

# **CITY OF WEST SACRAMENTO GENERAL PLAN UPDATE DRAFT ENVIRONMENTAL IMPACT REPORT**

**PREPARED FOR:**

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**August 2016**



ICF International. 2016. *City of West Sacramento General Plan Update Draft Environmental Impact Report*. August. (ICF 00230.14.) Sacramento, CA.  
Prepared for the City of West Sacramento, West Sacramento, CA.



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# Acronyms and Abbreviations

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µg/m <sup>3</sup>	micrograms per cubic meter
µS/cm	microSiemens per centimeter
2008 Scoping Plan	2008 Climate Change Scoping Plan for AB 32
2009 Plan	Northern Sacramento Valley Planning Area 2009 Triennial Air Quality Attainment Plan
2014 First Update	2008 Scoping Plan, the First Update to the AB 32 Scoping Plan
AB	Assembly Bill
Act	SB 5 of 2007, the Central Valley Flood Protection Act
ADA	Americans with Disabilities Act
ADD	Average Daily Demand
ADWF	average dry weather flow
AEP	annual exceedance probabilities
af	acre-feet
AFY	af per year
AG	Agriculture
AIA	Airport Influence Area
Alquist-Priolo Act	Alquist-Priolo Earthquake Fault Zoning Act
ALUCP	Airport Land Use Compatibility Plan
APA	American Planning Association
APE	area of potential effect
AQAP	air quality attainment plan
ARB	California Air Resources Board
AST	aboveground storage tank
AVE	area of visual effect
B.P.	Before Present
BACT	Best Available Control Technologies
BAMs	best available maps
Basin Plan	Water Quality Control Plan
BAT	best available technology
BCAG	Butte County Association of Governments'
BMP	best management practice
BO	biological opinion
BOD	biochemical oxygen demand
BRWL	blue-rich white light lamps
Business Plan Act	Hazardous Materials Release Response Plans and Inventory Act

C	Commercial
CAA	federal Clean Air Act
CAAQS	California Ambient Air Quality Standards
CAL FIRE	California Department of Forestry and Fire Protection
Cal/OSHA	California Division of Occupational Safety and Health
CalARP	California Accidental Release Prevention Program
Cal-EPA	California Environmental Protection Agency
Caltrans	California Department of Transportation
CAP	climate action plan
CASQA	California Stormwater Quality Association
CBC	California Building Code
CBD	Central Business District
CC	Community Commercial
CCAA	California Clean Air Act
CCAs	Community Choice Aggregations
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CDPH	California Department of Public Health
CEC	California Energy Commission
CEHC	California Essential Habitat Connectivity
Central Valley Water Board	Central Valley Regional Water Quality Control Board
CEQA	California Environmental Quality Act
CEQA Guidelines	State California Environmental Quality Act guidelines
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act of 1980
CERCLIS	Comprehensive Environmental Response, Compensation, and Liability Information System
CESA	California Endangered Species Act
CFGF	California Fish and Game Code
CFR	Code of Federal Regulations
cfs	cubic feet per second
CH <sub>4</sub>	methane
CHP	California Highway Patrol
CIP	Capital Improvement Program
City	City of West Sacramento
CMA	congestion management agency
CNDDDB	California Natural Diversity Database
CNEL	community noise equivalent level
CNPPA	California Native Plant Protection Act

CNPS	California Native Plant Society
CO	carbon monoxide
CO <sub>2</sub>	carbon dioxide
COG	Council of Governments
Construction General Permit	<i>General NPDES Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Order 2009-0009-DWQ)</i>
CO-OPS	NOAA Center for Operational Oceanographic Products and Services
Cortese	Hazardous Wastes and Substances Site
CPUC	California Public Utilities Commission
CRHR	California Register of Historical Resources
CSMP	Corridor System Management Plan
CTR	California Toxics Rule
CUPA	Certified Unified Program Agency
CVFMP	Central Valley Flood Management Planning
CVFPB	Central Valley Flood Protection Board
CVFPP	Central Valley Flood Protection Plan
CVP	Central Valley Project
CWA	Clean Water Act
dB	decibel
Delta	Sacramento-San Joaquin Delta
DO	dissolved oxygen
DOC	California Department of Conservation
DOGGR	Division of Oil, Gas, and Geothermal Resources
DOT	U.S. Department of Transportation
DPC	Delta Protection Commission
DPM	diesel particulate matter
DPS	Distinct Population Segment
DTSC	California Department of Toxic Substances Control
DUA	dwelling units per acre
DUE	dwelling unit equivalent
DWR	California Department of Water Resources
DWSC	Deep Water Ship Channel
EBMUD	East Bay Municipal Utility District
ECAs	Essential Connectivity Areas
EFH	essential fish habitat
EFPD	Elkhorn Fire Protection District
EIFD	enhanced infrastructure financing districts
EIP	Early Implementation Project

EIR	environmental impact report
EO	Executive Order
EPA	U.S. Environmental Protection Agency
ESA	federal Endangered Species Act
ESPs	energy service providers
ESU	Evolutionarily Significant Unit
FAR	floor area ratio
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FIRMs	Flood Insurance Rate Maps
FMMP	Farmland Mapping and Monitoring Program
FNU	Formazin Nephelometric Unit
FR	Federal Register
FTA	Federal Transit Administration
FWCA	Fish and Wildlife Coordination Act
GC	General Commercial
GC	Government Code
ghg	greenhouse gas
GKWTP	George Kristoff Water Treatment Plant
gpcd	gallons per capita daily
GRRs	General Reevaluation Reports
GWP	global warming potential
H:V	horizontal feet to vertical foot
HCD	California Department of Housing and Community Development
HCP	habitat conservation plan
HFC	hydrofluorocarbons
HI	Hazard Index
HMP	Hydromodification Management Plan
HR	High-Density Residential
HRR	High Rise Residential
HSC	Highway-Service Commercial
HSC	California Health and Safety Code
HSWA	Hazardous and Solid Waste Amendments of 1984
HVA	Hazard Vulnerability Analysis
HWCA	Hazardous Waste Control Act

I-	Interstate
IBC	International Building Code
IFP	Infrastructure Financing Plan
Important Farmland	Prime Farmland, Unique Farmland, or Farmland of Statewide Importance
IOUs	investor-owned utilities
IPCC	Intergovernmental Panel on Climate Change
ISO	Insurance Service Office
JPA	Yolo County Habitat Conservation Joint Powers Agency
LAFCOs	Local Agency Formation Commissions
LCFS	Low Carbon Fuel Standard
L <sub>dn</sub>	day-night sound level
LED	light emitting diode
L <sub>eq</sub>	equivalent sound level
LID	Low Impact Development
L <sub>max</sub>	maximum sound levels
L <sub>min</sub>	minimum sound levels
LNWI	Lower Northwest Interceptor
LOS	level of service
LR	Low-Density Residential
LSAA	Lake and Streambed Alteration Agreement
MAP-21	Moving Ahead for Progress in the 21st Century Act,
MBK	MBK Engineers
MBTA	Migratory Bird Treaty Act
MCL	maximum contaminant level
MDD	Maximum Day Demands
MEI	maximum exposed individual
MEP	maximum extent practicable
mg/L	milligrams per liter
mg/m <sup>3</sup>	milligrams per cubic meter
mgd	million gallons per day
MHR	Medium High-Density Residential
Mitigation Agreement	Agreement Regarding Mitigation for Impacts to Swainson's Hawk Foraging Habitat in Yolo County
MLD	most likely descendant
mm/yr	millimeters per year
MOU	memorandum of understanding



mph	mile-per-hour
MPOs	Metropolitan Planning Organizations
MRZ	Mineral Resource Zone
MS4	municipal separate storm sewer system
MS4 Permit	<i>General Permit for Municipal Separate Storm Sewer Systems</i>
MSA	Magnuson-Stevens Fishery Conservation and Management Act
msl	mean sea level
MSRs	Municipal Service Reviews
MTIP	Metropolitan Transportation Improvement Program
MTP	Metropolitan Transportation Plan
MU-C	Corridor Mixed-Use
MU-NC	Neighborhood Mixed-Use
N <sub>2</sub> O	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
NAT	no action taken
NC	Neighborhood Commercial
NCCP	Natural Community Conservation Plan
NCCPA	Natural Community Conservation Planning Act
NDWA	North Delta Water Agency
NEPA	National Environmental Policy Act
NFIP	National Flood Insurance Program
NGOs	nongovernmental organizations
NHPA	National Historic Preservation Act
NMFS	National Marine Fisheries Service
NO	nitric oxide
NO <sub>2</sub>	nitrogen dioxide
NOAA	National Oceanic and Atmospheric Administration
NOI	notice of intent
NOP	Notice of Preparation
NO <sub>x</sub>	nitrogen oxide
NPDES	National Pollutant Discharge Elimination System
NPL	National Priorities List
NRC	National Research Council
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NSR	New Source Review
NTR	National Toxics Rule

NTUs	Nephelometric Turbidity Units
NWIC	Northwest Information Center
NWPs	Nationwide permits
O	Office
O&M	operations and maintenance
OES	California Office of Emergency Services
OHWM	ordinary high water mark
OSHA	Occupational Safety and Health Administration
P1GER	Phase 1 Geotechnical Evaluation Report
PAHs	polycyclic aromatic hydrocarbons
PFC	perfluorocarbons
PIR	problem identification report
PL	Public Law
PM	particulate matter
PM10	PM less than or equal to 10 microns in diameter
PM2.5	PM 2.5 microns in diameter or less
Porter-Cologne Act	Porter-Cologne Water Quality Control Act of 1969
ppb	parts per billion
ppm	parts per million
PPV	peak particle velocity
PRC	Public Resource Code
program elements	City to develop and implement six <i>minimum control measures</i>
project	West Sacramento General Plan update
PVC	polyvinyl chloride
PWWF	peak wet weather flow
RCRA	Resource Conservation and Recovery Act of 1976
RD	Reclamation District
Reclamation	U.S. Bureau of Reclamation
RHNA	Regional Housing Needs Allocation
RHNP	Regional Housing Needs Plan
RM	river mile
RMP	Risk Management Plan
RMS	root-mean-square
RMU	Riverfront Mixed-Use
ROG	reactive organic gases
RPS	Renewables Portfolio Standard
RT	Regional Transit

RTCP	Residential Traffic Calming Program
RTP	Regional Transportation Plan
RWQCB	Regional Water Quality Control Boards
SACOG	Sacramento Area Council of Government
SB	Senate Bill
SCMP	Subregional Corridor Mitigation Program
SCS	Sustainable Communities Strategy
SEMS	Standard Emergency Management System
SERA	Sierra Northern Railroad
SF <sub>6</sub>	sulfur hexafluoride
SFNA	Sacramento Federal Nonattainment Area
SIP	State Implementation Plan
SLR	sea level rise
SMAQMD	Sacramento Metropolitan Air Quality Management District
SMARA	Surface Mining and Reclamation Act of 1975
SO <sub>2</sub>	sulfur dioxide
SRA	shaded riverine aquatic
SRA <sub>s</sub>	State Responsibility Areas
SRCSD	Sacramento County Regional Sanitation District
SRFCP	Sacramento River Flood Control Project
SRRE <sub>s</sub>	Source Reduction and Recycling Elements
SRT <sub>P</sub>	Short Range Transit Plan
SRWTP	Sacramento Regional Wastewater Treatment Plant
SSC	species of special concern
SSMP	Sewer System Management Plan
State	State of California
State Water Board	State Water Resources Control Board
SVAB	Sacramento Valley Air Basin
SVP	Society of Vertebrate Paleontology
SWMP	Storm Water Management Plan
SWP	State Water Project
SWPPP	stormwater pollution prevention plan
TAC <sub>s</sub>	toxic air contaminants
Tanner Act	Toxic Air Contaminant Identification and Control Act
TCM <sub>s</sub>	traffic control measures
TDS	total dissolved solids
TIF	Traffic Impact Fee

TMDLs	Total Maximum Daily Loads
TMP	Transportation Management Plan
TNM	Traffic Noise Model
TSDFs	treatment, storage, and disposal facilities
TSM	Transportation System Management
TSS	Total suspended sediment
ULDC	Urban Levee Design Criteria
UPRR	Union Pacific Railroad
US	U.S. Highway
US	United States Route
US 50	US Highway 50
USACE	U.S. Army Corps of Engineers
USC	United States Code
USDOT	U.S. Department of Transportation
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
UST	underground storage tank
UWMP	Urban Water Management Plan
VCP	rimarily of vitrified clay
VdB	level in decibel units
VMT	vehicle miles traveled
WDL	Water Data Library
WDRs	Waste Discharge Requirements
WMP	Water Master Plan
WQO	Water Quality Order
WRDA	Water Resources Development Act
WSAFCA	West Sacramento Area Flood Control Agency
WSFD	West Sacramento Fire Department
WSLIP	West Sacramento Levee Improvement Program
WSPD	West Sacramento Police Department
WUSD	Washington Unified School District
YCSD	Yolo County Sheriff's Department
YCTD	Yolo County Transportation District
YHC	Yolo County Habitat Conservation Joint Powers Agency
Yolo Habitat Conservancy	Yolo County Habitat Conservation Joint Powers Agency
YSAQMD	Yolo-Solano Air Quality Management District

## ES.1 Purpose

This environmental impact report (EIR) has been prepared to evaluate and disclose the significant environmental impacts associated with implementation of the proposed West Sacramento General Plan update (project). This is an update of the City of West Sacramento's (City's) existing General Plan, with the exception of the housing element, which was adopted in 2013. Impacts are evaluated on the basis of the project's 2035 planning horizon. A copy of the draft General Plan update is provided on the accompanying CD at the end of this EIR.

The EIR is a "program" EIR, meaning that it is expected to be used in the future, after approval of the project or part of the project, when considering future development projects. To the extent that such future projects are within the scope of the program EIR, their CEQA analysis can be streamlined.

This EIR has been prepared in accordance with California Environmental Quality Act (CEQA) and the State CEQA Guidelines. Accordingly, it discusses the existing physical and regulatory settings for each of the resources analyzed here, describes the proposed project, and examines the project's potential to result in significant effects on the physical environment. In addition to disclosing significant environmental impacts, the EIR also proposes mitigation measures, where feasible, to minimize or otherwise avoid significant environmental impacts and reviews two project alternatives.

The purpose of this EIR is to inform the City's Planning Commission and City Council, other affected/responsible agencies, the public, and other interested parties of the potential environmental effects that are associated with the project. As authorized under CEQA Guidelines Section 15146, the general plan update's impacts are analyzed on a general scale, in keeping with the broad level of detail found in the general plan itself. Accordingly, the reader should not expect to find parcel-specific analyses here.

This EIR is an informational document. It neither approves nor denies the proposed project.

## ES.2 Project Overview

The City is updating its general plan to address changes in state and federal law, to reflect new policies and issues of interest to the City, and to ensure consistency with the Metropolitan Transportation Plan (MTP) and Sustainable Communities Strategy (SCS) adopted by the Sacramento Area Council of Governments (SACOG). The City is also adopting a climate action plan (CAP) to reduce greenhouse gas emissions within the city.

West Sacramento is located in Yolo County adjacent to the Sacramento River. Figure ES-1 shows its location in relation to the larger region.

## ES.2.1 General Plan Update

The City is proposing to comprehensively update its General Plan for the first time in more than a decade. The update integrates new state laws, including Senate Bill (SB) 5 mandating 200-year flood protection in urbanized areas, SB 375 relating to “sustainable communities strategies,” Assembly Bill 32 (and its progeny) relating to reducing greenhouse gas emissions, and the Complete Streets Act. Portions of the existing General Plan will be refreshed and reorganized into more functional elements, entailing amendments to the goals, policies, and implementation measures of the Land Use, Urban Structure and Design, and Public Facilities and Services elements. The existing Transportation and Circulation element is to be the new Mobility element, with additional measures addressing multi-modal transportation and complete streets issues. The existing Recreational and Cultural Resources, Natural Resources, Health and Safety, and Child Care elements will be reorganized into the new Parks and Recreation, Natural and Cultural Resources, Safety, and Healthy Community elements. The General Plan update also includes a new Economic Development element.

A CAP, with policies and implementation measures intended to reduce the City’s greenhouse gas emissions, is proposed to be adopted separately from the General Plan. The General Plan update does not include the Housing Element, which was most recently amended in 2013.

Listed below are some of the proposed changes to the General Plan.

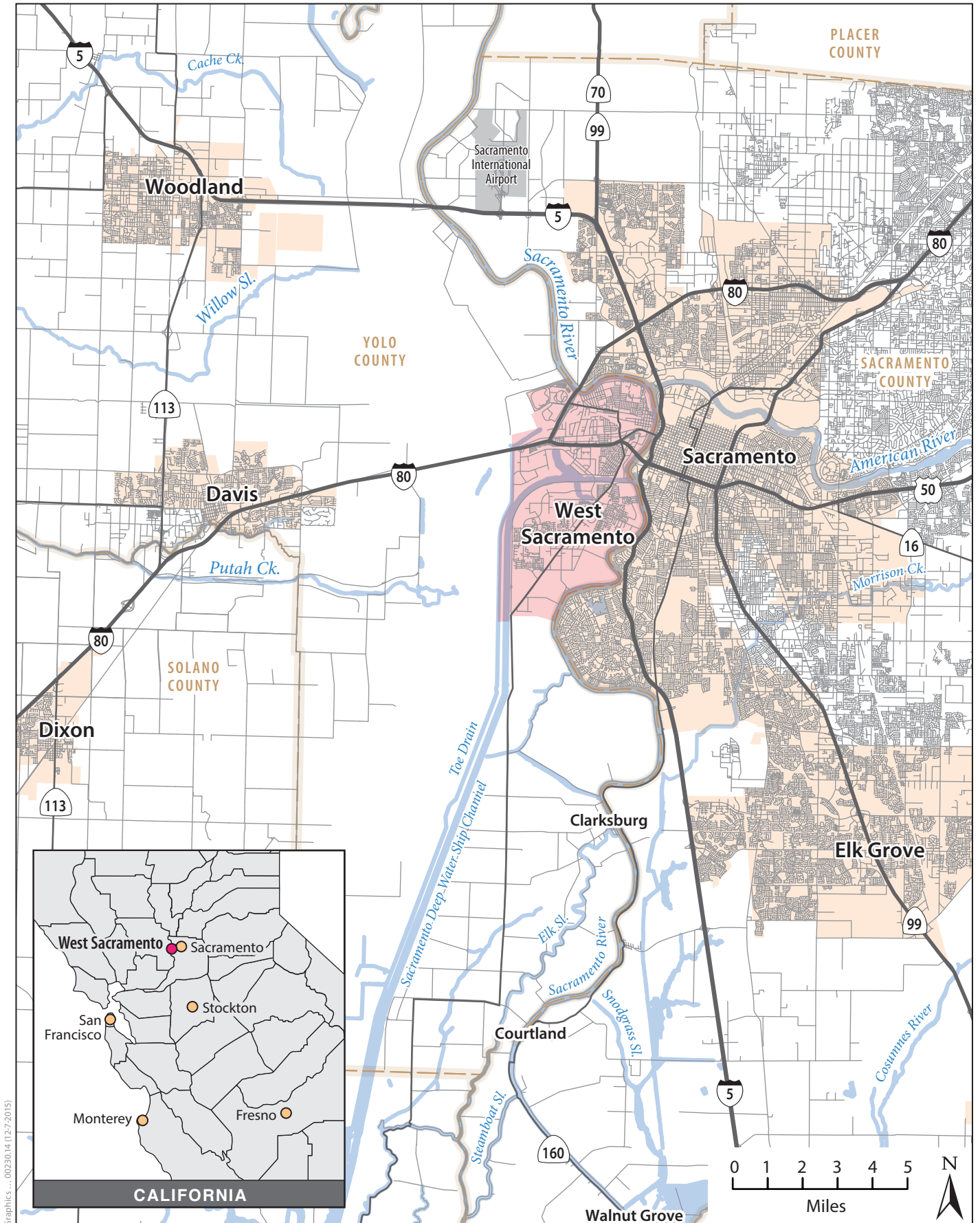
- The HRR (High Rise Residential) designation would be deleted, but the HR (High Density Residential) designation’s maximum density is proposed to be raised to 50 dwellings/acre, the density allowed in the HRR designation.
- The existing NC (Neighborhood Commercial) and CC (Community Commercial) designations are proposed to be deleted in favor of a C (Commercial) designation. The C designation would be oriented to local service.
- The existing GC (General Commercial) and O (Office) designations would be dropped.
- MU-C (Corridor Mixed Use) and MU-NC (Neighborhood Mixed Use) land use designations are proposed.

Figure ES-2 illustrates the updated General Plan land use designations.

## ES.3 Project Objectives

The proposed General Plan update has the following objectives.

- Incorporate goals, policies, and implementation measures into the General Plan that are consistent with current state law, including changes to California Planning Law enacted since the last major update of the General Plan in 1999.
- Adopt goals, policies, and implementation measures that reflect the City’s commitment to community sustainability. Specific examples include a vital central business district; compact, mixed-use developments near transit nodes; encouragement of urban infill where practical; revitalization of areas such as Stone Lock, Pioneer Bluff, and Seaway; flood protection; and passive and active recreation opportunities along the Sacramento River.
- Reflect the land use pattern and intensity set out in the SCS adopted by SACOG.

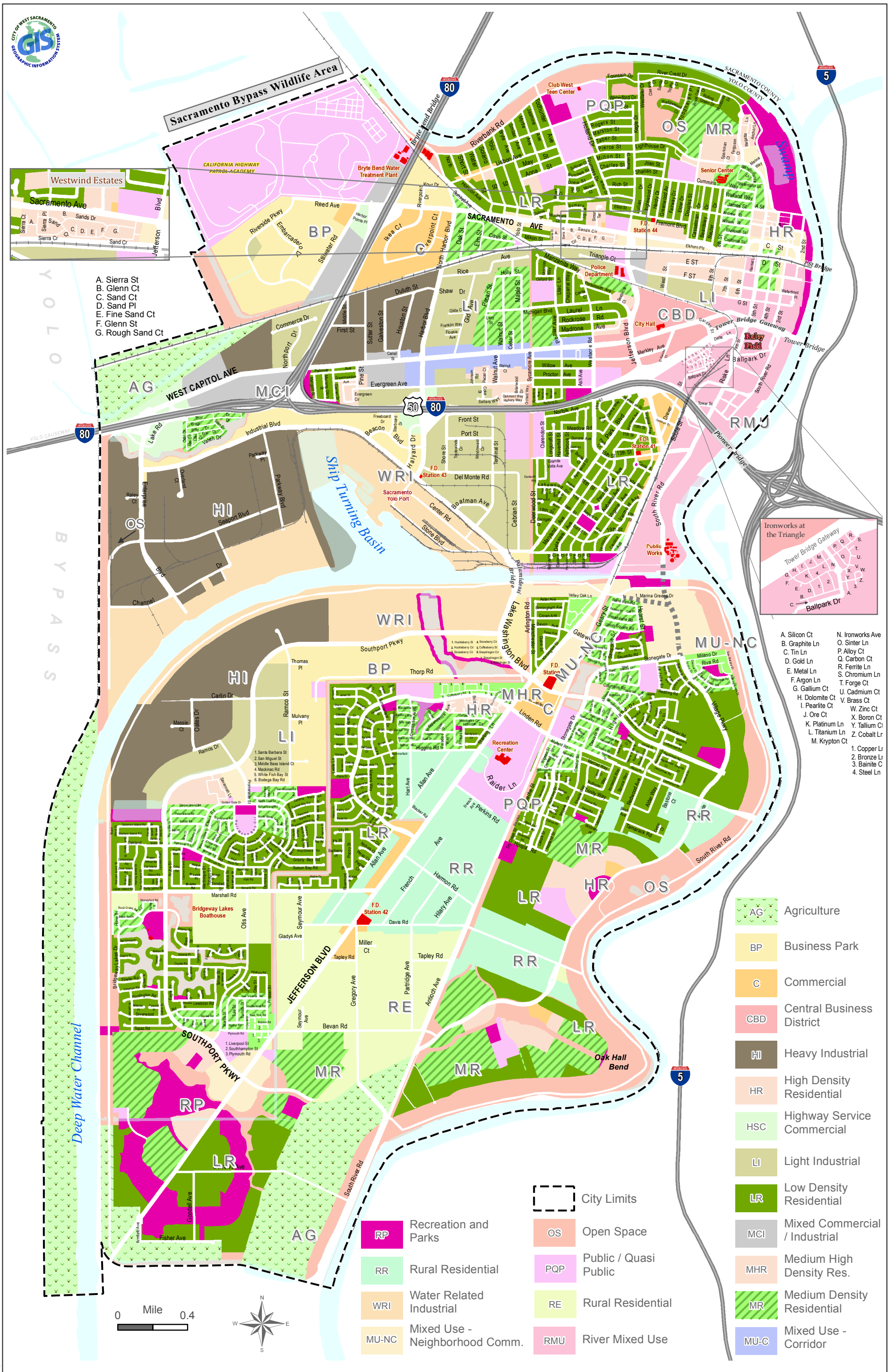


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**Figure ES-1**  
**Regional Location**





**Figure ES-2**  
**Proposed Land Use Designations**



- Adopt a CAP to reduce the city's emissions of greenhouse gases and conform to State CEQA Guidelines Section 15183.5 allowing the streamlining of CEQA analyses of projects that are consistent with the CAP.

## **ES.4 Project Impacts and Mitigation Measures**

Implementation of the project would result in a number of significant impacts on the environment. At the same time, the project contains many policies that are intended to minimize or mitigate these potential impacts. The analysis in this Program EIR considers the policies set forth in the proposed General Plan update when determining whether the project would result in a significant environmental impact. Where the policies are insufficient to avoid an impact, additional mitigation is identified. Table ES-1 lists the impacts and mitigation measures that have been identified in this EIR.

### **ES.4.1 Summary of Project Impacts**

The impacts and mitigation measures associated with the General Plan update as identified in the analyses presented in this EIR are listed in Table ES-1 at the end of this summary.

### **ES.4.2 Significant and Unavoidable Impacts**

The EIR has identified the following areas where, after implementation of feasible mitigation measures, the General Plan update may nonetheless result in impacts that cannot be fully mitigated to a less-than-significant level.

- Aesthetics
- Agricultural and Forestry Resources
- Air Quality
- Cultural Resources
- Greenhouse Gas Emissions
- Hydrology and Water Quality
- Noise
- Population and Housing
- Transportation/Traffic
- Utilities and Service Systems

## **ES.5 Project Alternatives**

CEQA requires the EIR to analyze a reasonable range of alternatives to the proposed project that (1) meet most or all of the project's objectives; (2) substantially reduce one or more of its significant effects; and (3) are potentially feasible. The City has examined two alternatives in this EIR: the proposed project and the No Project Alternative.

Below are brief summaries of each of the alternatives to the project that are examined in Section 5 of this EIR. See Chapter 4 for a more complete description of each of the alternatives and a qualitative comparison of their potential impacts. As required under CEQA, the range of alternatives includes the No Project Alternative—which, as authorized under Section 15126.6 of the State CEQA Guidelines, is examined at a lesser level of detail than the proposed project.

## **ES.6 Potential Areas of Controversy/Issues to be Resolved**

Pursuant to Section 15123 of the State CEQA Guidelines, the summary identifies areas of controversy known to the Lead Agency, including issues raised by agencies and the public. In addition, the summary section also identifies issues to be resolved. Each of these issues is discussed below.

A Notice of Preparation (NOP) for the Program EIR was distributed to the State Clearinghouse, responsible agencies, and other interested parties for a 30-day public review period from August 28, 2015 through September 28, 2015. In addition, a public scoping meeting was held at the West Sacramento City Hall Galleria, 1110 West Capitol Avenue, West Sacramento on September 14, 2015 from 2:00pm – 4:00pm. The NOP identified the following topics as being potentially significant impacts:

- 3.1 Aesthetics
- 3.2 Agricultural Resources
- 3.3 Air Quality
- 3.4 Biological Resources
- 3.5 Cultural Resources
- 3.6 Geology, Soils, and Paleontological Resources
- 3.7 Greenhouse Gas Emissions
- 3.8 Hazards and Hazardous Materials
- 3.9 Hydrology and Water Quality
- 3.10 Land Use and Planning
- 3.11 Mineral Resources
- 3.12 Noise
- 3.13 Population and Housing
- 3.14 Public Services
- 3.15 Recreation
- 3.16 Transportation and Traffic
- 3.17 Utilities and Service Systems

## **ES.7      How to Comment on this Draft EIR**

The Draft Program EIR will be available for public review for a 45-day public review period, beginning August 3, 2016 and ending September 19, 2016. During that time, members of public and agencies can submit written comments on the Draft Program EIR to the address provided below.

David W. Tilley Principal Planner  
West Sacramento Community Development Department  
1110 West Capitol Avenue, 2nd Floor  
West Sacramento, CA 95691  
davidt@cityofwestsacramento.org

After the end of the public review period and as part of preparing the Final EIR, the City will prepare written responses to all environmental issues raised. The Final EIR will consist of the Draft Program EIR, comments received, written responses to comments, and a list of commenters. It may also contain additional information necessary to respond to the comments. All public agencies that submit comments will be sent a copy of the City's response to their comment at least 10 days prior to the public hearing at which the Final EIR will be considered for approval by City Council.

The City Council will certify the Final EIR prior to taking action on the proposed General Plan update. At that time, the Council will adopt findings regarding the disposition of each significant effect identified in the Final EIR, as well as a statement of overriding considerations describing the specific benefits that outweigh the project's Significant and Unavoidable impacts.

**Table ES-1. Summary of Impacts and Mitigation Measures**

Impact	Level of Significance	Proposed Mitigation Measure(s)	Level of Significance after Mitigation
<b>Aesthetics</b>			
Impact AES-1: Substantial degradation of the existing visual character or quality of the site and its surroundings, including scenic vistas	Significant		Significant and unavoidable
Impact AES-2: Substantial damage to scenic resources, including but not limited to trees, rock outcroppings, and historic buildings along a scenic highway	No impact		
Impact AES-3: Creation of a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area	Significant	Mitigation Measure AES-3a: Create new Urban Structure and Design policies to apply minimum lighting standards and to reduce glare Mitigation Measure AES-3b: Amend Natural and Cultural Resources policies to apply minimum lighting standards Mitigation Measure AES-3c: Create new Natural and Cultural Resources policy to apply minimum lighting standards	Significant and unavoidable
<b>Agricultural and Forestry Resources</b>			
Impact AG-1: Conversion of Important Farmland to nonagricultural use	Significant		Significant and unavoidable
Impact AG-2: Conflict with existing zoning for agricultural use	Less than significant		Less than significant
Impact AG-3: Other changes in the existing environment that, due to their location or nature, could result in conversion of farmland to nonagricultural use	Less than significant		Less than significant
<b>Air Quality</b>			
Impact AQ-1: Conflict with or obstruction of implementation of the applicable air quality plan	Less than significant		Less than significant
Impact AQ-2: Potential to violate any air quality standard or contribute substantially to an existing or projected air quality violation	Significant	Mitigation Measure AQ-2: Implement construction dust control mitigation measures described in YSAQMD's CEQA Handbook	Significant and unavoidable

Impact	Level of Significance	Proposed Mitigation Measure(s)	Level of Significance after Mitigation
Impact AQ-3: Potential to result in a cumulatively considerable net increase of any criteria pollutant for which the project region is a nonattainment area for an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors)	Less than significant		Less than significant
Impact AQ-4: Exposure of sensitive receptors to substantial pollutant concentrations	Less than significant		Less than significant
Impact AQ-5: Creation of objectionable odors affecting a substantial number of people	Less than significant		Less than significant
<b>Biological Resources</b>			
Impact BIO-1: Potential for land use changes to result in the loss of special-status plants	Less than significant		Less than significant
Impact BIO-2: Potential for land use changes to result in the loss or disturbance of special-status wildlife and their habitats	Less than significant		Less than significant
Impact BIO-3: Potential for land use changes to result in the loss or disturbance of special-status fish and their habitats	Less than significant		Less than significant
Impact BIO-4: Potential for loss or disturbance of special-status fish from increased diversion of Sacramento River water to meet future water demand	Less than significant		Less than significant
Impact BIO-5: Potential for increased discharge of treated wastewater to result in the loss or disturbance of special-status fish and their habitats	Less than significant		Less than significant
Impact BIO-6: Potential for in-water construction projects and maintenance activities to result in the loss or disturbance of special-status fish and their habitats	Significant	Mitigation Measure BIO-6: Amend NCR-2.13 (Fisheries) to include in-water construction and maintenance activities	Less than significant
Impact BIO-7: Potential for land use changes to result in the loss of oak woodland and valley foothill riparian habitat	Significant	Mitigation Measure BIO-7: Amend NCR-2.9 (No Net Loss) to include riparian and associated SRA cover habitat and require the use of locally occurring native species	Less than significant
Impact BIO-8: Potential for land use changes to result in the loss of state- and federally protected wetlands and other waters through direct removal, filling, hydrological interruption, or other means	Less than significant		Less than significant

Impact	Level of Significance	Proposed Mitigation Measure(s)	Level of Significance after Mitigation
Impact BIO-9: Potential for land use changes to interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites	Less than significant		Less than significant
Impact BIO-10: Potential for updates to the General Plan biological resource policies to conflict with existing local policies or ordinances protecting biological resources, such as the West Sacramento tree mitigation ordinance	No impact		No impact
Impact BIO-11: Potential for land use changes to conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan	No impact		No impact
Impact BIO-12: Potential for land use changes and subsequent development to introduce or spread invasive plant species	Significant	Mitigation Measure BIO-12: Amend NCR-2.4 (Habitat Surveys) and NCR-2.14 (Public Areas) to avoid the introduction and minimize spread of invasive plants	Less than significant
<b>Cultural Resources</b>			
Impact CUL-1: Potential to cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5	Significant		Significant and unavoidable
Impact CUL-2: Potential to cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5	Significant	Mitigation Measure CUL-2: Require appropriate treatment for inadvertent discovery of archaeological resources	Significant and unavoidable
Impact CUL-3: Disturbance of any human remains, including those interred outside of formal cemeteries	Significant	Mitigation Measure CUL-3: Implement appropriate treatment for discovery of human remains	Significant and unavoidable

Impact	Level of Significance	Proposed Mitigation Measure(s)	Level of Significance after Mitigation
<b>Geology and Soils</b>			
Impact GEO-1: Exposure of people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving fault rupture	Less than significant		Less than significant
Impact GEO-2: Exposure of people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving strong seismic ground shaking; seismic-related ground failure, including liquefaction; or landslides	Less than significant		Less than significant
Impact GEO-3: Potential to result in substantial soil erosion or the loss of topsoil	Less than significant		Less than significant
Impact GEO-4: Location on a geologic unit or soil that is unstable or that would become unstable as a result of the project and potentially result in an onsite or offsite landslide or subsidence	Less than significant		Less than significant
Impact GEO-5: Location on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property	Less than significant		Less than significant
Impact GEO-6: Presence of soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems in areas where sewers are not available for the disposal of wastewater	Less than significant		Less than significant
Impact GEO-7: Direct or indirect destruction of a unique paleontological resource or site or unique geologic feature	Significant	Mitigation Measure GEO-7: Adopt new goal and policy to protect paleontological resources	Less than significant
<b>Greenhouse Gas Emissions</b>			
Impact GHG-1: Generation of greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment	Significant		Significant and unavoidable
Impact GHG-2: Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases	Significant		Significant and unavoidable

Impact	Level of Significance	Proposed Mitigation Measure(s)	Level of Significance after Mitigation
<b>Hazards and Hazardous Materials</b>			
Impact HAZ-1: Creation of a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials	Less than significant		Less than significant
Impact HAZ-2: Creation of a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment	Less than significant		Less than significant
Impact HAZ-3: Release of hazardous emissions or handling of hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school	Less than significant		Less than significant
Impact HAZ-4: Location on a site that is on a list of hazardous materials sites and the resultant creation of a significant hazard to the public or the environment	Less than significant		Less than significant
Impact HAZ-5: Location within an airport land use plan area or within 2 miles of a public airport or public use airport, resulting in a safety hazard for people residing or working in the planning area	Less than significant		Less than significant
Impact HAZ-6: Location within the vicinity of a private airstrip, resulting in a safety hazard for people residing or working in the planning area	No impact		No impact
Impact HAZ-7: Impairment of or physical interference with implementation of an adopted emergency response plan or emergency evacuation plan	Less than significant		Less than significant
Impact HAZ-8: Exposure of people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands	Less than significant		Less than significant



Impact	Level of Significance	Proposed Mitigation Measure(s)	Level of Significance after Mitigation
<b>Hydrology and Water Quality</b>			
Impact WQ-1: Violate any water quality standards or waste discharge requirements	Less than significant		Less than significant
Impact WQ-2: Substantially deplete groundwater supplies or interfere substantially with groundwater recharge, resulting in a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level that would not support existing land uses or planned uses for which permits have been granted)	Less than significant		Less than significant
Impact WQ-3: 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	Less than significant		Less than significant
Impact WQ-4: Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding onsite or offsite	Less than significant		Less than significant
Impact WQ-5: 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	Less than significant		Less than significant
Impact WQ-6: Otherwise substantially degrade water quality	Less than significant		Less than significant
Impact WQ-7: Place housing within a 100-year flood hazard area, as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map	Significant		Significant and unavoidable
Impact WQ-8: Place within a 100-year flood hazard area structures that would impede or redirect floodflows	Less than significant		Less than significant
Impact WQ-9: 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	Less than significant		Less than significant
Impact WQ-10: Contribute to inundation by seiche, tsunami, or mudflow	Less than significant		Less than significant

Impact	Level of Significance	Proposed Mitigation Measure(s)	Level of Significance after Mitigation
<b>Land Use and Planning</b>			
Impact LU-1: Physical division of an established community	Less than significant		Less than significant
Impact LU-2: 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	Less than significant		Less than significant
Impact LU-3: Conflict with any applicable habitat conservation plan or natural community conservation plan	Less than significant		Less than significant
<b>Mineral Resources</b>			
Impact MIN-1: Potential loss of availability of a known mineral resource that would be of value to the region and the residents of the state	No impact		No impact
Impact MIN-2: Potential loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan	No impact		No impact
<b>Noise</b>			
Impact NOI-1: Exposure of persons to or generation of noise levels in excess of standards established in a local general plan or noise ordinance or applicable standards of other agencies	Significant		Significant and unavoidable
Impact NOI-2: Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels	Significant	Mitigation Measure NOI-2: Add Vibration Standards Policy to the General Plan	Significant and unavoidable
Impact NOI-3: Potential to result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project	Significant		Significant and unavoidable
Impact NOI-4: Potential to result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project	Significant		Significant and unavoidable
Impact NOI-5: Location within an airport land use plan area, or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport and exposure of people residing or working in the project area to excessive noise levels	No impact		No impact

Impact	Level of Significance	Proposed Mitigation Measure(s)	Level of Significance after Mitigation
Impact NOI-6: Location in the vicinity of a private airstrip and exposure of people residing or working in the project area to excessive noise levels	No impact		No impact
<b>Population and Housing</b>			
Impact POP-1: Potential to induce substantial population growth in an area, either directly (e.g., by proposing new homes and businesses) or indirectly (e.g., through extension of roads or other infrastructure)	Significant		Significant and unavoidable
Impact POP-2: Displacement of a substantial number of existing housing units, necessitating the construction of replacement housing elsewhere	Less than significant		Less than significant
Impact POP-3: Displacement of a substantial number of people, necessitating the construction of replacement housing elsewhere	Less than significant		Less than significant
<b>Public Services</b>			
Impact PS-1: Potential to result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities	Significant	Mitigation Measure CUL-2: Require appropriate treatment for inadvertent discovery of archaeological resources Mitigation Measure CUL-3: Implement appropriate treatment for discovery of human remains Mitigation Measure WQ-3: Implement a Hydromodification Management Plan (HMP) in accordance with the City's Stormwater Permit	Less than significant
<b>Recreation</b>			
Impact REC-1: Potential to increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated	Less than significant		Less than significant
Impact REC-2: Construction or expansion of recreational facilities that might have an adverse physical effect on the environment	Significant	Mitigation Measure BIO-6: Amend NCR-2.13 (Fisheries) to include in-water construction and maintenance activities	Less than significant

Impact	Level of Significance	Proposed Mitigation Measure(s)	Level of Significance after Mitigation
Mitigation Measure CUL-2: Require appropriate treatment for inadvertent discovery of archaeological resources Mitigation Measure CUL-3: Implement appropriate treatment for discovery of human remains Mitigation Measure WQ-3: Implement a Hydromodification Management Plan (HMP) in accordance with the City’s Stormwater Permit			
<b>Transportation/Traffic</b>			
Impact TRA-1: Deterioration of intersection level of service	Significant		Significant and unavoidable
Impact TRA-2: Deterioration of level of service for freeway ramps and segments	Less than significant		Less than significant
Impact TRA-3: Increase in daily traffic volumes on arterial or non-residential collector road segments to from an acceptable level to a level greater than the maximum desirable daily volume	Significant		Significant and unavoidable
Impact TRA-4: Increase in daily traffic volumes on residential streets from an acceptable level to an unacceptable level	Significant		Significant and unavoidable
Impact TRA-5: Potential to conflict with adopted policies, plans, or programs regarding bicycle or pedestrian facilities, or otherwise decrease the performance or safety of such facilities	Less than significant		Less than significant
Impact TRA-6: Potential to adversely affect public transit operations, or fail to adequately provide access to transit	Less than significant		Less than significant
Impact TRA-7: Potential to result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks	Less than significant		Less than significant

Impact	Level of Significance	Proposed Mitigation Measure(s)	Level of Significance after Mitigation
<b>Utilities and Service Systems</b>			
Impact UT-1: Exceedance of wastewater treatment requirements of the Central Valley Regional Water Quality Control Board	Less than significant		Less than significant
Impact UT-2: Potential to require new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects	Less than significant		Less than significant
Impact UT-3: Potential to require new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects	Significant		Significant and unavoidable
Impact UT-4: Potential to result in insufficient water supplies to serve the project from existing entitlements and resources, or a need for new or expanded entitlements	Significant		Significant and unavoidable
Impact UT-5: Potential to result in a determination that wastewater treatment facilities serving the planning area have adequate capacity to serve the area's projected demand in addition to the provider's existing commitments	Less than significant		Less than significant
Impact UT-6: Insufficient permitted landfill capacity to accommodate the planning area's solid waste disposal needs	Less than significant		Less than significant
Impact UT-7: Failure to comply with federal, state, and local statutes and regulations related to solid waste	Less than significant		Less than significant

The City of West Sacramento (City) is updating its General Plan to address changes in state and federal law, to reflect new policies and issues of interest to the City, and to ensure consistency with the Metropolitan Transportation Plan (MTP) and Sustainable Communities Strategy (SCS) adopted by the Sacramento Area Council of Governments (SACOG). The City is also adopting a climate action plan (CAP) to reduce greenhouse gas emissions within the city. This environmental impact report (EIR) has been prepared to evaluate and disclose the significant environmental impacts associated with implementation of the proposed West Sacramento General Plan update (project).

