minor and less-than-significant surface water quality impacts on the San Joaquin River and the Delta once it discharges treated wastewater to the San Joaquin River. These impacts, as they relate to fisheries, would include a small reduction in downstream DO levels. TMDL programs that are being established, if effective, would eliminate violations of water quality standards for DO and other Section 303(d)-listed constituents. If the TMDLs are not effective, however, the contribution to the cumulative reductions in DO would represent a potentially cumulatively considerable contribution to a significant cumulative impact on fisheries that would be unavoidable.

GROUNDWATER

Development of Wells #21–23 would contribute to the migration of the 500-mg/l salinity intrusion front eastward over time associated with increased groundwater pumping in the Delta. It is likely that existing wells located between the existing and future (2030) 500-mg/l TDS contours would either need to cease operation or require the addition of treatment facilities during the time horizon of the Water Master Plan to comply with safe drinking water standards. However, the Water Master Plan requires the City to provide

municipal water to any users within the City limits currently reliant on well water should closure of said wells resulting from salinity intrusion be required. In addition, the SSJID SCSWSP will reduce regional dependence on groundwater and potentially slow the advancement of the 500-mg/l TDS contour. Hence, it is anticipated that a less-than-significant cumulative impact would occur. However, cumulatively significant impacts could occur due to overdrafting or an increase of salinity intrusion resulting from cumulative groundwater usage by entities other than the City. The City would contribute to such conditions despite limiting its own groundwater usage to what has been determined to be sustainable levels. Despite the City's limitations on its own groundwater usage, its groundwater impacts could be cumulatively considerable because the City cannot be certain that other groundwater users will similarly limit their own groundwater usage to sustainable levels.

6 Growth-Inducing Impacts

6 GROWTH-INDUCING IMPACTS

6.1 INTRODUCTION

According to §15126.2(d) of the California Environmental Quality Act (CEQA) Guidelines, an environmental impact report (EIR) must discuss the growth-inducing impacts of the proposed project. Specifically, CEQA states that the EIR shall:

> Discuss the 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 which would remove obstacles to population growth (a major expansion of a waste water treatment plant might, for example, allow for more construction in service areas). Increases in the population may tax existing community service facilities, requiring construction of new facilities that could cause significant environmental effects. Also, discuss the characteristics of some projects which 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.

A project can have direct and/or indirect growth inducement potential. 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; and/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).

Growth inducement itself is not an environmental effect but may foreseeably lead to 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.

6.2 SUMMARY OF CITY OF LATHROP GENERAL PLAN EIR ANALYSIS OF GROWTH-INDUCING IMPACTS

The CLSP area was first designated for eventual urban development as part of Sub-Plan Area #2 in the City of Lathrop General Plan (City General Plan), adopted in 1991. Sub-Plan Area #2 is identified in the City General Plan as being in the City's sphere of influence, but is outside the city limits and designated for residential and commercial development. The schematic diagram of the City General Plan shows much of the western and central portions of what is proposed as the CLSP area to comprise residential uses (low, medium, and high density), most of which are intended for low-density residential development. A maximum of approximately 7,913 housing units could be accommodated in this area under the current

general plan residential designations (see Table 4.2-1). Commercial development in Sub-Plan Area #2 is intended to consist primarily of freeway commercial uses until the population of the City of Lathrop increases sufficiently to support a community shopping center at Lathrop Road and I-5. The City General Plan anticipates approximately 322 acres of commercial land uses in Sub-Plan Area #2. Office and commercial uses are shown along I-5 between Louise Avenue and Lathrop Road, with a community park and a golf course shown along I-5 north of Dos Reis Road. Both a civic center and a transit center are identified along Lathrop Road in the central portion of the CLSP area, as well as a community park where Lathrop Road ends at the San Joaquin River.

The Growth-Inducing Impact analysis in the City General Plan EIR considers overall development of the Lathrop General Plan, including the area covered by the CLSP. The analysis also considers the City's interface with the cities of Stockton, Tracy and Manteca.

6.3 GROWTH-INDUCING IMPACTS OF THE PROPOSED PROJECT

The CLSP area is located in the northern portion of Sub-Plan Area #2, as identified in the City General Plan. It is in the planning sphere of influence of the City, but not in the existing city limits. Project approval and implementation would require annexation of the CLSP area into the City. As discussed above, the City General Plan identifies primarily residential and commercial uses, as well as a civic center, transit center, community park, and golf course in the CLSP area. The CLSP proposes similar land uses as the City General Plan, and the proposed densities are similar to or lower than previously considered in the City General Plan. In addition, the CLSP proposes four schools (one high school and three K–8 schools) and a wastewater treatment plant. The CLSP would allow up to 6,790 dwelling units (1,123 fewer than the maximum allowed under the City General Plan) and 327.2 acres of commercial land uses (5.4 acres more than under the existing City General Plan land use designations) (see Table 4.2-1).

Although there are differences from the City's General Plan designations for Sub-Plan Area #2, many aspects of the CLSP project are consistent with the General Plan and other City planning documents and the overall development potential is similar, as discussed below.

Roadways providing access to and throughout the CLSP area would consist of existing roads, improved roads along existing roadway alignments, as well as new roads. The proposed project would develop and/or improve the road network in the CLSP area (Golden Valley Parkway, Lathrop Road, De Lima Road, Dos Reis Road). The major arterials in the CLSP area would be Golden Valley Parkway and Lathrop Road, which would serve the project and provide access through the plan area to adjacent properties, consistent with the General Plan. However, these roadways would not provide new access or substantially enhanced access to currently undeveloped areas. Therefore, the CLSP roadway network is not considered growth inducing. The project would be served by the I-5/Lathrop Road and I-5/Louise Avenue-River Islands Parkway interchanges. Improvements to both these interchanges and associated underpasses are planned for in the City of Lathrop Capital Facility Fee program and the West Lathrop Specific Plan Regional Transportation Fee program. Development in the CLSP area would be designed to accommodate these planned interchange and roadway improvements, which would also serve the CLSP area. Although these improvements would also serve the CLSP area, they would not be considered growth inducing because these roadway and interchange improvements would be constructed to serve development that is already approved by the City or underway (e.g., Mossdale Landing, River Islands).

Currently, there are no public storm drain facilities that serve any properties in the CLSP area. The CLSP area is in the Northern Area Portion Master Plan of Drainage (NAPMPD) evaluation area. The NAPMPD recommends installation of an outfall system that passes through the CLSP area. This outfall system, known as the Stonebridge Outfall, is under construction as part of another project and includes four outfall

ports that have sufficient capacity to serve a portion of the CLSP area. The NAPMPD identifies the need to construct a second outfall to serve remaining lands in the CLSP area not served by the Stonebridge Outfall. A formal stormwater management system is proposed for the CLSP area that would include a second outfall structure, as well as pump stations, filtration, and detention facilities to serve the project. Construction of the stormwater conveyance facilities serving the CLSP area would not be intended to serve other development outside the plan area, and therefore would not be growth inducing.

The CLSP area is currently served by municipal water pipes and onsite wells. The City's Water, Wastewater, and Recycled Water Master Plan (Water Master Plan) identifies the need for two water storage tanks with a combined capacity of 2.5 million gallons and a booster pump station in Sub-Plan Area #2, which is encompassed by the CLSP area and Mossdale Village. The Mossdale Landing project includes plans for a 1.0 million gallon water storage tank and a booster pump station. To provide the 2.5 million gallons of storage capacity in Sub-Plan Area #2 called for in the Water Master Plan, the CLSP project includes plans for an additional 1.5 million gallons of storage capacity and a booster pump station in the CLSP area. Construction of the facilities in the CLSP area would be intended to only serve the CLSP area, and would therefore not be growth inducing.

All properties in the CLSP area are currently served by septic systems; there are no connections to the municipal wastewater system. The project considers six wastewater treatment plant/water recycling plant (WRP) options to serve development associated with the CLSP. Treatment capacity associated with the proposed WRP (WRP #2) would be in addition to the City's existing WRP #1. WRP #2 itself, which is planned for 3.0 million gallons per day (mgd) of total treatment capacity, would provide approximately 0.83 mgd of treatment capacity beyond what is needed for the CLSP. Each of the WRP #2 options being considered would be designed to allow internal wastewater treatment infrastructure to be installed in 0.75 mgd increments as development in the CLSP area proceeds. Land disposal and temporary storage of recycled water sufficient to serve the project are also proposed. Various pipelines would be needed to move recycled water from the potential WRP #2 locations to the recycled water storage/disposal areas being considered. The 0.83 mgd of additional treatment capacity provided by WRP #2 would remove one barrier to planned growth in the City (i.e., wastewater treatment capacity). However, the provision of additional treatment capacity would not eliminate constraints related to recycled water storage and disposal. Construction of recycled water storage/disposal infrastructure to serve the CLSP project would not result in the development of excess capacity to serve any other development, and therefore would not be growth inducing.

The proposed project would involve a substantial construction effort over a 15-year period that during peak periods would bring up to 300 construction workers to the project site on a daily basis. Because construction workers typically do not change where they live each time they are assigned to a new construction site, it is not anticipated that there would be any substantial relocation of construction workers to the City of Lathrop associated with the proposed project. In addition, 628 residents in the City of Lathrop and 16,190 residents in San Joaquin County are employed in the construction industry (U.S. Census 2002). This existing number of residents in the City and County who are employed in the construction industry would likely be sufficient to meet the demand for construction workers that would be generated by the proposed project. Therefore, no substantial increase in demand for housing or goods and services would be created by project construction workers, and thus no growth inducement associated with these workers would occur.

The CLSP project would include the development of up to 6,790 residential units with an estimated population of 18,750. Although the project includes the provision of commercial and retail services, onsite services would meet only some of the needs of the project population. The additional population associated with the proposed project would spur an increase in demand for goods and services in the City

and region, which could potentially result in additional development to satisfy this demand. In this respect, the proposed project would be growth inducing. It would be speculative, however, to try to predict exactly where any such new services would locate. The most logical assumption, however, is that they would locate where the existing general plans of Lathrop and other nearby jurisdictions currently anticipate them. Those general plans have already undergone environmental review; and any new individual projects requiring discretionary approvals would undergo their own environmental review if of a scale that warrants environmental review.

Schools and fire stations would be developed onsite as part of the CLSP. Except during the very early stages of project development, all students associated with the proposed project would be served by onsite schools. With the exception of the high school, the schools developed in the CLSP area are not expected to serve students from offsite areas. The high school would be constructed early in the development of the plan area to serve students housed in the proposed project as well as potentially accommodating high school students residing elsewhere in Lathrop who currently attend Sierra High School in Manteca or Weston High School in Weston Ranch. Fire stations would be constructed in the Mossdale Landing area and the CLSP area when response times reach a level that requires the additional service. Police, animal control, and other City services would be expanded only as necessary to meet project demand. Therefore, with respect to public services, the proposed project would not facilitate additional development because the proposed project would not create additional public service capacity in the City.

As described in Section 4.3, Population, Employment, and Housing, the estimated number of jobs generated by the CLSP project and the number of employable residents in the plan area varies depending on the ultimate development scenario in the Office Commercial/Variable Residential/Wastewater Treatment Plant (OC/VR/WWTP) parcel and the data source for estimated number of employable residents per household. Depending on these conditions, the ratio of jobs to employable residents may range from approximately 1,340 more employable residents than jobs, to approximately 1,100 more jobs generated than employable residents. If the proposed project results in a condition where jobs exceed employable residents, the CLSP could generate additional housing demand in the City and facilitate additional housing development. However, as discussed in section 4.3, Population, Employment, and Housing, San Joaquin County is considered jobs-poor and housing-rich, with at least 45,000 County residents currently commuting to jobs outside the County. By 2025, the number of out-commuters is expected to exceed 137,000. Given these conditions, jobs generated by the proposed project are expected to be filled in large part by the existing resident labor pool in the region. Therefore, any potential increases in housing demand in the City and the County attributable to jobs generated from the proposed project would be minimal, and the project would not be growth inducing in this respect.

The land directly north of the CLSP area is outside the City of Lathrop's sphere-of-influence boundary and is located in the jurisdiction of San Joaquin County. It is designated in the County General Plan as an agricultural land use. Because of this designation and its location outside the City's sphere-of-influence, the intended long-term use of this property is for agriculture. As the CLSP develops, especially along its northern edge, it will place urban development adjacent to agricultural land. Historically, this type of land use pattern results in conflicts between the ongoing agricultural operations and the urban development uses (although as described in Section 4.13, Agricultural Resources, these conflicts can be mitigated to less-than-significant levels for the CLSP). Further, economic returns from urban development are typically substantially higher than continued agricultural use of land, and encroaching urban uses typically make attractive the conversion of adjacent agricultural land to urban uses. Thus, it can be expected that the CLSP will place pressure on agricultural land to the north of the site to convert to urban uses.

Conversion of these lands to urban uses is not consistent with the long-term planning for the area. This potential conversion of agricultural land to an urban use, and the related loss of agricultural land, loss of

biological habitat, additional traffic generation and air and noise impacts is a potential growth-inducing impact of the project. However, development in this area would require the extension of unplanned infrastructure (water, wastewater) which may or may not be available. Further, because it would require San Joaquin County to amend its general plan, such a land use conversion is not assured. Thus, although development of the CLSP, despite not providing any direct infrastructure linkages to the area, may contribute to possible long-term economic pressure for the eventual filing of applications for general plan amendments and/or other discretionary approvals in the area north of the CLSP, the responses of future elected bodies to such applications cannot be predicted, making it impossible to conclude that the long-term urbanization of this northern area would be a reasonably foreseeable indirect effect of the CLSP. (See State CEQA Guidelines §15358 [defines "effects" for purposes of CEQA as including "[i]ndirect or secondary effects which are caused by the project and are later in time or farther removed in distance, but are still *reasonably foreseeable"*] [emphasis added].) It would therefore be premature to require the proponents of the CLSP to bear the burden of attempting to prevent the eventual development of such areas through mechanisms such as the purchase of conservation easements in the northern area, even assuming that the current landowners would be willing sellers. Any such easements, in any event, might have the effect, in the very long term (i.e., beyond current general plan planning horizons), of limiting future elected bodies' options as to how to deal with population growth in the greater metropolitan area of which the City of Lathrop is a part. Decades from now, that area might appear to be one of the least environmentally damaging areas into which an expanding population base can be directed.