## 1.1 The California Environmental Quality Act

This EIR has been prepared according to California Environmental Quality Act (CEQA) California Resources Code Section 21000 et seq. and the Guidelines for the California Environmental Quality Act (Title 14 California Code of Regulations [CCR] Chapter 3). It evaluates the potential environmental impacts associated with implementation of the proposed West Sacramento General Plan update (project). The text of the proposed General Plan update is provided on the accompanying CD.

### 1.1.1 Purpose of this Environmental Impact Report

The purpose of this EIR is to inform City decision makers, representatives of other affected/responsible agencies, the public, and other interested parties of the potential environmental effects that may be associated with the project; identify mitigation measures to reduce those effects; and analyze a range of alternatives to the project that would reduce one or more of its significant effects.

According to Section 15002 of the CEQA Guidelines, the basic purposes of CEQA are to accomplish the following.

- Inform government decision makers and the public about the potential significant environmental effects of proposed activities.
- Identify ways that environmental damage can be avoided or significantly reduced.
- Prevent significant, avoidable damage to the environment by requiring changes in projects through the use of alternatives or mitigation measures when the governing agency finds the changes to be feasible.
- Disclose to the public the reasons why a governmental agency approved the project in the manner the agency chose if significant environmental effects are involved.

The process of preparing an EIR involves the following discrete steps.

- Notice of Preparation (NOP). Prior to preparing the Draft EIR, the lead agency releases an NOP to solicit the comments of public agencies and interested organizations and individuals regarding the scope and content of the EIR. The NOP is available for comment for at least 30

days. An NOP was distributed for this EIR on August 28, 2015. The comments to the NOP received from agencies and the public are included in Appendix A of this EIR.

- Scoping Meeting. A scoping meeting to offer an additional opportunity for input prior to preparation of the Draft EIR. A scoping meeting was held for public agencies and members of the public at the West Sacramento City Hall Galleria, 1110 West Capitol Avenue, West Sacramento on September 14, 2015 from 2:00pm – 4:00pm
- Preparation and release for public review and comment of the Draft EIR. The Draft EIR must be available for 45 days for review and comment by public agencies and interested organizations and individuals.
- Preparation of the Final EIR. The Final EIR will present the comments received during the public review period (and a complete list of commenters), written responses to the comments related to environmental issues, and any revisions that are made to the Draft EIR in response to the comments. The City Council will certify the Final EIR prior to taking action on the project.
- Adoption of findings and a statement of overriding considerations. The City Council will adopt findings that describe how each significant effect is being addressed. Because the project will result in significant and unavoidable impacts, the City will also adopt a statement of overriding considerations that explains the specific benefits of adopting the project.

## 1.1.2 Level of Detail in this EIR

The most common type of EIR, the project-level EIR, analyzes the impacts of an individual activity or specific project. Like all EIRs, it must include the contents required by CEQA and the State CEQA Guidelines. Project EIRs are generally prepared for specific site-development projects, such as subdivisions, commercial centers, highway interchanges, and so on.

Where the project consists of a series of actions or activities, a *program EIR* can be prepared (CEQA Guidelines Section 15168). Once it is adopted, the program EIR will be used to streamline the later environmental analysis of these activities. Typically, because not all the components of the program are known in detail, the Program EIR will not be detailed enough to analyze all aspects of the later activities. If the later proposal would have effects that were not analyzed in the Program EIR or is an activity not included in the Program EIR, either a new EIR or a new Negative Declaration would be prepared to analyze that project.

On the other hand, if the agency finds that no new or more severe effects could occur that had not been analyzed in the program EIR, the agency can approve the activity as being within the scope of the activities described in and analyzed by the program EIR, and no new environmental document would be required. If a specific project is within the scope of the program EIR, but would result in a new or more severe impact, then a subsequent or supplemental EIR or Mitigated Negative Declaration would be prepared, its analysis focused on the new or more severe effects.

This EIR is a program EIR that presents program-level analysis of the General Plan update. Specifics of the General Plan update are described in Chapter 2, *Program Description*.

This EIR considers the potential environmental effects of implementing the General Plan update. The State CEQA Guidelines provide that “[t]he degree of specificity required in an EIR will correspond to the degree of specificity involved in the underlying activity which is described in the EIR” (State CEQA Guidelines 15146). The General Plan update is a broad statement of policies not

proposing any specific development project. Accordingly, this EIR “need not be as detailed as an EIR on ... specific construction projects” (State CEQA Guidelines Section 15146). Further actions or procedures necessary to implement the updated General Plan may include the processing of zoning plans, specific plans, tentative tract maps, site design plans, building permits, and grading permits.

When determining whether the project would result in a significant environmental impact, the EIR also considers the extent to which updated General Plan policies would act to reduce its effects. Where the General Plan policies would not be sufficient to reduce impacts to a less-than-significant level and there is feasible mitigation that would do so, the EIR identifies that mitigation. For purposes of this EIR, *mitigation* means specific policies that can be adopted to avoid the impact or reduce it to a less-than-significant level.

Environmental impacts cannot always be mitigated to a level that is considered less than significant. In accordance with Section 15093(b) of the State CEQA Guidelines, if a lead agency approves a project that has significant impacts that cannot be mitigated (i.e., significant and unavoidable impacts), the agency cannot approve the project without specifying in writing the project benefits that justify its approval. Because a general plan involves land uses for an entire county, most general plan EIRs identify significant and unavoidable impacts. This EIR is no exception. As mentioned above, prior to approving the project in final form, the County will adopt a “statement of overriding considerations” that describes the specific benefits that outweigh the significant and unavoidable impacts of the project.

This EIR addresses potential significant adverse environmental impacts associated with development pursuant to adoption of the General Plan update. The potential impacts of the project are analyzed in comparison to existing conditions, except as noted.

### 1.1.3 Document Format

This Program EIR is organized into the following sections.

- The Executive Summary presents an overview of the contents and findings presented in this document. It also contains a brief description of the proposed project, the alternatives, areas of known controversy, and summary tables listing all project impacts and comparisons between alternatives.
- Chapter 1, *Introduction*, describes this EIR’s purpose and legal requirements, as well as its intended use. It contains an outline of the document and a list of the environmental issues that are discussed in this EIR.
- Chapter 2, *Project Description*, describes the proposed General Plan update and the project objectives. The full proposed General Plan update is provided on a CD included with this EIR.
- Chapter 3.0, *Impact Analysis*, presents the environmental analysis by environmental topic. Discussion of existing setting, thresholds of significance impacts, and mitigation measures by environmental topic (e.g., aesthetics, air quality, and noise) is organized as shown below.
  - 3.1 Aesthetics
  - 3.2 Agricultural Resources
  - 3.3 Air Quality
  - 3.4 Biological Resources



- 3.5 Cultural Resources
- 3.6 Geology, Soils, and Paleontological Resources
- 3.7 Greenhouse Gas Emissions
- 3.8 Hazards and Hazardous Materials
- 3.9 Hydrology and Water Quality
- 3.10 Land Use and Planning
- 3.11 Mineral Resources
- 3.12 Noise
- 3.13 Population and Housing
- 3.14 Public Services
- 3.15 Recreation
- 3.16 Transportation and Traffic
- 3.17 Utilities and Service Systems
- Chapter 4, *Alternatives Analysis*, describes the alternatives screening process and assesses the impacts of project alternatives.
- Chapter 5, *Other CEQA Considerations*, presents discussions of additional topics required by CEQA, including cumulative impacts, growth-inducing impacts, significant and unavoidable impacts, and significant irreversible environmental changes.
- Chapter 6, *List of Preparers*, identifies the people who prepared the EIR.
- The Appendices contain copies of the NOP and comment letters, the texts of the proposed General Plan and ALUCP updates, and technical reports.

## 1.2 Intended Use of this EIR

The West Sacramento Planning Commission and City Council will use the EIR to inform themselves of the impacts of the proposed project before taking action on the project. They will also consider other information and testimony submitted during deliberations on the project. After weighing this information, they will make their decisions.

This EIR is prepared for the purpose of analyzing, at a broad scale, the environmental impacts of the proposed General Plan update. Accordingly, this EIR does not take a parcel-specific view or provide a parcel-specific analysis of potential impacts.

The City may implement the following discretionary actions based on this EIR.

- Adoption of the West Sacramento General Plan update.
- Future zoning actions necessary to make zoning consistent with the General Plan.

## 1.3 Reviewing an EIR

### 1.3.1 Making Effective Comments

The City will accept written comments during the review period described below. Please focus your comments on the adequacy of the Draft Program EIR.

### 1.3.2 Submitting Comments

The Draft EIR will be available for public review for the statutory 45-day public review period, beginning **August 3, 2016**. During that time, agency representatives and members of public will have the ability to submit written comments on the Draft EIR to the address provided below.

City of West Sacramento Community Development Department  
1110 West Capitol Avenue, 2nd Floor  
West Sacramento, CA 95691  
Contact: David W. Tilley, Principal Planner  
Phone: 916.617.4645  
davidt@cityofwestsacramento.org

## 1.4 Final EIR

After the end of the public review period and as part of preparing the Final EIR, the City will prepare written responses to all environmental issues raised through the public review process. The Final EIR will present the comments received, written responses to comments, a complete list of commenters, and revisions made to the Draft EIR in response to comments received. It may also contain additional information necessary to respond to the comments. All public agencies that submit comments will be sent a copy of the City's response to their comment at least 10 days prior to the public hearing at which the Final Program EIR will be considered for approval by the City Council.

The West Sacramento City Council will certify the Final Program EIR prior to taking separate actions on the proposed project. At that time, they will adopt findings regarding the disposition of each significant effect identified in the Final Program EIR, as well as a statement of overriding considerations describing the specific benefits that outweigh the projects significant and unavoidable impacts.

The project consists of the proposed comprehensive update to the City of West Sacramento's (City's) General Plan.

## **2.1 Project Setting**

### **2.1.1 Background**

Following its incorporation, the City adopted its first General Plan in 1990 and in 2000 adopted a broad update to the General Plan. Other incremental updates to individual elements have been approved over the years as well. The vision expressed in the General Plan includes creation of a vibrant central city, transition away from a mix of older commercial and industrial uses to more viable uses, planned expansion into the Southport area, and a renewed emphasis on reclaiming the Sacramento River waterfront.

Since 2000, the city has continued to grow into the vision expressed in the 2000 General Plan. The central city has been revitalized by actions and developments such as improvements to West Capitol Avenue, a new city hall, library, community college, transit center and other community facilities, the Raley Field baseball stadium, and compact new mixed-use developments. The riverfront has been and continues to be improved with parks, trails, and other amenities. Southport has been the primary residential growth area, while major retail has been developed in the northwestern portion of the city along Interstate (I)-80.

In 1990, the city's population was 28,898 residents (Department of Finance 2012). The city's 2016 population is estimated to be approximately 53,082 (Department of Finance 2016). West Sacramento is on course to transition from a suburban community to an urban city as it embraces the regional Sustainable Communities Strategy (SCS) adopted by the Sacramento Area Council of Governments (SACOG) as part of the Metropolitan Transportation Plan (MTP). A key strategy of that plan (intended to reduce greenhouse gas [ghg] emissions) is to promote compact, urban-density development patterns in areas that are well served by transit.

### **2.1.2 Location**

The city is located in eastern Yolo County across the Sacramento River from Sacramento (Figure 2-1). It is bounded by the Sacramento River on the east and the Yolo Bypass on the west. I-80 crosses the northwestern part of the city; U.S. Highway (US) 50/Capital City Freeway bisects the city east-west through the center of town (Figure 2-2).

### **2.1.3 Existing Conditions and Land Uses**

Existing conditions and land uses within the General Plan planning area (i.e., the West Sacramento city limits) are discussed in Chapter 3, *Impact Analysis*. With few exceptions, the existing conditions constitute the baseline against which future development proposed in the 2035 General Plan is

compared. The extent of the change between existing conditions and future planned uses determines the significance of the change for CEQA purposes.

For most purposes, the study area of this EIR corresponds to the planning area. Exceptions are the study areas for air quality, greenhouse gas emissions, traffic, and cumulative impacts, all of which extend beyond the planning area.

Existing land uses in the city cover the spectrum from small, single-family residences to industrial complexes and the Port of Sacramento. The northwestern quadrant, including the areas around the Port of Sacramento, is largely industrial and commercial. The northeastern quadrant includes the central business district; Raley Field; commercial and office uses; and existing and developing residential neighborhoods such as the Bridge District and the established neighborhoods of Broderick and Bryte north of Sacramento Avenue and along Park Boulevard north of the Sacramento Deepwater Ship Channel. The area immediately south of the Sacramento Deepwater Ship Channel is largely industrial. Farther south, the Southport area contains residential areas and associated commercial uses. Portions of Southport remain rural-residential in character, and its southern tier is still largely undeveloped.

## 2.1.4 Existing General Plan

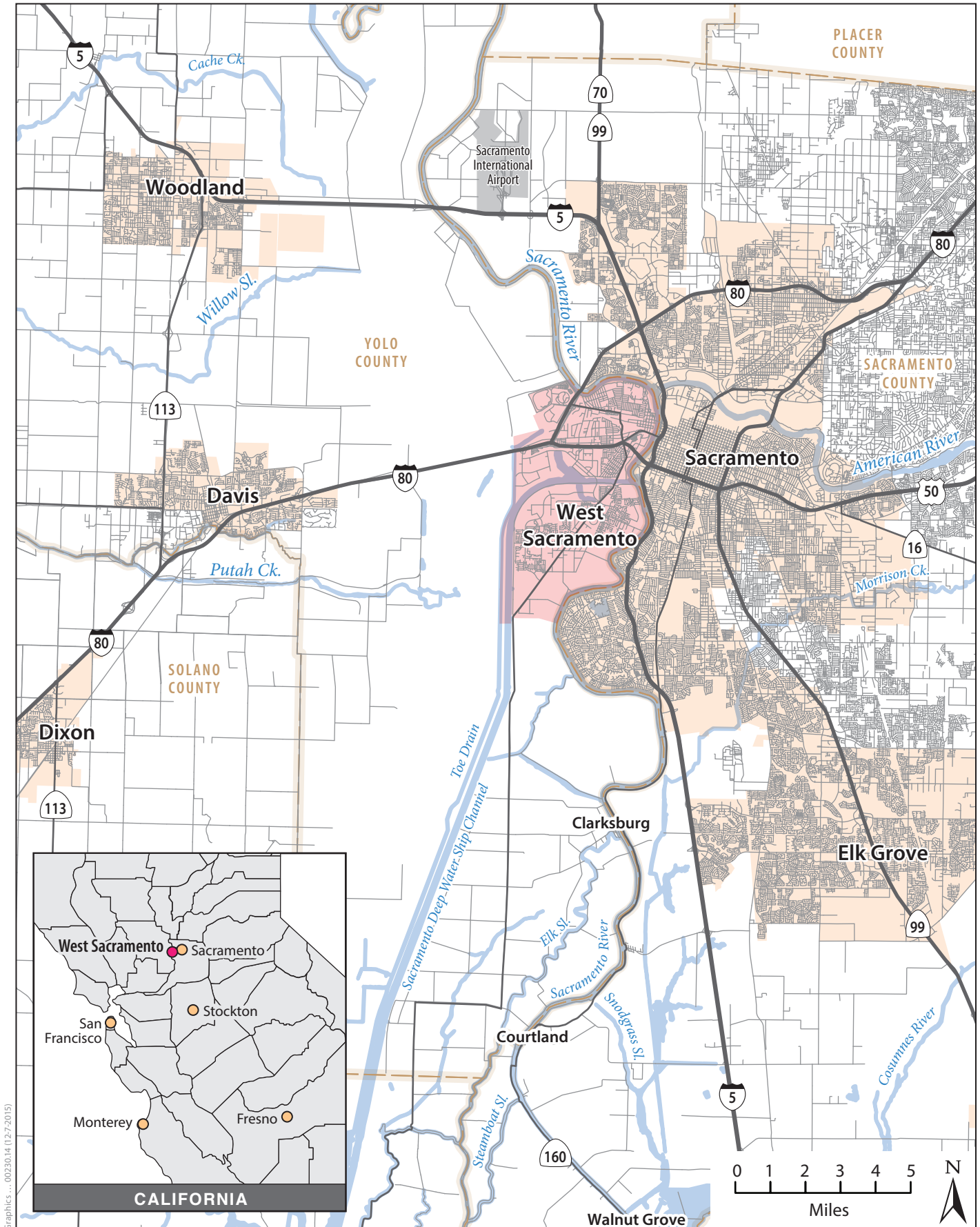
The West Sacramento General Plan consists of the following elements: Land Use, Housing, Transportation and Circulation, Public Facilities and Services, Recreational and Cultural Resources, Natural Resources, Health and Safety, Urban Structure and Design, and Child Care. These elements reflect the City's concern for its environment and people, in addition to policies guiding future development.

The City's development policies are also expressed in a number of other plans that are subordinate to the General Plan. These include the Bridge District Specific Plan, Grand Gateway Master Plan, Southport Framework Plan, and Washington Specific Plan.

## 2.2 Project Objectives

The City's purpose in proposing the project is to comprehensively update the General Plan's goals, policies, and implementation measures to reflect the City's preferences for future development and to conform to current state law. The General Plan has the following fundamental objectives.

- Incorporate goals, policies, and implementation measures into the General Plan that are consistent with current state law, including changes to California Planning Law enacted since the last major update of the General Plan in 2000.
- Adopt goals, policies, and implementation measures that reflect the City's commitment to community sustainability. These include a vital central business district; compact, mixed-use developments near transit nodes; encouragement of urban infill where practical; revitalization of areas such as Stone Lock, Pioneer Bluff, and Seaway; flood protection; and passive and active recreation opportunities along the Sacramento River.
- Reflect the land use pattern and intensity set out in the Sustainable Communities Strategy adopted by SACOG.

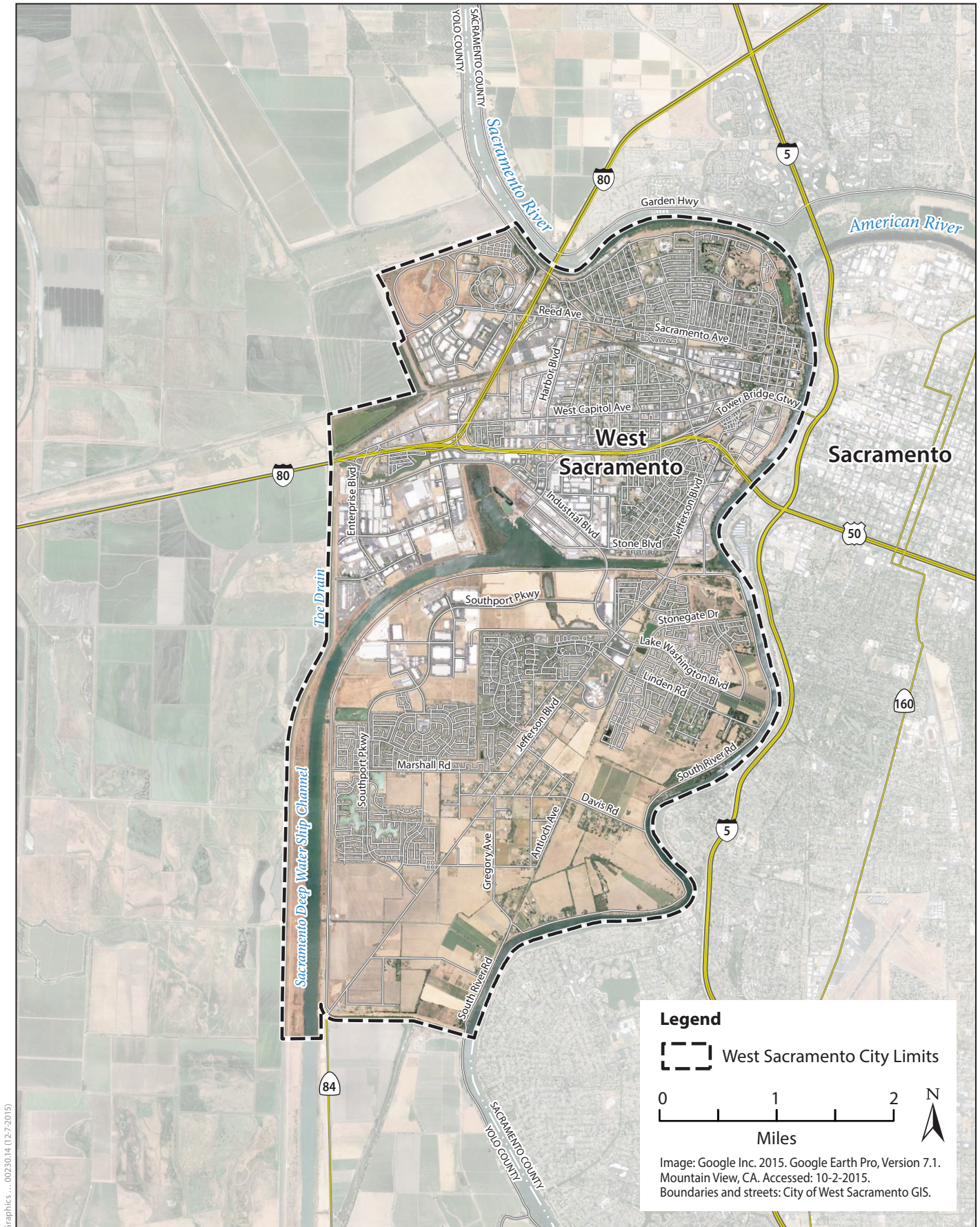


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**Figure 2-1**  
**Regional Location**





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**Figure 2-2**  
**City Limits and Planning Area**



- Adopt a climate action plan (CAP) to reduce the city’s emissions of greenhouse gases and conform to CEQA Guidelines Section 15183.5 allowing the streamlining of CEQA analyses of projects that are consistent with the CAP.
- Establish one or more enhanced infrastructure financing districts (EIFD) (Government Code Section 53398.50 et seq.) that may cover the entire city with the exception of the portion of the city subject to the Bridge District EIFD. The purpose of an EIFD would be to provide financing for public capital facilities described in the City’s Water, Sewer, Drainage, and Traffic Master Plans; public flood control improvements; and other projects of communitywide significance that provide significant benefits to the EIFD or the City, all as described in the EIFD plan.
- Remove planned development text from several antiquated planned development areas around the city, leaving the underlying zoning and planned development designations in place.
- Provide the foundation for subsequent implementation steps, such as revisions to Title 17 (Zoning) of the City’s municipal code.
- Allow for subsequent environmental documents to tier from the General Plan EIR to the extent permissible.

## 2.2.1 Changes to the General Plan

The City is proposing to comprehensively update its General Plan for the first time in more than a decade. The update integrates new state laws, including Senate Bill (SB) 5 mandating 200-year flood protection in urbanized areas, SB 375 relating to “sustainable communities strategies,” Assembly Bill 32 (and its progeny) relating to reducing greenhouse gas emissions, and the Complete Streets Act. Portions of the existing General Plan are proposed to be refreshed and reorganized into more functional elements.

This reorganization includes amendments to the goals, policies, and implementation measures of the Land Use, Urban Structure and Design, and Public Facilities and Services elements. The existing Transportation and Circulation element is to be the new Mobility element, with additional measures addressing multimodal transportation and complete streets issues. The existing Recreational and Cultural Resources, Natural Resources, Health and Safety, and Child Care elements are to be reorganized into the new Parks and Recreation, Natural and Cultural Resources, Safety, and Healthy Community elements. The update also includes a new Economic Development element.

A CAP with policies and implementation measures intended to reduce the City’s GHG emissions is proposed to be adopted separately from the General Plan. The update does not include the Housing Element, which was most recently amended in 2013 and approved by the Department of Housing and Community Development.

The basic direction and policies of the proposed General Plan elements are characterized by the proposed General Plan goals that are summarized below. These goals provide an overview of the General Plan’s direction.

The full text of the proposed amendments and of the proposed General Plan update, including the specific policies and implementation programs for each of the elements, is available for review during business hours at the Planning Division of the Community Development Department on the second floor of the West Sacramento City Hall at 1110 West Capitol Avenue, and online at [http://www.cityofwestsacramento.org/city/depts/comdev/general\\_plan\\_2035.asp](http://www.cityofwestsacramento.org/city/depts/comdev/general_plan_2035.asp).

The proposed amendments will be subject to consideration by the City's Planning Commission and City Council at public hearings. The role of the Planning Commission is to review and recommend the amendments to the City Council. After a public hearing, the Council will deliberate on and adopt the General Plan update.

## 2.2.2 Growth Forecasts

Development of the General Plan update and analysis of its effects were built on certain assumptions pertaining to future growth. The City developed growth projections based on regional growth forecasts developed by SACOG.

The forecasting process entailed establishing two planning horizons: 2020 and 2035. The 2020 forecast assumed a level of growth consistent with completion of projects in the city that either are underway or have been approved. The 2035 forecast is based on SACOG's 2035 MTP forecasts, which the City adjusted and updated using specific knowledge of local conditions, while maintaining the overall level of growth in the city forecast by SACOG. The forecasting methodology is described in greater detail in Section 3.16, *Transportation/Traffic*.

The growth in households and employment associated the growth projections is summarized in Table 2-1.

**Table 2-1. Citywide Growth Projections**

Metric	Existing (2014)	2020	Growth	2035	Growth
Households	17,817	19,157	1,340	32,568	14,751
Employment	25,208	27,089	1,181	54,043	28,835

## 2.3 Project Elements

### 2.3.1 Land Use Element

The proposed Land Use Element focuses on creating a compatible and complementary mix of housing, employment, retail, mixed-use, industrial, and service uses that contribute to West Sacramento's economy, environment, and quality of life. Under its provisions, existing and emerging neighborhoods would continue to develop as planned, but they would be enhanced with additional housing opportunities and mixed-use development. New and revitalized urban mixed-use districts and corridors would provide new opportunities for compatible and integrated housing, retail, and office uses and enhance the city's urban structure. Industrial uses are planned to continue in and around the Port of West Sacramento and in northwestern portions of the city. The amended Land Use Element would place a new emphasis on sustainability and the efficient use of land. It would also recognize the City's commitment to regional planning, particularly the Regional Blueprint and MTP/SCS. As amended, the Land Use Element would include the following goals (supported by related policies and implementation programs).

**LU-1:** To provide for sustainable, orderly, well planned, and balanced growth that meets the needs of residents and businesses, uses land efficiently, and is supported by adequate infrastructure.



**LU-2:** To develop local and support regional and statewide plans and strategies to grow efficiently, fund sustainable transportation improvements, and reduce greenhouse gas emissions while meeting local housing needs.

**LU-3:** To promote the development of complete residential neighborhoods that include a range of residential densities and a variety of housing types, and address the housing needs of various age and socio-economic groups who reside in West Sacramento.

**LU-4:** To promote the development of distinct, well-designed commercial centers that provide convenient neighborhood retail and services, maximize community commercial and regional shopping opportunities, and expand employment opportunities.

**LU-5:** To promote the development of unique higher-density and intensity mixed-use districts and corridors that provide civic and cultural activities; include a range of residential, retail, and employment uses; and serve as both visitor destinations and places of commerce.

**LU-6:** To encourage, facilitate, and provide support for the location of new light, heavy, and water-related industrial uses and retention of existing industry in appropriate locations.

**LU-7:** To designate adequate land for development of public and quasi-public uses to support existing and new residential, commercial, and industrial land uses.

**LU-8:** To protect open space for its recreational, agricultural, safety, and environmental value and provide adequate parks and open space areas throughout the city.

The updated Land Use Element would change a number of the General Plan's land use designations, as summarized below.

- The maximum density in the Low-Density Residential (LR) designation would be increased from 5 to 6 dwelling units per acre (DUA).
- A new Medium High-Density Residential (MHR) designation is proposed, with a maximum density of up to 20 DUA.
- The High Rise Residential (HRR) designation would be deleted, and the High-Density Residential (HR) designation's maximum density is proposed to be raised to 50 DUA, the density currently allowed in the HRR designation.
- The existing Neighborhood Commercial (NC) and Community Commercial (CC) designations are proposed to be deleted in favor of a Commercial (C) designation. The C designation would be oriented to local service, and would allow mixed use with a residential density of up to 20 DUA. It would have a minimum floor area ratio (FAR) of 0.25 and a maximum FAR of 0.50.<sup>1</sup>
- The maximum FAR in the Highway-Service Commercial (HSC) designation would be increased from 0.40 to 0.50.
- The existing General Commercial (GC) and Office (O) designations would be dropped.
- The Riverfront Mixed-Use (RMU) designation would have a new cap on residential density of 120 DUA (this designation currently has no maximum density limit) and its minimum density would be increased from 25 to 40 DUA.
- New Corridor Mixed-Use (MU-C) and Neighborhood Mixed-Use (MU-NC) designations are proposed. The MU-C designation would be applied along major travel corridors with a minimum/maximum FAR range of 0.3/3.0 and minimum/maximum residential density range of

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<sup>1</sup> FAR is the ratio of the area within the building to the area of the lot on which the building is located. A 1,500-square-foot building on a 6,000-square-foot lot would have a FAR of 0.25.

20/60 DUA. The MU-NC designation would have a minimum/maximum FAR range of 0.3/1.5 and minimum/maximum residential density range of 12/60 DUA.

- The minimum/maximum residential density range in the Central Business District (CBD) designation would be 20/60 DUA. The current CBD designation has a minimum density of 12 DUA and no maximum density.
- The proposed Agriculture (AG) designation replaces the existing AG & AC-1 designation, but its density and land use provisions would remain the same as AG & AC-1.

Figure 2-3 illustrates the distribution, density, and intensity of future land uses under the proposed Land Use Element. For purposes of this analysis, buildout under the General Plan is assumed to be 70% of the theoretical full buildout if each parcel within the City were developed by 2035 at the greatest density and intensity allowed under the General Plan. Note that Figure 2-3 reflects the current planned land uses for the LSP area, not those proposed under the LSP.

### 2.3.2 Urban Structure and Design Element

This new element would work in conjunction with the Land Use Element to create a well-organized and aesthetically pleasing city design and configuration. At the citywide level, it would provide goals and policies relating to building and site design, streetscape design, the visual patterns of land use, and the overall structure of the city, including how it connects different areas and transitions from rural areas to urban core. The Urban Structure and Design Element would include the following goals (supported by related policies and implementation programs).

**UD-1:** To promote development and urban design that creates neighborhoods, districts, centers, and corridors that are unique and contribute positively to the overall urban structure and character of West Sacramento.

**UD-2:** To provide a distinct and visually-pleasing experience for residents and visitors entering gateways to West Sacramento and entryways to the city's unique neighborhoods, districts, and corridors.

**UD-3:** To promote West Sacramento's waterfront as the active and vibrant urban core of the city that celebrates the Sacramento River as the focus of development and activity.

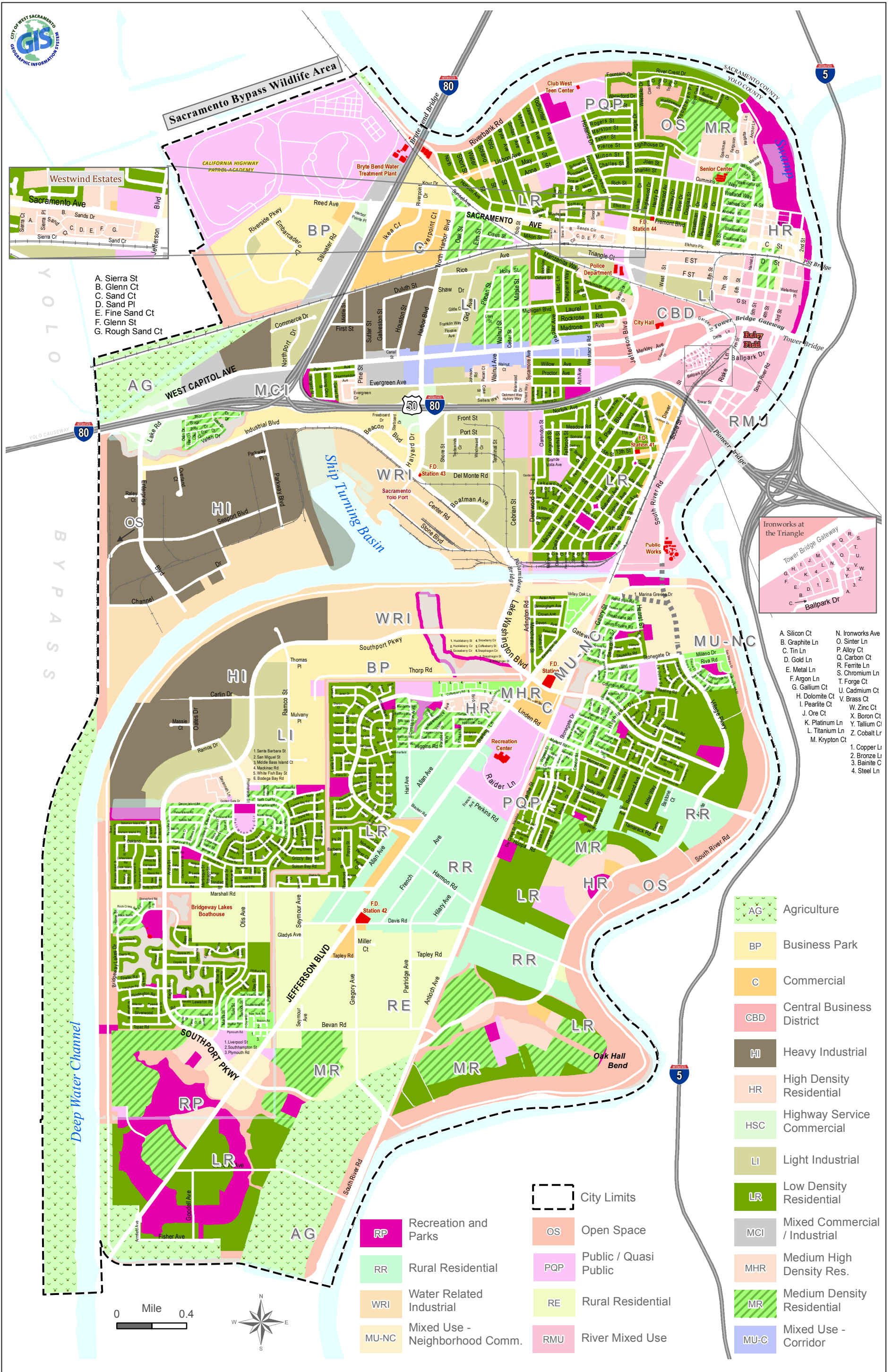
**UD-4:** To create durable, safe, and attractive streetscapes that support business activities, reinforce a sense of place, and make walking an attractive choice for moving within the city.

**UD-5:** To promote and enhance building and site design that produces a distinctive, complementary built environment whose forms and character reflect West Sacramento's unique historic and architectural context and distinct neighborhoods and districts.

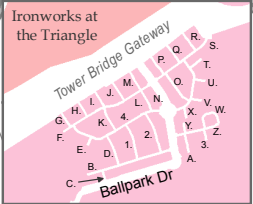
### 2.3.3 Economic Development Element

The Economic Development Element is intended to stimulate job growth and business vitality in the city. Accordingly, its goals and policies provide for the retention and expansion of existing businesses as well as the attraction of new businesses to increase job opportunities for West Sacramento's residents. The policies also address the development of an educated and skilled workforce by developing the skills of existing residents and attracting new residents. The Economic Development Element would include the following goals (supported by related policies and implementation programs).

**ED-1:** To maintain and expand a sustainable, strong, and diverse local economy that provides well-paying jobs, a high quality of life, and a sound tax base.



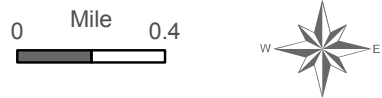
- A. Sierra St
- B. Glenn Ct
- C. Sand Ct
- D. Sand Pl
- E. Fine Sand Ct
- F. Glenn St
- G. Rough Sand Ct



- A. Silicon Ct
- B. Graphite Ln
- C. Tin Ln
- D. Gold Ln
- E. Metal Ln
- F. Argon Ln
- G. Gallium Ct
- H. Dolomite Ct
- I. Pearlite Ct
- J. Ore Ct
- K. Platinum Ln
- L. Titanium Ln
- M. Krypton Ct
- N. Ironworks Ave
- O. Sinter Ln
- P. Alloy Ct
- Q. Carbon Ct
- R. Ferrite Ln
- S. Chromium Ln
- T. Forge Ct
- U. Cadmium Ct
- V. Brass Ct
- W. Zinc Ct
- X. Boron Ct
- Y. Tellurium Ln
- Z. Cobalt Ln
- 1. Copper Ln
- 2. Bronze Ln
- 3. Baineite Ct
- 4. Steel Ln

- AG Agriculture
- BP Business Park
- C Commercial
- CBD Central Business District
- HI Heavy Industrial
- HR High Density Residential
- HSC Highway Service Commercial
- LI Light Industrial
- LR Low Density Residential
- MCI Mixed Commercial / Industrial
- MHR Medium High Density Res.
- MR Medium Density Residential
- MU-C Mixed Use - Corridor

- RP Recreation and Parks
- RR Rural Residential
- WRI Water Related Industrial
- MU-NC Mixed Use - Neighborhood Comm.
- OS Open Space
- PQP Public / Quasi Public
- RE Rural Residential
- RMU River Mixed Use



Graphics: ... 00230.14 (7-21-2016)



**Figure 2-3**  
**Proposed Land Use Designations**

**ED-2:** To make available new sites and infrastructure to meet the needs of new industries and existing City industries with a focus on target industries.

**ED-3:** To maintain a healthy business climate that increases the city's ability to retain and expand existing businesses and attract new ones.

**ED-4:** To provide a well-educated and highly-trained work force that effectively competes for meaningful and productive employment, earns a living wage, and meets existing and future local and regional business and industry needs.

### 2.3.4 Mobility Element

The proposed Mobility Element would expand the traditional role of the “circulation” element to address the concepts of complete streets and accessibility by travel modes other than just automobiles. It includes policies to support increased densities and a mix of uses in multi-modal districts, help walking become more practical for short trips, support bicycling for both short- and long-distance trips, improve transit to serve highly-frequented destinations, conserve energy resources, reduce greenhouse gas emissions and air pollution, and do so while continuing to accommodate auto mobility. This element would include the following goals (supported by related policies and implementation programs).

**M-1:** To develop and maintain a multi-modal transportation system that provides for the safe and efficient movement of people and goods, supports vibrant neighborhoods and districts, and reduces air pollution and greenhouse gas (GHG) emissions.

**M-2:** To provide complete streets that accommodate driving, walking, bicycling, and public transit and are designed to enable safe, attractive, and comfortable access and travel for all users.

**M-3:** To develop and maintain a street and highway system that promotes safe, efficient and reliable movement of people and goods by multiple transportation modes and routes, reduces air quality impacts and GHG emissions, and minimizes noise impacts.

**M-4:** To support and maintain a range of public and private transit systems that are responsive to the needs of all residents and employees and allow efficient and safe travel throughout the city and region.

**M-5:** To develop and maintain a safe, comprehensive, and integrated bicycle system and bicycle support facilities throughout the city.

**M-6:** Develop and maintain a safe, accessible and integrated pedestrian system that promotes walking.

**M-7:** To develop and manage both on- and off street parking systems that balance citywide goals of economic development, livable neighborhoods, and public safety.

**M-8:** To use Transportation Demand Management as a means to improve system efficiency and reduce dependence on motor vehicles and traffic congestion, and expand travel options and choices.

**M-9:** To provide an efficient system for goods movement that adequately serves the industrial and commercial areas of the City while protecting residents from potentially adverse impacts.

### 2.3.5 Public Facilities and Services Element

This element reflects the importance of providing adequate infrastructure and services to support the needs of residents and businesses and ensure a high quality of life. Water, wastewater, stormwater drainage, solid waste, and utility systems would be expanded concurrently with new development and the growth of population and employment. Likewise, the City would expand law enforcement, fire safety, emergency, and educational services and facilities to ensure that residents

and businesses are safe and adequately served. This element would include the following goals (supported by related policies and implementation programs).

**PFS-1:** To ensure the provision of adequate and efficient facilities and services that maintain service levels, are adequately funded, and strategically allocated.

**PFS-2:** To maintain an adequate level of service in the City's water system to meet the needs of existing and future development while improving water system efficiency.

**PFS-3:** To maintain an adequate level of service in the City's wastewater collection and disposal system to meet the needs of existing and future development.

**PFS-4:** To maintain an adequate level of service in the City's storm drainage system to accommodate runoff from existing and future development, prevent property damage due to flooding, and improve environmental quality.

**PFS-5:** To minimize the generation of waste, increase recycling, and provide for the collection and disposal of solid waste.

**PFS-6:** To ensure the provision of adequate utilities including gas, electric, and communication services to West Sacramento residents and businesses, and ensure utilities are constructed in a fashion that minimizes their impacts on surrounding development and maximizes energy efficiency.

**PFS-7:** To provide for the educational and literacy needs of West Sacramento residents.

**PFS-8:** To maintain an adequate level of police service as new development occurs to protect residents, visitors, and property.

**PFS-9:** To prevent loss of life, injury, and property damage due to wildland and structural fires, while ensuring an adequate level of fire protection service is maintained for all.

## 2.3.6 Parks and Recreation Element

The Parks and Recreation Element would establish the framework for an expanded park system and a greater variety of recreational activities. West Sacramento's riverfront and natural open spaces would continue to be linked to enhance opportunities for walking, bicycling, picnicking, participating in water sports, and appreciating natural open spaces and conservation areas. The location of schools and their recreational facilities would serve as a focal point of neighborhood identity and activity. Parklands would help to sustain natural environmental resources by providing landscapes that absorb GHGs, produce oxygen, and filter pollutants that would otherwise enter the groundwater basin. This element would include the following goals (supported by related policies and implementation programs).

**PR-1:** To establish and maintain a public park system and recreation facilities suited to the needs of West Sacramento residents and visitors.

**PR-2:** To provide a continual system of parks and open space corridors that connect destination points within and beyond the city of West Sacramento.

**PR-3:** To provide and encourage, to the fullest extent possible, public access to the Sacramento River and Deep Water Ship Channel for recreation purposes.

**PR-4:** To establish recreation programs suited to the broad needs and interests of all West Sacramento residents.

**PR-5:** To promote the provision of private recreational facilities and opportunities.

## 2.3.7 Natural and Cultural Resources

The Natural and Cultural Resources Element contains goals and policies that seek to balance the need for growth with the need for the conservation and enhancement of the area's natural and cultural resources. Resources addressed in this element include water, plant and animal species and habitat, urban forest, agricultural land, mineral resources, air, energy, and scenic amenities. The Natural and Cultural Resources Element would include the following goals (supported by related policies and implementation programs).

**NCR-1:** To promote the economic viability of agriculture in West Sacramento and to discourage premature development of agricultural land with non-agricultural uses, while providing for urban needs.

**NCR-2:** To protect sensitive native vegetation and wildlife communities and habitat in West Sacramento.

**NCR-3:** To protect existing mature trees and encourage the development of a healthy urban forest.

**NCR-4:** To preserve and protect water quality in the City's natural water bodies and drainage systems and the area's groundwater basin.

**NCR-5:** To preserve and protect West Sacramento's water resources and supply.

**NCR-6:** To increase efficiency and conservation of resources in City facilities and operations to serve as a leader in sustainability.

**NCR-7:** To increase energy independence and reduce greenhouse gas emissions through the use of renewable energy sources and improved energy conservation and efficiency.

**NCR-8:** To protect significant scenic resources.

**NCR-9:** To preserve and enhance West Sacramento's important historical, archaeological, and paleontological resources to increase awareness of the City's heritage.

## 2.3.8 Healthy Community Element

The Healthy Community Element addresses factors that influence physical and mental health—especially physical activity, nutrition, and access to health care. The element also addresses issues of health disparities and equal access to public participation, recognizing that a healthy community is one in which citizens are empowered to participate in decisions about the future of their community. This element includes a section addressing child care needs in the city, recognizing that safe and affordable child care is essential to healthy child development. This element would include the following goals (supported by related policies and implementation programs).

**HC-1:** To eliminate health disparities by promoting equal access to health care services, healthy food, safe and affordable housing, job opportunities, safe neighborhoods, and a healthy environment.

**HC-2:** To support active living through a built environment, a network of parks and open space, and programs that promote physical activity.

**HC-3:** To promote healthy eating habits.

**HC-4:** To promote access to health care and medical services for all residents and employees.

**HC-5:** To ensure an adequate, affordable, and diverse supply of child care facilities and services is available to parents who live or work in West Sacramento.



## 2.3.9 Safety Element

The goals and policies in this element are designed to protect and enhance public health and safety throughout the community. The Safety Element would address the emerging issue of planning for the impacts of climate change such as increased risk of drought, flooding, wildland fire, and disease. This element contains the City's GHG reduction targets and policies to respond to and adapt to the potential effects of climate change. It also addresses other issues related to community health and safety, including noise exposure. A major safety concern is the ongoing risk from flooding, as reflected in the element's proposed goals, policies, and implementation programs. The Safety Element would include the following goals (supported by related policies and implementation programs).

**S-1:** To ensure that City emergency response procedures are adequate in the event of natural or man-made disasters.

**S-2:** To prevent loss of life, injury, and property damage due to flooding.

**S-3:** To prevent loss of life, injury, and property damage due to geologic and seismic hazards.

**S-4:** To alleviate the effects of climate change by reducing greenhouse gas emissions and adapting to expected climate change impacts.

**S-5:** To improve air quality in West Sacramento and the Sacramento Region, and protect residents from the potential effects of decreased air quality.

**S-6:** To minimize exposure to the potentially harmful effects of hazardous materials and waste on West Sacramento residents.

**S-7:** To protect city residents from the harmful effects of excessive noise and vibration.

## 2.4 Enhanced Infrastructure Financing District

The City is proposing the formation of multiple EIFDs to fund public improvements that are part of the City's Capital Improvement Program (CIP) budget, as described in the General Plan and various City infrastructure master plans. EIFDs are independent government entities formed to finance an array of economic development and infrastructure projects using property tax increment revenue and other public and private funding sources. EIFDs are governed by a Public Financing Authority and an adopted Infrastructure Financing Plan, and have the authority to issue debt for up to 45 years. The types of public and private facilities listed below can be funded through the EIFD as described in Government Code Section 53398.52 (b), (c), (d), and (e).

- Highways, interchanges, ramps and bridges, arterial streets, parking and transit facilities.
- Sewer treatment, water reclamation plants, and interceptor pipes.
- Facilities for the transfer and disposal of solid waste, including transfer stations and vehicles.
- Facilities to collect and treat water for urban uses.
- Flood control levees and dams, retention basins, and drainage canals.
- Parks, recreational facilities, open space and libraries.
- Brownfield restoration and other environmental mitigation.
- Acquisition, construction, and repair of industrial structures for private use.

- Transit priority projects as defined under Section 21155 of the Public Resource Code (PRC).
- Projects that implement a sustainable communities strategy.
- Mixed-income housing developments.
- Reimbursements to a developer located within the EIFD for permit expenses incurred and to offset additional expenses incurred by the developer in constructing affordable housing units pursuant to the state's Transit Priority Project Program.
- Facilities constructed to house providers of consumer goods and services.
- Child care facilities.

## 2.5 Required Approvals

Implementation of the project would require the following approvals.

- Adoption of the updated General Plan by resolution of the City Council.
- Adoption of a new zoning map by ordinance of the City Council.
- Adoption of the CAP by resolution of the City Council.
- Future actions by the Planning Commission, City Council, and City administrative agencies on specific development projects that are consistent with the General Plan.

Establishment by the City of an EIFD would require following actions by the City, pursuant to Government Code Sections 53398.59–53398.74.

- Adoption of one or more resolutions for establishment of a Public Finance Authority.
- Adoption of a Resolution of Intention to create EIFD.
- Mailing a copy of Resolution of Intention to each landowner in the proposed district(s) and each affected taxing entity.
- Preparation of an Infrastructure Financing Plan (IFP) and sending the IFP to landowners and affected taxing entities.
- Adoption of a resolution approving financing the plan by all participating taxing agencies.
- Adoption of the IFP and formation of the EIFD.

## 2.6 References Cited

Department of Finance. 2012. *Historical Census Populations of California, Counties, and Incorporated Cities 1850-2010*. Sacramento, California. June.

Department of Finance. 2016. *E-1 City/County/State Population Estimates with Annual Percent Change January 1, 2015 and 2016*. Sacramento, California. May.



## Chapter 3

# Impact Analysis

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The primary purpose of this EIR is to analyze the potential significant impacts of the proposed project. The State CEQA Guidelines defines a significant environmental impact as “a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project.” (State CEQA Guidelines Section 15382). Not all the changes that may result from the proposed amendments are significant.

The following impact analysis sections address the short- and long-term adverse impacts on the physical (natural and built) environment. Existing conditions are the baseline against which the potential impacts of the project are evaluated for significance, except where noted. This means that the reasonably foreseeable impacts of the project are compared to the existing environment, not to the provisions of the current General Plan. The *project* for purposes of the following analyses consists of the update to the General Plan. The analysis is based on a forecast of growth under the General Plan update to 2035, based on the Sacramento Area Council of Governments’ regional growth projections.

Each impact analysis section comprises the following components.

- A description of the regulatory setting (i.e., the federal, state, and local environmental regulations that apply to that resource).
- A description of the environmental setting for the particular resource (i.e., aesthetics, air quality, agriculture, etc.).
- An identification of the significance thresholds or criteria that will be used to determine whether the project will have a significant effect on that resource.
- A description of the significant environmental impacts of the proposed project.
- Specific mitigation measures that will reduce or avoid the identified significant effects, when feasible mitigation exists. The City or other specified agencies will have the responsibility of requiring these measures.

This EIR analyzes and discloses the potential significant adverse impacts on the environment that would result from implementation of the General Plan update. The EIR is an informational document that represents a good faith effort at disclosing these impacts, examining a range of alternatives to the Project, and identifying mitigation measures that would reduce the project’s environmental impacts. The EIR neither approves nor disapproves the proposed amendments to the General Plan. The Planning Commission and the City Council will consider the findings of the EIR, along with testimony from the public and other interested parties at the hearings prior to taking action on the project.

State CEQA Guidelines Section 15146 states, in part, that “[t]he degree of specificity required in an EIR will correspond to the degree of specificity involved in the underlying activity which is described in the EIR.” The General Plan update is not proposing any site-specific development projects. Accordingly, this EIR takes a general look at the potential impacts of the General Plan update.

## 3.1 Aesthetics

### 3.1.1 Existing Conditions

#### Regulatory Setting

##### Federal and State

No roadways in or near the project vicinity are designated in state or federal plans as scenic highways worthy of protection for maintaining and enhancing scenic viewsheds. Accordingly, there are no federal or state regulations related to aesthetic resources that apply to implementation of the General Plan update.

##### Local

The following local policies related to aesthetic resources may apply to implementation of the General Plan update.

##### City of West Sacramento General Plan

The *City of West Sacramento General Plan* (City of West Sacramento Community Development Department 2000) and the 2013–2020 Housing Element (City of West Sacramento 2013a) identify goals and policies that apply to aesthetic resources.

##### Land Use

**Goal A:** To provide for orderly, well-planned, and balanced growth consistent with the limits imposed by the city's infrastructure and the city's ability to assimilate new growth.

##### Policies:

1. The City shall seek to preserve West Sacramento's traditional neighborhood qualities, while recognizing existing City commitments to new projects and accommodating region-serving development in certain areas of the city and in certain segments of the economy.
11. For proposed projects outside the city limits but within the West Sacramento General Plan Study Area, the City shall work with project proponents to ensure general plan amendments include provisions for high-quality development, adequate infrastructure improvements, and provision of City services. In order to minimize the disruption of agricultural land, development which is adjacent to the city boundaries or which has convenient freeway access shall be preferred. Proposals for development of land not adjacent to the city or without convenient freeway access shall be discouraged.

**Goal C:** To designate adequate land and provide support for the development of commercial uses providing goods and services to West Sacramento residents and West Sacramento's market area.

##### Policies:

5. The City shall promote development of West Sacramento as a visitor destination, capitalizing on its riverfront location.
6. The City shall promote the development of hotels, motels, and related convention facilities, with an emphasis on high-quality development.

8. In approving new commercial projects, the City shall seek to ensure that such projects reflect the City's concern for achieving and maintaining high quality development.
9. New commercial development shall be designed to avoid the appearance of strip development.

### ***Transportation and Circulation***

**Goal G:** To promote pedestrian and bicycle travel as alternatives to automobile use.

**Policies:**

2. The City shall establish a safe and convenient network of identified bicycle routes connecting residential areas with recreation, shopping, and employment areas within the city. The City shall cooperate with surrounding jurisdictions in designing and implementing an area-wide bikeway system.
7. To the extent practicable, bicycle and pedestrian pathways shall be included within open space areas and adjacent to waterways.

### ***Public Facilities and Services***

**Goal I:** To promote efficiency, convenience, and harmonious relationships in the siting of public facilities.

**Policies:**

1. Public facilities, such as utility substations, water storage or treatment plants, pumping stations, and sewer treatment plants, shall be located, designed, and maintained so that noise, light, glare, or odors associated with these facilities will not adversely affect nearby land uses. Building and landscaping materials that make these facilities compatible with neighboring properties shall be used.
2. Utility company rights-of-way shall be considered for use as public or private open space, trails, parkland, or other compatible recreational uses.
3. The City shall require that all new electrical and communication facilities are installed underground or, in the case of transformers, pad-mounted. The City shall actively promote the undergrounding of existing overhead facilities.
5. The City shall establish guidelines and procedures for the placement of wireless communication facilities. An emphasis shall be placed on concealing new facilities and minimizing intrusions into existing neighborhoods.

### ***Recreational and Cultural Resources***

**Goal A:** To establish and maintain a public park system and recreation facilities suited to the needs of West Sacramento residents and visitors.

**Policies:**

6. Neighborhood parks shall be integrated into, and become focal points of, new residential neighborhoods. Non-automobile access shall be facilitated.
9. Parks shall be located, oriented, and designed in such a way as to facilitate security, policing, and maintenance.
10. New park and recreation facilities shall provide shade and wind protection to facilitate year-round use.
11. New high-activity-level parks and parks intended for night use shall be designed to buffer existing and planned surrounding residential uses from excessive noise, light, and other potential nuisances.

13. The City shall emphasize the use of drought-tolerant and drought-resistant landscaping in the development of City parks.
14. The City shall assign high priority to the improvement and rehabilitation of parks in existing neighborhoods.
15. The City shall encourage the use of golf courses and other recreational uses as buffers between incompatible land uses.

**Goal D:** To provide and encourage, to the fullest extent possible, public access to the Sacramento River and Deep Water Ship Channel for recreation purposes.

**Policies:**

1. The City shall ensure continuous public access to the Sacramento River for its full length within West Sacramento.
2. The City shall seek to ensure continuous public access to the Deep Water Ship Channel, within the limits imposed by safety considerations.
3. Linear access to the Sacramento River and Deep Water Ship Channel shall be linked to the city's overall system of parks, recreational pathways, and open space. To this end, the City shall require the dedication of public access easements through new developments along the Sacramento River and Deep Water Ship Channel.
4. The City shall encourage the development of public and private marinas in appropriate locations on the Sacramento River and along the Deep Water Ship Channel. Siting and development of marinas shall avoid, as much as possible, areas of significant existing riparian vegetation.
5. The City shall support and encourage the development of public and private water-oriented park and recreational facilities along the Sacramento River and the Deep Water Ship Channel.

**Goal E:** To provide a network of pedestrian and bicycle pathways connecting parks and open space areas with other destination points within and beyond the city of West Sacramento.

**Policies:**

3. The City shall develop and implement a Bicycle Route Master Plan to link parks, scenic areas, the riverfront, schools, the Central Business District, public facilities, and neighborhoods.

**Goal F:** To preserve and enhance West Sacramento's historical heritage.

**Policies:**

7. New development near designated historic landmark structures and sites shall be designed to be compatible with the character of the designated historic resource.

**Natural Resources**

**Goal C:** To protect sensitive native vegetation and wildlife communities and habitat in West Sacramento.

**Policies:**

5. To minimize disturbance to wildlife, the City shall require the provision and maintenance of an adequate setback between significant wetland habitat and adjacent development. The buffer shall be landscaped with native or compatible introduced ornamental vegetation and may be used for passive recreation purposes.
12. Public access and recreation facilities shall not eliminate or degrade riparian habitat values. Trails, picnic areas, and other developments shall be sited to minimize impacts on sensitive wildlife habitat or riparian vegetation.

13. The City shall promote the use of native plants, especially valley oaks, for landscaping roadsides, parks, and private properties. In particular, native plants should be used along the Sacramento River and in areas adjacent to riparian and wetland habitats.

### ***Urban Structure and Design***

**Goal A:** To promote the development of a cohesive and aesthetically-pleasing urban structure for West Sacramento.

**Policies:**

1. The City shall endeavor to maintain and enhance the distinctiveness and integrity of the various neighborhoods and districts within West Sacramento.
2. The City shall use the circulation system and the pedestrian and bicycle pathway system as important structural elements to link and define neighborhoods and districts in West Sacramento.
3. The City shall establish the enhancement of the riverfront along the Sacramento River as a major priority.
4. The City shall seek to preserve the vital qualities of existing, stable neighborhoods and shall promote the development of new neighborhoods with these same qualities.

**Goal B:** To enhance the relationship between the City and the Sacramento River.

**Policies:**

1. The City shall seek to preserve the trees and other vegetation along the banks of the Sacramento River for their aesthetic qualities and environmental and ecological values.
2. The City shall protect and enhance public access to the Sacramento River along the entire riverfront within West Sacramento by providing for development of a continuous pedestrian and bicycle path along the river.
4. The City shall promote the development of important visual and scenic areas along the riverfront, including around the barge canal, for public access, including water-related activities.
5. The City shall promote and enhance open space and pedestrian links between the river and public schools, parks, and other major open space areas.
6. The City shall promote the enhancement of the areas where the "I" Street and Tower Bridges meet the riverfront to create strong, positive, and memorable entryways into West Sacramento and to reinforce the historical significance of these bridges.

**Goal C:** To preserve existing community character and fabric and promote the development of neighborhoods and districts that emphasizes pedestrian convenience.

**Policies:**

1. The City shall respect existing neighborhood scale and character when infilling and/or upgrading existing residential neighborhoods.
2. The City shall promote the creation of well-defined residential neighborhoods in newly-developing areas. Each of these neighborhoods should have a clear focal point, such as a neighborhood shopping center, park, school, or other open space and community facility, and should be designed to promote pedestrian convenience. To this end, the City shall encourage the use of existing West Sacramento neighborhoods, including the modified grid street system, as models for the planning and design of new residential neighborhoods.
5. The City shall attempt to maintain and enhance the historic character of Old Broderick.

6. The visual impact of automobiles should be minimized in all new development and in the Central Business District.

**Goal D:** To maintain and enhance the quality of the city's landscape and streetscape.

**Policies:**

1. The City shall endeavor to protect the tree canopy created by mature trees in existing developed areas and in newly developing areas.
2. The City shall require that all new development incorporate the planting of trees and other vegetation to extend the vegetation pattern of older adjacent neighborhoods into new development.
3. The City shall use street trees to enhance and soften the visual character of special and important streets within West Sacramento.
4. The City shall identify appropriate streets for inclusion of landscaped medians.

**Goal E:** To create a distinctive Central Business District which serves as the City's most important civic and pedestrian-oriented commercial area.

**Policies:**

2. The City shall take the lead in upgrading the visual quality of the streets in the CBD.
3. The City shall adopt and implement detailed plans for street improvements in the CBD.
4. The City shall promote the enhancement of the overall quality of development along West Capitol Avenue through infill, private recycling, and public redevelopment, as necessary.

**Goal F:** To establish the Triangle Area, as a regional, high-density, waterfront-oriented urban core of the City.

**Policies:**

3. The City shall promote the Triangle as a desirable place to live and work and as an attractive destination for visitors.
5. The City shall promote development in the Triangle Area that complements the character and functions of adjacent surrounding neighborhoods and districts.
6. The City shall assist in the development of urban waterfront improvements in the Triangle Area which establish an image for West Sacramento as a river city.

### ***Housing Element***

**Goal HE-1:** To designate adequate land for the production of a balanced range of housing types and densities for all economic segments of the community while emphasizing high quality development and encouraging homeownership when financially feasible

**Policy HE-P-1.9.** Where affordable residential units are included within a housing development, such units shall be interspersed within the development and shall be visually compatible with, if not indistinguishable from, market-rate units.

**Goal HE-5:** To ensure the provision of adequate services to support existing and future residential development

**Policy HE-5.6.** The City will consider alternative standards for infrastructure that would reduce the cost of developing affordable housing projects while meeting City health, safety, and aesthetic goals.

**Bridge District Specific Plan**

The City of West Sacramento's Bridge District Specific Plan contains guidelines and design standards that establish how the Bridge District will look and function. The specific plan also includes the following policies that specifically relate to aesthetic resources (City of West Sacramento 2009).

**Land Use Policies:**

1. The City will facilitate development of the Bridge District as a place of civic significance for West Sacramento that establishes its image as a river city.
7. The City shall require all proposals for development, where required by the provisions of the Specific Plan, to include appropriate landscape, public open space and distributed recreational opportunities.
9. The City shall require that all proposals for development protect or mitigate environmentally sensitive areas as set forth in the plan, in accordance with state and federal guidelines. Mitigation for protected trees unable to be preserved within development sites may be provided in park and open space areas and as street trees.

**Circulation Policies:**

5. The City will require large blocks to be broken up via universal streets, access corridors, or similar technique to increase pedestrian connections and provide more opportunities for enhanced architectural treatments of buildings and structures, as prescribed in Volume 2.

**Urban Development Policies:**

1. The City will encourage development of an urban waterfront that appropriately celebrates West Sacramento's central riverfront.
3. The City will invest in the development of streetscapes, landscaped open spaces and tree plantings as components of a coherent public open space system.
4. The City will facilitate creation of an environment in which people Architectural Design comfortable and safe walking and sitting in public spaces during the day and after dark.

**Architectural Design Policies:**

1. The City will promote the development of a cohesive urban structure within the Bridge District.

**Waterfront Edge Policies:**

1. The City will ensure continuous public access to the entire length of the Sacramento River waterfront.
2. The City will establish and maintain a waterfront pathway and river access system as a component of the City's public park system and recreation facilities, suited to the needs of West Sacramento residents and visitors.
3. The City will promote complementary private development, open space and other facilities and opportunities consistent with public enjoyment of the waterfront during the day, evening and on weekends.
5. The City will develop and implement a landscape plan to maintain and improve native vegetation in concert with people oriented uses, consistent with federal flood protection requirements.

**Core Policies:**

1. The City will encourage development of taller buildings in the Core that maintain visual contact with the river.

3. The City will encourage urban qualities in the design of streets, buildings and required universal streets, consistent with the Core's central location.
4. The City will promote welcoming civic facilities that are conveniently located in the Core, especially on City owned property.

#### **Tower Edge Policies:**

1. The City will encourage uses, activities and configurations that are compatible with the Bridge District, Tower Bridge Gateway, and neighborhoods to the north and west.

#### **Pioneer Edge Policies:**

1. The city will encourage uses adjacent to Highway 50 that are not sensitive to freeway noise yet are compatible with adjacent areas in the Bridge District and that effectively buffer areas to the north.
2. The city will encourage uses, activities and configurations that are compatible with the Core and neighborhoods to the west.

### **Grand Gateway Master Plan**

The City of West Sacramento's Grand Gateway Plan overlaps with the Bridge District and Washington Specific Plan Areas and the West Capitol Avenue Action Plan Area, and includes guidelines and design standards that establish how the Grand Gateway area will look and function. The master plan "focuses on design details aimed at establishing site development standards and design guidelines that will lead to attractive, compact mixed-use development laid out in a highly functional, pedestrian-orientated setting" (City of West Sacramento 2013b).

### **Southport Framework Plan**

The City of West Sacramento's Southport Framework Plan (City of West Sacramento 1998) and associated Design Guidelines (City of West Sacramento 2005) include guidelines and design standards that establish how the Southport planning area will look and function. The framework plan's intent is to create "a strong sense of place through a number of communitywide design elements."

### **Washington Specific Plan**

The City's Washington Specific Plan includes the following policies pertaining to aesthetic resources (City of West Sacramento 1996).

- 1.A.3. The City shall seek to protect the existing neighborhood quality of the Washington Plan Area.
- 2.B.4. The City shall promote the preservation of architecturally and historically significant residential structures in the Washington Plan Area, particularly the Delta Victorian style homes along Third and Fourth Streets.
- 3.A.3. The City shall work with Caltrans and the City of Sacramento in improving the traffic and pedestrian carrying capacity of the Tower Bridge and the I-Street Bridge and to provide more direct connections from these bridges into the Washington Plan Area.
- 3.E.5. Bicycle and pedestrian pathways shall be included within the riverfront open space areas.
- 4.C.1. The city shall ensure continuous public access to the Sacramento River for its full length within the Washington Plan Area. Access points shall be linked to the city's overall system of parks, recreational pathways and open space. To this end, the City shall require the



dedication of public access easements through new developments along the Sacramento River in the Washington Plan Area.

- 4.D.2. The City shall coordinate with the City of Sacramento to ensure that pedestrian and bicycle pathways in the Washington Plan Area are designed to link with existing and planned facilities in Sacramento.
- 4.E.5. The City shall encourage the developers of new projects near designated historic landmark structures and sites to design their projects to be compatible with the character of the designated historic resource.
- 4.E.7. The City shall ensure that street lighting systems and street furniture in the historic sections of the Washington Plan Area reflect the historic character of the area.
- 5.A.1. The City shall encourage development along the riverfront in the Washington Plan Area which minimizes adverse effects on existing stands of mature valley oaks and other significant or landmark trees.
- 5.A.2. The City shall support state and federal policies for preservation and enhancement of riparian habitat in the Washington Plan Area.
- 5.A.3. The City shall encourage design of public access and recreation facilities along the riverfront which minimize impacts on riparian habitat values. Trails, picnic areas and other developments shall be sited to minimize impacts on sensitive wildlife habitat or riparian vegetation.
- 5.A.6. The City shall promote the use of native plants for landscaping roadsides, parks, and private properties.
- 6.A.2. The City shall seek to preserve the vital qualities of existing, stable residential areas in the Washington Plan Area and shall encourage new development to recreate these qualities.
- 6.A.3. The City shall ensure that the main entrances into the Washington Plan Area provide distinctive, well-landscaped gateways into the community. In particular, the City should focus on the connections between the Washington Plan Area and the Lighthouse Marina project via Fifth Street and the Triangle Specific Plan Area via at-grade crossings at State Route 275. (p. III-7)
- 6.B.1. The City shall seek to protect areas of significant vegetation along the banks of the Sacramento River, including mature stands of valley oaks, for their aesthetic qualities and environmental and ecological values.
- 6.B.2. The City shall protect and enhance public access to the Sacramento River along the riverfront within the Washington Plan Area by providing for development of a continuous landscaped parkway with pedestrian and bicycle paths along the river.
- 6.B.3. The City shall promote and enhance open space and pedestrian links between the river and adjoining residential and employment areas as well as public parks and trails.
- 6.B.4. The City shall promote the enhancement of the areas where the "I" Street and Tower Bridges meet the riverfront to create strong, positive, and memorable entryways into the Washington Plan Area and to reinforce the historical significance of these bridges.
- 6.D.1. The City shall promote the planting of street trees in those parts of the Washington Plan Area without such trees.
- 6.D.2. The City shall promote the installation of street lighting systems in the Washington Plan Area that enhance the streetscape and contribute to the safety and security of the area.
- 6.D.3. The City shall require that all new development incorporate the planting of trees and other vegetation to extend the established vegetation pattern of the Washington Plan Area.

- 6.D.4. The City shall endeavor to protect the tree canopy created by mature trees in the Washington Plan Area.

### **West Sacramento Tree Preservation Ordinance**

The Tree Preservation Ordinance provides standards for tree permits required for actions affecting trees; standards for identifying street, landmark, and heritage trees; measures to protect trees; and replacement requirements. Section 8.24.010, *Purpose*, of the ordinance states that the “preservation of trees enhances the natural beauty of the city, sustains long-term potential increases in property values, maintains the environment, tempers the effect of extreme temperatures, creates the identity and quality of the city which is necessary for successful business to continue, improves the attractiveness of the city to visitors and increases the oxygen output of the area which is needed to combat air pollution” (City of West Sacramento 2015).

## **Concepts and Terminology**

Aesthetic resources are all objects (artificial and natural, moving and stationary) and features (e.g., landforms and water bodies) visible on a landscape. These resources add to or detract from the scenic quality of the landscape (i.e., the visual appeal of the landscape). A visual impact is the creation of an intrusion or perceptible contrast that affects the scenic quality of a viewscape. A visual impact can be perceived by an individual or group as either positive or negative, depending on a variety of factors or conditions (e.g., personal experience, time of day, weather or seasonal conditions).

Identifying a study area’s aesthetic resources and conditions involves understanding the visual character of the area’s visual features and its the regulatory context. Once those parameters are understood, a study area’s aesthetic resources are further defined by establishing the *area of visual effect* (AVE) and documenting the *visual character of the affected environment*, including the natural and cultural environments. The *affected population*, or viewers, are defined by their relationship to the AVE, their visual preferences, and the proposed project changes. Visual preferences, or what viewers like and dislike about the AVE’s visual character, define the AVE’s *visual quality*. Visual quality serves as the baseline for determining the degree of visual impacts and whether a project’s visual impacts would be adverse, beneficial, or neutral.

### **Area of Visual Effect**

The aesthetic resources analysis area, the AVE, comprises viewsheds, or what people can see in the landscape. The AVE and its viewsheds are defined by the physical constraints of the environment and the physiological limits of human sight. Physical constraints of the environment include landform, land cover, and atmospheric conditions. Landform is a major factor in determining the AVE because it can limit views or provide an elevated perspective for viewers. Similarly, land cover such as trees and buildings can limit views, while low-growing vegetation and the absence of structures can allow for unobscured views. Atmospheric conditions such as smoke, dust, fog, or precipitation can temporarily reduce visibility or be a more regular component of the visual landscape.

The physiological limits of human sight are affected by location, proximity, and light. Location refers to the topographic position of the viewer, such as being level with, above, or below what is being observed. Proximity is categorized into three distance zones: foreground (up to 0.5 mile from the viewer), middleground (0.5 mile to 3–5 miles from the viewer), and background (beyond 3–5 miles).

Features in the landscape are more dominant and have a greater importance the closer the feature is to the viewer, whereas importance is reduced the farther away the feature is. In the background, the scale and color of existing landscape elements and project features blend so that only broad forms, large-scale patterns, and muted colors are evident. Light also plays a large role in affecting views, such as during the daytime when views are more readily available than at night when darkness conceals details and color in the landscape in the absence of bright moonlight or artificial light sources. Furthermore, light levels and direction change throughout the day, affecting color and individual forms.

The environment's physical constraints and limits of human sight combine to establish viewsheds that range from restrictive to expansive and AVEs that range from smaller and more confined to larger and wider-reaching (Federal Highway Administration 2015:4-5-4-9, 6-3-6-4; Litton 1968:3-5).

The study area for this analysis is a single AVE—the planning area for the General Plan update, which is congruent with the West Sacramento city limits.

### Visual Character of the Affected Environment

The affected environment comprises the natural and cultural environments that constitute the AVE. The natural environment is determined by the visual character of the land, water, vegetation, animals, and atmospheric conditions. The cultural environment is determined by the visual character of buildings, infrastructure, structures, and other artifacts and art.

**Table 3.1-1. Visual Character Element of the Affected Environment**

Feature	Description of Element	Visual Attributes
<b>Natural Environment</b>		
Land	Landform and natural materials (besides water and vegetation) on the land (e.g., rocks, sand, boulders)	Landscape's form, its spatial qualities, and the nature of its materials
Water	Flowing or impounded; natural or artificial	Size of the water body, shape and spatial qualities of its perimeter, turbidity, the nature of its littoral or intertidal zones, and any other distinguishing visual attributes
Vegetation	Presence or absence of vegetation; native, naturalized, or cultivated	Height and density, artistic description (form, shading, color, and texture), and any other distinguishing visual attributes; seasonal changes (flowers, fruit, and seasonal color)
Animals	Wild or domesticated	Domesticated farm animals in rural agricultural landscapes, wildlife as a visual indicator of a landscape's vitality and identity (e.g., whale or bird migrations, herds of large mammals, or seasonal flocks of waterfowl)

Feature	Description of Element	Visual Attributes
Atmospheric conditions	Temporal changes; presence or absence of humidity, fog, and dust that reduce or alter visibility	Predictable amounts of precipitation, either as rain or snow, can change the visibility of the landscape. Rain with its darkened sky and snow covering the ground may change a landscape’s luminosity (i.e., level of brightness) and key views and distance zones (as discussed later in this section). Noting the frequency, even periodicity, of such obscuring or altering phenomena adds a caveat to description of a landscape’s visual character. For instance, the visual quality of the enclosing fogginess of the darker Olympic Peninsula is quite different than the open starkness of the very bright Four Corners area of the desert southwest.

**Cultural Environment**

Buildings	Enclosed structures that are or have been used or occupied by people	Buildings are often the dominant human-constructed objects in a landscape. A building’s visual character is determined by its form, scale, massing, materials, and architectural style and detailing. Building orientation; patterns of light and shadow; artistic attributes like color, pattern, and texture; and site-specific setting, particularly if it obstructs views, all affect character. The building’s historic status, current and past occupants, the architect that designed the building, the client for whom it was built, or the contractor who constructed it may also be critical to the perception of the building’s visual quality. Views of a proposed project from a building are also important.
Infrastructure	Railroads, airports, harbors, roads, canals, dams, electrical and telecommunication utilities, pipelines, sewer and water systems, solar arrays, wind turbines, and other infrastructure	A major visual attribute of infrastructure is linearity because infrastructure systems can stretch for miles, even across whole states. Extended lines can affect the character of the natural and cultural landscapes. Infrastructure also provides a special set of buildings, structures, and associated artifacts that are part of an intermodal system (for moving people, goods, and services) that can affect the visual character of an AVE.
Structures	Engineered elements that provide a social function but are not buildings or part of a larger infrastructure system	Structures may be walls, towers, and other constructed items erected to serve a single utilitarian function. Some structures have architectural treatments but most do not, and form and materials are dictated by functional requirements. A structure’s visual character is determined by its form, scale, massing, materials, construction method, and engineering detailing. Structure orientation; patterns of light and shadow; artistic attributes like color, pattern, and texture; and site-specific setting, particularly if it obstructs views, all affect character. The structure’s historic status, the architect that designed the structure, the client for whom it was built, or the contractor who constructed it may also be critical to the perception of the structure’s visual quality.

Feature	Description of Element	Visual Attributes
Artifacts and art	Artifacts are those items that do not fit neatly into any other category, such as cultural visual resources that are not buildings, infrastructure, or structures. Public art can also contribute to defining the visual landscape	Artifacts and art are described in a manner similar to that recommended for buildings and structures.

Source: Federal Highway Administration 2015:5-1-5-4.

## Affected Population

Two overarching groups of viewers are affected by a project: neighbors and users. *Neighbors* are those people who have views *of* the project site because they are located adjacent to it. *Users* are those people who are located within the project site boundaries and have views *from* the project site. The types of viewers considered for this analysis are listed below (Federal Highway Administration 2015:5-6 – 5-10).

- Residential Viewers:** Residential viewers can be owners or renters that live within viewing distance of a proposed project or within the project boundaries. Residential viewers generally have a desire to maintain the existing landscape as-is because how their neighborhood looks is a contributing factor for residents choosing to live in a certain location. Therefore, residential viewers tend to be uninterested in change unless they have been able to participate in defining the change.
- Recreational Viewers:** Recreational viewers provide or participate in active and passive recreational uses such as organized sporting events, indoor and outdoor leisure activities, and cultural events. Recreational viewers are often focused on their recreational activity, and although they tend to be unsupportive of visual changes that would negatively affect the recreational setting, they tend to be supportive of visual improvements that enhance their recreational experience. Recreational services provided for visitors can be permanent, while the visitors are more transitory.
- Retail Viewers:** Retail viewers include merchants that sell goods and services and the shoppers that buy them. Merchants generally want heightened visibility, free of competing visual intrusions, while shoppers need to be able to easily find their destination and, once there, concentrate on the shopping experience. Merchants tend to be more permanent than shoppers, although shoppers often frequent the same stores repeatedly, giving them a sense of permanence.
- Commercial Viewers:** Commercial viewers are those occupying or using office buildings, warehouses, and other commercial structures. Commercial viewers' visual preferences vary depending on the business and may be more aligned with retail, institutional, or industrial viewers' visual preferences than those of residential viewers. Workers are often permanent, while visitors and customers are transitory.

- **Institutional Viewers:** Institutional viewers provide or receive services from such places as schools or hospitals that provide social services to the community. Consequently, institutions often promote a public image to adjacent viewers, and the presentation of their buildings and grounds are critical and tend to be well maintained. Signage or orientation and wayfinding are commonly associated with institutional facilities. Workers and employees of the institution are present for longer durations, while visitors are more transitory.
- **Civic Viewers:** Civic viewers provide or receive services from a government organization, such as a military reservation or a federal, state, or local agency. Views of government facilities may or may not be desired, depending on the particular organization and work being performed. Workers and employees of the civic uses are present for longer durations, while visitors are more transitory.
- **Industrial Viewers:** Industrial viewers mine or harvest raw materials; manufacture goods and services; or transport goods, services, and people, and often require large amounts of land that has limited exposure to the public. Industrial viewers' visual preference is generally utilitarian unless they want to enhance the public presentation and views of their facility. Industrial viewers tend to be primarily workers with few transitory visitors.
- **Agricultural Viewers:** Agricultural viewers are agricultural workers in fields and pastures maintaining crops or herd animals. Cultural order and natural harmony are critical components of the landscape. Some agricultural viewers are permanent, but many are transient, although they may return to the same area seasonally.
- **Travelers (by transportation purpose):** Travelers can be grouped by the purpose for which they are traveling, such as commuting, tourism, and shipping. Commuters travel the same route regularly, have a repeated routine, and are often single drivers, but they may also be passengers; and trips can include commuting to work or to a favorite or frequent destination (e.g., campground, cabin, sports arena, or relative's home). Tourists travel individually or in groups through an area for enjoyment, often with a set destination, on trips that are generally more adventurous, cover longer distances, and take more time than commuting trips. Shippers are generally single drivers moving goods on routine routes of varying distances.
- **Travelers (by transportation mode):** Travelers can also be grouped by the mode in which they travel and can include pedestrians, cyclists, and motorists. Pedestrians use only their feet (or a wheelchair or other device), most often on a sidewalk or trail. Cyclists use bicycles at greater speeds than pedestrian travel, and may use trails, traffic lanes, and sidewalks. Motorists use vehicles with engines (e.g., cars, trucks, buses, motorcycles, mopeds, or any other technology that is not self-propelled, regardless of fuel source). Motorists move at higher speeds than other groups. Groups of motorists within a vehicle are able to discuss what they see from the vehicle. By necessity, the driver of a motor vehicle focuses less on the view outside the vehicle. The driver's primary interest is in project coherence, although natural harmony and cultural order also provide resources used for wayfinding. Good natural harmony and cultural order can increase driver attentiveness. Passengers prefer evidence of good natural harmony and cultural order.

### Viewer Sensitivity

Viewer sensitivity is based on viewer exposure and viewer awareness. Viewer exposure is a factor of proximity to an object or scene that is affected by elevation and distance (refer to the concepts of foreground, middleground, and background, described under *Concepts and Terminology*); the

number of people viewing an object or scene (more viewers equals more exposure); and how long viewers experience an object or scene. Viewer awareness is influenced by how routine a scene is (i.e., lower sensitivity with increased routine), visual features or focal points that help to focus the viewer's attention, and legal or social protection of a resource. Movement also affects viewer sensitivity by creating dynamic viewsheds that change as the viewer moves through the landscape. Speed affects how long or short a view is based on the mode of travel, and the availability of views is affected by the surrounding terrain and vegetation and the presence or absence of built features.