Land to the west of the CLSP area is also in agricultural use and is designated for this use by the County. Unlike the area to the north, the project would not be expected to contribute to the possible inducement of potential conversion of this land to urban uses. The reasons are many: (1) it is separated from the CLSP area by the San Joaquin River, which provides a natural barrier and natural separation of land uses. This barrier also would virtually eliminate conflicts between continuing agricultural use and urban development. (2) Transportation infrastructure would be costly because a bridge over the San Joaquin River would be necessary to provide urban-level access to the area. (3) It is likely that other infrastructure needs would be extensive, including flood control, water, and wastewater. (4) Lands to the west of the CLSP area are in the Primary Zone of the Delta, and the long-term use of land in the Primary Zone is intended to be agriculture. The Delta Protection Commission, while not having specific land use authority, would, based on its past opinions regarding this area, likely exert pressure on San Joaquin County to retain the long-term agricultural use of this area even if there were pressures to develop it. For all of these reasons, and because the area is designated for continued agricultural use in the County General Plan, the CLSP would not be expected to induce growth on land to the west.

Overall, the CLSP project would be growth inducing because it would provide additional wastewater treatment capacity beyond that needed to serve the project (although constraints related to recycled water storage and disposal would remain) and because the increased population associated with the proposed project would increase demand for goods and services, thereby fostering population and economic growth in the City of Lathrop or nearby communities. Further, implementing the CLSP project would effectively result in development of a population and employment base that is the size of a small town. It can be expected that a successful CLSP project would place pressure on adjacent areas to the north to seek development entitlements. As explained above, however, it would be speculative to assume that these areas would in fact develop with urban uses, and numerous discretionary actions subject to environmental review and political considerations would have to be granted before any such urban uses could materialize. In summary, much of the growth that the project would induce has been evaluated and provided for in the City General Plan, Water Master Plan, and other city documents.

7 Significant and Unavoidable Impacts

7 SIGNIFICANT AND UNAVOIDABLE ADVERSE IMPACTS

7.1 INTRODUCTION

Section 15126.2(b) of the California Environmental Quality Act Guidelines (State CEQA Guidelines) requires environmental impact reports (EIRs) to include a discussion of any significant environmental impacts that cannot be avoided if the project is implemented. Chapter 4 of this Draft EIR (DEIR) provides a detailed analysis of all potential significant environmental impacts of the CLSP project, feasible mitigation measures that could reduce or avoid the project's significant impacts, and whether these mitigation measures would reduce these impacts to less-than-significant levels. Chapter 5 identifies the significant cumulative impacts of the project. If a specific impact cannot be reduced to a less-than-significant level, it is considered a significant and unavoidable adverse impact.

7.2 SIGNIFICANT AND UNAVOIDABLE ADVERSE IMPACTS

The CLSP project would result in significant and unavoidable adverse impacts in seven environmental issue areas, as described below.

7.2.1 TRAFFIC

The traffic analysis in Section 4.4, Transportation and Circulation, evaluates CLSP traffic impacts under existing conditions (the existing roadway network and existing traffic volumes) and under cumulative conditions (existing project plus future regional development plus planned future transportation network improvements). Under both these conditions the project was evaluated at an interim buildout period (2010) and at full buildout (2020). Under each condition project generated traffic would result in one or more significant adverse impacts that either cannot be mitigated to less than significant levels, or mitigation actions would be implemented by others and it cannot be assured that mitigation would be implemented in a timely manner.

Impacts related to intersection operations at the Lathrop Road/Airport Way and Louise Avenue/Airport Way intersections at project buildout are considered significant and unavoidable because these intersections are located in the City of Manteca, and to date Manteca has not established a program by which it can receive moneys from projects in Lathrop and assure that such funds will be devoted to the intended mitigation.

Impacts related to intersection operations at the Lathrop Road/New Harlan Road intersection under the cumulative buildout condition are considered significant and sufficient feasible mitigation is not available to reduce this impact to a less than significant level.

Impacts related to intersection operations at the Lathrop Road/Old Harlan Road and Louise Avenue/Old Harlan Road intersections under the cumulative interim and buildout conditions are considered significant and no feasible mitigation is available for these impacts.

All significant impacts related to freeway segment operations cannot be fully mitigated and are considered significant and unavoidable for one or both of the following reasons:

- Projects to be funded by the existing Transportation Impact Fee program may not be completed by Caltrans by the time demand for these facilities would occur.

- Development of needed improvements are outside the scope of the proposed project (i.e., regional improvements) and cannot realistically be implemented by the project applicant.

Mitigation for impacts related to operations of the three freeway ramp facilities in the study area require that improvements to nearby segments of I-5 be implemented. However, such improvements may not be completed by Caltrans by the time demand for these facilities would occur. Therefore, these impacts are considered significant and unavoidable.

7.2.2 AIR QUALITY

As indicated in Section 4.5, Air Quality, in the discussion of Impact 4.5-a, the CLSP project could result in sufficient emissions during construction that applicable air quality standards could be violated, or emissions would contribute substantially to an existing or projected air quality violation. Mitigation Measure 4.5-a would reduce this impact to the greatest extent feasible. It requires the implementation of San Joaquin Valley Air Pollution Control District (SJVAPCD) regulations and guidance to minimize construction related emissions. Implementation of this mitigation would substantially lessen impacts associated with construction emissions and under most circumstances would be sufficient to reduce impacts related to construction emissions to less than significant levels. However, the San Joaquin Valley Air Basin (SJVAB) is currently in nonattainment for PM_{10} (serious nonattainment for federal standards) and ozone (severe nonattainment for state and federal standards), and may soon be classified as extreme nonattainment for ozone. Therefore, even with the implementation of Mitigation Measure 4.5-a, construction emissions associated with a project the size of the CLSP could be sufficient to result in violations of applicable air quality standards, or could contribute substantially to an existing or projected air quality violation. Thus, implementing the proposed project is considered to result in a significant and unavoidable adverse impact with respect to construction emissions.

As indicated in Section 4.5, Impact 4.5-b, implementation of the proposed project could result in elements of the public being exposed to toxic air contaminant (TAC) emissions from stationary and mobile sources in excess of SJVAPCD significance thresholds. All stationary sources with the potential to emit TACs are required to obtain permits from the SJVAPCD and comply with applicable standards and regulations, and it is considered highly unlikely that such stationary TAC sources would result in significant impacts in the CLSP area. However, the precise type and location of potential stationary TAC sources relative to sensitive receptors cannot be confirmed at this time. Therefore, although stringent permitting conditions will be applied to stationary TAC sources in the CLSP area, there is a theoretical potential that elements of the public could be exposed to levels of TACs that exceed SJVAPCD thresholds.

The primary emitter of mobile-source TACs is diesel engine vehicles. Mobile-source TACs are a relatively new concern for the California Air Resources Board (ARB), so specific guidelines and practices regarding assessing impacts and providing mitigation are not available. It is also unclear what effects new ARB diesel engine emission standards and diesel particulate matter regulations would have on the level of impact and the necessity for, or type of, mitigation. Therefore, the specific conditions of mobile source TAC impacts cannot be determined at this time.

The only available mitigation for stationary and mobile-source TACs is to completely separate potential emission sources from all sensitive receptors. Because of the common nature of many TAC sources (e.g., gas stations, dry cleaners, auto repair facilities, diesel vehicles), this mitigation is not feasible. Therefore, no feasible mitigation is available for Impact 4.5-d to reduce the impact to a less-than-significant level. Thus, implementing the proposed project would result in a significant and unavoidable adverse impact with respect to stationary and mobile-source TACs.

As indicated in section 4.5, Impact 4.5-e, implementation of the proposed project would result in a significant increase in long-term regional emissions that would exceed the San Joaquin Valley Air Pollution Control District's recommended significance threshold of 10 tons per year for reactive organic gases (ROG) and oxides of nitrogen (NOx). Mitigation Measure 4.5-e is identified to reduce this impact to the greatest extent feasible. It requires the implementation of various emission reducing measures, including, but not limited to, the provision of transit-enhancing infrastructure (e.g., bus stops, route signs), park-and-ride lots, and pedestrian and bicycle infrastructure. However, even though implementation of this mitigation would substantially lessen the impact, implementing the proposed project would result in long-term regional emissions that would exceed the San Joaquin Valley Air Pollution Control District's recommended significance threshold of 10 tons per year for ROG and NOx. Thus, implementing the proposed project would result in a significant and unavoidable adverse impact with respect to long-term regional emissions.

7.2.3 NOISE

As indicated in section 4.6, Noise, in the discussion of Impact 4.6-c, it is anticipated that the CLSP would result in noticeable increases (i.e., 3dBA or more) in traffic noise levels at six roadway segments. Mitigation Measure 4.6-c requires that a study be prepared to assess whether the increases in noise levels at these roadways would result in, or contribute to, exceedences of applicable noise standards at nearby sensitive receptors. Where necessary, sufficient mitigation shall be provided to attenuate the project's contribution to these increased noise levels. Potential mitigation measures might include sound walls, vegetative screening, or structural improvements to existing buildings. However, available mitigation actions may not be feasible in some instances due to various factors, such as availability of rights-of-way to install sound walls or vegetative screening. If no feasible measures can be implemented to reduce impacts related to increases in traffic noise levels to less-than-significant levels, the impact would remain significant after implementation of Mitigation Measure 4.6-c.

As indicated in section 4.6, Impact 4.6-d, implementation of the proposed project would result in significant impacts on some noise-sensitive receptors associated with noise generated by I-5 and other sources exceeding the City's "normally acceptable" land use compatibility noise standards. Mitigation Measure 4.6-d is identified to reduce this impact to the greatest extent feasible. It requires the City to evaluate projects during the permitting process for compliance with the City's Noise Ordinance and policies in the City of Lathrop General Plan (City General Plan). If projects would exceed the standards in the ordinance, mitigation measures such as use of dual-pane windows, exterior wall insulation, and other noise-reducing materials would be required to reduce interior noise exposure. Landscaping, sound walls, building orientation/location, and other measures would be used to reduce exterior noise levels. Implementation of these mitigation measures would reduce impacts associated with interior noise levels to less-than-significant levels. Although exterior noise levels would be substantially lessened with implementation of these measures, exterior noise levels could continue to exceed City noise standards in some areas. Site-specific studies would be required to determine precise locations where standards would be exceeded. As a result, impacts associated with exterior noise level compatibility with proposed land uses are significant and unavoidable.

7.2.4 AGRICULTURAL RESOURCES

As indicated in section 4.13, Agricultural Resources, in the discussion of Impact 4.13-a, implementation of the proposed project would result in the conversion of up to 1,536 acres of designated Important Farmland (i.e., Prime Farmland, Farmland of Statewide Importance, and Farmland of Local Importance) to development. Mitigation Measure 4.13-a would substantially lessen this impact. It requires participation in the San Joaquin Multi-Species Habitat Conservation and Open Space Plan (SJMSCP), which would provide funds to purchase conservation easements on agricultural and wildlife habitat lands in the project vicinity. Easements are purchased for a variety of land types benefiting wildlife, including

a combination of habitat, open space, and agricultural lands; therefore, the overall compensation for the loss of agricultural land is less than a 1:1 ratio. Even if the ratio exceeded 1:1, up to 1,536 acres of farmland would still be lost. Full compensation for the loss of Important Farmland would not be achieved; therefore, the impact is considered significant and unavoidable.

As indicated in section 4.13, Impact 4.13-b, implementation of the proposed project would result in the cancellation of Williamson Act contracts on up to 1,244.3 acres of agricultural land, which is considered a significant impact. Mitigation Measure 4.13-b is identified to reduce this impact. It requires the project applicant to allow/promote farming operations to continue as long as feasible on portions of the CLSP area until the area is to be developed. Like Mitigation Measure 4.13-a, mentioned above, this mitigation measure also requires participation in the SJMSCP, which would contribute to the preservation of agricultural lands under Williamson Act contracts. Implementing this mitigation would substantially lessen overall impacts associated with Williamson Act contract cancellations, but not sufficiently to reduce the impact to a less-than-significant level. This impact is therefore considered significant and unavoidable.

7.2.5 TERRESTRIAL BIOLOGY

As indicated in section 4.14, Terrestrial Biology, in the discussion of Impact 4.14-q, implementation of the proposed project would result in the removal of several patches of occupied riparian brush rabbit habitat along the San Joaquin River in the CLSP area. The riparian brush rabbit is listed as endangered by both the U.S. Fish and Wildlife Service (USFWS) and the California Department of Fish and Game (DFG). Displacement of individual rabbits could result from habitat removal, and direct loss of individuals could result from construction activities. Because the range of the riparian brush rabbit is restricted to a few known populations and the project site is at the northern edge of the species' range, implementation of the CLSP could restrict the range of this endangered species, as well as reduce the species' numbers by removing the population in the CLSP area.

Mitigation Measure 4.14-q requires consultation with the USFWS and DFG under the federal and California Endangered Species Acts to identify specific actions to minimize and compensate for impacts on riparian brush rabbit. Measures to minimize direct take in conjunction with compensation for adverse effects through creation of habitat offsite are anticipated to avoid a net reduction in the number of riparian brush rabbits. However, the potential loss of the riparian brush rabbit population on the project site could still restrict the range of this species. Although implementation of Mitigation Measure 4.14-q would substantially lessen significant impacts on the riparian brush rabbit, it would not necessarily reduce such impacts to a less-than-significant level. For CEQA purposes, impacts to riparian brush rabbit are considered significant and unavoidable because an overall reduction in the range of this species would occur. However, because the project site under existing conditions is not thought to support a long-term viable population of riparian brush rabbits, offsite mitigation is anticipated to have an overall benefit to the species by contributing to enhancement and/or establishment of a riparian brush rabbit population at a more appropriate location.

7.2.6 AESTHETIC RESOURCES

As indicated in section 4.18, Aesthetic Resources, in the discussion of Impact 4.18-c, implementation of the proposed project would substantially alter the visual character of the CLSP area through conversion of agricultural land to developed urban uses. In addition, if one of the WRP #2 North options (stand alone plant or scalping plant) is chosen, or recycled water storage ponds are constructed in areas identified north of the CLSP area, the visual setting for residents in the vicinity may be substantially degraded.

Travelers on I-5 would be the primary group affected by changes in the visual character of the CLSP area. Although views from I-5 would be substantially altered as agricultural land is replaced by urban

development, many travelers on this highway may not perceive this as a substantial degradation of visual character or quality of the site because one common type of viewshed in the area (agriculture) would be replaced by another common local viewshed (urban). The presence of urban development in the CLSP area would also be consistent with, and appear as a continuation of development on the Mossdale Landing site to the south and the existing developed portion of Lathrop to the east. However, reasonable people may also consider the conversion of agricultural land to urban development on the scale of the CLSP project (1,521 acres) as a loss of an aesthetically pleasing and valuable viewshed. Because reasonable people may differ as to the aesthetic value of the agricultural lands in the CLSP area and whether development of urban uses in the plan area would constitute a substantial degradation of existing visual character or quality of the site and its surroundings, a conservative approach was taken for the EIR analysis and the alteration of views of the CLSP area from I-5 is considered a significant impact.

The proposed location for WRP #2 North and areas identified as potential sites for recycled water storage ponds north of the CLSP area are in an area that currently consists of agricultural fields and scattered rural residences. Because the exact location of the recycled water storage ponds has not been determined, there is a potential for one or more ponds to be placed in close proximity to existing residences. Although the WRP #2 North site would not abut any existing residences, it would interject an industrial facility into a rural and agriculturally focused visual environment. Construction of either of the WRP #2 North options or installation of recycled water storage ponds in close proximity to existing residences are considered to cause a substantial degradation in the visual character in the area, and therefore result in a significant impact.

Mitigation Measure 4.18-c identifies measures to reduce aesthetic impacts related to WRP #2 North and installation of recycled water storage ponds to less than significant levels through installation of landscape buffers and visual screening with trees and shrubs. However, Mitigation Measure 4.18-c also identifies that because of the scale and location of the CLSP, there is no feasible mitigation available to address aesthetic resource impacts associated with the conversion of agricultural land to urban development. Although design, architectural, development, and maintenance standards are included in the CLSP to ensure that urban development in the plan area remains within certain aesthetic guidelines, there is no mechanism to allow implementation of the project while avoiding the conversion of the local viewshed from agriculture to urban development. This impact is therefore considered significant and unavoidable.

7.2.7 CUMULATIVE IMPACTS

As indicated in Chapter 5, Cumulative Impacts, implementing the CLSP project would result in direct and indirect cumulatively considerable incremental contributions to significant cumulative impacts related to transportation and circulation, air quality, noise, public services, public utilities, agricultural resources, terrestrial biology, fisheries, aesthetic resources, odor, surface water quality[1], and groundwater. Cumulative impacts related to terrestrial biology may be mitigated to less than significant levels through proposed creation of riparian brush rabbit habitat associated with the River Islands project. However, no feasible mitigation is available for the remainder of the cumulative impacts identified. Because these impacts are a product of cumulative growth, and because no feasible mitigation is available to reduce these impacts to less-than-significant levels, these significant impacts cannot be avoided and thus represent significant and unavoidable adverse impacts.

[1] The potentially significant and unavoidable cumulative surface water quality impact would occur only if the incremental increase in recycled water generated at WRP #1 potentially attributable to the CLSP (through implementation of the WRP #2 Integrated option or one of the WRP #2 Scalping options) was to be discharged to the San Joaquin River rather than disposed of on land. Even if river discharge did occur, a significant and unavoidable adverse surface water quality impact would occur only if the total maximum daily loads currently being reviewed by the regulatory agencies for dissolved oxygen (DO) are implemented and are ultimately not effective in reducing cumulative DO levels in portions of the San Joaquin River (e.g., the Stockton Ship Channel) to acceptable levels.

8 Alternatives Analysis

8 ALTERNATIVES ANALYSIS

8.1 INTRODUCTION

The guiding principles for the selection of alternatives for analysis in this EIR are provided by the California Environmental Quality Act Guidelines (State CEQA Guidelines) (§15126.6), which specify that the alternatives analysis must:

- describe a reasonable range of potentially feasible alternatives to the project that could feasibly attain most of the basic objectives of the project;
- consider alternatives that could reduce or eliminate any significant environmental impacts of the proposed project, including alternatives that may be more costly or could otherwise impede the project's objectives; and
- evaluate the comparative merits of the alternatives.

The focus and definition of the alternatives evaluated in this EIR are governed by the "rule of reason" in accordance with §15126.6(f) of the State CEQA Guidelines. That is, the range of alternatives presented in this EIR must permit a reasoned choice by the City of Lathrop's (City's) decision makers. The State CEQA Guidelines (§15126.6) require that an EIR evaluate a "No Project Alternative," evaluate a reasonable range of alternatives to the project, identify alternatives that were initially considered but then rejected from further evaluation, and identify the "environmentally superior alternative."

While the State CEQA Guidelines (§15126.6[d]) require an evaluation of alternatives, they permit the evaluation to be conducted in less detail than is done for the proposed project. Consistent with §15126.6(d), sufficient information is provided in this EIR about each alternative to allow for a meaningful evaluation, analysis, and comparison of the alternatives with the proposed project.

The following discussion is intended to inform the public and decision makers of potentially feasible alternatives to the proposed project that could be implemented to attain the basic project objectives while substantially reducing one or more of the potentially significant effects of the project.

8.1.1 BASIC PROJECT GOALS AND OBJECTIVES

As described above, one of the key factors in considering alternatives is whether they can feasibly attain most of the basic objectives of the project. Section 3.3 of this EIR describes the basic project goals and objectives. The following list identifies the overall goals and selected specific objectives of the Central Lathrop Specific Plan (CLSP):

- Establish a mixed-use community that implements the intent of the City of Lathrop General Plan (City General Plan) that Sub-Plan Area #2 be developed with urban land uses that complement existing development in the City
  - Establish a comprehensive land use plan that will guide development of the plan area in a way that is compatible with and complements existing and planned land uses in other portions of the City.
  - Provide a balanced mix of land uses, including residential neighborhoods; retail, office, service-related commercial, and other non-residential employment-generating land uses; and public/semi-public uses such as schools, parks, and other civic-oriented facilities.

- Provide a variety of housing types that will serve residents of differing incomes

  - Create opportunities for a variety of marketable housing types available to households of differing incomes, including single-family residential densities that are significantly higher than those found elsewhere in Lathrop and that are designed to provide more efficient land use, more affordable housing without reducing quality or amenities, more efficient use of public infrastructure, and more environmentally sensitive development patterns.

- Create integrated neighborhoods that link with the surrounding commercial and public/semi-public uses

  - Create a distinctive focal point for the plan area and a social centerpiece for the surrounding neighborhoods by anchoring the plan area with a pedestrian-oriented, centrally located village center that will include neighborhood-serving retail, civic and cultural uses, a high school, and a large community park.

- Provide economic and planning benefits for the City as a whole through commercial and retail development, availability of civic and public/semi-public space, and increased tax revenues

  - Establish a regional commercial corridor (including both retail and office uses) adjacent to the I-5 freeway that makes use of the visibility and prime freeway access provided by the Louise Avenue and Lathrop Road interchanges while buffering nearby residential neighborhoods from freeway-related impacts.

  - Add value to the existing and future City community and contribute to the establishment of a strong local economic base through (a) job creation; (b) the economic stimulus that comes from the multi-million-dollar investment required to develop the Central Lathrop Specific Plan and the disposable income of the people who will ultimately live and work in the plan area; and (c) the local general fund revenues generated by increased property taxes, retail sales taxes, and transient occupancy taxes.

  - Create a town center to serve existing and new development in the City.

- Provide opportunities for improved integration of transportation modes and increased transportation efficiency

  - Encourage non-vehicular travel by linking plan area neighborhoods to the village center, parks, and schools as well as to each other through an interconnected system of pedestrian and bicycle pathways.

- Provide recreational benefits to plan area and City residents through a comprehensive public park program and riverside parks

  - Maximize active and passive recreational opportunities through the creation of a comprehensive public park program that includes a linear park and open space system located adjacent to and providing access to the San Joaquin River, a large community park located adjacent to the high school site that affords an opportunity for joint use, and neighborhood parks that are centrally located within each residential village to ensure ease of access for area residents.

8.1.2 SIGNIFICANT EFFECTS OF THE PROPOSED PROJECT

Impacts associated with the proposed project are evaluated in Chapters 4 and 5 of this EIR. Listed below in Table 8-1 are the 17 environmental issue areas evaluated in this EIR. For each issue area, the table indicates whether the project would result in a less-than-significant impact or significant impact before mitigation and whether the impact can be mitigated to a less-than-significant level using feasible measures or if it would remain significant (and unavoidable). As shown in Table 8-1, the project would result in significant impacts before mitigation related to traffic; air quality; noise; geology, soils, and mineral resources; hydrology and water quality; hazardous materials and public health; public services; utilities; agricultural resources; terrestrial biology, fisheries; cultural resources; paleontological resources; and aesthetic resources. After mitigation, significant impacts would still remain for traffic, air quality, noise, agricultural resources, terrestrial biology, and aesthetic resources (i.e., significant and unavoidable impacts).

Table 8-1
Summary of Project Impact Levels before and after Mitigation

Environmental Topic	Before Mitigation	After Mitigation
Land use	Less than significant	Less than significant
Population, employment, and housing	Less than significant	Less than significant
Traffic	Significant	Significant (Unavoidable)
Air quality	Significant	Significant (Unavoidable)
Noise	Significant	Significant (Unavoidable)
Geology, soils, and mineral resources	Significant	Less than significant
Hydrology and water quality	Significant	Less than significant
Hazardous materials and public health	Significant	Less than significant
Public services	Significant	Less than significant
Public utilities	Significant	Less than significant
Recreation	Less than significant	Less than significant
Agricultural resources	Significant	Significant (Unavoidable)
Terrestrial biology	Significant	Significant (Unavoidable)
Fisheries	Significant	Less than significant
Cultural resources	Significant	Less than significant
Paleontological resources	Significant	Less than significant
Aesthetic resources	Significant	Significant (Unavoidable)

8.2 ALTERNATIVES CONSIDERED AND REMOVED FROM FURTHER CONSIDERATION

Several alternatives were considered for their potential to reduce the environmental impacts of the proposed project. They were rejected from further consideration because they were plainly infeasible, would not attain even the most basic of project objectives, or were unable to reduce any of the significant impacts of the project. These rejected alternatives are described below.

8.2.1 OFFSITE ALTERNATIVES

Offsite alternatives are generally considered in EIRs when one of the means to avoid or eliminate the significant impacts of a project is to develop it in a different available location. Under case law, such

alternatives are especially appropriate where a proposed project would put a site to uses different than those contemplated in the governing general plan, which presumably reflects land use policies reached after much deliberation. The City of Lathrop General Plan (City General Plan) identifies the CLSP area as an area that would be ultimately developed with a mix of urban uses, and the San Joaquin County General Plan (County General Plan) shows the site as within an urban reserve, also indicating the intent that it would ultimately be developed. Thus, both of the general plans pertinent to the project site envision the property as an area that will absorb a substantial amount of population growth expected in Lathrop and its environs.

To attain the basic objectives of the project, the project would need to be in Lathrop (mixed-use development for the City, expansion of the City's urbanized area consistent with the City's General Plan, creation of a Lathrop town center, integration of residential neighborhoods with surrounding nonresidential uses, economic and planning benefits for the City). These basic objectives would be difficult to attain at a location outside of the City, or not immediately adjacent to the existing City limits (such as the CLSP area). Further, there are no known sites within the region that are sufficient in size to accommodate the project (or a project of similar size) that would not result in most, if not more, of the significant impacts that would occur with the project. Most undeveloped land in the region is in agricultural production, or if not, is habitat (wetlands, riverine, natural habitat) that is used by a variety of endangered species.