As described earlier, visual sensitivity also is modified by the type of viewer, viewer activity, and visual expectations. For example, people driving for pleasure; people engaging in recreational activities such as hiking, biking, or camping; and homeowners generally have higher visual sensitivity to views. Viewers using recreational trails and areas, scenic highways, and scenic overlooks usually pay more attention to their surroundings, seek views, and have higher regard for the landscape composition. Residential viewers typically have extended viewing periods and are more concerned about and aware of changes in the views from their homes. Sensitivity tends to be lower for people driving to and from work or as part of their work, because commuters and nonrecreational travelers typically have fleeting views and tend to focus on commute traffic, not on surrounding scenery (Federal Highway Administration 2015: 6-2-6-4; USDA Forest Service 1995: 3-3-3-13; U.S. Soil Conservation Service 1978: 3, 9, 12).

Evaluating visual quality and viewer response must also be based on a regional frame of reference (U.S. Soil Conservation Service 1978: 3). The same visual resource appearing in different geographic areas could have a different degree of visual quality and associated viewer sensitivity in each setting. For example, a small hill may be a significant visual element on a flat landscape but have very little significance in mountainous terrain.

## Visual Quality

Visual quality is affected by aesthetics—the study of pleasing perceptual experiences as seen by humans. These perceptions are remarkably consistent within a society and across cultures, even though an individual's experience of visual quality is unique because of background and previous life experiences. Visual quality is a function of what the viewer wants or expects to see and what is actually seen. If people see what they want or expect to see, then the visual quality is good or high because the viewer is pleased. However, if what is seen is lacking or not what is expected then visual quality is poor or low because the viewer is disappointed. Expectations can be predictable for things like roadways and commercial development within a certain area. However, self-interest factors into visual preferences based on whether the viewer is a neighbor or user of the project site and how they may be personally benefited or affected. Different viewers and viewer groups value visual resources in different ways; therefore, there are different appraisals of visual quality. Regardless, there is a range of viewer responses inherent in all humans that aids in evaluating the overall landscape composition and vividness of both natural and cultural environments.

- **Natural harmony:** The natural environment creates a sense of natural harmony in people. The visual character of the natural environment's visual resources and viewer preferences affect the perception of natural harmony and the viewers inherently evaluate and determine if the composition is harmonious or inharmonious.
- **Cultural order:** The cultural environment creates a sense of cultural order in people. The visual character of the cultural environment's visual resources and viewer preferences affect the

perception of order and the viewers inherently evaluate and determine if the composition is orderly or disorderly.

The value placed on visual resources correlates to whether those resources meet the viewer's preferred concepts of natural harmony and cultural order. The greater the degree to which preferences are met, the higher the visual quality; the more they fail to match preferences, the lower the visual quality. Establishing the visual quality of the natural and cultural environments aids in evaluating the overall composition and vividness of the landscape.

- **Landscape composition and vividness:** The natural and cultural environment are elements that make up the overall landscape composition for a complete visual landscape. The more visual preferences and expectations are met by the landscape composition, the more that landscape is revered for its views and the more memorable, or vivid, it becomes. Visual features do not intrude but belong to a landscape of a harmonious nature in an orderly society.

Viewer preferences are established using a professional observational or public involvement approach. Professional observation is used on projects with average complexity and minimal controversy by identifying standard visual preferences associated with affected viewer groups that are adjusted to reflect state and local regulations protecting visual resources. More complex and controversial projects often engage affected stakeholders (i.e., neighbors and users) through public outreach and involvement to help define visual preferences. This analysis uses the professional observational approach (Federal Highway Administration 2015:5-13-5-14).

## Environmental Setting

### Visual Character of the Planning Area

The planning area is composed mostly of suburban and rural development and agricultural open space with some light commercial and industrial development, educational facilities, and riparian corridors. Key viewpoints representative of the planning area's visual character are identified in Figure 3.1-1. Figures 3.1-2 through 3.1-4 show the photographs taken from these viewpoints.

The natural landscape of the planning area is mostly flat with raised levees and is composed of vegetation in the form of residential landscaping, agricultural crops and hedgerows, and riparian vegetation along the river and in swales and drainages throughout rural residential lands. Rural residents often have horses, but livestock grazing is not a dominant land use. Residential landscaping and riparian vegetation, when combined with development in the planning area, act to restrict views largely to the foreground.

The cultural environment consists of older, medium-density suburban development that is centralized around the Interstate (I-) 80 and Jefferson Boulevard transportation hub, north of the Deep Water Ship Channel (DWSC); older, low-density rural development south of the DWSC; and newer development built within the last decade that includes larger tract developments mostly south of the DWSC and smaller infill development north of the DWSC. Older medium-density suburban and low-density rural development is commonly made up of smaller one-story residences that typically have fenced back yards and mature landscaping, including tall native and nonnative trees (Figure 3.1-2, Photographs 1 and 2). Narrower two-lane suburban roadways, often with sidewalks that are also narrow, provide access to older suburban areas. Smaller rural roadways that provide access to rural residences generally lack sidewalks, curbs, and gutters. Street lighting and



wooden poles and utility lines are common vertical elements lining roadways. Barns and corrals are also common on lands where owners keep horses.

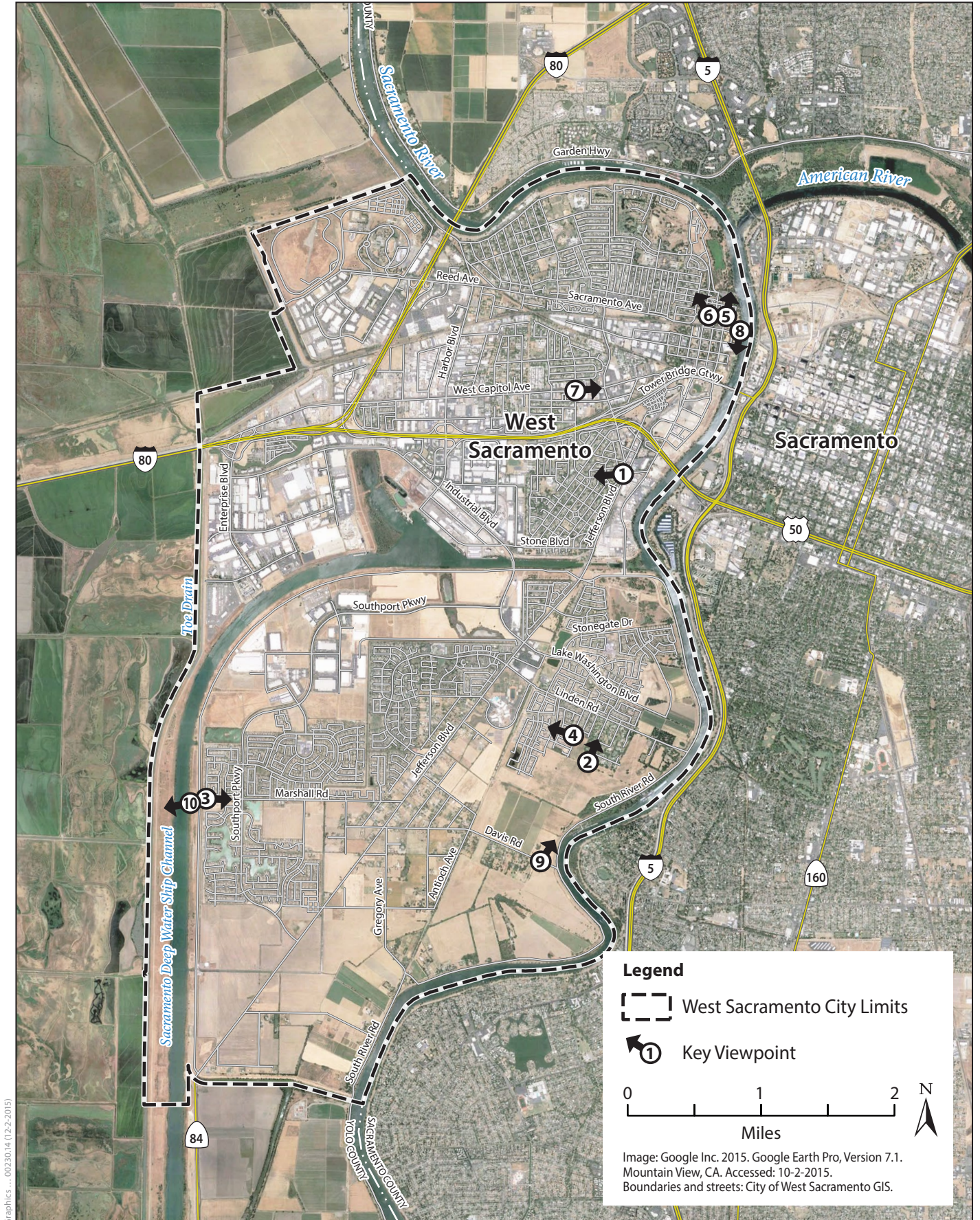
Houses in newer communities are larger, one and two-story structures with small lots and have not been designed to meld with the older communities of Bryte and Broderick with respect to layout, architectural style, and streetscaping. Roadways providing access to newer residential areas are much wider than older suburban roadways, with more formal and regular street tree plantings (Figure 3.1-2, Photographs 3 and 4). Plantings tend to be a mix of saplings and trees that have grown larger, yet newer development is also speckled with mature oaks and other trees that were left to remain growing on certain properties. Although street lighting is a vertical element, utilities have been placed underground in newer developments. Infill development tends to be denser, allowing for the maximum number of units for reprogrammed land uses and where conforming to smaller available spaces within older neighborhoods (Figure 3.1-3, Photographs 5 and 6).

In addition to residential areas, commercial and industrial areas make up the cultural landscape. These areas mainly border the DWSC and are located along I-80 and Business 80 in the northwestern portion of the planning area. Commercial areas also line the city's major roadways, such as Jefferson Boulevard and West Capitol Avenue (Figure 3.1-3, Photographs 7). Recreation and tourism uses are prevalent along the river, including Raley Field, River Walk Park, and various river access points (Figure 3.1-3, Photographs 8). The Clarksburg Branch Line Trail is a paved and unpaved trail that connects rural areas of West Sacramento near River Road and passes by River City High School and the Southport Town Center retail area en route to the suburbanized northern terminus of Locks Drive/South River Road. Levee crowns throughout the planning area provide informal recreational access near the river and DWSC for people running, walking, and cycling. In addition, the Lake Washington Sailing Club provides recreational opportunities on Washington Lake, located off the DWSC.

Development confines views mostly to the foreground so that views of open space are primarily available to rural residences and from residences or commercial uses at the outer edges of development bordering open space areas that lack intervening landscaping or structures to restrict views. In agricultural areas, viewers at the street level have foreground views of the levee and mature riparian trees, with little to no middleground and background views (Figure 3.1-4, Photograph 9). From atop levees, foreground views extend out and over development and toward background views of the downtown Sacramento skyline and the Vaca Mountains (Figure 3.1-2, Photograph 3 and Figure 3.1-4, Photograph 10).

The landscape composition of the planning area is characterized by a mix of older rural and suburban development that contrasts in design and form with newer suburban development. Similarly, older commercial areas line roadways whereas newer commercial areas cluster retail and services within shopping centers that occupy corners of major intersections. Accordingly, developed areas are moderate in landscape composition and vividness. However, remnant agricultural lands, the river, and the DWSC and associated vegetation have a higher degree of cultural order and natural harmony. These areas create opportunities for pastoral views of higher vividness in an otherwise developed area, creating a noticeable contrast to the surrounding, predominantly suburban areas. The result is that portions of the planning area are moderately high in landscape composition and vividness.





Graphics ... 0023014 (1/2-2-2015)



**Figure 3.1-1**  
**Key Viewpoint Locations**





Photo 1. Looking west down 15th Street.



Photo 2. Looking northeast down Redwood Avenue.



Photo 3. Looking east down Marshall Road.



Photo 4. Looking northwest down Trinity Way.

Graphics ... 002301.14 (12-1-2015).tm





Photo 5. Looking north down 3rd Street.

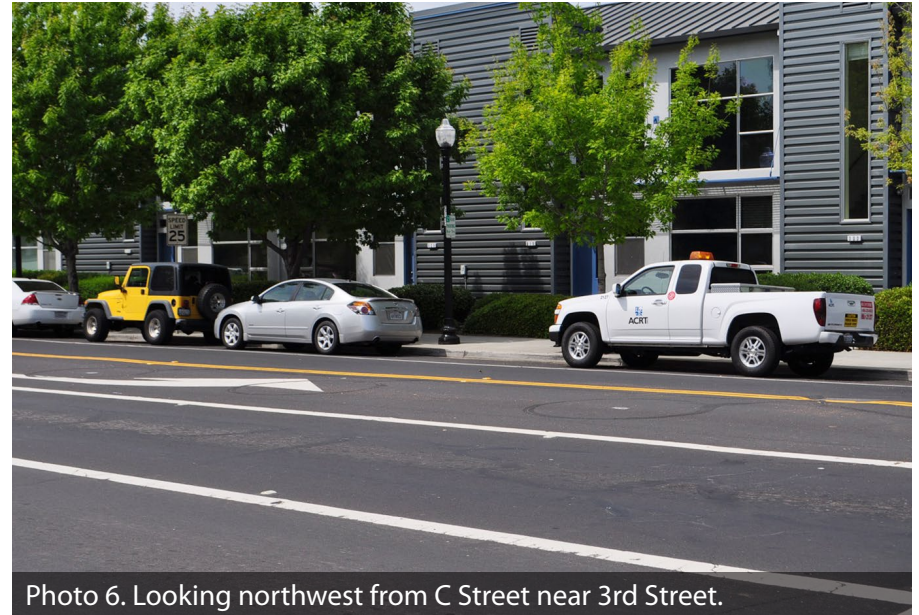


Photo 6. Looking northwest from C Street near 3rd Street.



Photo 7. Looking east down West Capitol Avenue.



Photo 8. Looking south from I Street Bridge toward River Walk Park.

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Photo 9. Looking northeast from Davis Road.



Photo 10. Looking southwest toward the DWSC and Vaca Mountains.

## **Viewer Groups and Viewer Responses**

Because the planning area consists of the whole city, viewer groups include residential, recreational, retail, commercial, institutional, civic, industrial, and agricultural viewers and travelers on local roadways. The primary viewer groups in the planning area are categorized as people living or conducting business in the city; travelers using the freeways, arterial roads, and smaller local roads (including those on levee crowns); and recreationists (boaters, swimmers, and anglers using canals, creeks, and rivers; trail users; equestrians; bicyclists; joggers; and others). All viewer groups have direct views of the planning area.

### ***Residents***

Suburban residents, including residents of older parts of the city, and rural residents in the planning area have potential exposure to views that would be affected by the General Plan update, and have a sense of ownership over nearby visual resources. These residents are considered to have high sensitivity to changes in the viewshed.

### ***Businesses***

Viewers from industrial, commercial, government, and educational facilities situated throughout the planning area have semipermanent views of areas that would be affected by the General Plan update. Because business workers and patrons focus on tasks at hand (i.e., working or shopping), these viewers are considered to have moderate sensitivity to changes in the viewshed.

### ***Travelers***

Travelers on local roadways pass by areas that would be affected by the General Plan update. Travelers use roadways in the planning area at varying speeds; normal highway and roadway speeds differ based on the traveler's familiarity with the route and roadway conditions (e.g., rain). Single views are typically of short duration, except on straighter stretches where views last slightly longer. Viewers who travel these routes frequently generally possess moderate visual sensitivity to their surroundings. The passing landscape becomes familiar to these viewers, and their attention typically is not focused on the passing views but on the roadway, roadway signs, and surrounding traffic. Viewers who travel local routes for their scenic quality generally possess a higher visual sensitivity to their surroundings because they are likely to respond to the natural environment with high regard and as a holistic visual experience. Furthermore, some scenic stretches of roadway in the planning area offer sweeping views of the surrounding area that are of interest to motorists, especially when traveling on levee tops. For these reasons, viewer sensitivity is moderate among most roadway travelers.

### ***Recreationists***

Recreational users using parks, waterways, roadways, trails, and levees are likely to seek out natural areas and scenic views that could be affected by the General Plan update. Local recreationists have a high sense of ownership of the waterways and corridors they use for recreation, and these areas are highly valued throughout the greater Sacramento area. Viewer sensitivity is high among recreationists using the planning area because they are more likely to value the natural environment, appreciate the visual experience, have a strong sense of ownership, and be sensitive to changes in views.

## 3.1.2 Environmental Impacts

### Methods for Analysis

Visual impacts are measured by the compatibility or incompatibility of the physical changes to the environment that are caused by the project's scale, form, and materials, which are seen by viewers, and the extent to which viewers care about—or how sensitive viewers are to—how the project changes the environment. Visual impacts can result in beneficial, adverse, or neutral changes to the visual environment and visual quality. Viewers have an inherent understanding of what constitutes project cohesion, which aids in determining the type of impact. The degree to which a project meets the preferred concept of project cohesion determines the level of impact.

Neutral impacts reflect little change to the visual environment and visual quality, retaining the existing landscape composition and vividness. Beneficial impacts can result where visual quality is improved through the enhancement of visual resources or where visual experiences are improved through the creation of new or improved views of resources. The level of beneficial impact is determined by how much the project improves the existing landscape composition and vividness and can range from small to very substantial improvements. Adverse impacts can result when visual quality is degraded through visual resource modification or by blocking or altering views in a negative manner. The level of adverse impact is determined by how much the project degrades the visual landscape and ranges from general negative changes to severe declines in the existing landscape composition and vividness (Federal Highway Administration 2015:6-1-6-8).

The type and level of impact for this project are evaluated in accordance with Appendix G of the State CEQA Guidelines.

### Visual Compatibility

The project environment can be affected by the visual character of grading, constructed elements, vegetative cover, infrastructure, and other ancillary visual elements associated with the project that interact to form a composition. These elements are described in more detail in Table 3.1-2. These changes affect the natural and cultural environments in the planning area and viewers evaluate the project components to determine if the project's composition is compatible or incompatible with the existing visual landscape. This viewer response determines how the existing landscape composition and vividness would be affected by the proposed project.

**Table 3.1-2. Visual Character Element of the Project Environment**

Feature	Description of Element	Visual Attributes
Grading	Alteration of the existing landform, or the grading, required to accommodate the project.	The visual character of the physical forms generated by grading, such as grading of slopes, the need for cuts and fills, and the presence of rock cuts and retaining walls, all affect visual quality. The surface appearance of rock cuts and retaining walls also affects the visual character of the project area.
Constructed elements	Buildings, infrastructure, and structures resulting from project implementation. Buildings can include homes, businesses, intuitions, and so on. Infrastructure can include new roads, parking lots, sidewalks, trails, utility lines, and telecommunication towers. Structures can include bridges, viaducts, and culverts; retaining walls; noise walls; and other large scale visual elements.	The visual character of constructed elements is described in terms of their form, scale, massing, and material compared to the existing built and natural environment. The setting and orientation of the structures, interplay between light and shadow, and artistic attributes like color, pattern, and texture also affect visual character. Whether a feature obstructs or generates views is also important.
Vegetative cover	Vegetation associated with the project, such as hydroseeding for erosion control, plantings for habitat enhancement or restoration, and landscaping for aesthetics and shade. Also, vegetative cover may be removed by project activities.	The visual character of the project's vegetative cover; its density, distribution, and species composition compared to the existing natural environment. Artistic attributes of the plants (such as seasonal color) and the ecological setting are also important.
Ancillary visual elements	These may include signage, mailboxes, benches, fencing and gates, bollards, plant containers, or other features.	Such features contribute to the project's appearance as components of the project's visual character, and existing and proposed elements are described in relation to each other.

Source: Federal Highway Administration 2015: 5-1-5-4.

## Thresholds of Significance

In accordance with Appendix G of the State CEQA Guidelines, the General Plan update would be considered to have a significant effect if it would result in any of the conditions listed below.

- Substantial degradation of the existing visual character or quality of the site and its surroundings, including scenic vistas.
- Substantial damage to scenic resources, including but not limited to trees, rock outcroppings, and historic buildings along a scenic highway.
- Creation of a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area.



## Impacts and Mitigation Measures

### **Impact AES-1: Substantial degradation of the existing visual character or quality of the site and its surroundings, including scenic vistas (significant and unavoidable)**

Development under the General Plan update would result in new suburban, urban, commercial/retail, and recreational development in undeveloped areas and infill development with a similar variety of uses (Figure 2-3). Depending on the particular projects pursued, new development allowed by the General Plan update could alter topography, remove vegetation, or change land use types in ways that would affect the existing visual character of views, including scenic vistas. Scenic vistas of particular concern include views from elevated vantages available from levee roadways and crowns that include views of the Sacramento skyline and the Vaca Mountains.

Updated General Plan goals and policies that would result in visible changes to the existing visual landscape would affect the existing visual character or quality of the city and views of available scenic vistas are discussed below.

- **Land Use Element:** Land Use policies LU-1.5 through LU-1.7 encourage infill development that is visually compatible with surrounding land uses, enhances the visual environment, and proceeds in an orderly fashion. Policies LU-3.4 through LU-3.5, LU-6.4, LU-7.3, and LU-7.4 ensure that infill, industrial, City-owned, and non-City public use development will respect the scale and character of existing residential development; protect existing neighborhoods from incompatible land uses; and provide for sensitive land use transitions. Policy LU-3.8 requires street trees and landscaping for pedestrian-friendly neighborhoods. Policy LU-3.10 helps to maintain the historic character of Old Broderick. Policies LU-4.1 through LU-4.3, LU-4.5, LU-5.20, and LU-6.5 ensure that commercial centers are well integrated with existing land uses and that when existing commercial areas are renovated, they reduce visual clutter and improve aesthetics. These policies also prevent commercial development that looks like strip malls, including development along West Capitol and Sacramento Avenues; and ensure that industrial properties improve their visual quality, when needed. Policy LU-5.3 supports the creation of city districts with unique identities that attract visitors. Policy LU-5.10 will continue to upgrade the visual quality of streets in the central business district while minimizing the visual impact of vehicles. Policies LU-5.11 and LU-5.19 promote developing unique mixed-use development along the river and at Stone Lock that complements existing neighborhoods. Policies LU-8.2 and LU-8.5 preserve and encourage the protection of open space for public access and to help soften edges between urban development and natural areas while ensuring that new development does not create connectivity barriers to open space uses.
- **Urban Structure and Design Element:** Urban Structure and Design policy UD-1.2 ensures that that the visual quality of open space is not diminished by urban and rural transitions. Policies UD-1.3 and UD-1.4 ensure that neighborhoods, districts, centers, and corridors within the city are maintained and enhanced for a positive travel experience. Policy UD-1.5 promotes a distinctive urban skyline. Policy UD-1.7 encourages neighborhoods that are designed to contribute to a complete and well-structured character. Policy UD-1.8 helps to maintain the historic character of West Sacramento. Policy UD-1.10 requires that industrial properties and structures incorporate high-quality design, landscaping, buffers, and visual screening. Policy UD-1.11 promotes visual access to waterfront, rural landscapes, and parks in the city. Policy UD-1.13 requires design review to promote quality design. Policies UD-2.1 through UD-2.7 enforce the visual improvement of existing gateways and call for the creation of new attractive, vivid

gateways. Policies UD-3.1 through UD-3.10 ensure that barriers to the waterfront are removed; riverfront parks are created; and development along the waterfront is well designed, attractive, and sensitive to surrounding land uses. Policies UD-4.1 through UD-4.13 promote streetscapes that include landscaping, trees, public art, and other site features that are well designed, attractive, sensitive to the use and context of the street, and well maintained. Policies UD-5.1 through UD-5.6 ensure that new and old development, including historic development, is complementary, includes landscaping and streetscaping, avoids abrupt changes in scale, creates attractive buildings, creates iconic buildings as appropriate, avoids visual monotony, and provides parking that is not visually obtrusive and sidewalks that are appropriately scaled.

- **Economic Development Element:** Economic Development policy ED-3.3 promotes the visibility of commercial areas along interstate highways and at interchanges. Policies ED-3.12 and ED-4.11 encourage reuse and revitalization to eliminate blight. Policy ED-4.12 supports the visual improvement of city gateways. Policy ED-5.6 encourages the improved appearance of aging shopping centers and buildings.
- **Mobility Element:** Mobility policy M-1.8 encourages the removal and minimization of natural and constructed barriers in the city to improve access. Policy M-2.6 requires landscaping and street trees to create inviting neighborhoods, and Policies M-2.7 through M-2.11 encourage retrofitting existing streets to improve their appearance and to ensure that bridges provide a welcoming city entrance. Policy M-4.5 encourages that transit facilities on new streets are well maintained and clean. Policy M-5.3 requires the city to adopt and implement a bike trail system that provides access to scenic areas. Policy M-6.3 promotes the use of street trees for new streets. Policy M-6.7 promotes safer pedestrian crossings by using well-marked street crossings.
- **Public Facilities and Services Element:** Public Facilities and Services policy PFS-1.6 ensures that public facilities do not adversely affect nearby land uses and promotes the use of landscaping and building materials for visual screening. Policy PFS-4.1 requires the use of greenscapes for stormwater runoff. Policy PFS-6.7 requires that all new utility lines be installed underground and that existing lines be undergrounded, as possible.
- **Parks and Recreation Element:** Parks and Recreation policy PR-1.16 promotes the use of landscaping that can withstand drought. Policy PR-1.18 encourages the use of parks as buffers between incompatible land uses. Policies PR-3.1 through PR-3.7 ensure and encourage existing and new public access along the river, DWSC, and the Barge Canal.
- **Natural and Cultural Resources:** Natural and Cultural Resources policies NCR-2.1 through NCR-2.16 state that the city will promote awareness of and appreciation for the natural environment, promote the protection of wildlife species and habitat that are visual resources, and promote the use of native plants. Policies NCR-3.3 and NCR-3.7 state that the tree mitigation ordinance will be implemented to preserve existing trees and to mitigate tree removal, and will preserve and plant trees on city property. Policies NCR-3.5, NCR-3.6, and NCR-7.4 ensure that trees and landscaping will be planted to provide shade and minimize the heat-island effect. Policy NCR-7.5 promotes the use of building orientation to benefit from natural lighting to reduce the need for building lighting. Policies NCR-8.1 and NCR-8.2 protect scenic vistas and require new development to complement the natural environment through siting and design.
- **Healthy Community Element:** Healthy Community policy HC-2.3 ensures that programs for parks and recreation facilitate the enjoyment of the outdoors.

- **Safety Element:** Safety policy S-2.10 encourages multi-purpose flood control projects that protect natural resources and habitat and provide recreational opportunities. Policy S-2.11 ensures that significant riparian vegetation will be protected during vegetation clearing on flood control channels. Policy S-5.2 ensures that clean air programs will be implemented to reduce air pollution emissions. Policy S-7.7 prescribes the use of noise barriers only when all other design features to reduce noise levels have been exhausted.

The updated General Plan policies would ensure that degraded existing visual conditions in the city are improved through renovations and blight reduction. In addition, the updated policies ensure that new development would be designed in a manner that is aesthetically pleasing and sensitive to adjacent land uses, including the natural and historical context. This objective would be achieved through building, infrastructure, and utility placement and design; the use of landscaping and site amenities; and design review to ensure that updated General Plan policies are addressed in proposed designs for renovations, infill, and new development. The policies also maintain and improve existing, and provide for new, visual access to important features such as the river, the DWSC, open spaces, and parks.

At some locations, landscape composition and vividness would be improved by beneficial changes resulting from implementing General Plan update policies. For example, visual improvements would come from reducing blight in areas, retrofitting existing streets to improve their appearance, and creating aesthetically pleasing recreational access along the river. It is likely that many viewer groups would view such changes as favorable.

At other locations, however, the landscape composition and vividness would be negatively affected by reducing the amount of open space that is physically and visually accessible, altering the visual character, and converting agricultural and open space land to developed land uses. In addition, higher densities for residential, commercial, and mixed-use development would create a visual environment that is more concentrated with a more urbanized appearance, compared to a visual environment that currently contains fairly large areas of rural development, lower densities, and agricultural open space. General Plan implementation would transition West Sacramento from a city that still retains a large rural visual component to one that is more suburban and metropolitan. Such changes would be visible from the elevated levees and would alter scenic vistas the levees provide.

Some viewers may perceive this transition favorably. However, it is anticipated that residents adjacent to areas that would be converted from agriculture to developed land uses would perceive such transitions negatively. Residents and other viewers in newer, less established suburban areas may tolerate such conversions as consistent with anticipated growth, even though they may not want to lose visual access to adjacent agricultural lands. However, residents and other viewers in more established, older suburban and rural developments are likely to have a much higher sensitivity to the conversion of agricultural lands and encroaching suburban development because they are accustomed to the visual environment provided by open space and agriculture. In such cases, impacts on the existing visual character and quality of views, including scenic vistas, would be significant. The updated General Plan policies ensure that new development would achieve a high standard of visual quality, and no additional mitigation beyond the proposed 2015 General Plan update policies is available. Accordingly, impacts would be significant and unavoidable.

**Impact AES-2: Substantial damage to scenic resources, including but not limited to trees, rock outcroppings, and historic buildings along a scenic highway (no impact)**

There are no federal, state, or local designated scenic roadways within the West Sacramento city limits that would be affected by the General Plan update. Therefore, there would be no impact.

**Impact AES-3: Creation of a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area (significant and unavoidable)**

Development under the General Plan update would result in new suburban, urban, commercial/retail, and recreational development and infill in undeveloped areas. New development allowed by the General Plan update could increase light and glare in the planning area by removing vegetation that provides shade, introducing reflective surfaces, and increasing interior and exterior nighttime lighting that would affect daytime and nighttime views. The policies summarized below pertain to light and glare.

- **Land Use Element:** Land Use policy LU-3.8 promotes the use of lighting for sidewalks to help create walkable neighborhoods.
- **Urban Structure and Design Element:** Urban Structure and Design policy UD-1.10 requires that industrial properties and structures control onsite lighting. Policies UD-4.2, UD-4.6, and UD-5.6 promote the use of appropriate lighting for streets and adjacent land uses; encourage unique streetscape features, including lighting; and encourage adequate lighting for safety.
- **Mobility Element:** Mobility policy M-4.5 encourages that transit facilities on new streets install adequate lighting for safety. Policy M-6.3 promotes the use of pedestrian-scale lighting and street trees for new streets. Policy M-6.9 ensures that pedestrian ways are adequately illuminated.
- **Public Facilities and Services Element:** Public Facilities and Services policy PFS-1.6 ensures that light and glare associated with public facilities does not adversely affect nearby land uses and promotes the use of landscaping and building materials for visual screening.
- **Parks and Recreation Element:** Parks and Recreation policy PR-1.14 ensures that bright lighting associated with new parks that are to be used at night is buffered so that the lighting does not adversely affect nearby existing and planned residential areas.
- **Natural and Cultural Resources:** Natural and Cultural Resources policy NCR-6.1 states that motion-activated lighting will be used as a means to reduce energy usage in older municipal buildings. Policy NCR-6.7 states that LED street lights will replace existing street lights. Policy NCR-7.4 ensures that trees and landscaping will be planted to provide shade and that reflective pavement will be minimized to reduce the heat-island effect. Policy NCR-7.5 promotes the use of building orientation to benefit from natural lighting to reduce the need for building lighting. Policies NCR-8.3 through NCR-8.5 encourage project and lighting design that reduces light pollution to help preserve views of the night sky, minimize obtrusive outdoor lighting, and prevent excessive glare.

While many of these policies act to limit light pollution and glare, the General Plan update would allow new sources of light and glare where no sources of artificial light and glare are currently present, such as by converting agricultural lands to residential development. In addition, proposed land use changes to support higher density development would increase the number of sources of light and glare by increasing the number of units per acre, the number of stories that may be built as

multi-level and high-rise development, and the number of cars that would be traveling in the planning area. Developing agricultural lands and higher development densities would increase both interior and exterior lighting within the planning area. Although little could be done to reduce residential interior lighting, all other development (i.e., civic, institutional, commercial, retail) can use interior lighting that greatly reduces light spill compared to traditional interior lighting.

Exterior lighting that is not shielded can result in backscatter that can negatively affect views of the nighttime sky by increasing ambient light glow. Improper shielding can also result in light trespass that occurs when light spills over and unintentionally lights other properties. In addition, installing new and replacing existing exterior lighting with LED lighting can result in a substantial increase in light and glare if not properly designed. Proper shielding is particularly important to avoid increasing light trespass and disruptive glare when blue-rich white light lamps (BRWL) are used (International Dark-Sky Association 2010a, 2010b, 2015). BRWL light fixtures often do not have a cover, leaving the LED bulbs exposed; such bright light can be very harsh to the human eye at night, when it is adjusted to lower light levels.

Also, while LED lighting is often recessed and directed downward, replacing existing street lights with BRWL LED lighting can result in substantial light trespass because the LED light is much brighter than traditional street lighting. Installing LEDs at the same height as traditional street lighting results in lighting a larger area than intended. This can be particularly troublesome in residential areas where LED lighting can spill into living rooms and bedrooms at night, and the nuisance light and glare can negatively affect humans' circadian rhythms and sleep patterns. It would also result in a substantial source of nighttime light and glare that would adversely affect nighttime views in the planning area. Implementation of Mitigation Measures 3a through AES-3c would reduce impacts associated with improper lighting design.

Glare would result from increases in reflective surfaces such as building and car windows, lighting, and replacement of vegetation with built features. Glare would be more pronounced if very light and bright or reflective materials are used. Streetscaping and residential landscaping—supported by updated General Plan policies—would help by planting trees and shrubs that can help to partially filter light and glare. However, such plantings would not fully offset the increases in light and glare that would occur as a result of the General Plan update. Windows in multi-level and high-rise buildings would introduce large reflective surfaces that could affect passing traffic and nearby viewers. This glare could potentially be dangerous for drivers, especially in late fall and winter when lower sun angles increase the potential for such glare, even though building design may reduce the effects of glare to a degree by using elements such as building overhangs. Implementation of Mitigation Measures AES-3b and AES-3c would reduce impacts associated with glare. While impacts associated with light and glare can be reduced, they cannot be fully mitigated. Implementation of Mitigation Measures AES-3a through AES-3c would reduce these impacts but not to a less-than-significant level. Accordingly, impacts associated with light and glare would be significant and unavoidable.

### **Mitigation Measure AES-3a: Create new Urban Structure and Design policies to apply minimum lighting standards and to reduce glare**

Create Policies UD-5.12, UD-5.13, and UD-5.14 in the Urban Structure and Design Element to apply minimum lighting standards as follows.

**UD-5.12 Apply Minimum Lighting Standards.** All artificial outdoor lighting shall be limited to safety and security requirements, designed using Illuminating Engineering Society's design

guidelines, and in compliance with International Dark-Sky Association–approved fixtures. All lighting shall be designed to have minimum impact on the surrounding environment and shall use downcast, cut-off type fixtures that are shielded and direct the light only toward objects requiring illumination. Lights shall be installed at the lowest allowable height and cast low-angle illumination while minimizing incidental light spill onto adjacent properties, open spaces, or backscatter into the nighttime sky. The lowest allowable wattage shall be used for all lighted areas, and the number of nighttime lights needed to light an area shall be minimized to the extent possible to ensure that spaces are not unnecessarily over-lit. Light fixtures shall have non-glare finishes that will not cause reflective daytime glare. Lighting shall be designed for energy efficiency and have daylight sensors or be timed with an on/off program. Lights shall provide good color rendering with natural light qualities, with the minimum intensity feasible for security, safety, and personnel access. Lighting, including color rendering and fixture types, shall be designed to be aesthetically pleasing.

**UD-5.13 Glare Reduction for Buildings.** New buildings built under the General Plan update shall be designed in a manner that reduces the potential for these features to create glare. Building facades will be colored in mid-range to darker earth tones to help buildings blend better with a natural setting. Large surface areas of shiny metals or colored white or very light beiges or tans increase the potential for glare and shall be avoided.

**UD-5.13 Glare Reduction for Multi-Level and High-Rise Buildings.** Windows installed in new multi-level (three stories and taller) and high-rise (75 feet, or higher than the lowest level of fire department vehicle access) buildings shall be selected for their ability to minimize glare and specular highlighting. To the extent feasible, windows designed using emerging technologies that introduce diffusion coatings and nanotechnology innovations shall be used to effectively reduce the refractive index of protective glass windows. In addition, new buildings shall be designed to ensure that solar glare does not create a hazard for travelers on local roadways.

### **Mitigation Measure AES-3b: Amend Natural and Cultural Resources policies to apply minimum lighting standards**

Revise Policy NCR-6.7 in the Natural and Cultural Resources Element as follows (additions are underlined and deletions shown with strikethrough).

**NCR-6.7 LED Street Lights.** The City shall replace existing street lights with light emitting diode (LED) street lights, as financially feasible. LED lighting shall avoid the use of blue rich white light lamps and use a correlated color temperature that is no higher than 3,000 degrees Kelvin, consistent with the International Dark-Sky Association’s Fixture Seal of Approval program. In addition, LED lights will use shielding to ensure that nuisance glare and light spill do not affect nearby residents. The height of street lights will be assessed to ensure that light trespass affecting residents is limited. If needed, the height of street lights will be lowered to account for the increase in lighting area provided by LED replacement lighting.

### **Mitigation Measure AES-3c: Create new Natural and Cultural Resources policy to apply minimum lighting standards**

Create Policies NCR-6.8 and NCR-6.9 in the Natural and Cultural Resources Element as follows.

**NCR-6.8 Lighting Efficiency in New Buildings.** Except for residential structures, building design shall be required to include low-intensity interior safety lighting for use after business hours instead of standard interior safety lighting. A “lights-off” policy shall be implemented that prevents the unnecessary overuse of interior nighttime lighting. This practice requires that all non-safety lighting, such as in offices and hallways, be turned off after business hours. This may be accomplished by using automatic motion sensors programmed for use after hours. Use of harsh mercury vapor or low-pressure sodium bulbs shall be prohibited.

**NCR-6.9 Light Pollution Technology.** Technologies to reduce light pollution evolve over time and design measures that are currently available may help but may not be the most effective means of controlling light pollution once a project is designed. Therefore, all design measures used to reduce light pollution shall employ the technologies available at the time of project design to allow for the highest potential reduction in light pollution.

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## 3.2 Agricultural and Forestry Resources

### 3.2.1 Existing Conditions

#### Regulatory Setting

There are no relevant federal regulations that apply to agricultural resources. Accordingly, only state and local regulations are described below.

#### State

##### Farmland Mapping and Monitoring Program

The California Department of Conservation's (DOC's) Farmland Mapping and Monitoring Program (FMMP), administered by the Division of Land Resource Conservation, is responsible for mapping and monitoring Important Farmlands for most of the state's agricultural areas. The FMMP updates its farmland maps every 2 years based on information from local agencies. FMMP maps show five categories of agricultural lands and three categories of nonagricultural lands, described in the following sections.

##### *Agricultural Lands*

Following are descriptions of the farmland mapping categories used by the FMMP. The minimum mapping unit for all agricultural land categories is 10 acres, except for Grazing Land where the minimum mapping unit is 40 acres.

Note that Prime Farmland, Farmland of Statewide Importance, and Unique Farmland are the most suitable for agriculture and are considered especially important agricultural resources. They are often referred to collectively as *important farmland*. Grazing Land may also qualify as important farmland where grazing is a key component of the local economy.

- Prime Farmland is defined as farmland with the best combination of physical and chemical features able to sustain long-term agricultural production. This land has the soil quality, growing season, and moisture supply needed to produce sustained high yields. Prime Farmland must have been used for irrigated agricultural production at some time during the 4 years prior to the mapping date.
- Farmland of Statewide Importance is defined as "irrigated land similar to Prime Farmland that has a good combination of physical and chemical characteristics for the production of agricultural crops." However, this land has minor shortcomings, such as steeper slopes or less ability to store soil moisture than Prime Farmland. In order for land to be designated as Farmland of Statewide Importance, it must have been used for production of irrigated crops at some time during the 4 years prior to the mapping date.
- Unique Farmland is considered to consist of lower-quality soils but nonetheless is used for production of the state's leading agricultural crops. Unique Farmland is usually irrigated, but may include nonirrigated orchards or vineyards in some climatic zones. To qualify for this designation, land must have been used for crops at some time during the 4 years prior to the mapping date.

- Farmland of Local Importance is land identified as important to the local agricultural economy by each county's board of supervisors and a local advisory committee.
- Grazing Land is land on which the existing vegetation is suited to the grazing of livestock. This category was developed in cooperation with the California Cattlemen's Association, the University of California Cooperative Extension, and other groups interested in the extent of grazing activities.

### **Nonagricultural Lands**

Following are descriptions of the nonagricultural land mapping categories used by the FMMP. Mapping units for nonagricultural lands vary, as described below.

- Urban and Built-Up Lands consist of land occupied by structures with a building density of at least 1 structure to 1.5 acres, or approximately 6 structures to a 10-acre parcel. This type of land is used for residential, industrial, commercial, construction, institutional, and public administration purposes; railroad and other transportation yards; cemeteries; airports; golf courses; sanitary landfills; sewage treatment facilities; water control structures; and other developed purposes.
- Other Land is land not included in any other mapping category. Examples include low-density rural developments and brush, timber, wetland, and riparian areas not suitable for livestock grazing. This category also includes vacant and nonagricultural land surrounded on all sides by urban development; confined livestock, poultry, or aquaculture facilities; strip mines; borrow pits; and water bodies smaller than 40 acres.
- Water includes perennial water bodies with an extent of at least 40 acres.