To satisfy the CLSP project objectives, a large undeveloped site in the City of Lathrop or its sphere of influence would be needed. The proposed CLSP area represents the only available major undeveloped land area in Lathrop or Lathrop's sphere of influence that is capable of providing the mix of uses that would attain the basic project objectives. East Lathrop contains a majority of the City's existing development and does not have sufficient infill areas to support the population increases and scale of land uses associated with the project. West Lathrop and Central Lathrop are the only areas of the City with major undeveloped land area. West Lathrop is covered by the West Lathrop Specific Plan (WLSP). Nearly the entire WLSP area is currently undergoing development or project-level planning for separate projects (e.g., River Islands, Mossdale Landing, Mossdale Landing East, Mossdale Landing South) by other developers; given the ongoing activity, it is unlikely that any of these properties would be available to the project applicant for a project of the size or near the size proposed (if any land is available at all). The CLSP area covers the entire Central Lathrop area, so there are no other alternatives in Central Lathrop that could serve the project. Therefore, alternative locations for the proposed project inside the City of Lathrop or its sphere of influence are not considered feasible. Further, while there are large, undeveloped tracts of land outside the City of Lathrop in San Joaquin County, development of these tracts would not attain basic project objectives such as providing mixed use and economically beneficial urban development in Lathrop, creating a town center, and implementing the land use plan and development program established by the City's General Plan.

There are also no known sites of substantial size (the CLSP area is over 1,500 acres and another site of similar size would be needed to attain many of the project objectives) in the region upon which development would not result in similar impacts (e.g., traffic, air quality, noise, agriculture, biological resources) as the proposed project. Undeveloped areas in the region are primarily used for agriculture or habitat (or both); the region is experiencing substantial growth in traffic; and it is in nonattainment of air quality standards. Consequently, any major development in San Joaquin County would be expected to generate significant agricultural, traffic, and air quality impacts, and any development that adds significant levels of traffic to regional roadways would contribute to substantial noise levels. While the CLSP area contains, or is adjacent to, sensitive biological (including riparian brush rabbit) and aquatic resources (as discussed in Chapter 4 of this EIR), the CLSP area does not appear to be any more sensitive than other large agricultural areas in the vicinity. Further, any undeveloped parcels to the west, where there are large tracts of agricultural land, are within the Primary Zone of the Delta, and as such development for urban uses would not be appropriate or likely to be approved. It is not likely that the

significant impacts of the project would be avoided or substantially lessened by the selection of an alternative site in the area. In addition, any alternative sites would likely be more distant than the proposed project from freeways and urban areas, requiring construction of additional utility and transportation infrastructure to serve the alternative site, which would, in turn, be likely to have additional impacts, including growth-inducing impacts.

Given the above considerations, there are no known alternative sites that can feasibly meet the CLSP project objectives or that would reduce the significant impacts of the project. For this reason, an offsite alternative is not evaluated further in this EIR.

8.2.2 RANCHETTE DEVELOPMENT

Under this alternative, the CLSP area would be developed with uses similar to what is found on the site currently, along Dos Reis Road. The plan area would be developed predominantly with 1- to 2-acre home sites and ranchettes. Approximately 1,000 dwelling units would be constructed on the 1,521-acre site. This alternative would reduce impacts from the project related to traffic, air quality, and noise. This alternative would generate approximately 9,600 vehicle trips, which is approximately 4% of the total trip generation of the proposed project. Air emissions and noise generation would similarly be much less than those that would occur under the proposed project, given that vehicle trips are the predominant source of air emissions and noise generation. However, even at this reduced development level, it is likely that the alternative would result in significant unavoidable impacts on air quality (project impacts would be expected to exceed significance thresholds) and a considerable contribution to cumulatively significant traffic impacts, albeit at a lesser magnitude than the proposed project. The Ranchette Alternative would also reduce impacts to other resources that are related to the total level of development on the site, such as demand for water, public services, etc. Further, because development would be substantially less intensive than the proposed project, infrastructure demands, including wastewater treatment and disposal, would be less. Because the area would be developed with residential uses, agriculture and biological resources would be affected in a manner similar to what is anticipated under the project.

While this alternative could reduce some of the impacts of the project, it would not attain the project's basic objectives. A mixed use community would not be constructed, and the alternative would not be consistent with the intent of the City's General Plan's, which contemplates the development of a mixed-use community on the site. This alternative would not provide a variety of housing types that would serve residents of different income levels. It would not create a town center or the type of urban development that would complement either existing development east of I-5 or planned development south of the project site. Mossdale Landing, a master-planned development abutting the project's southern boundary, incorporates a mixed-use land plan featuring neighborhoods with suburban residential densities. The establishment of a ranchette development in the CLSP area would introduce semirural residential densities that are inconsistent with the City General Plan's expressed intent to create a more urbanized environment that emphasizes traditional neighborhoods and sufficient development densities to support a mixed-use land plan. The alternative would not provide economic and planning benefits to the City through commercial and retail development or civic and public space.

More fundamentally, however, the land use densities that would occur under the Ranchette Alternative would be inconsistent with evolving notions of good land use planning in a growing state such as California. These notions are associated with what is sometimes called "Smart Growth," although that term means different things to different people. Although low density on a particular property may reduce the levels of impacts occurring on, or emanating from, that same property, low densities can be considered an inefficient use of finite land resources, with the result, in areas with growing populations, that market demand for development gets pushed outward toward other areas on the urban periphery, with the long-term consequence of more overall loss of habitat, open space, and farm land. Under Smart

Growth principles, areas that are planned for development are typically developed at higher densities. Although these higher densities may result in greater onsite impacts on biological, cultural, open space, and agricultural resources, the overall area of disturbance is reduced by concentrating development in particular locations. Because the San Joaquin Valley is feeling demographic pressures reflecting an increasing statewide population, intrastate migration from the Bay Area and Southern California, and interstate migration from the Northeast and Midwest to the Sun Belt states, Smart Growth principles strongly suggest that developing a 1,521-acre site for large-lot ranchette-style development would constitute a missed opportunity to try to focus market demand for development into an area near existing development, infrastructure, and services. Thus, in the long term, the Ranchette Alternative would reduce onsite impacts at the expense of greater offsite impacts.

In sum, because this alternative does not attain the project's basic objectives, and because it would be inconsistent with sound land use planning principles, it has been rejected from further consideration.

8.2.3 GENERAL PLAN ALTERNATIVE

Under the General Plan Alternative, the CLSP area would be developed in accordance with the existing City General Plan land use map, which is the City of Lathrop's approved land use plan applicable to the area. The plan area would be annexed, and no changes to the Lathrop General Plan would be required. Table 4.2-1 of this EIR provides a comparison between the proposed project and development under the current General Plan land use map. A summary of the comparison is provided below in Table 8-2.

Table 8-2
Summary Comparison of Development Under the Existing Lathrop General Plan Land Use Map and the Proposed Central Lathrop Specific Plan

Land Use Type	General Plan Development Potential	Central Lathrop Specific Plan Development Potential
Residential	7,913 dwelling units	6,790 dwelling units
Office/Commercial	321.8 acres	327.2 acres
Schools	Not specified (to be determined)	104.6 acres
Government	26.4 acres	11.1 acres
Parks/Open Space	453.4 acres (includes 147.2-acre golf course)	208.8 acres
Rights of Way	Not determined	92.7 acres

As shown, the development potential of the City General Plan is comparable but slightly greater than the CLSP. At maximum buildout density, the City General Plan includes over 1,100 more residences than the CLSP and 5.4 acres less office/commercial than CLSP. It is difficult to compare other uses because of differences in how development is determined under the City General Plan (e.g., school needs are to be determined, rights of way are not included, etc.), but the two development categories shown above provide an overall indication of development levels.

Given the similarities in the amount of development, the impacts of development consistent with the General Plan would be expected to be similar to impacts associated with the CLSP. Impacts associated with traffic, air quality, and noise would be nearly identical. All other impacts would also be similar given the level of development. This alternative would not reduce or avoid any of the significant impacts of the project. Because of this, it would not achieve the basic purpose of an alternatives evaluation under CEQA, which is to describe alternatives that would "…avoid or substantially lessen the significant effects of the project…" (CCR §15126.6[a]).

Furthermore, the General Plan Alternative represents policies and densities anticipated more than a decade ago. Based on current development trends, the project as proposed, compared with the General Plan Alternative, strikes a more marketable balance between different land use categories, while also accounting for the City's need for a positive overall revenue stream from the project area, and embodying an approach to infrastructure financing that can realistically be accomplished in light of constraints of numerous types. Although the General Plan Alternative, at least arguably, constitutes a more "efficient" use of the subject site based on the Smart Growth principles discussed above, the applicant apparently sees no economic benefit in attempting to seek approval of 7,913 dwelling units rather than 6,790. Nor does the applicant seek to build a 147.2-acre golf course, which presumably would be proposed if it constituted the highest and best use of portions of the property. Notably, too, the project proposes to devote 104.6 acres to schools, including a much-needed new high school campus, which subtracts from the areas available for new dwelling units. The General Plan Alternative, in contrast, would not deliver such an important community benefit.

For all of these reasons, the General Plan Alternative has been rejected from further consideration.

8.3 DESCRIPTION AND ANALYSIS OF ALTERNATIVES

The following alternatives are evaluated in this section:

- No Project Alternative,
- Reduced Development (Phase 1 Only) Alternative, and
- Reduced Development/Environmentally Constrained Alternative

Each alternative is described and an analysis is provided of the alternative for each environmental issue area evaluated in this EIR. The analysis is comparative, identifying whether the alternative would result in impacts that are "greater," "less," or "similar" in comparison to those of the proposed project. This determination is made in brackets at the end of the discussion for each environmental issue analyzed.

8.3.1 NO PROJECT ALTERNATIVE

Under this alternative, no actions would be taken in the CLSP area and the property would not be annexed by the City of Lathrop. The CLSP area would remain under the jurisdiction of San Joaquin County, and within the Sphere of Influence boundary of the City of Lathrop. Although both the City and County General Plans foresee development in this area, this analysis uses existing conditions as the "no project" scenario to allow consideration of a full range of alternatives. No development of the proposed CLSP area would occur and existing agricultural and rural residential use of the site would continue. Although this alternative is evaluated herein, it is an unlikely long-term alternative for the CLSP area. The City General Plan designates the area for urban development (see Section 8.2.3 above) and the County General Plan designates the site as urban reserve, signifying the intent that it be ultimately developed with urban uses. Infrastructure planning is well underway in the area, including the Lathrop Water, Wastewater and Recycled Water Master Plan (Water Master Plan), which identifies water and wastewater infrastructure to serve site development. The Mossdale Landing project is being developed in the Mossdale Village area of West Lathrop, immediately to the south of the CLSP area. To the south of Mossdale Village, the River Islands project, already approved by the City, is in the process of securing further permits to enable development.

In short, given the City and County General Plan designations for urban development and the large interest in development of Lathrop, future development interest in the site is extremely likely. The regional economic base will continue to expand as a result of these and other development projects in the region, and the associated growth in housing demand will increase the development pressure on the

proposed CLSP area. Therefore, it is unreasonable to assume that the site would remain in agricultural use on a long-term basis. It would be speculative to assume what type of development, other than the proposed project, would be planned in the future.

Consistent with CEQA requirements, this No Project Alternative is evaluated in this EIR. The No Project Alternative would not meet any of the objectives of the proposed project. This alternative also would not be consistent with the intent of the City General Plan, which calls for the development of mixed residential, office, retail and municipal uses in the CLSP area.

IMPACT ANALYSIS

Land Use

The proposed project includes amendments to the City General Plan. These amendments would not be required under the No Project Alternative. If the No Project Alternative were to be adopted, however, the City's General Plan would need to be amended to substitute a status quo land plan for the mixed-use urban development program presently contemplated by the City's General Plan for the area comprising the CLSP. In any case, because the CLSP land uses would remain unchanged under the No Project Alternative, the land use impacts would be less than significant. Similarly, no significant land use impacts were identified for the proposed project. Thus, impacts for this alternative would be similar to the project with respect to land use. *[Similar]*

Population, Employment, and Housing

The No Project Alternative would not generate any new residents, jobs, or homes in the City of Lathrop. The proposed project would result in limited population growth associated with construction activities; population growth consistent with what would be expected in the General Plan, but in excess of population growth in Sub-Plan Area #2 forecasted in the Water Master Plan (as discussed in Section 4.3, this is not a significant impact); and removal of approximately 30 farm related residences (but construction of 6,790 new dwelling units). No significant impacts related to population, employment, and housing were identified for the proposed project, so the No Project Alternative would not reduce or avoid any significant impacts associated with the project. *[Similar]*

Traffic

The No Project Alternative would not include any new development and thus would not generate any new traffic-related impacts. By comparison, the proposed project would generated more than 13,000 a.m. and 23,000 p.m. peak-hour trips and would significantly affect several intersections, roadways, and freeways. After mitigation, significant and unavoidable impacts would still occur along several segments of Interstate 5, State Route (SR) 99 and SR 120. Implementation of the No Project Alternative would avoid the project's contribution to these impacts, although cumulative development outside the CLSP area also would result in many of these impacts. *[Less]*

Air Quality

The No Project Alternative would not include any new development, and thus would not generate new construction or operations-related air emissions. A total of 235,000 daily vehicle trips would be generated by the proposed project, which, along with stationary sources, would produce substantial emissions (see Section 4.5). The proposed project would also include new construction and operational activities resulting in significant and potentially significant impacts before mitigation related to construction emissions, increases in stationary and mobile-source toxic air contaminants (TACs), and

long-term regional emissions. After mitigation, residual significant air quality impacts would remain related to mobile-source TAC emissions and long-term regional emissions. Implementation of the No Project Alternative would not result in these significant unavoidable air quality impacts; therefore, this alternative would result in less air quality impacts than the proposed project, although cumulative development outside the CLSP area would also result in many of these impacts. *[Less]*

Noise

Under the No Project Alternative, no new construction activities would occur, no new noise generating land uses or sensitive noise receptors would be developed, and no additional traffic would be generated. Therefore, there would be no increase in potential noise conflicts under this alternative. By comparison, the proposed project would include temporary noise generated by construction activities; development of various noise generating land uses; increases in traffic noise (up to 7.8 dB CNEL in one location and over 3 dB CNEL in several locations); and development of sensitive receptors that would be exposed to existing or project generated noise levels exceeding City standards. Several of these actions would result in significant noise impacts before mitigation. After mitigation, residual significant noise impacts would remain related to increased traffic noise and incompatibility between some proposed project land uses and projected onsite exterior noise levels. Implementation of the No Project Alternative would not result in this significant unavoidable noise impact; therefore, this alternative would result in less noise impacts than the proposed project. *[Less / Less than significant]*

Geology, Soils, and Mineral Resources

The No Project Alternative would not include any new construction activities, and existing buildings and other facilities would remain in their current state in the CLSP area. Therefore, there would be no construction-related erosion potential and no potential increase in risk of exposure to injury or property damage because of a seismic event. Access to mineable sand deposits on potential recycled water storage/disposal site 6 (Exhibits 3-6 and 4.7-3) would be preserved temporarily under the No Project Alternative since no development would occur over these deposits.

By comparison, the proposed project would result in significant impacts related to seismic ground shaking, seismic-induced liquefaction, shrink-swell soils and corrosive soils. However, all impacts would be reduced to less-than-significant levels after mitigation. Because the proposed project would not result in any significant impacts related to geology, soils, and mineral resources after mitigation, the No Project Alternative is considered to have similar impacts to the proposed project. *[Similar]*

Hydrology and Water Quality

Under the No Project Alternative, no new construction would occur; therefore, there would be no potential construction related releases of sediment and contaminants into surface waters and groundwater. Mitigation is proposed in this EIR to reduce these impacts to a less-than-significant level. Because the CLSP area would not be developed under this alternative, existing drainage from agriculture would occur during storm events. As discussed in Section 4.8, existing stormwater runoff from the site results in transport to the San Joaquin River of a variety of pollutants associated with agricultural practices. Under the proposed project, various stormwater pollution prevention devices/best management practices would be implemented, which would result in substantially better overall water quality during storm events than under existing, No Project conditions. Thus, Delta water quality would be improved under the proposed project, in comparison to existing conditions and the No Project Alternative.

Impacts under the proposed project related to Delta hydrology are considered less than significant because overall discharge volumes would be reduced during peak storm events. Other less-than-significant impacts of the proposed project include those related to groundwater quality and supply.

Because the proposed project would not result in any significant impacts related to hydrology and water quality after mitigation, and because beneficial impacts associated with the proposed project would not occur under the No Project Alternative, this alternative is considered to have greater impacts than the proposed project. *[Greater]*

Hazards and Hazardous Materials

Under the No Project Alternative no new development would occur; therefore, no new facilities that use hazardous materials (e.g., dry cleaners, gas stations) would be located on the CLSP area, and no new residents, workers, or visitors would have the potential to be exposed to existing or new sources of hazardous materials on the site. The use of hazardous substances (e.g. herbicides and pesticides) by the existing agricultural operations would continue; however, it is assumed that during the use of these materials, existing application, storage, and disposal regulations would continue to be followed. Because no additional wastewater would be generated under the No Project Alternative, it is assumed that no recycled water would be applied on the CLSP area, although the City would possibly consider the CLSP area for land disposal of recycled water generated by other development in the City. If this were to occur, recycled water applications on the CLSP area would need to comply with all applicable local, state, and federal regulations, which would prevent any potential conflicts with public health.

By comparison, the proposed project would result in increased storage, use, and transport of hazardous materials during construction and operation of project facilities. There would be increased potential for construction workers, residents, and visitors to be exposed to hazardous materials at existing and new contaminated areas in the CLSP area. There is also potential for public health impacts through the use of recycled water to irrigate public landscaped areas. However, all these effects are considered less than significant either before or after mitigation through adherence to applicable regulations and appropriate testing and clean-up of potentially contaminated sites. Because no significant impacts related to hazardous materials and public health were identified for the proposed project, the No Project Alternative would not reduce or avoid any significant impacts related to this issue area. However, because there would be fewer overall opportunities for workers and residents to be exposed to hazardous materials under the No Project Alternative (e.g., fewer workers and residents in the area), impacts are considered slightly less than those associated with the proposed project. *[Less]*

Public Services

The No Project Alternative would not include any new development. Therefore, this alternative would not generate increased demand for fire, police, school, or solid waste disposal services, and it would not potentially obstruct access by emergency vehicles because of construction activities. By contrast, the proposed project would include 6,790 new dwelling units. This would create significant demands for fire, police, and school services and facilities. Increased demand for solid waste disposal services was not considered significant for the proposed project because the receiving landfill has ample capacity to support the project. The significant public services impacts associated with the proposed project would be reduced to less-than-significant levels through implementation of recommended mitigation measures. Because the proposed project would not result in any significant public services impacts after mitigation, the No Project Alternative would not reduce or avoid any significant impacts related to this issue. However, the proposed project would create an incremental increase in service demand that would not occur under the No Project Alternative. *[Less]*

Public Utilities

Under the No Project Alternative, no new development would be constructed or operated at the CLSP area. Therefore, there would be no additional demand for water, wastewater treatment, recycled water disposal, stormwater conveyance, electricity, or natural gas; and no need for new facilities and infrastructure to support additional demand. By comparison, the proposed project would create significant demand for potable water (3,248 acre feet per year at buildout) and wastewater treatment capacity. These impacts would be reduced to less-than-significant levels with mitigation. Several utility impacts would be less than significant before mitigation: recycled water storage and disposal, stormwater/surface runoff management, and demand for electricity and natural gas. In addition, the proposed project would contribute to the generation of significant environmental impacts associated with the development of planned new City wells (Wells #21–23 and Emergency Wells #1 and #2) and the expansion of WRP #1. The expansion of WRP#1 and the construction of the City wells would result in significant unavoidable agricultural resources impacts and odor impacts and significant unavoidable cumulative water quality and fisheries impacts. However, the facility expansion/construction activities that would generate these impacts would occur regardless of whether or not the CLSP project is developed since they also support other planned development in the City.

Because the proposed project would not result in direct residual significant utilities impacts after mitigation, and because the significant impacts associated with expansion and construction of the WRP#1 and the City wells would likely occur regardless of whether the CLSP project is developed, the No Project Alternative would not avoid any such impacts. However, the No Project Alternative would substantially reduce the demand for potable water, wastewater treatment, and recycled water storage and disposal capacity in the City; therefore, overall utilities impacts associated with the No Project Alternative are considered less than what would occur under the proposed project. *[Less]*

Recreation

The No Project Alternative would not include any new development. Therefore, this alternative would not generate increased demand for recreational facilities, reduce availability of any existing recreational opportunities, or create new recreation facilities/opportunities in the City. By contrast, the proposed project would include 6,790 new residences, generating a demand (based on the General Plan) for 37.5 acres of neighborhood parks and 56.25 acres of community parks. The proposed CLSP would exceed these standards by providing 40 acres of neighborhood park credit and 60.15 acres of community park credit. Whereas the No Project Alternative does not provide parkland, the CLSP would result in an overall benefit to the City by providing more parkland than needed to satisfy General Plan calculated demand. Because the proposed project would not result in any significant impacts related to recreation, and because beneficial impacts associated with the proposed project would not occur under the No Project Alternative, this alternative is considered to have greater impacts than the proposed project. *[Greater]*

Agricultural Resources

Under the No Project Alternative, agricultural operations would continue on the CLSP area with no loss of important farmland, no Williamson Act Cancellations, and no opportunities for conflicts between new development and agricultural operations. By comparison, the proposed project would result in significant or potentially significant impacts related to each of these three issues. Impacts related to conflicts between development and adjacent agricultural operations under the project would be reduced to less-than-significant levels with mitigation. However, impacts related to the loss of important farmland (up to 1,536 acres) and cancellations of Williamson Act contracts (up to 1,244 acres) would remain significant after mitigation. Implementation of the No Project Alternative, in contrast, would not result in these significant unavoidable impacts; therefore, this alternative would result in less impacts to agricultural

resources than the proposed project. Some notices of nonrenewal of Williamson Act lands have already been filed, indicating that these properties will no longer have the tax reduction advantages afforded by the Williamson Act. This may place economic pressure on the property owner to develop the site in the future, regardless of whether the proposed project is approved in the short term. *[Less]*

Terrestrial Biology

The No Project Alternative would not include any development of the CLSP area or the construction of offsite facilities, and would thus not disturb any existing onsite sensitive species or habitat. The CLSP area would be retained in its existing agricultural open space use and would continue to provide the same type, extent, and quality of habitat. By comparison, the proposed project would develop the site with urban uses, resulting in significant and potentially significant impacts on sensitive and special-status plant, invertebrate, and animal species, and waters of the United States. These impacts would be reduced to less-than-significant levels after mitigation with the exception of impacts on the riparian brush rabbit. Because the project would restrict the range of this species, impacts will be significant and unavoidable. The No Project Alternative would avoid these impacts. *[Less]*

Fisheries

Under the No Project Alternative there would be no need for a new stormwater outfall to the San Joaquin River. Agricultural diversions and discharges would continue under the current timing and volume regime using the same existing intakes. Demands for surface water supplies for domestic use would remain the same because there would be no new residents on the CLSP area.

Under the proposed project, potentially significant fisheries impacts would occur related to releases of sediment into the San Joaquin River and removal of riparian vegetation (shade) during outfall construction. These impacts would be reduced to less-than-significant levels after mitigation.

Under the project, fisheries impacts related to ceasing operations of agricultural unscreened diversion pumps would be beneficial. Further, water quality of discharges to the San Joaquin River would be predominantly higher under the proposed project relative to existing agricultural discharges.

Because the proposed project would not result in any significant fisheries impacts after mitigation, and because beneficial impacts associated with the proposed project would not occur under the No Project Alternative, this alternative is considered to have greater impacts than the proposed project. *[Greater]*

Cultural Resources

The No Project Alternative would not require any construction activities, thereby avoiding impacts related to the disturbance, destruction, and physical or visual alteration of any known (Area 6) or as yet undiscovered/unrecorded cultural resource sites. Under the proposed project, ground disturbance and development of new structures would occur, resulting in potentially significant impacts related to disturbance of a recorded archaeological site (if Area 6 is selected for recycled water storage), and the potential disturbance of undiscovered/unrecorded subsurface archaeological sites and human remains. These impacts would be reduced to less-than-significant levels after mitigation. However, because the No Project Alternative does not include any new development or ground disturbance, it has a lesser potential to result in the disturbance of as yet undiscovered subsurface archaeological resources and/or human remains. Therefore, cultural resources impacts would be slightly less under this alternative. *[Less]*

Paleontological Resources

The proposed project has the potential to uncover previously unknown paleontological resources. This impact can be mitigated to a less than significant level. Because the No Project Alternative does not involve any construction activities, no potential impacts to paleontological resources would occur. *[Less]*

Aesthetic Resources

Under the No Project Alternative, no new development would occur. Thus, there would be no alteration of the visual character of the CLSP area, views of the CLSP area from surrounding vantage points would not change, and no new sources of light and glare would be created. By comparison, under the proposed project, views of the CLSP area from surrounding lands and Interstate 5 (I-5) would be altered. The impact is considered significant and unavoidable, although this is a highly subjective topic. New sources of nighttime lighting would be created, but because of the use of glare-reducing lighting, this impact would be less than significant. None of these impacts would occur under the No Project Alternative. *[Less]*

IMPACT SUMMARY

The No Project Alternative would result in greater impacts than the proposed project in three issue areas, lesser impacts in 11, and similar impacts in three. Significant unavoidable impacts related to traffic, air quality, noise, agricultural resources, terrestrial biology and aesthetic resources associated with the proposed project would not occur under this alternative.

8.3.2 REDUCED DEVELOPMENT (PHASE 1 ONLY) ALTERNATIVE

The Reduced Development (Phase 1 Only) Alternative assumes that only Phase 1 of the CLSP area would be constructed. Generally, the southern 943 acres of the site would be developed, and the northern 578 acres would remain in agriculture and would be used for wastewater treatment and recycled water storage and disposal. The area identified for development under Phase 2 of the CLSP would instead be designated for continued agricultural use. It is estimated that the wastewater needs for Phase 1 would be accommodated by approximately 70 acres of storage ponds (assuming that no winter irrigation is allowed), 150 acres of agricultural land for irrigation, and 7 acres for a treatment plant.

With this alternative, 4,042 dwelling units would be constructed, 60% of the total proposed. Approximately 3.5 million square feet of commercial/office would be constructed, 87% of the total proposed. Schools, open space and other proposed uses would be reduced compared to full buildout. Table 8-3 depicts the total estimated development under this alternative.