### **Williamson Act**

The California Land Conservation Act, better known as the Williamson Act, has been the state's premier agricultural land protection program since its enactment in 1965. Land placed under a Williamson Act contract is restricted to agricultural uses. The Williamson Act is a non-mandated state policy providing for a preferential assessment of agricultural and open space lands that meet local size and use criteria. There are no Williamson Act contracts on land within the city limits; consequently, this statute does not apply to West Sacramento.

## **Local**

### **City of West Sacramento General Plan**

Section VI, *Natural Resources*, of the existing General Plan, lists goals and policies relevant to agricultural resources.

**Goal B:** To promote the economic viability of agriculture in West Sacramento and to discourage premature development of agricultural land with non-agricultural uses, while providing for urban needs.

**Policy 1.** The City shall support the continuation of agricultural uses on lands designated for urban uses until urban development is imminent.

**Policy 2.** The City shall endeavor to ensure, in approving urban development near agricultural lands, that such development will not constrain agricultural practices or adversely affect the economic viability of nearby agricultural operations.

**Policy 3.** The City shall encourage Yolo County to retain agricultural uses on lands adjacent to the city.

**Policy 4.** The City shall support tax and economic incentives, at both the local and State levels, to enhance the economic competitiveness of agriculture.

### **Title 8, Health and Safety, City of West Sacramento Municipal Code**

Title 8, Health and Safety, of the City's Municipal Code includes a chapter that protects the right-to-farm. Chapter 8.28, Agriculture—Right to Farm, includes the provision that if land within 1,000 feet of the exterior boundary of agricultural is subdivided, sold, transferred, or leased with an option to purchase, the buyer must sign a disclosure statement regarding the presence of adjacent agricultural operations; the statement is then recorded with the County Recorder's office.

### **Title 10, Environment, Chapter 6, Agriculture, Yolo County Code**

Title 10, Environment, Chapter 6, Agriculture, of the Yolo County Code specifies that no agricultural activity, operation, or facility, maintained on agricultural lands for commercial purposes, shall become a nuisance if it has been in operation for more than 3 years, if it was not a nuisance at the time it began. The purpose of this ordinance is to protect local agricultural operations supporting preservation of the county's agricultural heritage. This provision affects lands along the city's edge that adjoins county land.

## **Environmental Setting**

West Sacramento has a long history of agriculture. Active agricultural uses within city limits is located predominantly in the southern portion (Figure 3.2-1). Principal crops include wheat, alfalfa, miscellaneous vegetables, and fruits.

Farming is important to the economy of both West Sacramento and Yolo County. According to the Yolo County Crop Report (2014), crops were harvested from 439,168 acres in Yolo County. The total value of crops (i.e., fruits, nuts, field and vegetable crops, and livestock and poultry) harvested in Yolo County in 2014 was \$801,205,000—an 11% increase from the 2013 gross production value of \$721,635,000.

Agricultural land within the city limits includes both Prime Farmland and Farmland of Local Importance (Department of Conservation 2015). Recent distribution of FMMP categories of farmland and general trends of farmland conversion in Yolo County as a whole are shown in Table 3.2-1 (this information is not available for the city alone).

**Table 3.2-1. Yolo County FMMP Designations (acres)**

Land Use Category	Acreage Inventoried	
	2012	2014
Prime Farmland	250,693	250,345
Farmland of Statewide Importance	17,298	18,861
Unique Farmland	42,403	44,604
Farmland of Local Importance	58,137	51,725
<b>Important Farmland Subtotal</b>	<b>368,531</b>	<b>365,535</b>
Grazing Land	163,640	166,367
<b>Agricultural Land Subtotal</b>	<b>532,171</b>	<b>531,902</b>
Urban and Built-up Land	30,835	31,049
Other Land	82,639	82,694
Water Area	7,804	7,804
<b>Total Area Inventoried</b>	<b>653,449</b>	<b>653,449</b>

Source: Yolo County 2014.

## 3.2.2 Environmental Impacts

### Methods for Analysis

This analysis addresses the project's short- and long-term adverse impacts on the physical (i.e., natural and built) environment, assuming that the project will be built out. Existing conditions are the baseline against which the significance of the project's potential impacts on agricultural land are evaluated. Therefore, the reasonably foreseeable impacts of the General Plan update are compared with the existing environment and not the provisions of the existing general plan and zoning ordinance. The FMMP's most recent available census of agricultural land use—(2012)—is used as the baseline for this analysis.

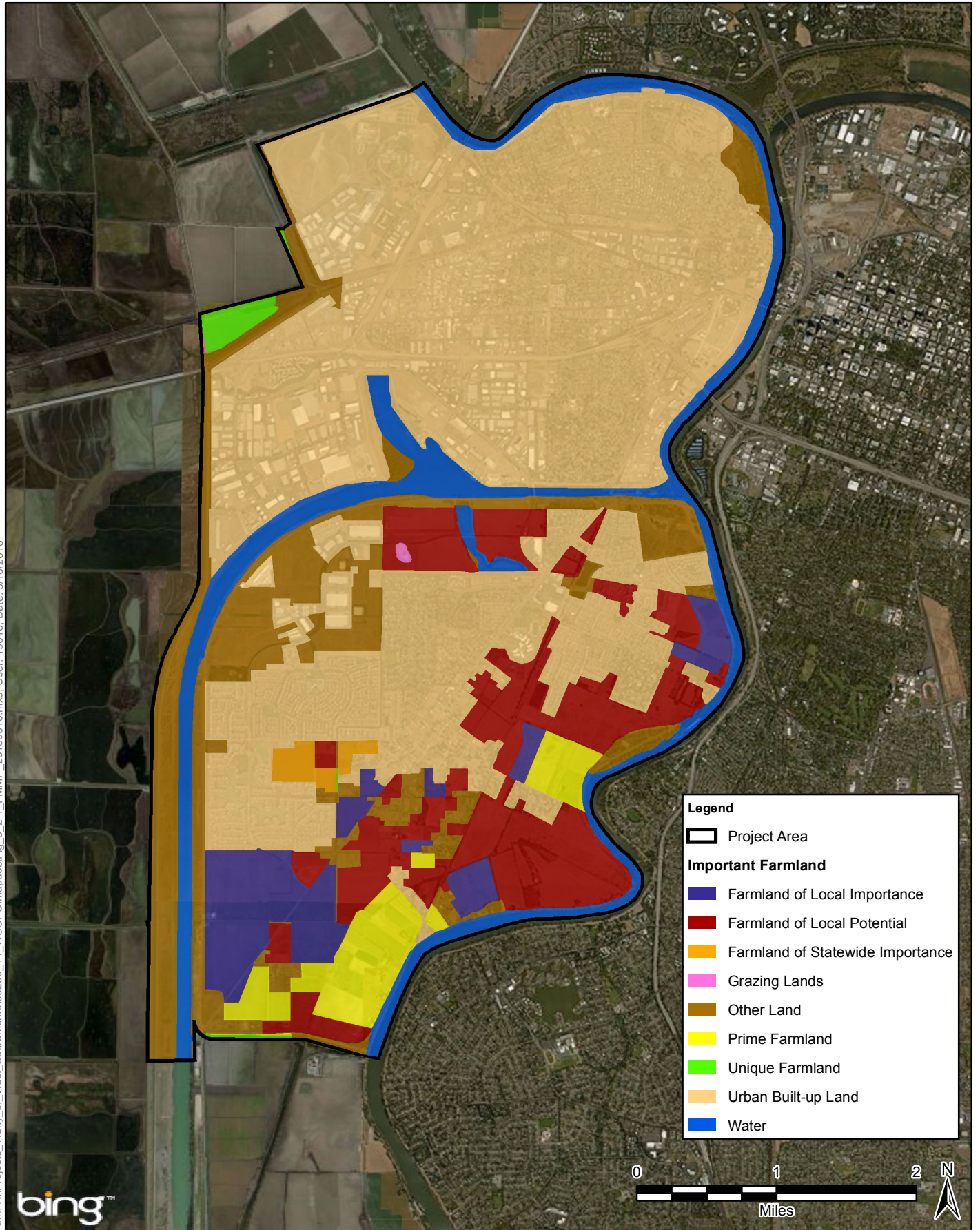
Major sources used in this analysis include *Table A-46, Yolo County 2012–2014 Land Use Conversion*, and the Yolo County Important Farmland 2015 map, both from California Department of Conservation, Farmland Mapping and Monitoring Program; the Yolo County Williamson Act FY 2012/2011 map, by California Department of Conservation, Division of Land Resource Protection, Conservation Program Support; and aerial photography provided by Google Earth.

### Thresholds of Significance

In accordance with Appendix G of the State CEQA Guidelines, the proposed project would be considered to have a significant effect if it would result in any of the conditions listed below.

- Conversion of Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Important Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to nonagricultural use.
- Conflict with existing zoning for agricultural use.
- Other changes in the existing environment that, due to their location or nature, could result in conversion of Farmland to non-agricultural use.

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Source: FMMP 2010

**Figure 3.2-1**  
**Important Farmland**



Appendix G identifies conflict with a Williamson Act contract as another indicator of potential impact. Because there are no active Williamson Act contracts in West Sacramento, that indicator does not apply.

## Impacts and Mitigation Measures

### **Impact AG-1: Conversion of Important Farmland to nonagricultural use (significant and unavoidable)**

The West Sacramento General Plan update is not a typical development project in that it would not result in a direct physical change in the environment. The uses that would be allowable under the General Plan's updated objectives and policies would indirectly affect the environment by establishing standards for future development. The project does not propose any changes to the General Plan's land use map or General Plan policies that would result in additional conversions of agricultural lands, nor are any changes proposed to the General Plan that would preclude agricultural uses. The project includes changes to reflect current legislation, regulatory codes, and local standards as well as some minor revisions to General Plan language and policy improvements.

While the city does contain areas of Prime Farmland, Farmland of Statewide Importance, and Unique Farmland, this project would not change the permitted land uses on these lands. However, lands currently being farmed are planned for urbanization. The future urbanization of those lands would remove them from agricultural production. The project would have a significant impact on farmland.

Permanent conversion of agricultural land to nonagricultural uses would occur with buildout of the General Plan, and while implementation of the General Plan goals and policies would reduce the severity of this impact, no additional feasible mitigation measures are available. The proposed General Plan would retain these measures and add policies stating that the City shall require that purchasers of homes near agricultural lands be provided notification of agricultural operations and activities by way of their deeds and/or escrow documents; the proposed General Plan would also support continued implementation of the right-to-farm ordinance. Although these policies and actions will reduce the impact related to conversion of important farmland, it will not reduce the impact to a less-than-significant level. Therefore, the impact is significant and unavoidable.

### **Impact AG-2: Conflict with existing zoning for agricultural use (less than significant)**

Lands currently zoned for agricultural use would largely remain so. Those areas that would change from Agriculture zoning would be zoned Rural Estate, which permits limited agricultural uses. Other areas of the city that are used as farmland are planned for urban development under the current General Plan and their land use status would be unchanged by the proposed project. The proposed project would have a less-than-significant impact on existing zoning for agricultural uses. No mitigation is required.

### **Impact AG-3: Other changes in the existing environment that, due to their location or nature, could result in conversion of farmland to nonagricultural use (less than significant)**

The proposed General Plan Update does not include any additional changes that, because of their location or nature, could result in the conversion of farmland to nonagricultural use. None of the General Plan policy amendments are site specific. As General Plan implementation occurs, the project would not involve General Plan amendments that would result in additional conversions of



agricultural lands. The General Plan update is not a development project in itself, but rather a policy document that will guide development in the county in the years ahead. None of the policies or updates to the General Plan would conflict with state and local policies that are in place to preserve the city's existing farmland. These policies in the West Sacramento General Plan's Agricultural Element are in place to help preserve existing farmland. The proposed General Plan update is supportive of, and does not conflict with, these policies. Therefore, impacts would be less than significant, and no mitigation is required.

### 3.2.3 References Cited

- Yolo County. 2014. *Table A-46, Yolo County 2012–2014 Land Use Conversion*. Division of Land Resource Protection, Farmland Mapping and Monitoring Program. Available: <http://www.conservation.ca.gov/dlrp/fmmp/Pages/Yolo.aspx>. Accessed: October 17, 2015.
- . 2014. *Yolo County Agricultural Crop Report*. Department of Agriculture and Weights and Measures. Department of Conservation. 2015. *Yolo County Important Farmland 2014*. September. Division of Land Resource Protection, Farmland Mapping and Monitoring Program. Available: <ftp://ftp.consrv.ca.gov/pub/dlrp/FMMP/pdf/2014/yol14.pdf>. Accessed: September 25, 2015.

## 3.3 Air Quality

This section addresses air quality resources in the planning area, which is also the study area for this analysis. Greenhouse gas emissions and impacts are discussed in Chapter 3.7, *Greenhouse Gas Emissions*.

### 3.3.1 Existing Conditions

#### Regulatory Setting

Air quality regulation in the United States is governed by the federal Clean Air Act (CAA). In addition to being subject to requirements of the CAA, air quality in California is also governed by more stringent regulations under the California Clean Air Act (CCAA). At the federal level, the CAA is administered by the U.S. Environmental Protection Agency (EPA). In California, the CCAA is administered by the California Air Resources Board (ARB) and by air districts at regional and local levels. The CAA and CCAA set overall air quality standards that are achieved by various rules and regulations at the regional and local level. This section describes relevant federal, state, and local regulations applicable to the proposed General Plan update.

#### Federal

##### Clean Air Act

The CAA, first enacted in 1963, has been amended numerous times (1965, 1967, 1970, 1977, and 1990). The CAA establishes federal air quality standards, known as National Ambient Air Quality Standards (NAAQS), and specifies future dates for achieving compliance. The CAA also mandates that the state submit and implement a State Implementation Plan (SIP) for local areas not meeting those standards. The SIPs must include pollution control measures that demonstrate how the standards will be met.

The 1990 amendments to the CAA identify specific emission-reduction goals for areas not meeting the NAAQS. These amendments require both a demonstration of reasonable further progress toward attainment and incorporation of additional sanctions for failure to attain or meet interim milestones. The sections of the CAA that would most substantially affect implementation of the updated General Plan are Title I (Nonattainment Provisions) and Title II (Mobile-Source Provisions).

Table 3.3-1 shows the NAAQS currently in effect for each criteria pollutant. The California Ambient Air Quality Standards (CAAQS) (discussed below) are included for reference.



**Table 3.3-1. Federal and State Ambient Air Quality Standards**

Criteria Pollutant	Average Time	California Standards	National Standards <sup>a</sup>	
			Primary	Secondary
Ozone	1-hour	0.09 ppm	None <sup>b</sup>	None <sup>b</sup>
	8-hour	0.070 ppm	0.070 ppm	0.070 ppm
Particulate matter (PM10)	24-hour	50 µg/m <sup>3</sup>	150 µg/m <sup>3</sup>	150 µg/m <sup>3</sup>
	Annual mean	20 µg/m <sup>3</sup>	None	None
Fine particulate matter (PM2.5)	24-hour	None	35 µg/m <sup>3</sup>	35 µg/m <sup>3</sup>
	Annual mean	12 µg/m <sup>3</sup>	12.0 µg/m <sup>3</sup>	15 µg/m <sup>3</sup>
Carbon monoxide	8-hour	9.0 ppm	9 ppm	None
	1-hour	20 ppm	35 ppm	None
Nitrogen dioxide	Annual mean	0.030 ppm	0.053 ppm	0.053 ppm
	1-hour	0.18 ppm	0.100 ppm	None
Sulfur dioxide <sup>c</sup>	Annual mean	None	0.030 ppm	None
	24-hour	0.04 ppm	0.014 ppm	None
	3-hour	None	None	0.5 ppm
	1-hour	0.25 ppm	0.075 ppm	None
Lead	30-day Average	1.5 µg/m <sup>3</sup>	None	None
	Calendar quarter	None	1.5 µg/m <sup>3</sup>	1.5 µg/m <sup>3</sup>
	3-month average	None	0.15 µg/m <sup>3</sup>	0.15 µg/m <sup>3</sup>
Sulfates	24-hour	25 µg/m <sup>3</sup>	None	None
Visibility reducing particles	8-hour	– <sup>d</sup>	None	None
Hydrogen sulfide	1-hour	0.03 ppm	None	None
Vinyl chloride	24-hour	0.01 ppm	None	None

Source: California Air Resources Board 2015a.

ppm = parts per million.

µg/m<sup>3</sup> = micrograms per cubic meter.

<sup>a</sup> National standards are divided into primary and secondary standards. Primary standards are intended to protect public health, whereas secondary standards are intended to protect public welfare and the environment.

<sup>b</sup> The federal 1-hour standard of 12 parts per hundred million was in effect from 1979 through June 15, 2005. The revoked standard is referenced because it was employed for such a long period and is a benchmark for State Implementation Plans.

<sup>c</sup> The annual and 24-hour NAAQS for SO<sub>2</sub> only apply for 1 year after designation of the new 1-hour standard to those areas that were previously in nonattainment for 24-hour and annual NAAQS.

<sup>d</sup> CAAQS for visibility-reducing particles is defined by an extinction coefficient of 0.23 per kilometer—visibility of 10 miles or more due to particles when relative humidity is less than 70%.

## State

### California Clean Air Act

In 1988, the state legislature adopted the CCAA, which established a statewide air pollution control program. The CCAA requires all air districts in the state to endeavor to meet the CAAQS by the earliest practical date. Unlike the federal CAA, the CCAA does not set precise attainment deadlines. Instead, the CCAA establishes increasingly stringent requirements for areas that will require more time to achieve the standards. CAAQS are generally more stringent than the NAAQS and incorporate additional standards for sulfates, hydrogen sulfide, visibility-reducing particles, and vinyl chloride. The CAAQS and NAAQS are listed together in Table 3.3-1.

ARB and the local air districts bear responsibility for achieving California's air quality standards, which are to be achieved through district-level air quality management plans that would be incorporated into the SIP. In California, EPA has delegated authority to prepare SIPs to ARB, which, in turn, has delegated that authority to individual air districts. ARB has traditionally established state air quality standards, maintaining oversight authority in air quality planning, developing programs for reducing emissions from motor vehicles, developing air emission inventories, collecting air quality and meteorological data, and approving SIPs.

The CAA substantially adds to the authority and responsibilities of air districts. The CCAA designates air districts as lead air quality planning agencies, requires air districts to prepare air quality plans, and grants air districts authority to implement transportation control measures. The CCAA also emphasizes the control of "indirect and area-wide sources" of air pollutant emissions. The CCAA gives local air pollution control districts explicit authority to regulate indirect sources of air pollution and to establish traffic control measures (TCMs).

### State Tailpipe Emission Standards

ARB established a series of increasingly strict emission standards for new off-road diesel equipment, on-road diesel trucks, and harbor craft. New construction equipment used for future projects under the proposed General Plan update, including heavy duty trucks and off-road construction equipment, will be required to comply with the standards.

### Toxic Air Contaminant Regulations

California regulates toxic air contaminants (TACs) (equivalent to hazardous air pollutants at the federal level) primarily through the Toxic Air Contaminant Identification and Control Act (Tanner Act) and the Air Toxics "Hot Spots" Information and Assessment Act of 1987 ("Hot Spots" Act). In the early 1980s, ARB established a statewide comprehensive air toxics program to reduce exposure to air toxics. The Tanner Act created California's program to reduce exposure to air toxics. The "Hot Spots" Act supplements the Tanner Act by requiring a statewide air toxics inventory, notification of people exposed to a significant health risk, and facility plans to reduce these risks.

In August 1998, ARB identified diesel particulate matter (DPM) from diesel-fueled engines as TACs. In September 2000, ARB approved a comprehensive Diesel Risk Reduction Plan to reduce emissions from both new and existing diesel-fueled engines and vehicles. The goal of the plan is to reduce DPM (respirable particulate matter) emissions and the associated health risk by 75% in 2010 and by 85% by 2020. The plan identifies 14 measures that ARB will implement over the next several years. Because these measures would be enacted before any phase of construction, future projects under

the proposed General Plan update would be required to comply with applicable diesel control measures.

## Local

Air quality districts have local responsibility in overseeing stationary-source emissions, approving permits, maintaining emissions inventories, maintaining air quality stations, overseeing agricultural burning permits, and reviewing air quality-related sections of environmental documents required by CEQA. The air quality districts are also responsible for establishing and enforcing local air quality rules and regulations that address the requirements of federal and state air quality laws and for ensuring that NAAQS and CAAQS are met.

The air quality study area falls under the jurisdiction of the Yolo-Solano Air Quality Management District (YSAQMD). Under the CCAA, YSAQMD is required to develop an air quality plan for nonattainment criteria pollutants in the air district. The 1994 Sacramento Area Regional Ozone Attainment Plan was prepared to address reactive organic gases (ROG) and nitrogen oxide (NO<sub>x</sub>) emissions following the region's serious nonattainment designation for the 1-hour ozone NAAQS in November 1991. The Sacramento Regional 8-Hour Attainment and Reasonable Further Progress Plan has also been adopted to address the region's nonattainment status for the 8-hour ozone NAAQS. Air districts within the Sacramento Federal Nonattainment Area (SFNA) have submitted the ozone plan to EPA and are currently waiting for the agency to approve the document. Counties in the SFNA (Sacramento, Yolo, Placer, El Dorado, Solano, Sutter, and Butte) have also adopted the Northern Sacramento Valley Planning Area 2009 Triennial Air Quality Attainment Plan (Sacramento Valley Air Quality Engineering and Enforcement Professionals 2013) (2009 Plan). This plan outlines strategies to achieve the health-based ozone standard. The Sacramento region is also in the process of developing a plan to address particulate matter (PM).

YSAQMD (2007) has adopted CEQA emission thresholds in its *Handbook for Assessing and Mitigating Air Quality Impacts* to assist lead agencies in determining the level of significance of project-related emissions. According to the YSAQMD handbook, project emissions that exceed the recommended threshold levels are considered potentially significant and should be mitigated where feasible. Also according to the handbook, the potential air quality effects of general plans should be evaluated based on the plan's consistency with the most recently adopted air quality attainment plan (AQAP) or SIP. To evaluate local plan consistency with the regional air quality plans, the lead agency should consider the local plan's consistency with AQAP and SIP population and vehicle use projections, the extent to which the plan implements AQAP and SIP transportation control measures, and whether the plan provides buffer zones around sources of odors and toxics. Additionally, general plans must show consistency with the strategies described in the AQAP and SIP in order to claim a less-than-significant impact on air quality.

The later projects under the proposed General Plan Update may be subject to the following district rules (Yolo-Solano Air Quality Management District 2015). This list of rules may not be all encompassing, as additional YSAQMD rules may apply to individual projects as specific components are identified. These rules have been adopted by YSAQMD to reduce emissions throughout the area.

- Rule 2.3 (Ringelmann Chart). This rule restricts visible emissions from stationary diesel-powered equipment, stating that emissions are not allowed to exceed 40% opacity for more than 3 minutes in any 1 hour.

- Rule 2.5 (Nuisance). This rule prevents dust emissions from creating a nuisance to surrounding properties.
- Rule 2.11 (Particulate Matter Concentration). This rule restricts emissions of PM greater than 0.1 grain per cubic foot of gas at dry standard conditions.
- Rule 2.14 (Architectural Coatings). This rule limits the quantity of ROG in architectural coatings supplied, sold, offered for sale, applied, solicited for application, or manufactured within YSAQMD.
- Rule 2.28 (Cutback and Emulsified Asphalts). This rule limits the application of cutback and emulsified asphalt.
- Rule 2.32 (Stationary Internal Combustion Engines). This rule requires portable equipment greater than 50 horsepower, other than vehicles, to be registered with either ARB's Portable Equipment Registration Program or YSAQMD.
- Rule 2.40 (Wood Burning Appliances). This rule prohibits the installation of any new traditional "open hearth" type fire places.
- Rule 3.4 (New Source Review). This rule provides for the review of new and modified stationary air pollution sources and provides mechanisms, including emission offsets, to construct such sources without interfering with attainment of the NAAQS.
- Rule 9.9 (Asbestos). This rule requires YSAQMD consultation and permit issuance prior to commencing demolition or renovation work, in the event that demolition, renovation, or removal of asbestos-containing materials is involved.

## Environmental Setting

Ambient air quality is affected by climatological conditions, topography, and the types and amounts of pollutants emitted. West Sacramento is located in Yolo County within the Sacramento Valley Air Basin (SVAB). The following discussion describes relevant characteristics of the SVAB, describes key pollutants of concern, summarizes existing ambient pollutant concentrations, and identifies sensitive receptors.

### Regional Climate and Meteorology

The SVAB is bounded on the north by the Cascade Range, on the south by the San Joaquin Valley Air Basin, on the east by the Sierra Nevada, and on the west by the Coast Ranges. The SVAB contains all of Tehama, Glenn, Butte, Colusa, Yolo, Sutter, Yuba, Sacramento, and Shasta Counties, as well as a portion of Solano and Placer Counties (California Code of Regulations 60106).

The SVAB has a Mediterranean climate characterized by hot, dry summers and cool, rainy winters. During winter, the north Pacific storm track intermittently dominates Sacramento Valley weather, and fair weather alternates with periods of extensive clouds and precipitation. Periods of dense and persistent low-level fog, which is most prevalent between storms, are also characteristic of winter weather in the valley. The frequency and persistence of heavy fog in the valley diminish with the approach of spring. The average yearly temperature range for the Sacramento Valley is 20°F to 115°F, with summer high temperatures often exceeding 90°F and winter low temperatures occasionally dropping below freezing.

In general, the prevailing winds are moderate in strength and vary from moist clean breezes from the south to dry land flows from the north. The mountains surrounding the SVAB create a barrier to airflow that can trap air pollutants under certain meteorological conditions. The highest frequency of air stagnation occurs in the autumn and early winter when large high-pressure cells collect over the Sacramento Valley. The lack of surface wind during these periods and the reduced vertical flow caused by less surface heating reduce the influx of outside air and allow air pollutants to become concentrated in a stable volume of air. The surface concentrations of pollutants are highest when these conditions are combined with temperature inversions (warm air over cool air), which trap pollutants near the ground.

The ozone season (May through October) in the Sacramento Valley is characterized by stagnant morning air or light winds, with the Delta breeze arriving in the afternoon from the southwest. Usually the evening breeze transports the airborne pollutants northward out of the Sacramento Valley. During about half of the days from July to September, however, a phenomenon called the Schultz eddy prevents this from occurring. Instead of allowing the prevailing wind patterns to move north carrying the pollutants out, the Schultz eddy causes the wind pattern to circle back to the south. Essentially, this phenomenon causes the air pollutants to be blown south toward the Sacramento Valley and Yolo County. This phenomenon has the effect of exacerbating the pollution levels in the area and increases the likelihood of violating federal or state standards. The eddy normally dissipates around noon when the Delta breeze arrives (Yolo-Solano Air Quality Management District 2007).

## Pollutants of Concern

### Criteria Pollutants

As discussed above, the federal and state governments have established NAAQS and CAAQS, respectively, for six criteria pollutants: ozone, lead, carbon monoxide (CO), nitrogen dioxide (NO<sub>2</sub>), sulfur dioxide (SO<sub>2</sub>), and PM, which consists of PM less than or equal to 10 microns in diameter (PM<sub>10</sub>) and PM less than or equal to 2.5 microns in diameter (PM<sub>2.5</sub>). Ozone and NO<sub>2</sub> are considered regional pollutants because they (or their precursors) affect air quality on a regional scale. Pollutants such as CO, SO<sub>2</sub>, and lead are considered local pollutants that tend to accumulate in the air locally.

The primary pollutants of concern in the planning area are ozone (including NO<sub>x</sub> and ROG), CO, and PM. Principal characteristics surrounding these pollutants are discussed below.

**Ozone**, or smog, is photochemical oxidant that is formed when ROG and NO<sub>x</sub> (both byproducts of the internal combustion engine) react with sunlight. Ozone poses a health threat to those who already suffer from respiratory diseases as well as to healthy people. Additionally, ozone has been tied to crop damage, typically in the form of stunted growth and premature death. Ozone can also act as a corrosive, resulting in property damage, such as the degradation of rubber products.

**Reactive organic gases** are compounds made up primarily of hydrogen and carbon atoms. Internal combustion associated with motor vehicles is the major source of hydrocarbons. Other sources of ROG are emissions associated with the use of paints and solvents, the application of asphalt paving, and the use of household consumer products such as aerosols. Adverse effects on human health are not caused directly by ROG but rather by reactions of ROG to form secondary pollutants such as ozone.

**Nitrogen oxides** serve as integral participants in the process of photochemical smog production. The two major forms of NO<sub>x</sub> are nitric oxide (NO) and NO<sub>2</sub>. NO is a colorless, odorless gas formed from atmospheric nitrogen and oxygen when combustion takes place under high temperature or high pressure. NO<sub>2</sub> is a reddish-brown, irritating gas formed by the combination of NO and oxygen. NO<sub>x</sub> acts as an acute respiratory irritant and increases susceptibility to respiratory pathogens.

**Carbon monoxide** is a colorless, odorless, toxic gas produced by incomplete combustion of carbon substances, such as gasoline or diesel fuel. The primary adverse health effect associated with CO is interference with normal oxygen transfer to the blood, which may result in tissue oxygen deprivation and, in extreme cases, death.

**Particulate matter** consists of finely divided solids or liquids such as soot, dust, aerosols, fumes, and mists. Two forms of fine particulates are now recognized—inhalable coarse particles, or PM<sub>10</sub>, and inhalable fine particles, or PM<sub>2.5</sub>. Particulate discharge into the atmosphere results primarily from industrial, agricultural, construction, and transportation activities. However, wind on arid landscapes also contributes substantially to local particulate loading. Both PM<sub>10</sub> and PM<sub>2.5</sub> may adversely affect the human respiratory system, especially in people who are naturally sensitive or susceptible to breathing problems.

### **Toxic Air Contaminants**

Although NAAQS and CAAQS have been established for criteria pollutants, no ambient standards exist for TACs. Many pollutants are identified as TACs because of their potential to increase the risk of developing cancer or because of their acute or chronic health risks. For TACs that are known or suspected carcinogens, ARB has consistently found that there are no levels or thresholds below which exposure is risk-free. Individual TACs vary greatly in the risks they present. At a given level of exposure, one TAC may pose a hazard that is many times greater than another. TACs are identified and their toxicity is studied by the California Office of Environmental Health Hazard Assessment.

Air toxics are generated by a variety of sources: stationary sources, such as dry cleaners, gas stations, auto body shops, and combustion sources; mobile sources, such as diesel trucks, ships, and trains; and area sources, such as farms, landfills, and construction sites. Adverse health effects of TACs can be carcinogenic (cancer-causing), short-term (acute) noncarcinogenic, and long-term (chronic) noncarcinogenic. Direct exposure to these pollutants has been shown to cause cancer, birth defects, damage to the brain and nervous system, and respiratory disorders.

### **Existing Air Quality Conditions**

The existing air quality conditions in the planning area can be characterized by monitoring data collected in the region. Table 3.3-2 summarizes data for criteria air pollutant levels from the Sacramento T Street monitoring station for the last 3 years for which complete data are available (2012–2014). The Sacramento T Street monitoring station is approximately 2 miles east of West Sacramento. Air quality concentrations are expressed in terms of parts per million (ppm) or micrograms per cubic meter (µg/m<sup>3</sup>). As shown in Table 3.3-2, the monitoring station has experienced occasional violations of the ozone and PM<sub>2.5</sub> NAAQS and CAAQS. No violations of the PM<sub>10</sub>, CO, or NO<sub>2</sub> NAAQS and CAAQS were reported during the monitoring period.

**Table 3.3-2. Ambient Air Quality Monitoring Data from the Sacramento T Street Station (2011–2013)**

Pollutant	2012	2013	2014
<b>Ozone (O<sub>3</sub>)</b>			
Maximum 1-hour concentration (ppm)	0.104	0.091	0.085
Maximum 8-hour concentration (ppm)	0.092	0.068	0.72
Number of days standard exceeded <sup>a</sup>			
CAAQS 1-hour (>0.09 ppm)	1	0	0
CAAQS 8-hour (>0.070 ppm)	4	0	0
NAAQS 8-hour (>0.075 ppm)	9	0	0
<b>Carbon Monoxide (CO)<sup>b</sup></b>			
Maximum 8-hour concentration (ppm)	2.4	2.4	2.1
Maximum 1-hour concentration (ppm)	2.7	3.0	2.5
Number of days standard exceeded <sup>a</sup>			
NAAQS 8-hour (≥9 ppm)	0	0	–
CAAQS 8-hour (≥9.0 ppm)	0	0	–
NAAQS 1-hour (≥35 ppm)	0	0	0
CAAQS 1-hour (≥20 ppm)	0	0	0
<b>Nitrogen Dioxide (NO<sub>2</sub>)</b>			
State maximum 1-hour concentration (ppm)	62.0	59.3	64.7
State second-highest 1-hour concentration (ppm)	56.0	56.4	61.4
Annual average concentration (ppm)	12	12	11
Number of days standard exceeded			
CAAQS 1-hour (0.18 ppm)	0	0	0
<b>Particulate Matter (PM<sub>10</sub>)<sup>c</sup></b>			
National <sup>d</sup> maximum 24-hour concentration (µg/m <sup>3</sup> )	36.2	53.1	105.7
National <sup>d</sup> second-highest 24-hour concentration (µg/m <sup>3</sup> )	33.6	45.4	83.5
State <sup>e</sup> maximum 24-hour concentration (µg/m <sup>3</sup> )	36.7	92.3	106.4
State <sup>e</sup> second-highest 24-hour concentration (µg/m <sup>3</sup> )	35.6	66.8	86.4
National annual average concentration (µg/m <sup>3</sup> )	17.2	14.4	21.6
State annual average concentration (µg/m <sup>3</sup> ) <sup>f</sup>	17.8	–	–
Number of days standard exceeded <sup>a</sup>			
NAAQS 24-hour (>150 µg/m <sup>3</sup> ) <sup>g</sup>	0	0	0
CAAQS 24-hour (>50 µg/m <sup>3</sup> ) <sup>g</sup>	0	21	4
<b>Particulate Matter (PM<sub>2.5</sub>)</b>			
National <sup>d</sup> maximum 24-hour concentration (µg/m <sup>3</sup> )	27.1	39.2	26.3
National <sup>d</sup> second-highest 24-hour concentration (µg/m <sup>3</sup> )	26.7	35.9	24.7
State <sup>e</sup> maximum 24-hour concentration (µg/m <sup>3</sup> )	40.8	40.2	33.2
State <sup>e</sup> second-highest 24-hour concentration (µg/m <sup>3</sup> )	31.1	39.4	32.5
National annual average concentration (µg/m <sup>3</sup> )	8.3	10.0	8.0
State annual average concentration (µg/m <sup>3</sup> ) <sup>f</sup>	–	10.1	8.1
Number of days standard exceeded <sup>a</sup>			
NAAQS 24-hour (>35 µg/m <sup>3</sup> )	0	6	0
<b>Sulfur Dioxide (SO<sub>2</sub>)</b>			
No data available			

Sources: California Air Resources Board 2015b; U.S. Environmental Protection Agency 2015a.

ppm = parts per million.

NAAQS = National Ambient Air Quality Standards.

CAAQS = California Ambient Air Quality Standards.

µg/m<sup>3</sup> = micrograms per cubic meter.mg/m<sup>3</sup> = milligrams per cubic meter.

&gt; = greater than.

NA = not applicable.

<sup>a</sup> An exceedance is not necessarily a violation.<sup>b</sup> Values from the El Camino and Watt monitoring station since the T Street location does not monitor for CO.<sup>c</sup> National statistics are based on standard conditions data. In addition, national statistics are based on samplers using federal reference or equivalent methods.<sup>d</sup> State statistics are based on local conditions data, except in the South Coast Air Basin, for which statistics are based on standard conditions data. In addition, State statistics are based on California approved samplers.<sup>e</sup> Measurements usually are collected every 6 days.<sup>f</sup> State criteria for ensuring that data are sufficiently complete for calculating valid annual averages are more stringent than the national criteria.<sup>g</sup> Mathematical estimate of how many days concentrations would have been measured as higher than the level of the standard had each day been monitored. Values have been rounded.

## Attainment Status

Local monitoring data (Table 3.3-2) are used to designate areas as nonattainment, maintenance, attainment, or unclassified for the NAAQS and CAAQS. The four designations are defined below.

- Nonattainment—assigned to areas where monitored pollutant concentrations consistently violate the standard in question.
- Maintenance—assigned to areas where monitored pollutant concentrations exceeded the standard in question in the past but are no longer in violation of that standard.
- Attainment—assigned to areas where pollutant concentrations meet the standard in question over a designated period of time.
- Unclassified—assigned to areas where data are insufficient to determine whether a pollutant is violating the standard in question.

Table 3.3-3 summarizes the attainment status of the City and air quality study area in Yolo County.

**Table 3.3-3. Federal and State Attainment Status of the Project Area in Yolo County**

Pollutant	Federal	State
Ozone (8 hr)	Nonattainment/Severe	Nonattainment
CO	Attainment/Maintenance <sup>a</sup>	Attainment
PM10	Unclassified	Nonattainment
PM2.5	Unclassified	Unclassified

Sources: U.S. Environmental Protection Agency 2015b; California Air Resources Board 2015c.

<sup>a</sup> The West Sacramento portion of Yolo County is located in both attainment and maintenance areas (moderate:  $\geq 12.7$  ppm)

## Sensitive Receptors

The NAAQS and CAAQS apply at publicly accessible areas, regardless of whether those areas are populated. For the purposes of air quality analysis, sensitive land uses are defined as locations where human populations, especially children, seniors, and sick persons, are located and where there is reasonable expectation of continuous human exposure according to the averaging period for the air quality standards (e.g., 24-hour, 8-hour, and 1-hour). Typical sensitive receptors include residences, hospitals, and schools.

Diverse land uses and numerous sensitive receptors are distributed throughout the planning area and air quality study area. Impacts on existing and new receptors associated with the General Plan update must be carefully evaluated. State law restricts the siting of new schools within 500 feet of a freeway, urban roadways with 100,000 vehicles/day, or rural roadways with 50,000 vehicles/day, with some exceptions. ARB has published advisory recommendations on siting new sensitive land uses, with the same guidelines as the state school limitation (California Air Resources Board 2005).



## 3.3.2 Environmental Impacts

### Methods for Analysis

Impacts of the project on air quality and criteria pollutant emissions from operations were assessed and quantified using standard and accepted software tools, techniques, and emission factors. Construction emissions were assessed qualitatively due to the availability of data for this plan-level document. The primary assumptions and key methods used to quantify emissions and estimate potential impacts are described below. Model inputs and calculation files are provided in Appendix B, *Air Quality Data*.

### Mobile Sources

Long-term air quality impacts from motor vehicles operating within the General Plan area were evaluated using vehicle miles traveled (VMT) traffic data provided by the project traffic engineers (DKS Associates), and ARB's EMFAC2014 emissions model. Daily VMT data (for trips that have an origin or destination within the City) for Existing, Year 2020, and Year 2035 scenarios were provided in 5 mph speed bins for West Sacramento. The traffic data used in the emissions modeling analysis are provided in Appendix B.

Criteria pollutants were calculated by multiplying the VMT estimates per speed bin by the appropriate emission factors provided by EMFAC2014. Total emissions for each scenario year were then summed to obtain a total daily emissions estimate. Emissions were converted from grams per day to units that could be compared to thresholds (where applicable) for each criteria pollutant. Note that project-level thresholds from YSAQMD are not applicable to the proposed General Plan update because this is a planning-level document; the comparison to thresholds is included for informational purposes only. Please refer to Appendix B for the EMFAC2014 emission factors utilized in this analysis.

### Area Criteria Pollutant Sources

To account for operational emissions of criteria pollutants from the proposed General Plan update, CalEEMod was run based on the land uses associated with buildout of the General Plan update. Area sources of criteria pollutants include the combustion of natural gas for building heating and hot water, engine emissions from landscape maintenance equipment, and volatile organic compound emissions from repainting of buildings, among other sources.

Mobile source emissions calculated using EMFAC2014 emission factors were added to area source emissions calculated with CalEEMod to determine overall emissions from operational sources associated with the General Plan update.

### CO Hotspots

The effects of localized CO hotspots were evaluated through CO dispersion modeling consistent with the Transportation Project-Level Carbon Monoxide Protocol, which was developed for Caltrans by the Institute of Transportation Studies at the University of California, Davis. The CO protocol details a qualitative step-by-step procedure to determine whether project-related CO concentrations have a potential to generate new air quality violations, worsen existing violations, or delay the attainment of NAAQS or CAAQS for CO. CO concentrations at potential sensitive receptors adjacent to the most

congested and heavily traveled roadway segments were estimated through dispersion modeling using the CALINE4 dispersion model and emission factors from ARB's EMFAC2014 emissions model.