Table 8-3
Summary Comparison of Development Under the Reduced Development (Phase 1 Only) Alternative and the Proposed Central Lathrop Specific Plan

Land Use Type	Reduced Development (Phase 1) Only Alternative	Central Lathrop Specific Plan Development Potential
Residential	4,042 dwelling units	6,790 dwelling units
Office/Commercial	285 acres (approximate)	327.2 acres
Schools	62.8	104.6 acres
Government	10.1	10.1 acres
Parks/Open Space	160 acres (approximate)	208.8 acres
Rights of Way	75 acres (approximate)	92.7 acres

IMPACT ANALYSIS

Land Use

The Reduced Development (Phase 1 Only) Alternative would require similar amendments to the General Plan as the proposed project, although the Phase 2 portion of the CLSP area would be designated for agricultural use. The proposed project would not result in any significant land use impacts. Because this alternative includes the same land uses over a large part of the CLSP area and does not introduce any other potential land uses, it would also not result in any significant land use impacts. Therefore, land use impacts are considered similar for the proposed project and the Reduced Development (Phase 1 Only) Alternative. *[Similar]*

Population, Employment, and Housing

Compared to the proposed project the Reduced Development (Phase 1 Only) Alternative would result in 40% less population growth than the project. Housing displacement would be less than the proposed project; about half of the estimated 30 occupied houses on the site are in the Phase 1 area. Housing displacement, however, is not a significant impact of the project. The ratio of jobs to housing would be higher under this alternative (higher proportion of jobs to housing); given the region's relative abundance of housing and predominant export of jobs, this higher ratio would be beneficial by providing more jobs relative to housing, potentially resulting in less regional commuting. All these impacts are considered less-than significant under the proposed project. Therefore, this alternative would not reduce or avoid any significant impacts associated with population, employment, and housing. However, it would be marginally better than the project with respect to the regional jobs-to-housing balance and the displacement of onsite residents. *[Less]*

Traffic

Section 4.4 of this EIR evaluates the project in two phases, Phase 1 (which is this alternative) and buildout. Please see Section 4.4 for a detailed discussion of the impacts at these two phases. A total of 39 intersections were included in the traffic analysis, each in the AM and PM peak hour period. Phase 1 would result in significant impacts to 10 of these intersections. At buildout, a total of 13 intersections would be significantly affected. Mitigation is available to reduce the impacts of Phase 1 to less-than-significant levels at all but two intersections. Mitigation is available to reduce impacts of buildout (the proposed project) at all but five intersections. Both the Phase 1 Only Alternative and the Project contribute to cumulatively significant and unavoidable impacts along several segments of Interstate 5, SR 99, and SR 120. Buildout would contribute a higher level of traffic, but the level of service would be the same between these two alternatives. The Phase 1 Only Alternative would contribute less traffic to this significant and unavoidable impact. *[Less]*

Air Quality

Both the Reduced Development (Phase 1 Only) Alternative and the proposed project would result in development within the CLSP area and the generation of associated construction- and operations-related air emissions. This alternative would produce approximately 200,000 daily vehicle trips, approximately 85% of the number of trips generated by the project. (Although housing would be only 60% of the proposed project total, nearly 90% of higher traffic-generating office/commercial development would occur.) Overall air emissions would be less under the Reduced Development (Phase 1 Only) Alternative because of the reduced development, project population, and vehicle trips. It is estimated that the reduction in development size would reduce air emissions (traffic and stationary source) by approximately 20% compared with the project. Less-than-significant air quality impacts identified for the

proposed project related to odors and local mobile source carbon monoxide (CO) concentrations would be reduced under this alternative. The same is true for impacts associated with construction emissions, which would be considered less than significant after mitigation under both alternatives.

Impacts associated with construction emissions, stationary- and mobile-source toxic air contaminants (TAC), and long-term regional emissions are considered significant and unavoidable under the proposed project, although mitigation measures would substantially lessen these impacts. Construction emissions would have to be substantially reduced, to the point where very little grading would be allowed at any time, to enable construction emissions to be reduced to a less-than-significant level. Better certainty over the ability to control stationary- and mobile-source TACs would also be needed to conclude that this impact would be less than significant, and this alternative does not alter the EIR conclusion for the proposed project, given that stationary- and mobile-source TACs would still be developed. Long-term regional emissions would need to be reduced by over 90% to meet the 10-ton per a year significance threshold, and this alternative reduces emissions by only and estimated 15%. Although the Reduced Development (Phase 1 Only) Alternative would result in a substantial reduction in project development, the associated reductions in air emissions would not be sufficient to meet the 10-ton per year San Joaquin Valley Air Pollution Control District (SJVAPCD) significance threshold. Therefore, this alternative would also result in significant unavoidable long-term regional emissions impacts. Impacts associated with stationary- and mobile-source TACs would also be considered significant and unavoidable under the proposed project and the Reduced Development (Phase 1 Only) Alternative because specific conditions regarding this impact cannot be determined at this time and there is no feasible mitigation approach available for this impact (see the discussion for Impact 4.5-b in Section 4.5, Air Quality). Although significant and unavoidable air quality impacts would still occur under this alternative, overall emissions would be less than under the proposed project; therefore, overall impacts are considered less. *[Less]*

Noise

Both the Reduced Development (Phase 1 Only) Alternative and the proposed project would result in temporary noise generated by construction activities; development of various noise generating land uses; increases in traffic noise; and development of sensitive receptors that would be exposed to existing or project generated noise levels exceeding City standards. Given the relative level of traffic (85% of project), compared with the project, traffic noise would continue to be substantial. However, the location of development would result in far fewer roadway segments with noticeable increases in noise. Whereas the proposed project would noticeably increase traffic noise (defined as a 3-dBA increase) on 6 roadway segments, this alternative would substantially increase noise at only 1 roadway segment. After mitigation, under both scenarios, residual significant noise impacts would remain related to incompatibility between some proposed project land uses and projected onsite exterior noise levels. However, this impact would be less under the Reduced Development (Phase 1 Only) Alternative because with a 40% reduction in residential development there would be fewer sensitive receptors overall. However, exterior noise conflicts would still occur related to other noise sources. Although the Reduced Development (Phase 1 Only) Alternative does not avoid this significant and unavoidable impact, it does reduce the effects relative to the proposed project. *[Less]*

Geology, Soils, and Mineral Resources

Under the Reduced Development (Phase 1 Only) Alternative there would be a reduction in project development; therefore impacts related to construction erosion and risks from seismic and soil hazards would be reduced. This alternative would include the same mitigation measures as the proposed project; therefore, post mitigation impacts would not change (less than significant). Because sufficient land would be available to treat, store and dispose of wastewater, the option of using Area 6 for this purpose would be avoided along with the potential impact to mineral resources.

All impacts related to geology, soils, and mineral resources are considered less than significant, or less than significant after mitigation under the proposed project. However, overall earth resources impacts are considered less for this alternative for the reasons described above. *[Less]*

Hydrology and Water Quality

All project flood control elements needed for the project would be the same as needed for Phase 1, except that some of the localized detention basins in the Phase 2 area (which would not be needed) would not be constructed. Detention basins, stormwater pipes, and outfalls to the San Joaquin River all would be constructed, and BMPs would be provided to manage the water quality of stormwater runoff.

Approximately 1/3 of the site would not be developed under this alternative, so total runoff would be less. However, detention facilities would still be appropriately sized for the level of development proposed, so onsite and offsite impacts (San Joaquin River downstream) would be similar to those of the project, which resulted in a less-than-significant impact. Because 1/3 of the site would remain in agricultural production under this alternative, beneficial effects associated with treating stormwater runoff would be less because the existing discharge conditions would continue.

Other hydrology and water quality impacts associated with the proposed project include potential effects on groundwater quality and changes in non-flood hydrology. These less-than-significant impacts (either before or after mitigation) would be the same under the Reduced Development (Phase 1 Only) Alternative.

All hydrology and water quality impacts identified for the proposed project are considered less than significant either before or after mitigation. Therefore, the Reduced Development (Phase 1 Only) Alternative would not avoid any significant impacts. Implementation of this alternative would result in some hydrology and water quality impacts being reduced, but would also result in some beneficial effects being lessened. Comparing both beneficial and adverse effects, hydrology and water quality impacts under these two development scenarios are considered similar. *[Similar]*

Hazardous Materials and Public Health

The proposed project would result in impacts related to the use of hazardous materials during project construction and operation; the potential exposure of construction workers, residents, and visitors to existing sources of hazardous materials during project construction and operation; and potential public health impacts associated with the use of recycled water. All these impacts are considered less than significant, or less than significant after mitigation. These same impacts would occur under the Reduced Development (Phase 1 Only) Alternative, although to a slightly lesser degree because of the reduced development area and population size. *[Less]*

Public Services

The proposed project would result in significant public services impacts related increased demand for fire protection, police protection, animal control, and public school facilities and services. These impacts would be reduced to less-than-significant levels after mitigation. Increased demand for solid waste disposal services was not considered significant because the receiving landfill has ample capacity to support the project. These same impacts would occur under the Reduced Development (Phase 1 Only) Alternative, but to a lesser degree because of the reduced population and residential development associated with the alternative. However, impacts would still remain significant before mitigation since new facilities and services would be required to meet project demand. Although this alternative would

not reduce or avoid any significant impacts to public services, impacts are still considered less relative to the proposed project because of the reduced demand. *[Less]*

Public Utilities

The proposed project would create significant demand for potable water and wastewater treatment capacity. These impacts would be reduced to less-than-significant levels with mitigation. With the Reduced Development (Phase 1 Only) Alternative, public utilities demands would be less. Potable water demands are estimated to be 1,562 acre feet per year (see Table 4.11-1), half the total project demand. Recycled water storage and disposal would be able to be accommodated on the project site, in the Phase 2 area. These impacts, as well as impacts to stormwater/surface runoff management, and demand for electricity and natural gas would be less than the project, but, like those of the project, would be less than significant or less than significant after mitigation. In addition, the proposed project would contribute to the generation of significant environmental impacts associated with the development of planned new City wells (Wells #21–23 and Emergency Wells #1 and #2) and the expansion of WRP #1. The expansion of WRP#1 and the construction of City wells would result in significant unavoidable agricultural resources impacts and odor impacts and significant unavoidable cumulative water quality and fisheries impacts. However, the facility expansion/construction activities that would generate these impacts would occur regardless of whether or not the CLSP project is developed since they also support other planned development in the City.

The Reduced Development (Phase 1 Only) Alternative would result in the same utility impacts described above, although to a lesser degree because of the development reduction associated with this alternative. As described above, with Phase 2 undeveloped under this alternative, it could be possible to store and dispose of all project generated recycled water onsite. This would minimize the potential for the project to contribute to significant and unavoidable water quality and fisheries impacts resulting from WRP#1's potential disposal of treated wastewater to the San Joaquin River. Because the Reduced Development (Phase 1 Only) Alternative would result in a reduction in utility demand, and could potentially avoid contributing to a significant unavoidable impact, overall utility impacts associated with this alternative are considered less than for the proposed project. *[Less]*

Recreation

The proposed project would create parks and other recreational opportunities/facilities in excess of anticipated demand; therefore, it would have a beneficial impact on recreation in Lathrop considering that there is a deficit of park acreage in the City relative to General Plan standards. The Reduced Development (Phase 1 Only) Alternative would be expected to have reduced development of parks and other recreational opportunities/facilities compared to the proposed project, but project elements that generate demand for these facilities would be commensurately reduced. Therefore, the availability of parks and other recreational facilities would also exceed anticipated demand, but the net excess acreage would be less. Therefore, this beneficial impact would be less under this alternative. Because the Reduced Development (Phase 1 Only) Alternative would result in less overall improvements related to a beneficial impact, and would have similar effects relative to a less-than-significant impact, overall recreation impacts are considered slightly greater under this alternative relative to the proposed project. *[Greater]*

Agricultural Resources

The proposed project would result in the conversion of up to 1,536 acres of agricultural land. Mitigation would be provided through participation in the SJMSCP, which would result in agricultural land being preserved elsewhere in the County, and allowing agricultural production to continue on Williamson Act

lands as long as possible before development. However, these mitigation measures would not be sufficient to reduce the impacts to less-than-significant levels. Therefore, these impacts are considered significant and unavoidable. An additional impact resulting from potential conflicts between agricultural operations and nearby development is considered less than significant after mitigation.

The Reduced Development (Phase 1 Only) Alternative would reduce development of the CLSP Area. A total of 943 acres would be developed in Phase 1. This alternative would include construction of the WRP #2 and related storage and disposal in the CLSP Area, but outside of the Phase 1 area. Approximately 7 acres would be needed to construct WRP #2. Another 62 acres would be needed for pond construction. Under this scenario, 69 acres of land outside of Phase 1 would be converted from agriculture to wastewater treatment/storage, bringing the total amount of land converted from agriculture to 1,012 acres. In addition, a total of 214 acres would be needed for irrigation disposal, but this could occur on agricultural land outside of Phase 1 while continuing the agricultural use.

This alternative would reduce conversion of agricultural land by a third compared to the project. The impact would be significant and unavoidable, but because less land would be affected, the impact would be less than that of the project. *[Less]*

Terrestrial Biology

Both the proposed project and the Reduced Development (Phase 1 Only) Alternative would develop large portions of the project site, resulting in significant and potentially significant impacts on sensitive and special-status plant, invertebrate, and animal species, and waters of the United States. However, these impacts would be reduced under the Reduced Development (Phase 1 Only) Alternative through retention of a third of the site in its existing uses. Under this alternative, a third of the existing agricultural land in the project area would be retained, allowing continued use by Swainson's hawk and other species which are associated with this habitat. Impacts of the project are significant but mitigated to a less-than-significant level. Because this alternative would be developed on the same, but a lesser amount, of habitat, impacts would also be significant but can be mitigated.

Riparian brush rabbit habitat would be affected by this alternative. The proposed project would affect seven isolated populations of this endangered species. Five of these isolated populations would be affected by this alternative. The impact would be significant and unavoidable under both this alternative and the proposed project, because the range of the population would be restricted. However, mitigation is available to ensure that the numbers of the species are not reduced.

Significant and potentially significant biological resources impacts for both the proposed project and the Reduced Development (Phase 1 Only) Alternative would be reduced to less-than-significant levels through participation in the SJMSCP and other mitigation, except for impacts to riparian brush rabbit (see discussion above). Although no impact conclusions would change under this alternative, impacts are still considered less because of the reduction in habitat loss and disturbance. *[Less]*

Fisheries

All project drainage facilities would be the same for both the Reduced Development (Phase 1 Only) Alternative and the proposed project (new outfall needed, elimination of agricultural drainages and unscreened water intakes). Therefore, impacts related to habitat modification in the San Joaquin River would be the same for both alternatives. Overall beneficial impacts would be expected through elimination of the intake and the application of BMPs to drainage (versus limited if any control currently applied to agricultural runoff). All these impacts are considered less than significant, or less than significant after mitigation.

While less impervious surface would be created by this alternative, runoff differences would be marginal given the requirement to retain peak flows Under both development scenarios fisheries impacts associated with stormwater management and would be less than significant or beneficial. Comparing both beneficial and adverse effects, fisheries impacts under these two development scenarios are considered similar. *[Similar]*

Cultural Resources

Under the proposed project ground disturbance and development of new structures would occur resulting in significant and potentially significant impacts related potential disturbance of a recorded archaeological site in Area 6, and the potential disturbance of undiscovered/unrecorded subsurface archaeological sites and human remains. These impacts would be reduced to less-than-significant levels after mitigation.

This alternative would avoid development in Area 6, so potential impacts to recorded archaeological sites would be avoided. Impacts to unknown archaeological resources would be potentially significant with this alternative and would be similar to those of the proposed project.

No significant cultural resource impacts were identified for the proposed project after mitigation, so this alternative would not reduce or avoid any significant cultural resource impacts of the proposed project. However, overall cultural resources impacts would still be reduced under the Reduced Development (Phase 1 Only) Alternative for the reasons described above. *[Less]*

Paleontological Resources

The proposed project has the potential to uncover previously unknown paleontological resources. This impact can be mitigated to a less than significant level. Because the Reduced Development (Phase 1 Only) Alternative would result in less ground disturbance, there is less of a potential to uncover previously unknown paleontological resources. *[Less]*

Aesthetic Resources

Under the Reduced Development (Phase 1 Only) Alternative, there would be less alteration of the views of the CLSP area from surrounding lands, including Interstate 5. This impact was identified as significant and unavoidable. With the Reduced Development (Phase 1 Only) Alternative, the northerly third of the site would not be developed, so the agricultural viewshed would not be as modified as under the project. However, the impact would be considered significant and unavoidable because the viewshed would substantially change, though to a lesser extent than the project. Lighting would be less under this alternative, but lighting impacts were not identified as significant project impacts. Overall aesthetic resources impacts would still be reduced under the Reduced Development (Phase 1 Only) Alternative for the reasons described above. *[Less]*

IMPACT SUMMARY

The Reduced Development (Phase 1 Only) Alternative would result in greater impacts than the proposed project in one issue area, lesser impacts in 13, and similar impacts in three. Significant and unavoidable impacts related to traffic, air quality, noise, agricultural resources, terrestrial biology and aesthetic resources associated with the proposed project would also occur under this alternative, but this alternative would contribute to each of these impacts to a lesser extent than the proposed project. Although this alternative includes substantially less development than the proposed project, these significant unavoidable impacts would still occur.

8.3.3 REDUCED DEVELOPMENT/ENVIRONMENTALLY CONSTRAINED ALTERNATIVE

The Reduced Development /Environmentally Constrained Alternative is designed to avoid or reduce several of the environmental impacts identified for the proposed project. With this alternative, a 400 acre corridor would be retained along the western edge of the CLSP area, along the San Joaquin River. Treated wastewater would be applied to this area, and the area would be allowed to return to a more natural vegetated condition. The corridor would be separated from the developed part of the site by a wall or other barrier that would allow limited human access but would prevent feral cats from entering this area. This size and design for the corridor was selected because it could support a long term viable population riparian brush rabbit, and other sensitive species. The project would, in part, become a mitigation bank for other development in the region. A 400-acre corridor would remove an approximately ¼-mile-wide area of land from development. This alternative assumes that development potential would be reduced at a level proportionate to the reduction in developable acreage, or by 26%.

With this alternative, 5,025 dwelling units would be constructed, 74% of the total proposed. Approximately 3.0 million square feet of commercial/office would be constructed, also 74% of the total proposed. Table 8-4 depicts the total estimated development of this alternative.

Table 8-4
Summary Comparison of Development Under the Environmentally Constrained Alternative and the Proposed Central Lathrop Specific Plan

Land Use Type	Environmentally Constrained Alternative	Central Lathrop Specific Plan Development Potential
Residential	5,025 dwelling units	6,790 dwelling units
Office/Commercial	242 acres	327.2 acres
Schools	77	104.6 acres
Government	7.5	10.1 acres
Parks/Open Space	550 acres (approximate; includes buffer)	208.8 acres
Rights-of-Way	68 acres	92.7 acres

IMPACT ANALYSIS

Land Use

The Reduced Development/Environmentally Constrained Alternative would require the same amendments to the General Plan as the proposed project. The proposed project would not result in any significant land use impacts. Because this alternative includes the same land uses over a large part of the CLSP area and does not introduce any other potential land uses, it would also not result in any significant land use impacts. Therefore, land use impacts are considered similar for the proposed project and the Reduced Development/Environmentally Constrained Alternative. *[Similar]*

Population, Employment, and Housing

Compared to the proposed project, the Reduced Development/Environmentally Constrained Alternative would result in a 26% less population growth than the project. Housing displacement would be similar to what would occur with the proposed project; only about five of the 30 homes that would be displaced are located within the ¼ mile buffer area that would not be developed. This is not a significant impact of the project. The ratio of jobs to housing would be the same under this alternative as the project (more jobs

than housing opportunities) because housing and jobs would be similarly reduced; given the region's relative abundance of housing and predominant export of jobs, this ratio would be beneficial by providing more jobs relative to housing, potentially resulting in less regional commuting. All these impacts are considered less-than significant under the proposed project. Therefore, this alternative would not reduce or avoid any significant impacts associated with population, employment, and housing. *[Similar]*

Traffic

Section 4.4 of this EIR evaluates the project in two phases, Phase 1 and buildout. Phase 1 involves development of 4,042 of a total 6,790 dwelling units. The Reduced Development/Environmentally Constrained Alternative would result in development of 5,025 units. Phase 1 development would include 285 of the total 327.2 acres of office/commercial, and the Reduced Development/Environmentally Constrained Alternative would result in development of 242 acres of office/commercial. Because this alternative results in development of around 1,000 more residential units and 43 fewer acres of commercial office compared with Phase 1, it is likely that traffic impacts would be closer to impacts from Phase 1 than from total buildout. Please see Section 4.4 for a detailed discussion of the impacts at these two phases. A total of 39 intersections were included in the traffic analysis, each in the AM and PM peak hour period. Phase 1 would result in significant impacts to 10 of these intersections. At buildout, a total of 13 intersections would be significantly affected. Mitigation is available to reduce the impacts of Phase 1 to less than significant at all but two intersections. Mitigation is available to reduce impacts of buildout (the proposed project) at all but five intersections. Both the Phase 1 and buildout contribute to cumulatively significant and unavoidable impacts along several segments of Interstate 5, SR 99, and SR 120. Buildout would contribute a higher level of traffic, but the level of service would be the same between these two alternatives. Based on these discussions and the likely parallels of this alternative to Phase 1 of the project, the Reduced Development/Environmentally Constrained Alternative would be expected to result in the same impacts as Phase 1 and would contribute less traffic than the project to significant and unavoidable impacts. *[Less]*

Air Quality

Both the Reduced Development/Environmentally Constrained Alternative and the proposed project would result in development of the CLSP area and the generation of associated construction- and operations-related air emissions. This alternative would produce approximately 174,000 daily vehicle trips, approximately 74% of the number of trips generated by the project. Overall air emissions would be less under the Reduced Development/Environmentally Constrained Alternative because of the reduced development, project population, and vehicle trips. The reduction in development size would reduce air emissions by an estimated 26% compared with the project. Less-than-significant air quality impacts identified for the proposed project related to odors and local mobile source carbon monoxide (CO) concentrations would be reduced under this alternative.

Impacts associated with construction emissions, stationary- and mobile-source toxic air contaminants (TAC), and long-term regional emissions are considered significant and unavoidable under the proposed project, although mitigation measures would substantially lessen these impacts. As discussed under the Reduced Development (Phase 1 Only) Alternative, construction emissions would need to be substantially reduced to the point where very little grading would be allowed at any time, to reduce construction emissions to less-than significant, and better certainty over the ability to control stationary- and mobile-source TAC would also be needed to conclude this impact would be less than significant. Similar to the Reduced Development (Phase 1 Only) Alternative, this alternative does not alter the EIR conclusion for the proposed project, given that stationary and mobile TAC sources would still be developed. Long-term regional emissions would need to be reduced by over 90% (compared with the project) to meet the 10-ton-per-year significance threshold, and this alternative reduces emissions by only an estimated 26%.

Although the Reduced Development/ Environmentally Constrained Alternative would result in a substantial reduction in project development, the associated reductions in air emissions would not be sufficient to meet the 10-ton per year San Joaquin Valley Air Pollution Control District (SJVAPCD) significance threshold. Therefore, this alternative would also result in significant unavoidable long-term regional emissions impacts. Impacts associated with stationary- and mobile-source TACs would also be considered significant and unavoidable under the proposed project and the Reduced Development/ Environmentally Constrained Alternative because specific conditions regarding this impact cannot determined at this time and there is no feasible mitigation approach available for this impact (see the discussion for Impact 4.5-b in Section 4.5, Air Quality). Although significant and unavoidable air quality impacts would still occur under this alternative, overall emissions would be less than under the proposed project; therefore, overall impacts are considered less. *[Less]*

Noise

Both the Reduced Development/Environmentally Constrained Alternative and the proposed project would result in temporary noise generated by construction activities; development of various noise generating land uses; increases in traffic noise; and development of sensitive receptors that would be exposed to existing or project generated noise levels exceeding City standards. Given the relative level of traffic (74% of project), compared with the project, traffic noise would continue to be substantial. Whereas the proposed project would noticeably increase traffic noise (defined as a 3 dBA increase) on 6 roadway segments, it is estimated that this alternative would noticeably increase noise at 3 or 4 roadway segments. After mitigation, under both scenarios, residual significant noise impacts would remain related to incompatibility between some proposed project land uses and projected onsite exterior noise levels. However, this impact would be less under the Reduced Development/ Environmentally Constrained Alternative because with a 24% reduction in residential development there would be fewer sensitive receptors overall. Although the Reduced Development/Environmentally Constrained Alternative does not avoid this significant and unavoidable impact, it does reduce the effects relative to the proposed project. *[Less]*

Geology, Soils, and Mineral Resources

Under the Reduced Development/Environmentally Constrained Alternative there would be a reduction in project development; therefore impacts related to construction erosion and risks from seismic and soil hazards would be reduced. This alternative would include the same mitigation measures as the proposed project; therefore, post mitigation impacts would not change (less than significant). Because sufficient land would be available to treat, store and dispose of wastewater, the option of using Area 6 for this purpose would be avoided along with the potential impact to mineral resources.

All impacts related to geology, soils, and mineral resources are considered less than significant, or less than significant after mitigation under the proposed project. However, overall earth resources impacts are considered less for this alternative for the reasons described above. *[Less]*

Hydrology and Water Quality

All project flood control elements needed for the project would be the same as needed for the Reduced Development/Environmentally Constrained Alternative, except that some of the localized detention basins in the undeveloped corridor area would not be constructed (and would not be needed because there would be no development). Detention basins, stormwater pipes, and outfalls to the San Joaquin River all would be constructed, and BMPs would be provided to manage the water quality of stormwater runoff.

Approximately ¼ of the site would not be developed under this alternative, so total runoff would be less. However, detention facilities would still be appropriately sized for the level of development proposed, so onsite and offsite impacts (San Joaquin River downstream) would be similar to those of the project, which results in a less-than-significant impact. The portion of the site not developed with urban uses would revert to more natural conditions, and runoff previously associated with agricultural use (including pesticide residues) would now be more representative of natural conditions. This is beneficial in comparison to the proposed project.

Other hydrology and water quality impacts associated with the proposed project include potential effects on groundwater quality and changes in non-flood hydrology. These less-than-significant impacts (either before or after mitigation) would be the same under the Reduced Development/Environmentally Constrained Alternative.

All hydrology and water quality impacts identified for the proposed project are considered less than significant either before or after mitigation. Therefore, the Reduced Development/Environmentally Constrained Alternative would not avoid any significant impacts. Implementation of this alternative would result in some hydrology and water quality impacts being reduced, particularly associated with runoff from the open space corridor. Hydrology and water quality impacts under this alternative would therefore be less than those of the project. *[Less]*

Hazardous Materials and Public Health

The proposed project would result in impacts related to the use of hazardous materials during project construction and operation; the potential exposure of construction workers, residents, and visitors to existing sources of hazardous materials during project construction and operation; and potential public health impacts associated with the use of recycled water. All these impacts are considered less than significant, or less than significant after mitigation. These same impacts would occur under the Reduced Development/Environmentally Constrained Alternative, although to a slightly lesser degree because of the reduced development area and population size. *[Less]*

Public Services

The proposed project would result in significant public services impacts related increased demand for fire protection, police protection, animal control, and public school facilities and services. These impacts would be reduced to less-than-significant levels after mitigation. Increased demand for solid waste disposal services was not considered significant because the receiving landfill has ample capacity to support the project. These same impacts would occur under the Reduced Development/Environmentally Constrained Alternative, but to a lesser degree because of the reduced population and residential development associated with the alternative. However, impacts would still remain significant before mitigation since new facilities and services would be required to meet project demand. Although this alternative would not reduce or avoid any significant impacts to public services, impacts are still considered less relative to the proposed project because of the reduced demand. *[Less]*

Public Utilities

The proposed project would create significant demand for potable water and wastewater treatment capacity. These impacts would be reduced to less-than-significant levels with mitigation. With the Reduced Development/Environmentally Constrained Alternative, public utilities demands would be less. Potable water demands are estimated to be 2,400 acre feet per year, 74% of the total project demand. Recycled water disposal would be able to be accommodated on the project site, in the ¼ mile buffer area. Storage may or may not be able to be accommodated on the site. These impacts, as well as impacts to

stormwater/surface runoff management, and demand for electricity and natural gas would be less than the project, but, like those of the project, would be less-than-significant or less-than-significant after mitigation. In addition, the proposed project would contribute to the generation of significant environmental impacts associated with the development of planned new City wells (Wells #21–23 and Emergency Wells #1 and #2) and the expansion of WRP #1. The expansion of WRP#1 and the construction of City wells would result in significant and unavoidable agricultural resources impacts and odors impacts and significant and unavoidable cumulative water quality and fisheries impacts. However, the facility expansion/construction activities that would generate these impacts would occur regardless of whether or not the CLSP project is developed because they also support other planned development in the City.