### **Roadway and Traffic Conditions**

CO hotspots were evaluated at roadway segments within the study area for existing (2014), Year 2020, and Year 2035 conditions. Modeled traffic volumes and operating conditions were obtained from peak hour intersection turning movement data prepared by the project traffic engineers (DKS Associates).

CO modeling was conducted at the following four roadway intersections, which were identified in the traffic study as having the highest peak-hour volumes and/or lowest level of service (LOS).

- Jefferson Boulevard and Park Boulevard/US 50 westbound ramps.
- Jefferson Boulevard and Devon Avenue/Gateway Drive.
- Jefferson Boulevard and Lake Washington Boulevard.
- Riverfront Street/Third Street and Tower Bridge Gateway.

CALINE4 roadway geometry for each modeled segment was based on satellite confirmation of the number of lanes at each segment, and modeled segments were assumed at 1,000 meters. A 12-foot lane width was assumed plus an additional mixing zone on either side (generally 10 feet on each side).

### **Vehicle Emission Rates**

Vehicle emission rates were determined using ARB's EMFAC2014 emission rate program. Free-flow traffic speeds were adjusted to 5.0 mph to represent a worst-case scenario. EMFAC2014 estimates emission rates from approximately 40 vehicle classes. A composite emission factor for a typical Sacramento County vehicle fleet was calculated by weighting vehicle emissions according to the relative amount of VMT expected for each vehicle class based on EMFAC2014 default values for Sacramento County.

### **Receptor Locations**

CO concentrations were estimated at four receptor locations at each of the four modeled intersections, for a total of 16 receptors. CALINE4 guidance specifies that the model should not be used to estimate pollutant concentrations within 3 meters of the traveled way; this assumption could result in an artificially high CO concentration because it is unlikely a person will be located 3 meters from a roadway for 1–8 hours. However, to ensure the most conservative analysis, the receptors were placed at the midpoint of each segment 3 meters from the traveled way of each modeled segment, with additional receptors located 15, 25, 50, and 100 feet from the traveled way of each modeled segment. A standard receptor elevation of 1.8 meters was used consistent with CO protocol guidance.

### **Meteorological Conditions**

Meteorological inputs to the CALINE4 model were determined in accordance with Caltrans' 1998 Air Quality Technical Analysis Notes. The meteorological conditions used in the modeling represent a calm winter period. Worst-case wind angles were modeled to estimate conservative CO concentrations at each receptor. The meteorological inputs assumed the following: wind speed of

0.5 meters per second, ground-level temperature inversion (atmospheric stability class G), wind direction standard deviation equal to 5°, ambient temperature of 32°F, and a mixing height of 1,000 meters.

### **Background Concentrations and 8-Hour Values.**

To account for sources of CO not included in the modeling, a background concentration of 2.0 ppm was added to the modeled cumulative 1-hour values, while a background concentration of 1.5 ppm was added to the modeled cumulative 8-hour values. Background concentration data for 1- and 8-hour values were obtained from EPA's Air Data webpage (U.S. Environmental Protection Agency 2015a). Maximum 1- and 8-hour values for 2012–2014 were averaged to obtain a background concentration. Eight-hour modeled values were calculated from the 1-hour values using a persistence factor of 0.7. Background concentrations for future 2020 and 2035 scenarios were assumed to be the same as those for the current year. Actual 1- and 8-hour background concentrations in future years would likely be lower than those used in the CO modeling analysis because the trend in CO emissions and concentrations is decreasing due to continuing improvements in engine technology and the retirement of older, higher-emitting vehicles. To ensure a conservative analysis, it was assumed that the hourly traffic during an 8-hour sampling period was equal to the 1-hour commuting peak flowrate.

### **Odors**

To assess potential odor impacts, the methodology for odor impact assessment described in the *Handbook for Assessing and Mitigating Air Quality Impacts* (Yolo-Solano Air Quality Management District 2007) was utilized. According to this handbook and based on YSAQMD's general nuisance rule (District Rule 2.5), a project may be reasonably expected to have a significant adverse odor impact where it:

Generates odorous emissions in such quantities as to cause detriment, nuisance, or annoyance to any considerable number of persons or to the public. Or which may endanger the comfort, repose, health, or safety of any such person or the public, or which may cause, or have a natural tendency to cause, injury or damage to business or property.

The handbook states that screening of potential odor impacts should be conducted for projects that would potentially generate odorous emissions near existing sensitive receptors or other land uses where people may congregate. It also states that screening should be conducted for residential or other sensitive receptor projects, or other projects that may attract people to locations near existing odor sources. If it is determined during the screening-level analysis that the project would place receptors and known odor sources near each other (up to 1 mile), a full analysis would be conducted according to the guidance in the handbook.

### **Thresholds of Significance**

In accordance with Appendix G of the State CEQA Guidelines, the proposed project would be considered to have a significant effect if it would result in any of the conditions listed below.

- Conflict with or obstruction of implementation of the applicable air quality plan. For the purposes of this analysis, "conflict with or obstruction of implementation" is defined as circumstances under which the project will worsen existing air quality violations or exceed the growth assumptions utilized by the City of West Sacramento and Sacramento Council of Governments (SACOG).

- Violation of any air quality standard or substantial contribution to an existing or projected air quality violation. For the purposes of this analysis, “violation of any air quality standard or substantial contribution to an existing or projected air quality violation” is defined as circumstances under which construction or operational emissions exceed the applicable YSAQMD thresholds, as described below in *Local Air District Thresholds*.
- A cumulatively considerable net increase of any criteria pollutant for which the project region is a nonattainment area for an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors). For the purposes of this analysis, a “cumulatively considerable net increase” is defined as circumstances under which total direct emissions exceed the applicable YSAQMD thresholds identified in Table 3.3-4. As further discussed below, the emissions thresholds presented in Table 3.3-4 represent the maximum emissions a project may generate before contributing to a cumulative impact on regional air quality. Therefore, exceedances of the project-level thresholds, as identified in Table 3.3-4, would be cumulatively considerable.
- Exposure of sensitive receptors to substantial pollutant concentrations. For the purpose of this analysis, schools, daycare facilities, medical facilities, parks, and residences are considered sensitive receptor locations. A “substantial pollutant concentration” is defined as levels in excess of applicable YSAQMD thresholds, as described below in *Local Air District Thresholds*.
- Creation of objectionable odors affecting a substantial number of people. For the purpose of this analysis, construction of an odor-producing facility, as defined by YSAQMD, would result in an “objectionable odor” capable of affecting a substantial number of people.

### **Local Air District Thresholds**

This section summarizes YSAQMD thresholds and presents substantial evidence regarding the basis upon which they were developed, as well as describes how they are used to determine whether project construction and operational emissions would lead to either of the following conditions.

- Interference with or impedance of attainment of state or federal ambient air quality standards (CAAQS and NAAQS, respectively).
- Increased risk to human health.

### **Regional Thresholds for Air Basin Attainment of State and Federal Ambient Air Quality Standards**

The project falls under the jurisdiction of YSAQMD, which has established thresholds, as shown in Table 3.3-4, for regional criteria pollutants (as discussed in Section 3.5.1, ROG and NO<sub>x</sub> are regional pollutants, whereas PM is both a regional and local pollutant). The regional criteria pollutant thresholds identified in Table 3.3-4 were adopted by YSAQMD to assist lead agencies in determining the significance of environmental impacts with regard to local attainment of state and federal ambient air quality standards.

YSAQMD’s ozone precursor thresholds are based on CCAA requirements and YSAQMD Rule 3.20 (Ozone Transport Mitigation). Rule 3.20 accounts for ozone transport to neighboring air basins and establishes a 10 ton per year “no net increase” threshold for NO<sub>x</sub> and ROG from stationary sources. YSAQMD has concluded that the 10 ton per year NO<sub>x</sub> and ROG threshold enumerated in Rule 3.20 is appropriate for use as a project-level threshold for CEQA analyses of projects within the YSAQMD.

YSAQMD's regional PM<sub>10</sub> threshold is based on the New Source Review (NSR) program, which requires Best Available Control Technologies (BACT) to be applied when new or modified PM<sub>10</sub> emissions exceed 80 pounds per day. Therefore, PM<sub>10</sub> emissions that trigger the BACT threshold for PM<sub>10</sub> would constitute a potentially significant impact on local air quality (Yolo-Solano Air Quality Management District 2007).

### **Health-Based Thresholds for Project-Generated Pollutants of Human Health Concern**

As discussed in Section 3.3.1, *Existing Conditions*, all criteria pollutants are associated with some form of health risk (e.g., asthma, asphyxiation). Adverse health effects associated with criteria pollutant emissions are highly dependent on a multitude of interconnected variables (e.g., cumulative concentrations, local meteorology and atmospheric conditions, the number and character [e.g., age, gender] of exposed individuals). Moreover, ozone precursors (ROG and NO<sub>x</sub>) affect air quality on a regional scale. Health effects related to ozone are therefore the product of emissions generated by numerous sources throughout a region. Existing models have limited sensitivity to small changes in criteria pollutant concentrations; consequently, attempting translation of project-generated criteria pollutants to specific health effects would be a speculative exercise. In other words, minor increases in regional air pollution from project-generated ROG and NO<sub>x</sub> would have nominal or negligible impacts on human health.<sup>1</sup>

A quantitative accounting of impacts on human health associated with project-generated regional emissions is not included in this analysis. Increased emissions of ozone precursors (ROG and NO<sub>x</sub>) generated by the General Plan update could increase photochemical reactions and the formation of tropospheric ozone, which at certain concentrations could lead to respiratory symptoms (e.g., coughing), decreased lung function, and inflammation of airways. While these health effects are associated with ozone, the impacts are a result of cumulative and regional ROG and NO<sub>x</sub> emissions. Please refer to Impact AQ-3 for a discussion of cumulative impacts.

Because localized pollutants generated by a project can directly affect adjacent sensitive receptors, the analysis of project-related impacts on human health focuses only on those localized pollutants with the greatest potential to result in a significant, material impact on human health. This approach is consistent with the current state of practice and published guidance by YSAQMD (2007), California Air Pollution Control Officers Association (2009), Office of Environmental Health Hazard Assessment (2003), and ARB (2000). The pollutants of concern are (1) locally concentrated PM, (2) locally concentrated CO, and (3) DPM.<sup>2</sup> Locally adopted thresholds of significance for each pollutant are identified below.

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<sup>1</sup> As an example, the Bay Area Air Quality Management District's Multi-Pollutant Evaluation Method requires a 3–5% increase in regional ozone precursors to produce a material change in modeled human health impacts. Based on 2008 ROG and NO<sub>x</sub> emissions in the Bay Area, a 3–5% increase equates to more than 20,000 pounds per day of ROG and NO<sub>x</sub>. While this example is specific to the Bay Area, similar model limitations would be apply to the Sacramento Valley.

<sup>2</sup> DPM is the primary TAC of concern for mobile sources—of all controlled TACs, emissions of DPM are estimated to be responsible for about 70% of the total ambient TAC risk (California Air Resources Board 2000). In response to the risks associated with DPM, tools and factors for evaluating human health impacts from project-generated DPM have been developed and are readily available. Conversely, tools and techniques for assessing project-specific health outcomes as a result of exposure to other TACs (e.g., benzene) remain limited. These limitations impede the ability to evaluate and precisely quantify potential public health risks posed by TAC exposure.

**Localized Fugitive Particulate Matter Concentrations**

Particulate matter is a complex mixture of substances including carbon, metals, organic material, wood smoke, and diesel exhaust. When inhaled, PM can be absorbed into the body's respiratory system, increasing the severity of asthma attacks and other lung diseases. YSAQMD has not adopted significance thresholds for localized PM<sub>2.5</sub> or PM<sub>10</sub>, but recommends fugitive dust controls be applied during earthmoving activities.

**Localized Carbon Monoxide Concentrations**

Heavy traffic congestion can contribute to high levels of CO. Individuals exposed to these CO hotspots may have a greater likelihood of developing adverse health effects. YSAQMD considers localized CO emissions to result in significant impacts if concentrations exceed the CAAQS (Table 3.3-1).

**Localized Diesel Particulate Matter Concentrations**

DPM is a form of localized PM (see above) that is generated by diesel equipment and vehicle exhaust. DPM has been identified as a TAC and is of particular concern because long-term exposure can lead to cancer, birth defects, and damage to the brain and nervous system. YSAQMD has adopted incremental cancer and hazard thresholds to evaluate receptor exposure to TAC emissions. The "substantial" TAC threshold defined by YSAQMD is the probability of contracting cancer for the maximum exposed individual (MEI) exceeding 10 in 1 million, or the ground-level concentrations of non-carcinogenic TACs resulting in a hazard index (HI) greater than 1 for the MEI.

**Table 3.3-4. YSAQMD Thresholds of Significance for Analysis of Air Quality Impacts**

Analysis	Threshold
Regional Criteria Pollutants (construction and operation)	ROG: 10 tons/year NO <sub>x</sub> : 10 tons/year PM <sub>10</sub> : 80 lbs/day
Localized PM	Fugitive dust controls
Localized CO	Violation of CAAQS
Localized DPM	Increased cancer risk of 10 in 1 million or increased non-cancer hazard of greater than 1.0 (HI)

Source: Yolo-Solano Air Quality Management District 2007.

**Impacts and Mitigation Measures****Impact AQ-1: Conflict with or obstruction of implementation of the applicable air quality plan (less than significant)**

The CAA requires that a SIP or an air quality control plan be prepared for areas with air quality violating the NAAQS. The SIP sets forth the strategies and pollution control measures that states will use to attain the NAAQS. The CCAA requires attainment plans to demonstrate a 5% per year reduction in nonattainment air pollutants or their precursors, averaged every consecutive 3-year period, unless an approved alternative measure of progress is developed. AQAPs outline emissions limits and control measures to achieve and maintain these standards by the earliest practical date.

West Sacramento is within the Sacramento Valley Air Basin, in which air quality does not meet some state and federal health standards—specifically state standards for ozone and PM10 and federal standards for ozone. While emission control requirements on motor vehicles and industrial operations have substantially reduced air pollution from these sources, increased development and the associated increase in emissions from automobiles threaten to offset these gains. YSAQMD monitors and regulates air quality in the planning area and regulates air pollution emissions of commercial and industrial operations.

All of Yolo County, including West Sacramento, is considered part of the Sacramento region. On November 21, 2013, the *2013 SIP Revisions to the Sacramento Regional 8-Hour Ozone Attainment and Reasonable Further Progress Plan* was approved. This revision incorporates improvements and updates in reasonable further progress and transportation conformity analyses, emissions inventories, and existing and proposed control measures developed since adoption of the original 2009 Plan. This update also revises the attainment demonstration and reconfirms the strategy for attainment of the 1997 federal 8-hour ozone standard by 2018.

Typically, a general plan is deemed consistent with air quality plans if it would result in population, VMT, or emissions that are consistent with estimates set forth in the applicable air quality plan, and if it shows consistency with strategies described in the applicable AQAP and SIP. YSAQMD's *Handbook for Assessing and Mitigating Air Quality Impacts* states that the potential air quality effects of general plans should be evaluated based on the plan's consistency with the most recently adopted AQAP and SIP. The proposed General Plan update would redistribute certain land uses and change the definition of certain land use designations to allow for an increase in the density or intensity of development in the planning area. Consequently, the potential increases in density—and therefore population—in the planning area may not have been accounted for in the AQAP and SIP. However, the updated General Plan policies emphasize the importance of infill development, making the plan consistent with strategies described in the AQAP and SIP. Specifically, Control Measure RP-1 from Appendix D of the *2013 SIP Revisions to the Sacramento Regional 8-Hour Ozone Attainment and Reasonable Further Progress Plan* is intended to encourage infill development, as shown in the following excerpt.

**Control Measure Number: RP-1.** Control Measure Title: Blueprint Implementation & Planning Technical Assistance

*Control Measure Description*

SACOG has no land use authority and cannot directly affect the pattern that future land uses will take. However, it can strive to implement the Blueprint Vision through existing and new programs. SACOG will continue to fund the regional Community Design Grant Program which funds transportation projects that are part of mixed-use, higher density developments. The Community Design component of the MTP for 2035 could encourage growth patterns that promote alternatives to the automobile by creating mixed-use developments that would include residences, shops, parks, and civic institutions linked to pedestrian-and-bicycle friendly public transportation centers. Projects would be awarded a Community Design grant if they incorporate design features such as improved street connectivity, public amenities, and a concentration of residences and jobs in proximity to transit routes. Implementation of this strategy could result in more balanced land use conditions throughout the region and less land converted to urban uses due to the higher-density, infill focus of the grant program.

The proposed General Plan update is specifically intended to comply with SACOG's Metropolitan Transportation Plan (MTP) and Sustainable Communities Strategy (SCS) (successor to the Blueprint). The General Plan update includes numerous goals, objectives, and policies that would help to support mixed-use development and alternative forms of transportation in the planning area. The following policies, goals, and programs demonstrate the consistency of the strategies in the General Plan update with the SIP (specifically Control Measure RP-1).

**LU-1.6 Compatible Infill.** The City shall actively encourage infill development that is architecturally and environmentally sensitive and is compatible with surrounding land uses.

**LU-1.7 Infill and Redevelopment Incentives.** The City shall provide incentives (e.g., zoning/rezoning, revised regulations, provision of infrastructure) for infill and redevelopment that enhances community character and optimizes City investments in infrastructure.

**Goal LU-2:** To develop local and support regional and statewide plans and strategies to grow efficiently, fund sustainable transportation improvements, and reduce greenhouse gas emissions while meeting local housing needs.

**LU-2.1 Blueprint Participation.** The City shall continue to participate in the Sacramento Regional Blueprint effort and ensure that local plans and new developments are consistent with the Blueprint.

**LU-4.3 Enhanced Design Character.** The City shall encourage renovation, infill, and redevelopment of existing centers that reduces the visual prominence of parking lots, makes the centers more pedestrian-friendly, reduces visual clutter associated with signage, and enhances the definition and character of the street frontage and associated streetscape.

**LU-5.20 Development Quality.** The City shall promote the enhancement of the overall quality of development along West Capitol Avenue and Sacramento Avenue through infill, private reuse, and public redevelopment, as necessary.

### Implementation Programs

3. The City shall create a priority list for how sections of the West Sacramento Code, including the Zoning Ordinance, and applicable guidelines will be updated consistent with the General Plan. The City shall identify and prioritize key areas (e.g., transit centers, mixed-use corridors), development sites, opportunity areas, and infill areas for rezoning to promote infill development and ensure consistency with the General Plan. The City shall review and update the West Sacramento Code, Zoning Ordinance, and applicable guidelines, consistent with the policies and diagrams of the General Plan.
6. The City shall conduct a study to define a set of criteria for determining whether proposed projects are infill developments and what types of incentives are appropriate to facilitate infill. Based on findings from the study, the City shall consider preparing an Infill Strategy that targets priority infill areas, addresses obstacles to infill development, and identifies incentives for infill development.

In addition to updated General Plan goals and policies related to the promotion of infill development, the General Plan update includes goals and policies specifically related to the reduction of air quality emissions.

**Goal S-5:** To improve air quality in West Sacramento and the Sacramento Region, and protect residents from the potential effects of decreased air quality.

**S-5.1 Local and Regional Programs.** The City shall support and participate in local and regional air quality planning programs to ensure the earliest practicable attainment and subsequent maintenance of Federal and State ambient air quality standards.



**S-5.2 Clean Air Programs.** The City shall promote and implement clean air programs administered by the Yolo-Solano Air Quality Management District to reduce air pollutant emissions.

**S-5.3 New Development.** The City shall use the CEQA process to ensure development projects incorporate feasible mitigation measures to reduce construction and operational air quality emissions, and consult with the Yolo-Solano Air Quality Management District early in the development review process.

**S-5.4 Sensitive Land Uses.** The City shall ensure maintenance of adequate separation between sensitive land uses and facilities or operations that may produce toxic or hazardous air pollutants or substantial odors, consistent with California Air Resources Board recommendations.

**S-5.5 Health Risk Assessment.** The City shall require adequate separation between facilities that may produce toxic or hazardous air pollutants and sensitive receptors in accordance with the recommendations in the California Air Resources Board Air Quality and Land Use Handbook: A Community Health Perspective. If it is determined that these minimum distances cannot be met, the City shall coordinate with Yolo-Solano Air Quality Management District to prepare a health risk assessment that will determine the site-specific airborne health risks and appropriate mitigation, if necessary.

**S-5.6 Early Coordination with YSAQMD.** The City shall notify and coordinate with the Yolo-Solano Air Quality Management District when industrial developments are proposed within the city to ensure applicants comply with applicable air quality regulations and incorporate design features and technologies to reduce air pollution.

**S-5.7 PM10 Emissions from Construction.** The City shall require developers to reduce particulate emissions from construction (e.g., grading, excavation, and demolition) to the maximum extent feasible and consistent with Yolo-Solano Air Quality Management District guidance.

**S-5.8 Industrial Facilities.** The City shall encourage industrial facilities to incorporate best management practices to reduce PM10 emissions.

**S-5.9 Mitigation Measures.** The City shall maximize the use of current air quality mitigation measures, including offsets, into the construction and design of new development to aid in the reduction of regional air pollution emissions.

**S-5.10 Truck Idling.** The City shall enforce State idling laws for commercial vehicles, including delivery and construction vehicles. The City shall also encourage the use of electrical outlets in loading zones, including signage, to reduce vehicle idling associated with operating refrigeration for delivery trucks.

**S-5.11 Public Education.** The City shall educate the public about air quality, its effects on health, and efforts the public can make to improve air quality and reduce greenhouse gas emissions.

Other policies related to air quality effects from the General Plan Update include:

**LU-6.4 Compatible Land Use.** The City shall ensure an adequate separation and buffers between sensitive land uses (e.g., residential, educational, healthcare) and industrial land uses to minimize land use incompatibility and associated noise, odors, and air pollutant emissions from industrial uses.

**LU-6.6 Clean Industries.** The City shall promote the development of clean industries that do not create problems or pose health risks associated with water and air pollution or potential leaks or spills.

**M-3.7 Roundabouts.** The City shall consider roundabouts as an intersection traffic control option with demonstrated air quality and safety benefits, where deemed feasible and appropriate.

**M-8.7 Mitigation through TDM Programs.** The City shall consider Transportation Demand Management programs with achievable trip reduction goals as partial mitigation for development project traffic and air quality impacts.

These goals, policies, and programs related to both the promotion of infill development and the reduction of potential adverse air quality effects included in the General Plan update are consistent with the strategies of the SIP and of the applicable AQAP. As the General Plan update is considered to be consistent with the Sacramento Metropolitan Region's air quality attainment plans, this impact would be less than significant.

**Impact AQ-2: Potential to violate any air quality standard or contribute substantially to an existing or projected air quality violation (significant and unavoidable)**

***Construction Emissions***

Construction associated with later projects under the General Plan update would result in the temporary generation of ozone precursors (ROG, NO<sub>x</sub>), CO, and particulate matter exhaust emissions that could result in short-term impacts on ambient air quality in the planning area. Emissions would originate from mobile and stationary construction equipment exhaust, employee vehicle exhaust, dust from clearing the land, exposed soil eroded by wind, and ROG from architectural coatings and asphalt paving. Construction-related emissions would vary substantially depending on the level of activity, length of the construction period, specific construction operations, types of equipment, number of personnel, wind and precipitation conditions, and soil moisture content.

The General Plan update does not propose any specific development projects, but construction would occur as buildout of West Sacramento proceeds under the proposed General Plan update. The precise level of construction activities that buildout would entail is currently unknown. In addition, changes in the land use designations of certain areas could result in more intense construction activities under the proposed General Plan update than would take place under the current General Plan (e.g., the development of an area previously zoned for a single-family residence that is zoned for high-rise apartments under the updated General Plan). Because such details of future construction under the General Plan update are not known, emissions from construction activities associated with buildout cannot be quantified and are evaluated qualitatively for purposes of this analysis.

According to the thresholds outlined by YSAQMD, emissions from the construction of any project, including a project developed under the General Plan update, will not exceed 10 tons per year of ROG and NO<sub>x</sub> or 80 pounds per day of PM<sub>10</sub>, or else a significant construction-related impact would result. Additionally, all construction projects must abide by YSAQMD rules adopted to reduce emissions throughout the region. The following rules, also discussed above in the *Regulatory Setting*, would reduce the potential for substantial pollutant emissions from future construction projects under the General Plan update.

- Rule 2.3 (Ringelmann Chart). This rule restricts visible emissions from stationary diesel-powered equipment, stating that emissions are not allowed to exceed 40% opacity for more than 3 minutes in any 1 hour.
- Rule 2.5 (Nuisance). This rule prevents dust emissions from creating a nuisance to surrounding properties.

- Rule 2.11 (Particulate Matter Concentration). This rule restricts emissions of PM greater than 0.1 grain per cubic foot of gas at dry standard conditions.
- Rule 2.14 (Architectural Coatings). This rule limits the quantity of ROG in architectural coatings supplied, sold, offered for sale, applied, solicited for application, or manufactured within YSAQMD.
- Rule 2.28 (Cutback and Emulsified Asphalts). This rule limits the application of cutback and emulsified asphalt.
- Rule 2.32 (Stationary Internal Combustion Engines). This rule requires portable equipment greater than 50 horsepower, other than vehicles, to be registered with either ARB Portable Equipment Registration Program or YSAQMD.
- Rule 9.9 (Asbestos). This rule requires YSAQMD consultation and permit issuance prior to commencing demolition or renovation work, in the event that demolition, renovation or removal of asbestos-containing materials is involved

In addition to these YSAQMD rules with which future development projects must comply, future development would be required to comply with policies described in the proposed General Plan update if the proposed project is approved. Policies from the General Plan update that would reduce the level of significance of air quality impacts from construction are listed below.

**S-5.3 New Development.** The City shall use the CEQA process to ensure development projects incorporate feasible mitigation measures to reduce construction and operational air quality emissions, and consult with the Yolo-Solano Air Quality Management District early in the development review process.

**S-5.7 PM10 Emissions from Construction.** The City shall require developers to reduce particulate emissions from construction (e.g. grading, excavation, and demolition) to the maximum extent feasible and consistent with Yolo-Solano Air Quality Management District guidance.

**S-5.9 Mitigation Measures.** The City shall maximize the use of current air quality mitigation measures, including offsets, into the construction and design of new development to aid in the reduction of regional air pollution emissions.

**S-5.10 Truck Idling.** The City shall enforce State idling laws for commercial vehicles, including delivery and construction vehicles. The City shall also encourage the use of electrical outlets in loading zones, including signage, to reduce vehicle idling associated with operating refrigeration for delivery trucks.

Compliance with these measures would reduce the amount of criteria pollutant emissions from future development under the proposed General Plan update. However, given the lack of specifics regarding construction projects at this time, it is uncertain what the intensity of future construction would be, and whether construction activities from individual future projects developed under the General Plan update would result in ROG, NO<sub>x</sub>, PM10, and PM2.5 emissions in excess of YSAQMD thresholds. Accordingly, this impact is conservatively determined to be significant. Implementation of Mitigation Measure AQ-1 would help reduce construction exhaust emissions and potential construction-related air quality impacts. However, because it may not be feasible in all cases to ensure that construction emissions are below applicable thresholds, this impact is considered to be significant and unavoidable.

### ***Operational Emissions***

Operational emissions sources associated with the General Plan update comprise mobile source emissions from vehicle traffic and area source emissions related to consumer product use, landscaping, and the use of residential fireplaces, among others.

Air quality impacts associated with motor vehicles operating on the roadway network in the planning area were analyzed using VMT data provided by the project traffic engineers (DKS Associates) and emission factors from EMFAC2014. Emission of ROG, NO<sub>x</sub>, CO, PM10, and PM2.5 for Existing year (2014), Year 2020, and Year 2035 were evaluated. Table 3.3-5 summarizes the modeled emissions by scenario. The differences in emissions between existing and future conditions (Year 2020 and Year 2035) represent mobile source emissions generated as a result of implementation of the General Plan update.

Note that vehicular emission rates are anticipated to lessen in future years due to continuing improvements in engine technology and the retirement of older, higher-emitting vehicles. For this reason, some future emissions may be less than existing conditions even though future VMT may be higher than existing conditions.

Buildout of the planning area under General Plan update to Year 2035 (approximately 70% buildout) would result in increases in PM10 emissions from mobile sources compared to existing conditions. ROG, CO, NO<sub>x</sub> and PM2.5 emissions under existing conditions are anticipated to be worse than they would be under year 2035 buildout of the updated General Plan due to the lower future-year vehicular emissions rates (resulting from technological improvements). Table 3.3-5 shows the total mobile emissions for ROG, CO, NO<sub>x</sub>, PM10, and PM2.5 for Existing, Year 2020, and Year 2035 conditions. Refer to Appendix B for the full results of the EMFAC modeling.

**Table 3.3-5. Total Mobile Source Emissions (Using EMFAC2014 Emissions Factors) (tons/year)**

	ROG	NO <sub>x</sub>	CO	PM10	PM2.5
Year 2014 (Existing)	128	1,003	2,479	90	59
Year 2020	42	389	987	67	33
Year 2035	39	245	806	98	40

Note: Modeling for mobile source emissions conducted using EMFAC2014 (ARB) and VMT data provided by DKS Associates. Refer to Appendix B for EMFAC modeling outputs and VMT data incorporated into the analysis.

The reductions in future emissions compared to Existing Conditions are primarily the result of lower future emission factors (due to improved engine technology), which offset the increase in VMT associated with buildout of the planning area. Improvements in engine technology would reduce tailpipe (exhaust) emissions of PM, but PM10 and PM2.5 total emission rates would not decrease as much as emission rates of other pollutants for the future conditions, because brake and tire wear emissions (fugitive PM emissions) would not be reduced by improvements in engine technology.

Operational area source emissions were calculated with CalEEMod for existing conditions and for buildout of the planning area to Year 2035. Land use data used in the modeling and the CalEEMod model outputs are provided in Appendix B. Table 3.3-6 presents the summary of the annual operational (non-mobile source) emissions for Existing, Year 2020, and Year 2035 conditions.

**Table 3.3-6. Area Source Emissions (tons/year)**

Emissions	ROG	NO <sub>x</sub>	CO	SO <sub>2</sub>	PM10	PM2.5
<b>Year 2014 (Existing)</b>						
Area source	1,331	17	1,512	1	194	194
Energy use	4	33	19	0	3	3
<b>Total</b>	<b>1,335</b>	<b>50</b>	<b>1,531</b>	<b>1</b>	<b>197</b>	<b>197</b>
<b>Year 2020</b>						
Area source	1,438	18	1,623	1	209	209
Energy use	4	36	21	0	3	3
<b>Total</b>	<b>1,442</b>	<b>54</b>	<b>1,644</b>	<b>1</b>	<b>212</b>	<b>212</b>
<b>Year 2035</b>						
Area source	2,412	30	2,751	1	354	354
Energy use	6	55	33	0	4	4
<b>Total</b>	<b>2,418</b>	<b>85</b>	<b>2,783</b>	<b>1</b>	<b>358</b>	<b>358</b>

Note: Modeling for stationary source operational emissions conducted using CalEEMod and land use data provided by DKS Associates. Refer to Appendix B for CalEEMod modeling outputs and land use assumptions incorporated into the analysis.

Table 3.3-7 presents the summary of the total (mobile and non-mobile source) annual operational emissions for Existing, Year 2020, and Year 2035 conditions.

**Table 3.3-7. Total Operational Emissions (tons/year)**

Emissions	ROG	NO <sub>x</sub>	CO	SO <sub>2</sub>	PM10 <sup>a</sup>	PM2.5
<b>Year 2014 (existing)</b>						
Area and Energy source emissions	1,335	50	1,531	1	197	197
Mobile source emissions	128	1,003	2,479	-	90	59
<b>Total existing operational emissions</b>	<b>1,463</b>	<b>1,053</b>	<b>4,010</b>	<b>1</b>	<b>287</b>	<b>256</b>
<b>Year 2020</b>						
Area and Energy source emissions	1,442	54	1,644	1	212	212
Mobile source emissions	42	389	987	-	67	33
<b>Total Year 2020 operational emissions</b>	<b>1,484</b>	<b>442</b>	<b>2,631</b>	<b>1</b>	<b>279</b>	<b>245</b>
<b>Year 2035</b>						
Area and Energy source emissions	2,418	85	2,783	1	358	358
Mobile source emissions	39	245	806	-	98	40
<b>Total Year 2035 operational emissions</b>	<b>2,457</b>	<b>330</b>	<b>3,590</b>	<b>1</b>	<b>456</b>	<b>399</b>

Note: Modeling for stationary source operational emissions conducted using CalEEMod and land use data from the project traffic engineers, DKS Associates. Modeling for mobile source emissions conducted using EMFAC2014 emission factors and VMT data from DKS Associates. Refer to Appendix B for land use data, VMT data, and full modeling results.

<sup>a</sup> Total operational emissions of PM10 are 5,371, 5,566, and 8,640 lbs/day for Existing, Year 2020 and Year 2035 scenarios, respectively. This information is provided because YSAQMD's PM10 threshold is given in lbs/day (80 lbs/day).

For comparison purposes, the project-level construction emissions thresholds for YSAQMD are shown below.

- ROG: 10 tons/year
- NO<sub>x</sub>: 10 tons/year
- PM<sub>10</sub>: 80 lbs/day

Implementation of the proposed General Plan update would result in many individual development projects that would cumulatively result in emissions much larger than this project-level threshold. However, as described previously, the project-level thresholds from YSAQMD are not applicable to the proposed General Plan update because it is a planning level document.

As disclosed in the discussion of Impact AQ-1, the potential air quality effects of general plans should be evaluated based on the plan's consistency with the most recently adopted AQAP or SIP. The goals, policies, and programs related to both the promotion of infill development and the reduction of potential adverse air quality effects set forth in the General Plan update are consistent with the strategies of the SIP and the applicable AQAP. Because the General Plan update is considered to be consistent with the Sacramento Metropolitan Region's AQAPs as described in the discussion of Impact AQ-1, operational impacts related to consistency with thresholds in the YSAQMD would be less than significant.

#### **Mitigation Measure AQ-2: Implement construction dust control mitigation measures described in YSAQMD's CEQA Handbook**

The following construction dust and construction equipment exhaust control measures will be implemented, when feasible, to reduce the amount of dust emissions from construction activities in the planning area.

- Dust Control Measures
  - Water all active construction sites at least twice daily. Frequency should be based on the type of operation, soil, and wind exposure.
  - Haul trucks hauling dirt, sand, or loose materials shall maintain at least 2 feet of freeboard or shall be covered.
  - Apply non-toxic binders (e.g., latex acrylic copolymer) to exposed areas after cut and fill operations and hydroseed area.
  - Apply chemical soil stabilizers on inactive construction areas (disturbed lands within construction projects that are unused for at least four consecutive days).
  - Plant tree windbreaks on the windward perimeter of construction projects if adjacent to open land.
  - Plant vegetative ground cover in disturbed areas as soon as possible.
  - Cover inactive storage piles.
  - Sweep streets if visible soil material is carried out from the construction site.
  - Treat accesses to a distance of 100 feet from the paved road with a 6 to 12 inch layer of wood chips, mulch or gravel.

- Construction Equipment Emissions Control Measures:
  - Restrict unnecessary vehicle idling to 5 minutes.
  - Incorporate catalyst and filtration technologies.
  - Modernize the equipment fleet with cleaner repower and newer engines.

**Impact AQ-3: Potential to result in a cumulatively considerable net increase of any criteria pollutant for which the project region is a nonattainment area for an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors) (less than significant)**

As discussed previously, the planning area is currently a non-attainment area for PM, CO, and ozone. The potential air quality effects of general plans, however, should not be evaluated based on a comparison of emissions to project-level thresholds; as discussed for Impacts AQ-1 and AQ-2, impacts related to a general plan should be evaluated based on the plan's consistency with the most recently adopted AQAP or SIP. Air quality plans that have been implemented in the planning area are intended to help the region achieve compliance with the regulations for these pollutants. These plans account for the effects of SACOG's Sacramento Region Blueprint, which implements smart growth principles and promotes infill development, and SAGOG's MTP/SCS, which is the long-range transportation plan for the six-county Sacramento region. The MTC/SCS supports the Sacramento Region Blueprint, as it succeeds the Blueprint and proactively links land use, air quality, and transportation needs. As described in the discussions of Impacts AQ-1 and AQ-2, the goals, policies, and programs in the General Plan update that are related to both the promotion of infill development and the reduction of potential adverse air quality effects are consistent with the strategies of the SIP and of the applicable AQAP. As the General Plan update is considered to be consistent with the Sacramento Metropolitan Region's air quality attainment plans, the potential for the General Plan update to have a cumulatively considerable contribution to a cumulative operational impact would be less than significant.

**Impact AQ-4: Exposure of sensitive receptors to substantial pollutant concentrations (less than significant)**

***Potential Health Risks to Sensitive Receptors***

The proposed General Plan update includes some changes to definitions of land use designation and some changes to the assigned land use type for certain parcels in the planning area. These changes would alter the overall layout of West Sacramento in relatively minor ways. The air quality impacts of the General Plan update are largely discussed above in Impacts AQ-1, AQ-2, and AQ-3; however, according to State CEQA Guidelines Appendix G, the potential for a project to expose sensitive receptors to substantial pollutant concentrations must also be assessed.

In a recent court case, the California Supreme Court held that lead agencies are not required to analyze the impacts of the environment on a project's future users or residents, unless the project exacerbates existing environmental hazards (see *California Building Industry Association v. Bay Area Air Quality Management District* (2015) 62 Cal.4<sup>th</sup> 369) or when the legislature has indicated by specific PRC code (21096, 21151.8, 21155.1, 21159.21, 21159.22, 21159.23, and 21159.24) that specifically defined environmental hazards associated with airport noise and safety, school projects, certain kinds of infill housing, and transit priority projects must be addressed.

The proposed General Plan update would not generally introduce scenarios that would exacerbate existing environmental hazards and expose sensitive receptors to substantial pollutant concentrations. The General Plan update does, however, include some changes to land use designations from a single land use type (residential, commercial, or industrial) to land use designations that may allow residential and commercial/retail uses to be developed on the same parcel. These land use designations (i.e., River Mixed Use, Corridor Mixed Use, Mixed Use–Neighborhood Commercial) would allow for residential land uses to be developed on the same parcel or as a part of the same project as a commercial or retail use—a combination that may not have been allowed under the existing General Plan. As the commercial and retail uses may involve activities that could result in excessive air quality emissions (e.g., loading docks/trucks idling, diesel generators), it is possible that a future project developed under the updated General Plan could affect a project’s onsite residents, and could exacerbate existing environmental hazards for those residents. In these instances, there would be the potential for the onsite residents to be exposed to an adverse health risk caused by a proposed project developed under the General Plan update.

Policies included in the proposed General Plan update would help reduce this possible effect. These policies (also included in the discussion of Impact AQ-1) are listed below.

**LU-1.6 Compatible Infill.** The City shall actively encourage infill development that is architecturally and environmentally sensitive and is compatible with surrounding land uses.

**LU-2.1 Blueprint Participation.** The City shall continue to participate in the Sacramento Regional Blueprint effort and ensure that local plans and new developments are consistent with the Blueprint.

**LU-6.4 Compatible Land Use.** The City shall ensure an adequate separation and buffers between sensitive land uses (e.g., residential, educational, healthcare) and industrial land uses to minimize land use incompatibility and associated noise, odors, and air pollutant emissions from industrial uses.

**S-5.3 New Development.** The City shall use the CEQA process to ensure development projects incorporate feasible mitigation measures to reduce construction and operational air quality emissions, and consult with the Yolo-Solano Air Quality Management District early in the development review process.

**S-5.4 Sensitive Land Uses.** The City shall ensure maintenance of adequate separation between sensitive land uses and facilities or operations that may produce toxic or hazardous air pollutants or substantial odors, consistent with California Air Resources Board recommendations.

**S-5.5 Health Risk Assessment.** The City shall require adequate separation between facilities that may produce toxic or hazardous air pollutants and sensitive receptors in accordance with the recommendations in the California Air Resources Board Air Quality and Land Use Handbook: A Community Health Perspective. If it is determined that these minimum distances cannot be met, the City shall coordinate with Yolo-Solano Air Quality Management District to prepare a health risk assessment that will determine the site-specific airborne health risks and appropriate mitigation, if necessary.

**S-5.8 Industrial Facilities.** The City shall encourage industrial facilities to incorporate best management practices to reduce PM10 emissions.

**S-5.10 Truck Idling.** The City shall enforce State idling laws for commercial vehicles, including delivery and construction vehicles. The City shall also encourage the use of electrical outlets in loading zones, including signage, to reduce vehicle idling associated with operating refrigeration for delivery trucks.



Although these updated General Plan policies would help reduce the potential effects of air pollutant emissions in these mixed-use land use designations, future projects may still result in the presence of air pollutant sources on the same parcel as a residential receptor or sensitive population. If this type of development were to occur, it is possible that the project would exacerbate environmental hazards on a given project site. Because the General Plan update does not propose any specific development projects, details related to specific projects that could result in this type of air quality effect are not known. However, all future development projects would be required to analyze potential impacts under CEQA, the potential for adverse health risks of future projects would be evaluated and disclosed on a project-specific basis. In the context of the General Plan update, this impact would be less than significant.

### ***CO Hotspot Analysis***

Elevated levels of CO concentrations are typically found in areas with significant traffic congestion. CO is a public health concern because it can cause health problems such as fatigue, headache, confusion, dizziness, and even death. Motor vehicles are the dominant source of CO emissions in most areas. High CO levels develop primarily during winter when periods of light winds combine with the formation of ground-level temperature inversions (typically from the evening through early morning). These conditions result in reduced dispersion of vehicle emissions. Motor vehicles also exhibit increased CO emission rates at low air temperatures. CO emission rates from motor vehicles have been declining and are expected to continue to decline in the future because of ARB's Mobile Source Program, which supports replacement of older, higher-emitting vehicles with newer vehicles, and increasingly stringent inspection and maintenance programs, as well as other regulatory requirements, such as Assembly Bill 1493 (Pavley) of 2002 that mandates regulations to reduce tailpipe greenhouse gas emissions that also improve fuel economy.

CO concentrations in the planning area were evaluated following the Caltrans CO protocol (Garza et al. 1997) to evaluate whether the General Plan update would cause or contribute to localized violations of the state or federal ambient standards in the vicinity. CO concentrations at potential sensitive receptors near congested roadways were estimated using CALINE4 dispersion modeling. Table 3.3-8 summarizes CO modeling results for Existing (2014), Year 2020, and Year 2035 conditions.

**Table 3.3-8. Carbon Monoxide Concentrations at Greatest Affected Roadway Intersections**

Intersection	Receptor	Existing (2014) <sup>a</sup>		Year 2020 <sup>a</sup>		Year 2035 <sup>a</sup>	
		1-hr CO <sup>b</sup>	8-hr CO <sup>c</sup>	1-hr CO <sup>b</sup>	8-hr CO <sup>c</sup>	1-hr CO <sup>b</sup>	8-hr CO <sup>c</sup>
Jefferson Boulevard and Park Boulevard/ US 50 westbound ramps	1	3.8	2.8	3.3	2.4	3.7	2.7
	2	3.9	2.9	3.5	2.6	3.6	2.7
	3	3.8	2.8	3.4	2.5	3.6	2.7
	4	3.8	2.8	3.4	2.5	3.9	2.9
Jefferson Boulevard and Devon Avenue/ Gateway Drive	5	2.7	2.0	2.5	1.9	2.4	1.8
	6	3.2	2.4	2.9	2.2	3.0	2.2
	7	2.8	2.1	2.6	2.0	2.6	2.0
	8	3.0	2.2	2.8	2.1	2.8	2.1
Jefferson Boulevard and Lake Washington Boulevard	9	3.4	2.5	3.1	2.3	3.2	2.4
	10	3.7	2.7	3.2	2.4	3.3	2.4
	11	3.7	2.7	3.5	2.6	3.5	2.6
	12	3.6	2.7	3.4	2.5	3.4	2.5
Riverfront Street/ Third Street and Tower Bridge Gateway	13	3.9	2.9	3.5	2.6	3.8	2.8
	14	3.6	2.7	3.3	2.4	4.0	2.9
	15	3.6	2.7	3.3	2.4	4.0	2.9
	16	3.6	2.7	3.3	2.4	3.7	2.7

<sup>a</sup> Background concentrations of 2.0 ppm and 1.5 ppm were added to the modeling 1-hour and 8-hour results, respectively.

<sup>b</sup> The federal and state 1-hour standards are 35 and 20 ppm, respectively.

<sup>c</sup> The federal and state 8-hour standards are 9 and 9.0 ppm, respectively.

As indicated in Table 3.3-8, future year CO concentrations will be lower than existing concentrations and no violations of the state or federal 1- or 8-hour CO standards are anticipated in the planning area under cumulative year conditions. Consequently, the impact of traffic conditions on ambient CO levels in the planning area would be less than significant.

#### **Impact AQ-5: Creation of objectionable odors affecting a substantial number of people (less than significant)**

YSAQMD has identified certain types of land uses as being commonly associated with odors, as presented in Table 3.3-9; although this list is not exhaustive, it is intended to help lead agencies recognize the types of facilities where more analysis may be warranted. YSAQMD has established a screening criteria distance of 1 mile between sensitive receptors and odor-generating facilities as a reasonable buffer distance; if there is more than 1 mile between the receptor and the odor-generating land use, odor impacts would be less than significant. If the source and the receptor are less than 1 mile apart, a full analysis must be conducted.

**Table 3.3-9. Potential Odor Sources According to YSAQMD**

Type of Facility
Wastewater treatment facilities
Chemical manufacturing
Sanitary landfill
Fiberglass manufacturing
Transfer station
Painting/coating operations (e.g., auto body shops)
Composting facility
Food processing facility
Petroleum refinery
Feed lot/dairy
Asphalt batch plant
Rendering plant

Source: Yolo-Solano Air Quality Management District 2007

As discussed earlier, the California Supreme Court has opined that impacts of the environment on projects are not subject to CEQA analysis, with limited exceptions. This general rule includes the impacts of existing odor-generating uses on future land uses. The proposed General Plan update would not generally introduce scenarios that would exacerbate existing odors and expose sensitive receptors.

Potential odor emitters during construction activities include diesel exhaust, asphalt paving, and the use of architectural coatings and solvents. Construction-related operations near existing receptors would be temporary, and construction activities would not be likely to result in nuisance odors that would violate YSAQMD Rule 2.5. Given mandatory compliance with YSAQMD rules, no construction activities or materials are proposed that would create a significant level of objectionable odors.

Additionally, as future development under the General Plan Update must comply with the zoning ordinance, odor-generating uses would only be developed in areas zoned for such uses. Consequently, new odor-generating uses would not be developed near residences or other receptors that would be sensitive to odors. Accordingly, odor impacts are considered less than significant.

### 3.3.3 References Cited

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## 3.4 Biological Resources

### 3.4.1 Existing Conditions

The study area for the analysis of biological resources is the area within the West Sacramento city limits.

#### Regulatory Setting

##### Federal

##### Federal Endangered Species Act

The federal Endangered Species Act (ESA) protects fish and wildlife species and their habitats that have been identified by the National Marine Fisheries Service (NMFS) or U.S. Fish and Wildlife Service (USFWS) as threatened or endangered. *Endangered* refers to species, subspecies, or distinct population segments (DPSs) that are in danger of extinction through all or a significant portion of their range. *Threatened* refers to species, subspecies, or DPSs that are likely to become endangered in the near future.

ESA is administered by USFWS and NMFS. In general, NMFS is responsible for protection of listed marine species and anadromous fish, and USFWS is responsible for other listed species.

Implementation of any project that may result in take of any species protected by ESA would be subject to approval and oversight by NMFS and USFWS, as relevant, and subject to the terms and conditions of any biological opinion (BO) from that agency. Compliance with the terms and conditions of the BOs would further ensure that no implemented project would jeopardize the continued existence of any threatened or endangered species.

Relevant ESA provisions are summarized below.

##### **Section 9: ESA Prohibitions**

ESA Section 9 prohibits the take of any fish or wildlife species listed under ESA as endangered. Take of threatened species also is prohibited under Section 9, unless otherwise authorized by federal regulations.<sup>1</sup> *Take*, as defined by ESA, means “to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct.” *Harm* is defined as “any act that kills or injures the species, including significant habitat modification.” In addition, Section 9 prohibits removing, digging up, cutting, and maliciously damaging or destroying federally listed plants on sites under federal jurisdiction.

##### **Section 7: ESA Authorization Process for Federal Actions**

ESA Section 7 provides a means for authorizing take of threatened and endangered species by federal agencies. Under Section 7, the federal agency conducting, funding, or permitting an action

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<sup>1</sup> In some cases, exceptions may be made for threatened species under ESA Section 4(d); in such cases, USFWS or NMFS issues a “4(d) rule” describing protections for the threatened species and specifying the circumstances under which take is allowed.

must consult with NMFS or USFWS, as appropriate, to ensure that the proposed project will not jeopardize endangered or threatened species or destroy or adversely modify designated critical habitat.

### ***Section 10: ESA Authorization for Nonfederal Actions***

In cases where federal land, funding, or authorization is not required for an action by a nonfederal entity, the take of listed species must be permitted by USFWS and/or NMFS through the Section 10 process. Private landowners, corporations, state agencies, local agencies, and other nonfederal entities must obtain a Section 10(a)(1)(B) incidental take permit for take of federally listed fish and wildlife species that is “incidental to, and not the purpose of, the carrying out of an otherwise lawful activity.” Because the ESA Section 9 prohibitions for listed plants apply only on lands under federal jurisdiction, Section 10 incidental take permits are necessary only for take of wildlife and fish species. Nonetheless, plants often are included in habitat conservation plans (HCPs) such that USFWS can make findings of no-jeopardy when the Section 7 process is triggered.

To receive an incidental take permit, the nonfederal entity is required under Section 10(a)(2)(A) to prepare an HCP. If submitted in support of an incidental take permit application, the HCP must include the following information.

- Impacts likely to result from the proposed taking of the species for which permit coverage is requested.
- Measures that will be implemented to monitor, minimize, and mitigate impacts.
- Funding that will be made available to undertake such measures.
- Procedures to deal with unforeseen circumstances.
- Alternative actions considered that would not result in take.
- Additional measures USFWS may require as necessary or appropriate for purposes of the plan.

### ***Critical Habitat***

Critical habitat, as defined in ESA Section 3, is the specific area within the geographic area occupied by a species at the time it is listed, in which those biological features essential to the conservation of the species are found and that may require special management considerations or protection. Critical habitat also includes specific areas outside the geographic area occupied by a species at the time it is listed upon a determination that such areas are essential for conservation of the species.

### **Fish and Wildlife Coordination Act**

The Fish and Wildlife Coordination Act (FWCA) of 1958 requires that all federal agencies consult with USFWS, NMFS, and the appropriate state wildlife agency for activities that affect, control, or modify surface waters, including wetlands and other waters. The study area contains wetlands and other waters that could be affected by implementation of the proposed project.

### **Migratory Bird Treaty Act**

The Migratory Bird Treaty Act (MBTA) (16 United States Code [USC] 703) enacts the provisions of treaties between the United States, Great Britain, Mexico, Japan, and the Soviet Union (now Russia). The MBTA prohibits the take, possession, import, export, transport, selling, purchase, barter, or offering for sale, purchase, or barter any migratory bird, their eggs, parts, and nests, except as

authorized under a valid permit (50 CFR 21.11). Executive Order (EO) 13186 (January 10, 2001) directs each federal agency taking actions that have or may have a negative effect on migratory bird populations to work with USFWS to develop a memorandum of understanding (MOU) that will promote the conservation of migratory bird populations.

### **Magnuson-Stevens Fishery Conservation and Management Act**

The Magnuson-Stevens Fishery Conservation and Management Act (MSA) requires all federal agencies to consult with NMFS regarding all actions or proposed actions permitted, funded, or undertaken that may adversely affect essential fish habitat (EFH). EFH is defined as “waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity.”

### **Clean Water Act**

The Clean Water Act (CWA) is administered by the U.S. Environmental Protection Agency (EPA) and U.S. Army Corps of Engineers (USACE). The discharge of dredged or fill material into waters of the United States is subject to permitting under CWA Section 404. Certification from the applicable Regional Water Quality Control Board (Regional Water Board) is required when a proposed activity may result in discharge into waters of the United States, pursuant to CWA Section 401 and EPA’s Section 404(b)(1) guidelines. CWA Section 402 regulates construction-related stormwater discharges to surface waters through the National Pollutant Discharge Elimination System (NPDES) program, administered by EPA. In California, the State Water Resources Control Board (State Water Board) is authorized by EPA to oversee the NPDES program through the Regional Water Boards.

#### ***Section 401: Water Quality Certification***

Under CWA Section 401, applicants for a federal license or permit to conduct activities that may result in the discharge of a pollutant into waters of the United States must apply for water quality certification from the state. Accordingly, all projects with a federal component that may affect state water quality (including projects that require federal agency approval, such as a Section 404 permit) must comply with CWA Section 401. Development projects under the General Plan update that would place fill in waters of the United States would require CWA Section 401 certification.

#### ***Section 402: Permits for Stormwater Discharge***

NPDES permits are required for projects that disturb more than 1 acre of land. The NPDES permitting process requires the applicant to file a public notice of intent to discharge stormwater and to prepare and implement a Stormwater Pollution Prevention Plan (SWPPP). The SWPPP must include a site map, a description of proposed construction activities, and the best management practices (BMPs) that will be implemented to prevent soil erosion and discharge of other construction-related pollutants (e.g., petroleum products, solvents, paints, cement) that could contaminate nearby water resources. Permittees are required to conduct annual monitoring and reporting to ensure that BMPs are correctly implemented and effective in controlling the discharge of stormwater-related pollutants.

#### ***Section 404: Permits for Fill Placement in Waters of the United States (Including Wetlands)***

Waters of the United States (including wetlands) are protected under CWA Section 404. Any activity that involves a discharge of dredged or fill material into waters of the United States, including wetlands, is subject to regulation by USACE. *Waters of the United States* is defined to encompass navigable waters of the United States; interstate waters; all other waters where their use,

degradation, or destruction could affect interstate or foreign commerce; tributaries of any of these waters; and wetlands that meet any of these criteria or are adjacent to any of these waters or their tributaries. *Wetlands* are defined under Section 404 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 criteria.

- They support hydrophytic vegetation (i.e., plants that grow in saturated soil).
- They have hydric soil types (i.e., soils that are wet or moist enough to develop anaerobic conditions).
- They have wetland hydrology.

### **Rivers and Harbors Act**

Rivers and Harbors Act Section 10 requires authorization from USACE for the construction of any structure in, over, or under any navigable water of the United States. Tidal waterways within the Delta are considered navigable waters. The law applies to any dredging, excavation, filling, or other modification of a navigable water of the United States, as well as to all structures, including bank protection (e.g., riprap).

### **Executive Order 11990: Protection of Wetlands**

EO 11990, signed May 24, 1977, directs all federal agencies to refrain from assisting in or giving financial support to projects that encroach on publicly or privately owned wetlands. It further requires that federal agencies support a policy to minimize the destruction, loss, or degradation of wetlands.

### **Executive Order 13112: Invasive Species**

EO 13112, signed February 3, 1999, directs all federal agencies to prevent and control the introduction of invasive species in a cost-effective and environmentally sound manner. The EO requires consideration of invasive species in National Environmental Policy Act analyses, including their identification and distribution, their potential effects, and measures to prevent or eradicate them.

## **State**

### **California Endangered Species Act**

The California Endangered Species Act (CESA) (California Fish and Game Code [CFGF] Sections 2050–2116) states that all native species or subspecies of a fish, amphibian, reptile, mammal, or plant and their habitats that are threatened with extinction and those experiencing a significant decline that, if not halted, would lead to a threatened or endangered designation will be protected or preserved.

Under CFGF Section 2081, a permit from the California Department of Fish and Wildlife (CDFW) is required for projects that could result in take of a species that is state-listed as threatened or endangered. Under CESA, *take* is defined as an activity that would directly or indirectly kill an individual of a species. The definition does not include *harm* or *harass*, as does the definition of take



under ESA. Accordingly, the threshold for take under CESA is higher than that under ESA. For example, habitat modification is not necessarily considered take under CESA.

CFGC Section 2090 requires state agencies to comply with endangered species protection and recovery and to promote conservation of these species. CDFW administers CESA and authorizes take through CFGC Section 2081 incidental take agreements (except for species designated as fully protected) and Section 2080.1 consistency determinations. If it is determined that a proposed project would result in take of a state-listed species, an incidental take permit or consistency determination would be obtained through consultation with CDFW.

### **Section 1600 of the California Fish and Game Code**

Sections 1600–1603 of the CFGC state that it is unlawful for any person or agency to substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake in California that supports wildlife resources, or to use any material from the streambeds without first notifying CDFW. A Lake and Streambed Alteration Agreement (LSAA) must be obtained if effects are expected to occur.

The regulatory definition of a stream is a body of water that flows at least periodically or intermittently through a bed or channel having banks and that supports wildlife, fish, or other aquatic life. This definition includes watercourses having a surface or subsurface flow that supports or has supported riparian vegetation. CDFW's jurisdiction within altered or artificial waterways is based on the value of those waterways to fish and wildlife and extends to the tops of banks and often includes the outer edge of riparian vegetation canopy cover. Riparian trees that have a diameter of 6 inches or more also fall within CDFW's jurisdiction.

### **California Fully Protected Species**

CFGC Sections 3511, 3513, 4700, and 5050 pertain to fully protected wildlife species (birds in Sections 3511 and 3513, mammals in Section 4700, and reptiles and amphibians in Section 5050) and strictly prohibit the take of these species. CDFW cannot issue a take permit for fully protected species, except under narrow conditions for scientific research or the protection of livestock, or if a Natural Community Conservation Plan (NCCP) has been adopted.

### **California Fish and Game Code (3503, 3503.5, 3513)**

Sections 3503, 3503.5, and 3513 of the CFGC protect all native birds, birds of prey, and all nongame birds, including eggs and nests, that are not already listed as fully protected and that occur naturally within the state. Eggs and nests of all birds (except for house sparrow [*Passer domesticus*] and European starling [*Sturnus vulgaris*]) are protected under Section 3503, while Section 3503.5 protects all birds of prey as well as their eggs and nests. Migratory non-game birds are protected under Section 3513. Except for take related to scientific research, take as described above is prohibited.

### **California Native Plant Protection Act**

CESA defers to the California Native Plant Protection Act (CNPPA) to ensure that state-listed plant species are protected when state agencies are involved in projects subject to CEQA. Plants listed as rare under CNPPA are not protected under CESA, but rather under CEQA. CDFW is consulted regarding impacts on state-listed species and potential mitigation for unavoidable impacts.

### **Natural Community Conservation Planning Act**

In 1991, California's Natural Community Conservation Planning Act (NCCPA) (California Fish and Game Code Section 2800 et seq.) was enacted to implement broad-based planning that balances appropriate development and growth with conservation of wildlife and habitat. Pursuant to the NCCPA, local, state, and federal agencies are encouraged to prepare Natural Community Conservation Plans (NCCPs) to provide comprehensive management and conservation of multiple species and their habitats under a single plan, rather than through preparation of numerous individual plans on a project-by-project basis. The NCCPA is broader in its orientation and objectives than are ESA and CESA. The primary objective of the NCCP program is to conserve natural communities at the ecosystem scale while accommodating compatible land use. To be approved by CDFW, an NCCP must provide for the conservation of species and protect natural communities within the inventory area in perpetuity.

### **Porter-Cologne Water Quality Control Act**

Under the Porter-Cologne Water Quality Control Act, the State of California, through the Regional Water Boards, regulates discharges of waste into any waters of the state, regardless of whether USACE has concurrent jurisdiction under CWA Section 404. *Waters of the state* include all surface water or groundwater within the state.

### **Local**

The following local policies related to biological resources may apply to the General Plan update.

#### **Yolo County Oak Woodland Conservation and Enhancement Plan**

The Yolo County Oak Woodland Conservation and Enhancement Plan (Yolo County 2007) promotes voluntary efforts to conserve and enhance the county's existing oak woodlands to help minimize the disturbance of the health and longevity of existing oak woodlands.

#### **Yolo Habitat Conservancy**

##### ***Yolo Habitat Conservation Plan/Natural Community Conservation Plan***

The Yolo County Habitat Conservation Joint Powers Agency (now known as the Yolo Habitat Conservancy or YHC) was formed in August 2002 for the purpose of acquiring habitat conservation easements and to serve as the lead agency for the preparation of an HCP/NCCP for Yolo County and the Cities of Davis, Woodland, Winters, and West Sacramento (Yolo Habitat Conservancy 2015). The HCP/NCCP covers 12 listed species and 15 natural communities. Pursuant to ESA Section 10, it is intended to support 50-year incidental take permits for development projects in the plan area.

##### ***Swainson's Hawk Mitigation Agreement***

YHC is responsible for the facilitation of mitigation for effects on foraging habitat of Swainson's hawk (*Buteo swainsoni*) by assisting in the acquisition of conservation easements. YHC and CDFW have entered into an Agreement Regarding Mitigation for Impacts to Swainson's Hawk Foraging Habitat in Yolo County (Mitigation Agreement) (Yolo County 2002).

The Mitigation Agreement allows for the establishment of a mitigation fee program to fund the acquisition, enhancement, and long-term management of Swainson's hawk foraging habitat conservation lands. Project proponents with projects that are smaller than 40 acres can contribute

to a fund for purchase of suitable conservation lands for Swainson's hawk. Project proponents with projects that are larger than 40 acres must coordinate with the JPA/YHC to locate and negotiate a conservation easement on an appropriate property that would contribute to the JPA/YHC's preserve design. The Mitigation Agreement does not authorize the incidental take of Swainson's hawk (Yolo County 2002).

### **City of West Sacramento General Plan**

The Natural Resources Element of the current General Plan includes goals and policies to protect natural resources. The goal and policies listed below are relevant to biological resources in the planning area (City of West Sacramento 2000).

#### **Goal C: To protect sensitive native vegetation and wildlife communities and habitat in West Sacramento.**

##### **Policies:**

1. The City shall encourage and support development projects and programs that enhance public appreciation and awareness of the natural environment.
2. The City shall support state and federal policies for preservation and enhancement of riparian and wetland habitats by incorporating, as deemed appropriate, the findings and recommendations of the *Sacramento Greenway Plan*, California Department of Fish and Game and the U.S. Fish and Wildlife Service into site-specific development proposals.
3. The City shall require site-specific surveys to identify significant wildlife habitat and vegetation resources for development projects located in or near riparian or wetland areas.
4. The City shall support mitigation measures which provide for no net loss of riparian or wetland habitat acreage and value by regulating development in and near these habitats and promoting projects that avoid sensitive areas. Where habitat loss is unavoidable, the City shall seek replacement on at least a 1:1 basis. Replacement entails creating habitat that is similar in extent and ecological value to that displaced by the project. The replacement habitat should consist of locally occurring, native species and shall be located as close as possible to the project site or be part of a larger replacement habitat project.
5. To minimize disturbance to wildlife, the City shall require the provision and maintenance of an adequate setback between significant wetland habitat and adjacent development. The buffer shall be landscaped with native or compatible introduced ornamental vegetation and may be used for passive recreation purposes.
6. The City shall encourage the maintenance of marsh and riparian vegetation along irrigation/drainage canals and along the Deep Water Ship Channel by encouraging that routine maintenance and clearing disturb only one bank per year and maintain the fringes of marsh vegetation.
7. The City shall seek to minimize the loss or degradation of wetland and riparian habitats at the following sites: Lake Washington and associated wetlands; Bee Lakes and associated riparian woodlands; riparian woodlands along the Sacramento River north of the I Street Bridge and south of the barge canal; and riparian woodlands along the Deep Water Ship Channel and the Yolo Bypass.
8. The City shall seek a cooperative effort with other jurisdictions, the State, and the federal government to conserve habitat. The goal of this effort shall be to preserve and enhance habitat values in appropriate large areas while allowing the orderly development within the incorporated areas of the County.

In the event a multi-jurisdictional effort is unsuccessful, the City shall adopt a conservation ordinance or plan that identifies specific habitats and sites where development could

diminish or eliminate significant biological habitat and protects them from the adverse effects of excavating, grading, filling, dredging, removing vegetation, landscaping with exotic species, and other incompatible uses and activities. In the event protection is not possible, full mitigation shall be required.

9. The City shall seek to preserve populations of rare, threatened, and endangered species by ensuring that development does not adversely affect such species or by fully mitigating adverse effects.
10. The City shall not approve projects that would cause unmitigatable impacts on rare, threatened, or endangered wildlife or plant species.
11. The City shall implement measures to ensure that development in the city does not adversely affect fishery resources in the Sacramento River, Deep Water Ship Channel, and Lake Washington.
12. Public access and recreation facilities shall not eliminate or degrade riparian habitat values. Trails, picnic areas, and other developments shall be sited to minimize impacts on sensitive wildlife habitat or riparian vegetation.
13. The City shall promote the use of native plants, especially valley oaks, for landscaping roadsides, parks, and private properties. In particular, native plants should be used along the Sacramento River and in areas adjacent to riparian and wetland habitats.
14. Golf course development shall incorporate, to the maximum extent possible, areas of native vegetation and wildlife habitat.

### **City of West Sacramento Tree Preservation Ordinance**

The City's Tree Preservation Ordinance is found in the West Sacramento Municipal Code, Title 8 (Health and Safety), Chapter 24 (Tree Preservation). The City protects heritage and landmark trees, as defined in the ordinance, and requires tree permits for activities that would affect such trees. Tree permits require the applicant to replace a removed tree or to pay an in-lieu fee to the City.

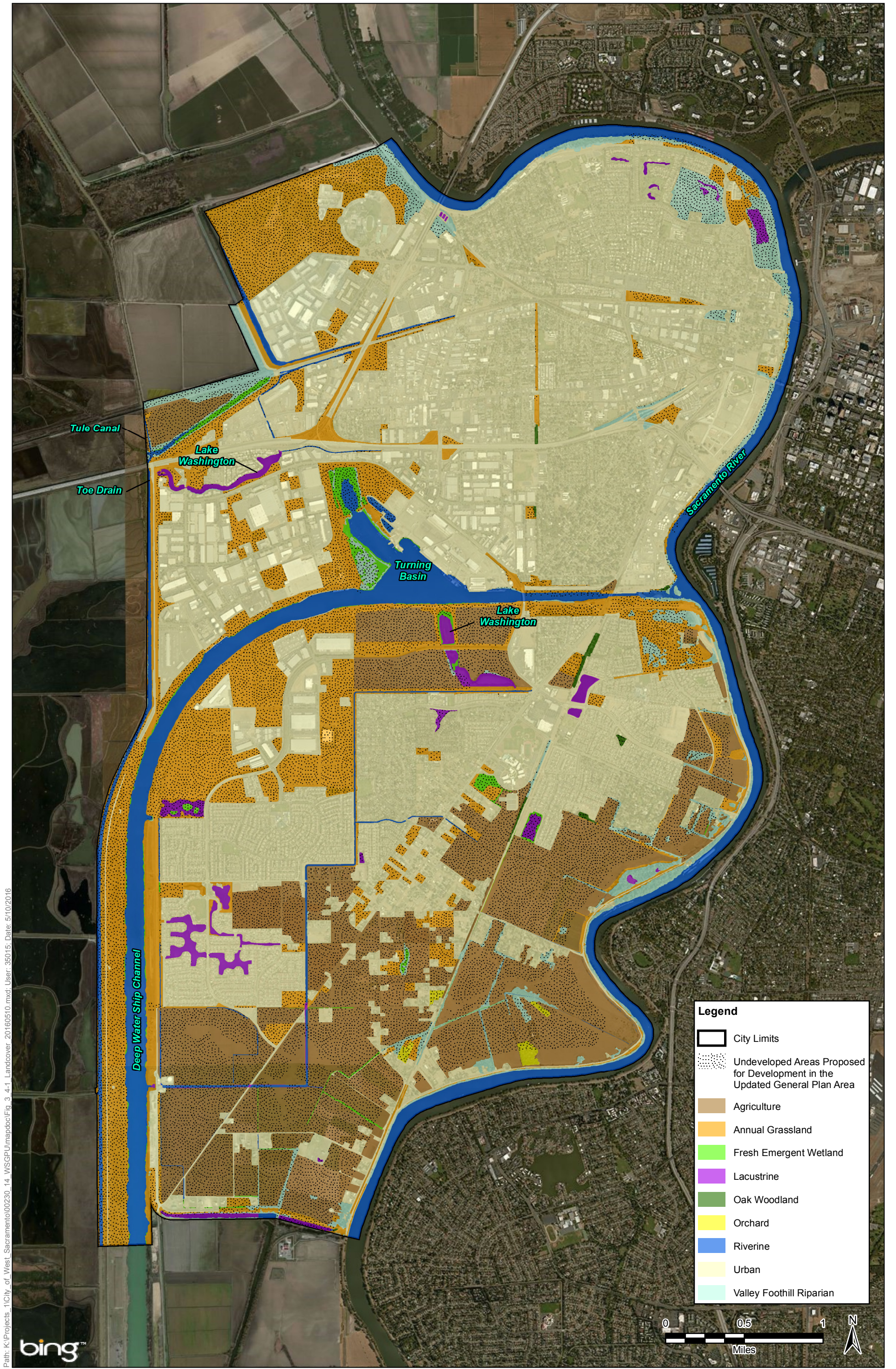
## **Environmental Setting**

West Sacramento is situated in the Sacramento Valley subregion of the California Floristic Province in Yolo County (Baldwin et al. 2012:41–43). The topography is relatively level throughout the study area.

### **Land Cover Types in the Study Area**

Land cover mapping for the study area was based on the best available resources, including CalVeg data (USDA Forest Service 2014), the *City of West Sacramento General Plan Public Review Draft Background Report* (City of West Sacramento 2009), and the Southport Sacramento River Early Implementation Project (ICF International 2015a). Due to the availability of more specific vegetation mapping data, the Southport area might contain slightly more detailed land cover mapping than other parts of the study area. For the purposes of this analysis, nine land cover types were identified in the study area based on modifications to the CalVeg classification of vegetation communities. Several of the CalVeg land cover types were combined, where the vegetation descriptions, wildlife habitat functions, and agency regulation of the cover type would be essentially the same (e.g., coastal oak woodland and valley oak woodland are combined into a single oak woodland cover type), and corrections/updates were made to the CalVeg designations in some areas. Figure 3.4-1 shows the locations of the mapped land cover types.





Path: K:\Projects\_1\City\_of\_West\_Sacramento\00230\_14\_WSGP\Umapdoc\Fig\_3\_4-1\_Landcover\_20160510.mxd; User: 35015; Date: 5/10/2016



**Figure 3.4-1**  
**Landcover Types and Potential Development Impacts in the City of West Sacramento Updated General Plan Area**



The Yolo County Habitat Conservation Plan/Natural Communities Conservation Plan (HCP/NCCP) uses a similar, but separate, classification system to map natural communities in Yolo County. For ease of comparison between the cover types shown in Figure 3.4-1 and the Yolo HCP/NCCP natural communities, Table 3.4-1 provides a crosswalk between the two classification systems.

**Table 3.4-1. Crosswalk for Mapped Land Cover Types and Yolo HCP/NCCP Natural Communities**

Mapped Land Cover Types*	Yolo HCP/NCCP Natural Communities
Agriculture	Alfalfa Field Crops Grain/Hay Crops
Annual Grassland	Grassland
Fresh Emergent Wetland	Fresh Emergent Wetland
Lacustrine	Lacustrine
Oak Woodland	Valley Oak Woodland
Orchard	Deciduous Fruits/Nuts
Riverine	Riverine
Urban	Urban Urban Ruderal
Valley Foothill Riparian	Valley Foothill Riparian

\* As shown on Figure 3.4-1.

The study area supports both common and sensitive land cover types. Common land cover types are widespread vegetation communities with low plant species diversity. These types may reestablish naturally after disturbance, support primarily nonnative plant species, or be highly managed. They are not generally protected by agencies unless they provide habitat for special-status species (e.g., raptor foraging or nesting habitat, upland habitat in a wetland watershed). The common land cover types in the study area are annual grassland, orchard, and agriculture. The urban cover type is not considered a vegetation community and is not sensitive.

Sensitive land cover types are rare vegetation communities with limited distribution. They may have high species diversity, high productivity, distinctive characteristics, or a declining status. Local, state, and federal agencies that regulate biological resources consider these types to be important, and compensation for loss of sensitive types is generally required by these agencies. Under state Public Resources Code Section 21083.4, conservation of and mitigation for impacts on oak woodlands are required. USFWS considers certain types, such as wetlands and riparian communities, important to wildlife; and USACE and EPA consider wetlands important for water quality and wildlife. Waters of the United States and waters of the State are regulated by USACE and the Regional Water Boards, respectively. CDFW’s California Natural Diversity Database (CNDDDB) contains a current list of rare habitat types throughout the state. The land cover types in the study area that are considered sensitive are oak woodland, valley foothill riparian, fresh emergent wetland, lacustrine, and riverine.

Dominant plant species and typical wildlife species found in vegetated and unvegetated land cover types within the study area and their locations are described below. Descriptions of plant species in each land cover type are based on the previously prepared documents (ICF International 2015a, 2015b), aerial photographs from Google Earth, and information from the CalVeg data (USDA Forest Service 2014).

## Agriculture

Agriculture occurs primarily in the southern part of the study area (Figure 3.4-1). The agriculture land cover type includes fields that transition between active cultivation, disked or plowed, or fallow conditions. Actively cultivated fields are large parcels of wheat, ryegrass, and row crops that may be transitioned to either fallow or disked/plowed conditions. The dominant species in fallow fields are essentially the same as those described for annual grassland, but fallow fields generally cover larger areas than the uncultivated grasslands in the study area. Blue elderberry (*Sambucus nigra* ssp. *caerulea*) shrubs occur in several areas of fallow agricultural land.

Agricultural lands are established on fertile soils that historically supported abundant wildlife. The quality of habitat for wildlife is greatly diminished when the land is converted to agricultural uses and intensively managed. Many species of rodents and birds have adapted to agricultural lands, but they are often controlled by fencing, trapping, and poisoning to prevent excessive crop losses. However, certain agricultural lands have become important habitats for wintering waterfowl and breeding and wintering raptors. Wildlife species commonly associated with agricultural lands include mourning dove (*Zenaidura macroura*), American crow (*Corvus brachyrhynchos*), Brewer's blackbird (*Euphagus cyanocephalus*), sandhill crane (*Grus canadensis*), various raptor species, egrets, and many species of rodents (Mayer and Laudenslayer 1988).

## Annual Grassland

Annual grassland occurs in scattered areas throughout the study area on levee slopes, along roadsides, and on undeveloped parcels (Figure 3.4-1). Similar vegetation occurs in the fallow agricultural fields, described above, but those areas are larger and are subject to intermittent cultivation. The annual grassland is dominated by naturalized annual grasses with intermixed perennial and annual forbs. Grasses commonly found in annual grassland are foxtail barley (*Hordeum murinum* ssp. *leporinum*), ripgut brome (*Bromus diandrus*), Italian ryegrass (*Festuca perennis*), and soft chess (*Bromus hordeaceus*). Forbs commonly found in annual grasslands in the study area are yellow star-thistle (*Centaurea solstitialis*), prickly lettuce (*Lactuca serriola*), bristly ox-tongue (*Helminthotheca echioides*), sweet fennel (*Foeniculum vulgare*), Italian thistle (*Carduus pycnocephalus*), horseweed (*Conyza canadensis*), black mustard (*Brassica nigra*), fireweed (*Epilobium brachycarpum*), broad-leaf pepper grass (*Lepidium latifolium*), common sunflower (*Helianthus annuus*), pigweed (*Chenopodium* sp.), cheeseweed (*Malva parviflora*), bindweed (*Convolvulus arvensis*), and telegraph weed (*Heterotheca grandiflora*). The annual grasslands in the study area contain a relatively large proportion of ruderal species, likely because of substantial disturbance from human activities. Blue elderberry shrubs occur in several areas of annual grassland.

Annual grasslands are used by many wildlife species for foraging. Some of these species also inhabit annual grassland if special features such as cliffs, caves, ponds, or woody plants are available for breeding or resting habitat, or as escape cover. Reptiles that breed in annual grassland habitats include western fence lizard (*Sceloporus occidentalis*), common gartersnake (*Thamnophis sirtalis*), and western rattlesnake (*Crotalus tigris*). Grasslands provide foraging habitat for wide-ranging species such as red-tailed hawk (*Buteo jamaicensis*), turkey vulture (*Cathartes aura*), American kestrel (*Falco sparverius*), and northern harrier (*Circus cyaneus*). Mammals typically found in this habitat include California vole (*Microtus californicus*), western harvest mouse (*Reithrodontomys megalotis*), California ground squirrel (*Spermophilus beecheyi*), black-tailed hare (*Lepus californicus*), and coyote (*Canis latrans*) (Mayer and Laudenslayer 1988:118). In addition, many species that nest

or roost in open woodlands may forage in associated grasslands, including western bluebird (*Sialia mexicana*), western kingbird (*Tyrannus verticalis*), and some species of bats (Zeiner et al. 1990a:428, 510, 1990b).

### **Fresh Emergent Wetland**

Fresh emergent wetland habitat occurs in undredged agricultural ditches; in the Parlin Ranch detention basin; and in patches along the Sacramento River, DWSC, and Toe Drain/Tule Canal (Figure 3.4-1). Ditches with minimal wetland vegetation are considered riverine habitat, as discussed below. Fresh emergent wetland habitats support wetland species such as tule (*Schoenoplectus acutus*), narrow-leaved cattail (*Typha angustifolia*), Himalayan blackberry, knotweed (*Persicaria hydropiperoides*), monkeyflower (*Mimulus guttatus*), English plantain (*Plantago lanceolata*), and dallisgrass (*Paspalum dilatatum*). Some fresh emergent wetlands qualify as waters of the United States, while others would be considered only as waters of the state.

Fresh emergent wetlands may occur in association with terrestrial or aquatic habitats and contain varying amounts of vegetation. Fresh emergent wetlands provide food, cover, and water for a variety of amphibians, reptiles, birds, and mammals (Mayer and Laudenslayer 1988:124). Wildlife species that utilize fresh emergent wetlands include Sierran treefrog (*Pseudacris sierra*), western aquatic gartersnake (*Thamnophis couchi*) (Zeiner et al. 1988:78, 216), great blue heron (*Ardea herodias*), great egret (*Ardea alba*), Virginia rail (*Rallus limicola*), and red-winged blackbird (*Agelaius phoeniceus*) (Zeiner et al. 1990a:32, 34, 176, 638).

### **Lacustrine**

The lacustrine land cover type includes ponds and lakes, such as the two areas known as Lake Washington and Bees Lakes, and unnamed ponds (Figure 3.4-1). Both parts of Lake Washington north and south of the DWSC and several of the unnamed ponds are mostly open water, but they support a band of fresh emergent wetland around the edges. Both parts of Lake Washington are also surrounded by scattered riparian trees. Bees Lakes are primarily open water features surrounded by riparian woodland, although they support partial cover of floating aquatic species such as water meal (*Wolffia* sp.) or duckweed (*Lemna* sp.). Lacustrine habitats qualify as waters of the United States.

Ponds and lakes provide habitat for several species of amphibians including Sierran treefrog, California newt, and California toad (*Anaxyrus boreas halophilus*), and aquatic reptiles such as western pond turtle (*Actinemys marmorata*) and valley gartersnake (*Thamnophis sirtalis fitchi*). Freshwater marsh vegetation is commonly associated with ponds and provides cover habitat for these species, and may provide cover, resting, or breeding habitat for various bird species. Bats and insectivorous birds may drink from and forage over ponds, and other mammal species may use ponds as a source for water.

Historically, ponds and lakes provided habitat for native fish species, which likely found their way into these habitats during periods when the Sacramento River would overflow its banks and inundate the valley floor. Currently, these ponds and lakes likely support only nonnative fish species that have been introduced either intentionally or unintentionally into these habitats. Furthermore, these habitats likely favor nonnative fish species over native fish species as a result of other species introductions (e.g., invasive aquatic plants) and their hydrologic separation from the Sacramento River because of levee construction.



## Oak Woodland

Oak woodland in the study areas occurs in stands ranging in size from a few trees to several acres (Figure 3.4-1). The dominant overstory species in most areas is valley oak, although other tree species are present, including interior live oak (*Quercus wislizeni*) and northern California black walnut (*Juglans hindsii*). Understory species include Himalayan blackberry, blue elderberry, and herbaceous annual grassland species.

Some of the trees in the oak woodland are large enough to meet the definition of heritage or landmark trees as defined in the City's Tree Preservation Ordinance. Oak woodlands are identified in the CNDDDB as a sensitive habitat type (California Department of Fish and Game 2003).

Oak woodlands are important habitats because of their high value to wildlife in the form of nesting sites, cover, and food (Mayer and Laudenslayer 1988:80). Birds associated with oak woodlands include acorn woodpecker (*Melanerpes formicivorus*), western scrub-jay (*Aphelocoma californica*), yellow-billed magpie (*Pica nuttalli*), and many warblers and flycatchers (Zeiner et al. 1990a:376, 452, 460). Cavities in oak trees are important nesting sites for acorn woodpecker, oak titmouse (*Baeolophus inornatus*), Bewick's wren (*Thryomanes bewickii*), and western bluebird (California Partners in Flight 2002:24). Oak woodlands provide nesting sites and/or foraging habitat for raptors, such as red-tailed hawks (*Buteo jamaicensis*), red-shouldered hawks (*Buteo lineatus*), and great horned owls (*Bubo virginianus*) (Zeiner et al. 1990a:132, 136, 326; California Partners in Flight 2002:24). Mammals associated with oak woodlands include western gray squirrel (*Sciurus griseus*), pallid bat (*Antrozous pallidus*), bobcat (*Lynx rufus*), mule deer (*Odocoileus hemionus*), and gray fox (*Urocyon cinereoargenteus*) (Zeiner et al. 1990b:70, 146, 324, 352). Acorns are an important food source for species such as California quail (*Callipepla californica*), wild turkey (*Meleagris gallopavo*), western gray squirrel, and mule deer (Mayer and Laudenslayer 1988:79).