The Reduced Development/Environmentally Constrained Alternative would result in the same utility impacts described above, although to a lesser degree because of the development reduction associated with this alternative. As described above, with a ¼-mile buffer (400 acres) undeveloped under this alternative, it could be possible to dispose of all project-generated recycled water onsite. This would minimize the potential for the project to contribute to significant and unavoidable water quality and fisheries impacts resulting from WRP#1's potential disposal of treated wastewater to the San Joaquin River. Because the Reduced Development/Environmentally Constrained Alternative would result in a reduction in utility demand, and could potentially avoid contributing to a significant and unavoidable impact, overall utility impacts associated with this alternative are considered less than for the proposed project. *[Less]*

Recreation

The proposed project would create parks and other recreational opportunities/facilities in excess of anticipated demand; therefore, it would have a beneficial impact on recreation in Lathrop considering that there is a deficit of park acreage in the City relative to General Plan standards. The Reduced Development/Environmentally Constrained Alternative would be expected to have reduced development of parks and other recreational opportunities/facilities compared to the proposed project, but project elements that generate demand for these facilities would be commensurately reduced. Further, the 400-acre buffer would provide open space along the westerly edge of the project. Therefore, the availability of parks and other recreational facilities would also exceed anticipated demand, but the net excess acreage would be less. Therefore, this beneficial impact would be less under this alternative. Because the Reduced Development/Environmentally Constrained Alternative would result in less overall improvements related to a beneficial impact, and because the alternative would have similar effects relative to a less-than-significant impact, overall recreation impacts are considered slightly greater under this alternative than under the proposed project. *[Greater]*

Agricultural Resources

The proposed project would result in the conversion of up to 1,536 acres of agricultural land. Mitigation would be provided through participation in the SJMSCP, which would result in agricultural land being preserved elsewhere in the County, and allowing agricultural production to continue on Williamson Act lands as long as possible before development. However, these mitigation measures would not be sufficient to reduce the impacts to less-than-significant levels. Therefore, these impacts are considered significant and unavoidable. An additional impact resulting from potential conflicts between agricultural operations and nearby development is considered less than significant after mitigation.

The Reduced Development/Environmentally Constrained Alternative would reduce development of the CLSP Area. A total of 1,121 acres would be developed. For purposes of this analysis, it is assumed this alternative would include construction of the WRP #2 and related storage at one of the offsite locations

(rather than dedicating more acreage on the site for this use). Approximately 7 acres would be needed to construct WRP #2. Another 60 ± acres would be needed for pond construction. Under this scenario, 67 acres of land offsite would be converted from agriculture to wastewater treatment/storage, bringing the total amount of land converted from agriculture to 1,181. In addition, the 400-acre buffer would be allowed to revert to natural habitat (approximately 200 acres of this area would be irrigated with treated wastewater). Thus, while conversion to urban uses would not occur, the land would no longer be used for agriculture. Thus, a total of 1,521 acres would no longer be in agriculture, which is virtually the same as would occur with the project (conversion of up to 1,536 acres). The impact would be significant and unavoidable and would be similar to that of the project. However, because some of the lost agricultural land would become habitat, rather than being developed, the underlying soils would not be lost. Thus, the overall impact to agriculture, while significant and unavoidable, would be less under this alternative than the project. *[Less]*

Terrestrial Biology

Both the proposed project and the Reduced Development/Environmentally Constrained Alternative would develop large portions of the project site, resulting in significant and potentially significant impacts on sensitive and special-status plant, invertebrate, and animal species, and waters of the United States. However, these impacts would be reduced under the Reduced Development/Environmentally Constrained Alternative through retention of 400 acres (26% of the site) in undeveloped uses, and allowing this area to revert to a more natural condition. Riparian brush rabbit habitat would be adversely affected by the proposed project. And this species has a highly limited range. The impact would be significant and unavoidable under the proposed project, because the range of the population would be restricted. However, mitigation is available to ensure that the numbers of the species are not reduced.

This alternative would avoid potential impacts to riparian brush rabbit. Enhancement activities could be provided to create desirable habitat types, although funding for such enhancement would likely not justifiably come from the project applicant because the extent of mitigation activities that would result would exceed the magnitude of impacts (possible external funding sources include SJMSCP, CALFED grants, or other mitigation funds). Retention/creation of the 400-acre corridor would allow for mitigation and habitat enhancement for the riparian brush rabbit. This extent of acreage would not only avoid any impacts to this species from the project, it would also be likely to be sufficient to serve as a mitigation bank for other development that would affect this species. Other riparian species could similarly be benefited. To this end, this alternative would be environmentally beneficial. Impacts to other species more reliant on retention of the site in agriculture (e.g., Swainson's hawk) would be affected in a manner similar to what would occur with the project. Impacts of the project on these other species are significant but mitigated to a less-than-significant level. Because this alternative would be developed on the same, but a lesser amount of, habitat, impacts would also be significant but can be mitigated.

Significant and potentially significant biological resources impacts for both the proposed project and the Reduced Development/Environmentally Constrained Alternative would be reduced to less-than-significant levels through participation in the SJMSCP and by retention of the 400-acre corridor. Because this alternative would avoid impacts to riparian brush rabbit and would result in a net benefit to this species, impacts from this alternative would be substantially less than those of the project. *[Less]*

Fisheries

All project drainage facilities would be the same for both the Reduced Development/Environmentally Constrained Alternative and the proposed project (new outfall needed, elimination of agricultural drainages and unscreened water intakes). Therefore, impacts related to habitat modification in the San Joaquin River would be the same for both alternatives. Overall beneficial impacts would be expected

through elimination of the intake and the application of BMPs to drainage (versus limited, if any, control currently applied to agricultural runoff). All these impacts are considered less than significant, or less than significant after mitigation.

While less impervious surface would be created by this alternative, runoff differences would be marginal given the requirement to retain peak flows. Under both development scenarios fisheries impacts associated with stormwater management and would be less than significant or beneficial. Comparing both beneficial and adverse effects, fisheries impacts under these two development scenarios are considered similar. *[Similar]*

Cultural Resources

Under the proposed project, ground disturbance and development of new structures would occur resulting in significant and potentially significant impacts related potential disturbance of a recorded archaeological site in Area 6, and the potential disturbance of undiscovered/unrecorded subsurface archaeological sites and human remains. These impacts would be reduced to less-than-significant levels after mitigation.

This alternative has the same potential for development of recycled water storage ponds in Area 6, so impacts to recorded archaeological sites would be the same. Impacts to unknown archaeological resources would be potentially significant with this alternative and would be similar to those of the proposed project.

No significant cultural resource impacts were identified for the proposed project after mitigation, so this alternative would not reduce or avoid any significant cultural resource impacts of the proposed project. *[Similar]*

Paleontological Resources

The proposed project has the potential to uncover previously unknown paleontological resources. This impact can be mitigated to a less-than-significant level. Because the Reduced Development (Phase 1 Only) Alternative would result in less ground disturbance, there is a lesser potential to uncover previously unknown paleontological resources. *[Less]*

Aesthetic Resources

Under the Reduced Development/Environmentally Constrained Alternative, there would the same alteration of the views of the CLSP area from surrounding lands, including Interstate 5. Even though a ¼-mile corridor of open space would be provided along the western edge of the site, this development would dominate the viewshed and the corridor would likely not be visible from I-5. This impact was identified as significant and unavoidable for the project. With the Reduced Development/Environmentally Constrained Alternative, the impact would also be considered significant and unavoidable because the viewshed would substantially changed, similar to what would occur with the project. Lighting would be slightly less under this alternative, but lighting impacts were not identified as significant project impacts. Overall aesthetic resources impacts would still be reduced under the Reduced Development/ Environmentally Constrained Alternative for the reasons described above. *[Less]*

IMPACT SUMMARY

The Reduced Development/Environmentally Constrained Alternative would result in greater impacts than the proposed project in one issue area, lesser impacts in 12, and similar impacts in four. Significant unavoidable impacts related to traffic, air quality, noise, agricultural resources, and aesthetic resources

associated with the proposed project would also occur under this alternative, but this alternative would contribute to these impacts to a lesser extent than the project. This alternative would avoid one of the significant unavoidable impacts of the proposed project: terrestrial biology.

8.4 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

The State CEQA Guidelines require identification of an environmentally superior alternative. If the No Project Alternative is environmentally superior, CEQA requires selection of the "environmentally superior alternative other than the no project alternative" from among the proposed project and the alternatives evaluated.

Table 8-5 identifies whether each of the three alternatives would have "greater," "less," or "similar" impacts as the proposed project for each of the 17 environmental issues evaluated in this EIR. The No Project Alternative would have greater impacts than the proposed project in three issue areas, lesser impacts in 11, and similar impacts in three. The Reduced Development (Phase 1 Only) Alternative would have greater impacts than the proposed project in one issue area, lesser impacts in 13, and similar impacts in three. The Reduced Development/Environmentally Constrained Alternative would have greater impacts than the proposed project in one issue area, lesser impacts in 12, and similar impacts in four.

Based solely on the listing of lesser and greater impacts as identified in Table 8-5, the Reduced Development (Phase 1 Only) Alternative would appear to be the environmentally superior alternative. However, the table does not provide the full breadth of information necessary to make such a finding.

The proposed project would result in significant unavoidable adverse impacts in six areas: traffic; air quality; noise; agricultural resources; terrestrial biology, and aesthetics. The No Project Alternative, by comparison, would not result in any significant unavoidable impacts. It would have greater impacts than the project with respect to water quality and fisheries (associated with stormwater runoff from agricultural land), and would provide less recreational opportunities than the project. Nevertheless, because it would not result in any significant unavoidable impacts, the No Project Alternative is the environmentally superior alternative, and it is superior to all other alternatives considered.

By comparison, the Reduced Development (Phase 1 Only) Alternative would reduce, but not to a less than significant level, each of the proposed project's unavoidable impacts. It would result in slightly lesser beneficial impacts with respect to recreation compared with the proposed project. Because overall less development would occur, although this alternative would still contribute to the listed significant unavoidable impacts, its contributions would be less than what would occur with the proposed project. For these reasons, the Reduced Development (Phase 1 Only) Alternative is environmentally superior to the proposed project.

Similarly, the Reduced Development/Environmentally Constrained Alternative would reduce but not avoid any of the significant unavoidable impacts of the project, but with one important exception: terrestrial biology. Whereas the proposed project and the Reduced Development (Phase 1 Only) Alternative would both reduce the range (but not restrict the numbers) of the endangered riparian brush rabbit, the Reduced Development/Environmentally Constrained Alternative would avoid impacts to this species and, in fact, would be beneficial to the species in that it would provide additional habitat compared with existing conditions (and No Project). The only environmental impact that is reduced by the Reduced Development (Phase 1 Only) Alternative but not the Reduced Development/Environmentally Constrained Alternative is an impact to housing; the Environmentally Constrained Alternative would remove slightly more existing homes (all of which would be compensated for) than the Phase 1 Only Alternative. Other than that, the Reduce Development/Environmentally Constrained Alternative has less

overall development than the proposed project and the Reduced Development (Phase 1 Only) Alternative, and its overall contribution to impacts would be commensurately less. Further, because the Reduced Development/Environmentally Constrained Alternative avoids an impact that is significant and unavoidable under both the proposed project and the Reduced Development (Phase 1 Only) Alternative, the Reduced Development/ Environmentally Constrained Alternative is the environmentally superior alternative among the alternatives that may partially meet the objectives of the proposed project.

Table 8-5
Comparison of the Impacts of the Proposed Project to Those of the Alternatives*

Environmental Issues	Alternatives		
	No Project	Reduced Development (Phase 1 Only)	Reduced Development/ Environmentally Constrained
Land Use	Similar	Similar	Similar
Population, Employment, and Housing	Similar	Less	Similar
Traffic	Less	Less	Less
Air Quality	Less	Less	Less
Noise	Less	Less	Less
Geology, Soils, and Mineral Resources	Similar	Less	Less
Hydrology and Water Quality	Greater	Similar	Less
Hazardous Materials and Public Health	Less	Less	Less
Public Services	Less	Less	Less
Public Utilities	Less	Less	Less
Recreation	Greater	Greater	Greater
Agricultural Resources	Less	Less	Less
Terrestrial Biology	Less	Less	Less
Fisheries	Greater	Similar	Similar
Cultural Resources	Less	Less	Similar
Paleontological Resources	Less	Less	Less
Aesthetic Resources	Less	Less	Less
Totals			
Greater Impacts	3	1	1
Lesser Impacts	11	13	12

* For each environmental issue, the alternative is compared to the proposed project based on the level of severity of impacts (greater, less, similar).

Source: EDAW 2004

9 References

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10 Report Preparation

10 REPORT PREPARATION

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