## Orchard

Two areas of walnut orchard occur in the study area (Figure 3.4-1). The trees in walnut orchards are usually English walnut (*Juglans regia*) grafted onto black walnut (*Juglans* sp.) rootstock and planted in rows for cultivation and harvesting, and the orchard is generally managed intensively, with understory layers that are often unvegetated and sprayed with herbicides or disked.

Orchards are typically planted on deep, fertile soils that supported diverse and productive natural habitats in the past. Orchards can provide shade or water, if irrigated, for wildlife. Deer may browse on trees. Orchards may provide cover and nesting sites for various species of birds including mourning dove and California quail. California ground squirrels may also feed on nuts in orchards. Birds that commonly feed on almonds and walnuts are northern flicker (*Colaptes auratus*), western scrub-jay, American crow, oak titmouse, Brewer's blackbird, and house finch (*Carpodacus mexicanus*). Birds that commonly feed on fruit trees include yellow-billed magpie, western bluebird, American robin (*Turdus migratorius*), northern mockingbird (*Mimus polyglottos*), cedar waxwing (*Bombycilla cedrorum*), and Bullock's oriole (*Icterus bullockii*) (Mayer and Laudenslayer 1988:140). Western red bat (*Lasiurus blossevillii*) has also been found roosting in fruit and nut orchards (Pierson et al. 2006:12-15).

## Riverine

The riverine land cover type includes open water channels or parts of channels in the study area, such as the Sacramento River, DWSC, Toe Drain/Tule Canal, and unvegetated canals and ditches that

are more highly maintained than the ditches that support fresh emergent wetland habitat (Figure 3.4-1). The riverine land cover type is unvegetated, but some of the open water channels are bordered by fresh emergent wetland and riparian habitats. Some of the riverine habitats qualify as waters of the United States and waters of the State.

Rivers, with adjacent riparian or emergent wetland vegetation, provide food, water, and migration and dispersal corridors, as well as escape, nesting, and thermal cover for a variety of wildlife and fish species. The open water areas of large rivers and creeks provide resting and escape cover for many species of waterfowl and other waterbirds. Insectivorous birds, such as swallows, swifts, and flycatchers, catch insects over open water areas. The river shore and shallow water areas provide foraging opportunities for waterfowl, herons, and shorebirds (Mayer and Laudenslayer 1988:86, 130). Other wildlife species that may use the riverine habitat and/or associated riparian habitat include western pond turtle (Zeiner et al. 1988:100), river otter (*Lontra canadensis*), raccoon (*Procyon lotor*), and striped skunk (*Mephitis mephitis*) (Zeiner et al. 1990b:298, 316, 318).

The segment of the Sacramento River in the study area falls within the Sacramento–San Joaquin Province (Central Valley Subprovince), one of six aquatic zoogeographic provinces in California, as defined by Moyle (2002). The Sacramento–San Joaquin Province is drained by the Sacramento and San Joaquin Rivers. Generally, four native fish assemblages can be recognized in Central Valley streams: rainbow trout assemblage, California roach assemblage, pikeminnow-hardhead-sucker assemblage, and deep-bodied fish assemblage (Moyle 2002). The study area lies at the interface between the zone characterized by the deep-bodied fish assemblage and the Sacramento–San Joaquin Estuary (i.e., the Delta).

Native fish species that occur where the Sacramento River meets the Delta include Sacramento sucker (*Catostomus occidentalis*), Sacramento pikeminnow (*Ptychocheilus grandis*), Sacramento splittail (*Pogonichthys macrolepidotus*), Sacramento blackfish (*Orthodon microlepidotus*), hitch (*Lavinia exilicauda*), Chinook salmon (*Oncorhynchus tshawytscha*) (winter-, spring-, fall-, and late fall-runs), steelhead (*O. mykiss*), green sturgeon (*Acipenser medirostris*), white sturgeon (*A. transmontanus*), Pacific lamprey (*Entosphenus tridentata*), river lamprey (*Lampetra ayresi*), delta smelt (*Hypomesus transpacificus*), longfin smelt (*Spirinchus thaleichthys*), tule perch (*Hysterocarpus traski*), and prickly sculpin (*Cottus asper*) (Moyle 2002). The dominant fishes, however, are all nonnative species: largemouth, smallmouth, and spotted bass (*Micropterus* spp.); white and black crappie (*Pomoxis* spp.); bluegill (*Lepomis macrochirus*); American (*Alosa sapidissima*) and threadfin shad (*Dorosoma petenense*); striped bass (*Morone saxatilis*); bigscale logperch (*Percina macrolepida*); red shiner (*Cyprinella lutrensis*); inland silverside (*Menidia beryllina*); white catfish (*Ameiurus catus*); black and brown bullhead (*Ameiurus* spp.); and common carp (*Cyprinus carpio*) (Moyle 2002).

### Urban

The urban land cover type consists of developed commercial, industrial, and residential parcels in the study area where vegetation, if present, is mostly landscaped, horticultural species. This land cover type also includes roads and large paved areas.

Urban areas have marginal value for wildlife because of human disturbance and the lack of vegetation. Wildlife species that use these areas are typically adapted to human disturbance, such as western scrub-jay, northern mockingbird, house finch, rock dove (*Columba livia*), raccoon, Virginia opossum (*Didelphis virginiana*), striped skunk, western fence lizard, and gopher snake (*Pituophis melanoleucus*) (Mayer and Laudenslayer 1988).

## Valley Foothill Riparian

In the study area, valley foothill riparian habitat occurs on the Sacramento River levee, primarily on the waterside; surrounding the Bees Lakes area; and along some agricultural ditches. This habitat may be dominated by Fremont cottonwood (*Populus fremontii* ssp. *fremontii*), Goodding's black willow (*Salix gooddingii*), valley oak (*Quercus lobata*), or northern California black walnut. The shrub layer includes small trees of the dominant species, box elder (*Acer negundo* var. *californicum*), tree tobacco (*Nicotiana glauca*), sandbar willow (*Salix exigua*), red willow (*S. laevigata*), poison-oak (*Toxicodendron diversilobum*), and Himalayan blackberry (*Rubus armeniacus*). Blue elderberry shrubs may also occur in riparian habitat. Herbaceous understory species can include mugwort (*Artemisia douglasiana*), rough cocklebur (*Xanthium strumarium*), cudweed (*Gnaphalium luteoalbum*), and annual grasses.

Riparian scrub habitat is included in this land cover type. Riparian scrub occurs intermittently on the waterside of the Sacramento River levee and along some ditches in the study area. The dominant overstory species are willows and saplings of riparian trees found in the riparian woodland land cover type, and elderberry shrubs also occur along some ditches. Woody vegetation in this community is lower growing than that found in the woodland communities. Some areas of riparian scrub occur where rock has been placed on levees for erosion control.

Some of the riparian trees are large enough to meet the definition of heritage or landmark trees as defined in the City's Tree Preservation Ordinance. The CNDDDB identifies riparian woodlands as a sensitive habitat type (California Department of Fish and Game 2003). CDFW has adopted a no-net-loss policy for riparian habitat values, and the USFWS mitigation policy identifies California's riparian habitats in Resource Category 2, for which no net loss of existing habitat value is recommended (46 FR 7644).

When the vegetation is diverse and well developed, riparian forest provides high-value habitat for wildlife, including several special-status species. Riparian forest habitat provides food, water, and migration and dispersal corridors, as well as escape, nesting, and thermal cover for many wildlife species (Mayer and Laudenslayer 1988:86). Invertebrates, amphibians, and aquatic reptiles live in aquatic and adjacent upland habitats. Raptors, herons, egrets, and other birds nest in the upper canopy. A variety of songbirds use the shrub canopy, and cavity-nesting birds, such as Nuttall's woodpecker (*Picoides nuttallii*) and oak titmouse, occupy dying trees and snags (Zeiner et al. 1990a:388, 472). Several mammals including raccoon, Virginia opossum, and striped skunk are common in riparian habitats (Zeiner et al. 1990b:2, 298, 316).

Riparian vegetation is also a component of nearshore and shaded riverine aquatic (SRA) cover and directly influences the quality of fish habitat. USFWS defines SRA cover as the unique nearshore aquatic area occurring at the interface between a river and adjacent woody riparian habitat. Key attributes of SRA cover are (1) the adjacent bank being composed of natural, eroding substrates supporting riparian vegetation that either overhangs or protrudes into the water; and (2) the water containing variable amounts of debris, such as leaves, logs, branches, and roots and often substantial amounts of detritus; and variable water velocities, depths, and flows. Instream cover often consists of dead woody material (i.e., instream woody material) that has fallen from the overhanging riparian vegetation. Whole trees, which periodically become dislodged from the adjacent eroding banks, also contribute to SRA cover. These attributes provide high-value feeding areas, burrowing substrates,

escape cover, and reproductive cover for numerous regionally important fish and wildlife species (U.S. Fish and Wildlife Service 1992).

SRA contributes to cover, food, instream habitat complexity, streambank stability, and temperature regulation (National Marine Fisheries Service 2008). Large woody debris usually originates from riparian trees and provides habitat complexity in aquatic environments, an essential component of fish habitat. The roots of riparian vegetation at the land-water interface and on adjacent berms provide streambank stability and cover for rearing fish (Meehan and Bjorn 1991).

Riparian vegetation also provides shade and an insulating canopy that moderates water temperatures in both summer and winter. While the influence of shade on regulating river temperatures decreases as rivers become larger, the moderating effects of shade on nearshore water temperatures may be important to some fish species, including juvenile salmonids, during the growing season (National Marine Fisheries Service 2008.)

Riparian vegetation also influences the food chain of a stream, providing organic detritus and terrestrial insects. Terrestrial organisms falling from overhanging branches contribute to the food base of the aquatic community. Salmonids in particular are primarily insectivorous, feeding mainly on drifting food organisms (National Marine Fisheries Service 2008).

## **Wetlands and Other Waters**

Wetlands and other waters include several of the land cover types discussed above—fresh emergent wetland, lacustrine, riverine, and some areas of valley foothill riparian. The fresh emergent wetland and valley foothill riparian types would be considered wetlands, and the lacustrine and riverine types would be considered other waters. These land cover types are regulated as waters of the United States by USACE and/or as waters of the state by the Regional Water Board.

Parts of the study area have been delineated to determine the extent of waters of the United States (Gibson & Skordal 2014a; ICF International 2015a).

## **Special-Status Species**

For the purposes of CEQA, the following categories are considered special-status species.

- Species listed or proposed for listing as threatened or endangered under ESA (50 CFR 17.12 [listed plants], 50 CFR 17.11 [listed animals], and various notices in the Federal Register [proposed species]).
- Species that are candidates for possible future listing as threatened or endangered under ESA (79 FR 72450, December 5, 2014).
- Species listed or proposed for listing by the State of California as threatened or endangered under CESA (California Code of Regulations [CCR], Title 14, Section 670.5).
- Species that meet the definitions of rare or endangered under State CEQA Guidelines Section 15380.
- Animals fully protected in California (California Fish and Game Code Section 3511 [birds], 4700 [mammals], and 5050 [amphibians and reptiles]).
- Animal species of special concern (SSC) to CDFW (California Department of Fish and Wildlife 2015a).

- Plants listed as rare under the CNPPA (California Fish and Game Code Section 1900 et seq.).
- Plants with a California Rare Plant Rank of 1A, 1B, 2A, 2B, 3, and 4 (California Native Plant Society 2015).

Numerous animal and plant species are given special status under state and federal laws because they are rare, threatened, endangered, or otherwise identified as needing protection to ensure their survival. CDFW maintains the CNDDDB, a statewide inventory of reported occurrences of special-status plant and animal species. The CNDDDB includes state- and federally listed species, as well as plants that are considered threatened (“Rare Plant Rank” in Table 3.4-1). Because the General Plan update is neither site-specific nor proposes any individual development project, the following information from the CNDDDB (California Department of Fish and Wildlife 2015b) and the California Native Plant Society (CNPS) Inventory (California Native Plant Society 2015) is for the 7.5-minute quadrangles that include portions of the study area. Tables 3.4-1, 3.4-2, and 3.4-3 list the special-status plant, wildlife, and fish species, respectively, that have been found to occur in or near the study area, as documented in the CNDDDB and CNPS in September 2015. Several special-status wildlife species that were not on the CNDDDB list but that have at least a moderate potential to occur within the study area are included in Table 3.4-2.

### Special-Status Plants

The 24 special-status plants identified as occurring in or near the study area are found in a variety of natural habitats, including annual grassland, marsh, vernal pool, oak woodland, riparian, and chaparral. Of these 24 species, 5 are state- and/or federally listed: palmate-bracted bird’s-beak (*Chloropyron palmatum*), Boggs Lake hedge hyssop (*Gratiola heterosepala*), Mason’s lilaepsis (*Lilaepsis masonii*), Colusa grass (*Neostapfia colusana*), and Crampton’s tuctoria (*Tuctoria mucronata*). Three special-status plant species have been recorded in or at the boundary of the study area: Ferris’s milk vetch (*Astragalus tener* var. *ferrisiae*), rose-mallow (*Hibiscus lasiocarpus* var. *occidentalis*), and Mason’s lilaepsis (Gibson & Skordal, LLC 2014b; California Department of Fish and Wildlife 2015b; California Native Plant Society 2015; ICF International 2015b). Table 3.4-2 lists the status, habitat requirements, and potential for occurrence in the study area for all 24 species.

### Special-Status Wildlife

Sixteen special-status wildlife species were identified from the CNDDDB search as occurring in or near the study area (Table 3.4-3). Of the 16 species identified, 8 species have a moderate or high potential to occur in the study area. Five additional species that were not identified from the CNDDDB search were included in Table 3.4-3 because they have at least a moderate potential to occur in the study area. The 13 species with moderate or high potential to occur in the study area are found in a variety of natural habitats: annual grassland, fresh emergent wetland, oak woodland, riparian, and riverine. Of these 13 species, 3 are state- and/or federally listed: valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*), giant gartersnake (*Thamnophis gigas*), and Swainson’s hawk.

**Special-Status Fish**

Nine Special-status fish species or populations are known or have potential to occur in the study area (Table 3.4-4).

- Chinook salmon—Sacramento River winter-run evolutionarily significant unit (ESU)
- Chinook salmon—Central Valley spring-run ESU
- Chinook salmon—Central Valley fall-/late fall-run ESU
- Steelhead—Central Valley distinct population segment (DPS)
- North American green sturgeon—southern DPS
- Delta smelt
- Longfin smelt
- Sacramento splittail
- River lamprey

Table 3.4-5 summarizes the timing of species and life stage occurrence in the study area.

**Table 3.4-2. Special-Status Plants Identified as Occurring in or Near the Study Area**

Common and Scientific Name	Legal Status <sup>a</sup> Federal/ State/CRPR <sup>b</sup>	Habitat Requirements	Identification Period	Potential for Occurrence in Study Area
Ferris's milk vetch <i>Astragalus tener</i> var. <i>ferrisiae</i>	-/-/1B.1	Seasonally wet areas in meadows and seeps, sub-alkaline flats in valley and foothill grassland; 16–246 feet	Apr–May	Species is present at the western boundary of the study area. Habitat present in annual grasslands elsewhere, but habitat is likely too disturbed (mowing and discing) to support the species.
Alkali milk vetch <i>Astragalus tener</i> var. <i>tener</i>	-/-/1B.2	Playas, on adobe clay in valley and foothill grassland, vernal pools on alkali soils; below 197 feet	Mar–Jun	Low. Habitat present in grasslands, but suitable microhabitat (adobe clay) is not present. Nearest recorded occurrence is ~3.75 miles southwest of the study area.
Heartscale <i>Atriplex cordulata</i> var. <i>cordulata</i>	-/-/1B.2	Saline or alkaline soils in chenopod scrub, meadows and seeps, sandy areas in valley and foothill grassland; below 1,230 feet	Apr–Oct	Low. Habitat present in annual grasslands, but habitat is likely too disturbed (mowing and discing) to support the species. Nearest recorded occurrence (extirpated) was ~7.75 miles west of the study area.
Brittlescale <i>Atriplex depressa</i>	-/-/1B.2	Alkaline or clay soils in chenopod scrub, meadows and seeps, playas, valley and foothill grassland, vernal pools; below 1,050 feet	Apr–Oct	Low. Habitat present in annual grasslands, but habitat is likely too disturbed (mowing and discing) to support the species. Nearest recorded occurrence is ~5 miles northwest of the study area.
Bristly sedge <i>Carex comosa</i>	-/-/2.1	Coastal prairie, marshes and swamps at lake margins, valley and foothill grassland; below 2,050 feet	May–Sep	Low. Habitat present in annual grasslands, but habitat is likely too disturbed (mowing and discing) to support the species. Habitat present at edge of Bees Lakes ponds. Nearest recorded occurrence is ~7.5 miles south of the study area.
Palmate-bracted bird's-beak <i>Chloropyron palmatum</i>	E/E/1B.1	Alkaline grassland, alkali meadow, chenopod scrub; 50–1,650 feet	May–Oct	Low. Habitat present in annual grasslands, but habitat is likely too disturbed (mowing and discing) to support the species and typical associates (iodine bush [ <i>Allenrolfea occidentalis</i> ]) are lacking. Nearest recorded occurrence is ~7.5 miles northwest of the study area.
Peruvian dodder <i>Cuscuta obtusiflora</i> var. <i>glandulosa</i>	-/-/2.2	Freshwater marshes and swamps; 50–920 feet	Jul–Oct	Moderate. Habitat present in emergent wetland habitats in agricultural ditches, but habitat is subject to disturbance from maintenance activities. Nearest recorded occurrence is ~7.75 miles southeast of the study area.

Common and Scientific Name	Legal Status <sup>a</sup>		Identification Period	Potential for Occurrence in Study Area
	Federal/State/CRPR <sup>b</sup>	Habitat Requirements		
Dwarf downingia <i>Downingia pusilla</i>	-/-/2.2	Mesic areas in valley and foothill grassland, vernal pools; below 1,460 feet	Mar–May	Low. Habitat present in mesic annual grasslands, but habitat is likely too disturbed (mowed or disced) to support the species. Nearest recorded occurrence is ~5.75 miles southeast of the study area.
San Joaquin saltscale <i>Extriplex joaquiniana</i>	-/-/1B.2	Alkaline soils in chenopod scrub, meadows and seeps, playas, valley and foothill grassland; below 2,739 feet	Apr–Oct	Low. Habitat present in annual grasslands, but habitat is likely too disturbed (mowing and discing) to support the species. Nearest recorded occurrence is ~4.5 miles southwest of the study area.
Stinkbells <i>Fritillaria agrestis</i>	-/-/4.2	Clay, sometimes serpentine soils in chaparral, cismontane woodland, pinyon-juniper woodland, valley and foothill grassland; 33–5,102 feet	Mar–June	Low. Habitat present in grassland and clay subsoils may be present at surface from disturbance to study area. Grasslands are highly disturbed from human activities (mowing and discing). No serpentine soils occur in the study area. Nearest recorded occurrence is ~6.75 miles northeast of the study area.
Boggs Lake hedge hyssop <i>Gratiola heterosepala</i>	-/E/1B.2	Marshes and swamps along lake margins, vernal pools on clay soils; 32–7,792 feet	Apr–Aug	Low. No vernal pool habitat present. Potential for emergent wetland habitat at Bees Lakes pond edges, although ponds are unlikely to be naturally occurring features. Nearest recorded occurrence is ~9.5 miles east of the study area.
Rose-mallow <i>Hibiscus lasiocarpus</i> var. <i>occidentalis</i>	-/-/2.2	Freshwater marsh along rivers and sloughs; below 394 feet	Jun–Sep	Species is present at the northern boundary of the study area. Emergent wetland habitat is present only in agricultural ditches that are subject to disturbance from human activities.
Northern California black walnut <i>Juglans hindsii</i>	-/-/1B.1	Riparian scrub and riparian woodland; below 1,443 feet	Apr–May	Low. Riparian habitat present and one planted stand of black walnut, but no native stands observed during field surveys. Nearest recorded occurrence along the Sacramento River ~2.75 miles south of the study area is extirpated.
Legenere <i>Legenere limosa</i>	-/-/1B.1	Vernal pools; below 2,887 feet	Apr–Jun	Low. No vernal pool habitat present. Nearest recorded occurrence is ~5.5 miles southeast of the study area.
Heckard's pepper-grass <i>Lepidium latipes</i> var. <i>heckardii</i>	-/-/1B.2	Alkaline flats in valley and foothill grassland; 32–656 feet	Mar–May	Low. Habitat present in annual grasslands, but habitat is likely too disturbed (mowing and discing) to support the species. Nearest recorded occurrence is ~4.75 miles southwest of the study area.



Common and Scientific Name	Legal Status <sup>a</sup> Federal/ State/CRPR <sup>b</sup>	Habitat Requirements	Identification Period	Potential for Occurrence in Study Area
Mason's lilaeopsis <i>Lilaeopsis masonii</i>	-/R/1B.1	Freshwater or brackish marsh, riparian scrub, in tidal zone	Apr–Nov	Species is present on the DWSC banks near the southern boundary of the study area. Habitat also present on the Sacramento River bank, but not known to occur in this area; flow and boat wakes are likely too great for establishment of this species.
Little mousetail <i>Myosurus minimus</i> <i>ssp. apus</i>	-/-/3.1	Alkaline soils in valley and foothill grassland and vernal pools; 66–2,100 feet	Mar–Jun	Low. Study area is lower than species' known elevation range. No vernal pool habitat present. No recorded occurrences within 10 miles of the study area.
Baker's navarretia <i>Navarretia</i> <i>leucocephala</i> ssp. <i>bakeri</i>	-/-/1B.1	Mesic areas in cismontane woodland, lower montane coniferous forest, meadows and seeps, valley and foothill grassland, vernal pools; 16–5,709 feet	Apr–Jul	Low. Habitat present in mesic annual grasslands, but habitat is likely too disturbed (mowing and discing) to support the species. Nearest recorded occurrence is ~4.75 miles southwest of the study area.
Colusa grass <i>Neostapfia colusana</i>	T/E/1B.1	Adobe soils of vernal pools; 16–656 feet	May–Aug	Low. No vernal pool habitat present. Nearest recorded occurrence is ~4.75 miles west of the study area.
Bearded popcorn flower <i>Plagiobothrys</i> <i>hystriculus</i>	-/-/1B.1	Mesic grassland, vernal pools; 30–900 feet	Apr–May	Low. Habitat present in annual grasslands, but habitat is likely too disturbed (mowing and discing) to support the species. Nearest recorded occurrence is ~5 miles southwest of the study area.
Sanford's arrowhead <i>Sagittaria sanfordii</i>	-/-/1B.2	Freshwater marshes, sloughs, canals, and other slow-moving water habitats; below 2,132 feet	May–Oct	Moderate. Habitat present in emergent wetland habitats in agricultural ditches, but habitat is subject to disturbance from maintenance activities. Nearest recorded occurrence is ~1.5 miles east of the study area.
Suisun Marsh aster <i>Symphotrichum</i> <i>lentum</i>	-/-/1B.2	Brackish and freshwater marshes and swamps; below 10 feet	May–Nov	Moderate. Habitat present in emergent wetland habitats in agricultural ditches, but habitat is subject to disturbance from maintenance activities. Habitat also present along parts of the Sacramento River. Nearest recorded occurrences are ~1 mile west of the study area.
Saline clover <i>Trifolium</i> <i>hydrophilum</i>	-/-/1B.2	Salt marsh, mesic alkaline areas in valley and foothill grasslands, vernal pools, marshes and swamps; below 980 feet	Apr–Jun	Low. Habitat present in annual grasslands, but habitat is likely too disturbed (mowing and discing) to support the species. Nearest recorded occurrence is ~3.75 miles southwest of the study area.

Common and Scientific Name	Legal Status <sup>a</sup> Federal/ State/CRPR <sup>b</sup>	Habitat Requirements	Identification Period	Potential for Occurrence in Study Area
Crampton's tuctoria <i>Tuctoria mucronata</i>	E/E/1B.1	Mesic areas in valley and foothill grassland, vernal pools; 16–33 feet	Apr–Aug	Low. Habitat present in annual grasslands, but habitat is likely too disturbed (mowing and discing) to support the species. Nearest recorded occurrence is ~5.25 miles west of the study area.

Source: California Native Plant Society 2015; California Department of Fish and Wildlife 2015b.

<sup>a</sup> Status explanations:

**Federal**

- E = listed as endangered under ESA
- T = listed as threatened under ESA
- = no listing

**State**

- E = listed as endangered under CESA
- R = listed as rare under the CNPPA. This category is no longer used for newly listed plants, but some plants previously listed as rare retain this designation.
- = no listing

**California Rare Plant Rank**

- 1B = rare, threatened, or endangered in California and elsewhere
- 2 = rare, threatened, or endangered in California but more common elsewhere
- 3 = more information is needed about this plant
- 4 = limited distribution and on a watch list
- 0.1 = seriously endangered in California
- 0.2 = fairly endangered in California.

<sup>b</sup> In March, 2010, California Department of Fish and Game (now CDFW) changed the name of “CNPS List” or “CNPS Ranks” to “CRPR” to reduce confusion over CNPS and CDFW’s joint management of the Rare Plant Status Review groups (300+ botanical experts from government, academia, nongovernmental organizations, and the private sector) and to reflect that the rank assignments are the product of a collaborative effort and not solely a CNPS assignment.

**Table 3.4-3. Special-Status Wildlife Species Identified as Occurring in or Near the Study Area**

Common and Scientific Names	Status <sup>a</sup> Fed/State	Geographic Distribution and Habitat Requirements	Potential for Occurrence in the Study Area
<b>Invertebrates</b>			
Vernal pool fairy shrimp <i>Branchinecta lynchi</i>	T/-	Central Valley, central and south Coast Ranges from Tehama County to Santa Barbara County; isolated populations in Riverside County Found in vernal pools and sandstone rock outcrop pools; also alkaline rain pools and some disturbed and constructed sites	Low. Study area was historically subject to regular flooding and no vernal pool habitat has been identified. No CNDDDB records for the study area.
Vernal pool tadpole shrimp <i>Lepidurus packardi</i>	E/-	Shasta County south to Merced County Vernal pools and ephemeral stock ponds	Low. Study area was historically subject to regular flooding and no vernal pool habitat has been identified. No CNDDDB records in the study area.
Valley elderberry longhorn beetle <i>Desmocerus californicus dimorphus</i>	T/-	Streamside habitats below 3,000 feet throughout Central Valley; Riparian and oak savanna habitats with elderberry shrubs (host plant)	High. Suitable habitat present and there are CNDDDB records in the study area.
<b>Reptiles</b>			
Western pond turtle <i>Actinemys marmorata</i>	-/SSC	From Oregon border of Del Norte and Siskiyou Counties south along coast to San Francisco Bay, inland through Sacramento Valley, and on western slope of Sierra Nevada. Ponds, marshes, rivers, streams, and irrigation canals with muddy or rocky bottoms that support watercress, cattails, water lilies, or other aquatic vegetation; woodlands, grasslands, and open forests	High. Suitable habitat present (Sacramento River, Bees Lakes) and have been observed in Bees Lakes.
Giant gartersnake <i>Thamnophis gigas</i>	T/T	Central Valley from vicinity of Burrell in Fresno County north to near Chico in Butte County; has been extirpated south of Fresno Sloughs, canals, low gradient streams and freshwater marsh habitats with a prey base of small fish and amphibians; also irrigation ditches and rice fields. Requires grassy banks and emergent vegetation for basking and areas of high ground protected from flooding during winter.	Moderate. No CNDDDB records the study area but suitable habitat present. There are CNDDDB records north and west of the study area.
<b>Birds</b>			
Northern harrier <i>Circus cyaneus</i>	-/SSC	Occurs throughout lowland California in grasslands, meadows, marshes, and seasonal and agricultural wetlands. Has been recorded in fall at high elevations.	Moderate. No CNDDDB records in the study area but suitable nesting and foraging habitat present.
Swainson's hawk <i>Buteo swainsoni</i>	-/T	Lower Sacramento and San Joaquin Valleys, Klamath Basin, and Butte Valley; highest nesting densities occur near Davis and Woodland, Yolo County Nests in oaks or cottonwoods in or near riparian habitats. Forages in grasslands, irrigated pastures, and grain fields.	High. Suitable nesting and foraging habitat present. Numerous CNDDDB records for Swainson's hawk nests in the study area.

Common and Scientific Names	Status <sup>a</sup> Fed/State	Geographic Distribution and Habitat Requirements	Potential for Occurrence in the Study Area
White-tailed kite <i>Elanus leucurus</i>	-/FP	Lowland areas west of Sierra Nevada from the head of the Sacramento Valley south, including coastal valleys and foothills to western San Diego County at the Mexico border. Low foothills or valleys with valley or live oaks, riparian areas, and marshes near open grasslands for foraging.	Moderate. No CNDDDB records in the study area but suitable nesting and foraging habitat present.
Western snowy plover (inland population) <i>Charadrius alexandrinus nivosus</i>	-/SSC	Nests at inland lakes throughout northeastern, central, and southern California, including Mono Lake and Salton Sea. Barren to sparsely vegetated ground at alkaline or saline lakes, reservoirs, ponds and riverine sand bars; also along sewage, salt-evaporation, and agricultural wastewater ponds.	None. No suitable nesting habitat in the study area. There are no CNDDDB records in the study area.
Mountain plover <i>Charadrius montanus</i>	-/SSC	Does not breed in California; in winter, found in Central Valley south of Yuba County, along coast in parts of San Luis Obispo, Santa Barbara, Ventura, and San Diego Counties; parts of Imperial, Riverside, Kern, and Los Angeles Counties. Open plains or rolling hills with short grasses or very sparse vegetation; nearby waterbodies not needed; may use newly plowed or sprouting grain fields	Low. Would not nest in study area but could occur in grain fields during the winter. There are no CNDDDB records in the study area.
Western yellow-billed cuckoo <i>Coccyzus americanus occidentalis</i>	PT/E	Nests along the upper Sacramento, lower Feather, south fork of the Kern, Amargosa, Santa Ana, and Colorado Rivers. Wide, dense riparian forests with a thick understory of willows for nesting; sites with a dominant cottonwood overstory are preferred for foraging; may avoid valley oak riparian habitats where scrub jays are abundant.	Low. Marginal nesting habitat and suitable stopover/foraging habitat are present at Bees Lakes and other isolated locations along Sacramento River. May occasionally stopover or forage along Sacramento River in larger dense riparian areas but unlikely to nest there.
Western burrowing owl <i>Athene cunicularia hypugea</i>	-/SSC	Lowlands throughout California, including Central Valley, northeastern plateau, southeastern deserts, and coastal areas; rare along south coast. Level, open, dry, heavily grazed or low-stature grassland or desert vegetation with available burrows.	Moderate. Suitable habitat is present in the project area. One CNDDDB record in the study area that is assumed to be extirpated.
Purple martin <i>Progne subis</i>	-/SSC	Coastal mountains south to San Luis Obispo County, west slope of Sierra Nevada, and northern Sierra and Cascade ranges; absent from Central Valley except in Sacramento; isolated, local populations in southern California. Nests in abandoned woodpecker holes in oaks, cottonwoods, and other deciduous trees in a variety of wooded and riparian habitats. Also nests in vertical drainage holes under elevated freeways and highway bridges.	High. Known to nest under overpasses in the vicinity of the I-80/I-5 intersection; could nest under other bridges or in oak woodland in the study area.

Common and Scientific Names	Status <sup>a</sup> Fed/State	Geographic Distribution and Habitat Requirements	Potential for Occurrence in the Study Area
Loggerhead shrike <i>Lanius ludovicianus</i>	-/SSC	Resident and winter visitor in lowlands and foothills throughout California; breeding populations in north and possibly elsewhere are migratory. Prefers open habitats with scattered shrubs, trees, posts, fences, utility lines, or other perches.	Moderate. No CNDDDB records in the study area but suitable nesting and foraging habitats present.
Least Bell's vireo <i>Vireo bellii pusillus</i>	E/E	Small populations remain in southern Inyo, southern San Bernardino, Riverside, San Diego, Orange, Los Angeles, Ventura, and Santa Barbara Counties. Riparian thickets either near water or in dry portions of river bottoms; nests along margins of bushes and forages low to the ground; may also use mesquite and arrow weed in desert canyons.	Low. No CNDDDB records in the study area but suitable nesting and foraging habitats are present in dense riparian patches along Sacramento River.
Tricolored blackbird <i>Agelaius tricolor</i>	-/SSC	Permanent resident in Central Valley from Butte County to Kern County; breeds at scattered coastal locations from Marin County south to San Diego County and at scattered locations in Lake, Sonoma, and Solano Counties; rare nester in Siskiyou, Modoc, and Lassen Counties. Nests in dense colonies in emergent marsh vegetation, such as tules and cattails, or upland sites with blackberries, nettles, thistles, and grain fields; habitat must be large enough to support 50 pairs; probably requires water at or near the nesting colony.	Moderate. Large patches of fresh emergent wetland in the study area provide suitable nesting habitat. Agricultural fields provide suitable foraging habitat and potential nesting habitat. One CNDDDB record in the study area that is possibly extirpated.
Yellow-headed blackbird <i>Xanthocephalus xanthocephalus</i>	-/SSC	Locally numerous in the Klamath Basin, Modoc Plateau, Great Basin desert, and large mountain valleys in northeastern California and in San Joaquin Valley; common breeders in the Colorado River valley, Salton Sink, and the western Mojave Desert; scarce in Sacramento Valley and along southern coast in Los Angeles, Riverside, and San Bernardino Counties. Nest in marshes with tall emergent vegetation, such as tules or cattails, generally in open areas and edges over relatively deep water; breeds in marshes often on edges of deep water bodies such as lakes, reservoirs, and or larger ponds.	Low. Larger patches of fresh emergent wetland in the study area provide suitable nesting habitat. Uncommon in Sacramento Valley and no CNDDDB records in the study area.
Song sparrow (Modesto population) <i>Melospiza melodia</i>	-/SSC	Resides in the north-central portion of the Central Valley, with the highest densities in the Butte Sink area of the Sacramento Valley and in the Sacramento-San Joaquin River Delta. Associated with freshwater marshes dominated by tules and cattails and riparian willow thickets. Also nests in riparian forests with blackberry understory and along vegetated irrigation canals and levees.	Moderate. Large patches of fresh emergent wetland and riparian forest in the study area provide suitable nesting habitat.

Common and Scientific Names	Status <sup>a</sup> Fed/State	Geographic Distribution and Habitat Requirements	Potential for Occurrence in the Study Area
<b>Mammals</b>			
Pallid bat <i>Antrozous pallidus</i>	-/SSC	Throughout California except high Sierra from Shasta to Kern County and northwest coast, primarily at lower and mid-level elevations Variety of habitats from desert to coniferous forest; most closely associated with oak, yellow pine, redwood, and giant sequoia habitats in northern California and oak woodland, grassland, and desert scrub in southern California; relies heavily on trees for roosts.	Moderate. No CNDDDB records in the study area but suitable roosting and foraging habitats present.
Western red bat <i>Lasiurus blossevillii</i>	-/SSC	Scattered throughout much of California at lower elevations. Found primarily in riparian and wooded habitats; occurs at least seasonally in urban areas; day roosts in trees within the foliage; found in fruit orchards and sycamore riparian habitats in Central Valley.	High. Detected during acoustic surveys during the maternity season in riparian habitat along Sacramento River for the Southport Project (ICF International 2011). Suitable roosting and foraging habitat in the study area.
American badger <i>Taxidea taxus</i>	-/SSC	In California, throughout the state except in humid coastal forests of northwestern California in Del Norte and Humboldt Counties. Wide variety of open, arid habitats; most commonly associated with grasslands, savannas, mountain meadows, and open areas of desert scrub; principal habitat requirements appear to be sufficient food (burrowing rodents), friable soils, and relatively open, uncultivated ground.	Low. No CNDDDB records in the study area and limited suitable habitat is present.

<sup>a</sup> Status explanations:

**Federal**

- E = listed as endangered under the Federal Endangered Species Act.
- T = listed as threatened under the Federal Endangered Species Act.
- PT = proposed for listing as threatened under the Federal Endangered Species Act.
- = no listing.

**State**

- E = listed as endangered under the California Endangered Species Act.
- T = listed as threatened under the California Endangered Species Act.
- FP = fully protected under the California Fish and Game Code.
- SSC = species of special concern in California.
- = no listing.

**Table 3.4-4. Special-Status Fish Species Identified as Occurring in or Near the Study Area**

Common and Scientific Name	Status <sup>a</sup> Federal/State	Habitat Requirements	Potential for Occurrence in Study Area
Sacramento River winter-run Chinook salmon <i>Oncorhynchus tshawytscha</i>	E/E	Well-oxygenated, cool, riverine habitat with water temperatures from 8.0°C to 12.5°C. Habitat types are riffles, runs, and pools (Moyle 2002).	High. Suitable adult and/or juvenile migration habitat present in Sacramento River and Yolo and Sacramento Bypasses. May occur in DWSC. No suitable spawning habitat present in the study area. Sacramento River is designated as critical habitat (58 Federal Register [FR] 33212) and the Sacramento River, DWSC, and Yolo and Sacramento Bypasses are considered EFH for Pacific salmon.
Central Valley spring-run Chinook salmon <i>Oncorhynchus tshawytscha</i>	T/T	Same general habitat requirements as winter-run Chinook salmon. Coldwater pools are needed for holding adults (Moyle 2002).	High. Suitable adult and/or juvenile migration habitat present in Sacramento River and Yolo and Sacramento Bypasses. May occur in DWSC. No suitable spawning habitat present in the study area. The Sacramento River and Yolo and Sacramento Bypasses are designated as critical habitat (70 FR 52596–52597, September 2, 2005) and the Sacramento River, DWSC, and Yolo and Sacramento Bypasses are considered EFH for Pacific salmon.
Central Valley fall-/late fall-run Chinook salmon <i>Oncorhynchus tshawytscha</i>	SC/SSC	Same general habitat requirements as winter-run Chinook salmon.	High. Suitable adult and/or juvenile migration habitat present in Sacramento River and Yolo and Sacramento Bypasses. May occur in DWSC. No suitable spawning habitat present in the study area. Critical habitat has not been designated; however, the Sacramento River, DWSC, and Yolo and Sacramento Bypasses are considered EFH for Pacific salmon.
Central Valley steelhead <i>Oncorhynchus mykiss</i>	T/–	Well-oxygenated, cool, riverine habitat with water temperatures from 7.8°C to 18°C (Moyle 2002). Habitat types are riffles, runs, and pools.	High. Suitable adult and/or juvenile migration habitat present in Sacramento River and Yolo and Sacramento Bypasses. May occur in DWSC. No suitable spawning habitat present in study area. The Sacramento River and Yolo and Sacramento Bypasses are designated as critical habitat (70 FR 52611–52612).
Green sturgeon (southern DPS) <i>Acipenser medirostris</i>	T/SSC	Spawn in large river systems with well-oxygenated water, with temperatures from 8.0°C to 14°C.	High. Suitable adult and/or juvenile migration habitat present in Sacramento River and Yolo and Sacramento Bypasses. May occur in DWSC. Juveniles may rear year-round in Sacramento River. No suitable spawning habitat present in the study area. The Sacramento River and Yolo and Sacramento Bypasses are designated as critical habitat (74 FR 52345).

Common and Scientific Name	Status <sup>a</sup> Federal/State	Habitat Requirements	Potential for Occurrence in Study Area
Delta smelt <i>Hypomesus transpacificus</i>	T/E	Occurs in estuary habitat in the Delta where fresh and brackish water mix in the salinity range of 2–7 parts per thousand (Moyle 2002).	High. Suitable habitat for adults and juveniles in the study area. May spawn in the study area. The Sacramento River upstream to the I-Street Bridge near downtown Sacramento, DWSC, and Toe Drain in the Yolo Bypass upstream to I-80 are designated as critical habitat (59 FR 65277).
Longfin smelt <i>Spirinchus thaleichthys</i>	–/T	Occurs in open waters of estuaries and seasonally migrates to spawn in freshwater habitats of upper estuary; spawns over sand, rocks, and aquatic plants.	High. Suitable habitat for adults and juveniles in the study area. May spawn in the study area. Critical habitat has not been designated.
Sacramento splittail <i>Pogonichthys macrolepidotus</i>	–/SSC	Spawning takes place among submerged and flooded vegetation in sloughs and the lower reaches of rivers.	High. Suitable habitat for adults and juveniles in the study area. May spawn in the study area. Critical habitat has not been designated.
River lamprey <i>Lampetra ayresi</i>	–/SSC	Adults live in the ocean and migrate into fresh water to spawn.	High. Suitable habitat for adults and juveniles in the study area. Ammocoetes (young juveniles) may rear year-round. No suitable spawning habitat is present in the study area. Critical habitat has not been designated.

<sup>a</sup> Status explanations:

**Federal**

- E = endangered under the Federal Endangered Species Act.
- T = threatened under the Federal Endangered Species Act.
- SC = species of concern.
- = no listing.

**State**

- E = endangered under the California Endangered Species Act.
- T = threatened under the California Endangered Species Act.
- SSC = species of special concern.
- = no listing.



**Table 3.4-5. Life Stage Timing and Distribution of Special-Status Fish Species Potentially Affected by the General Plan Update**

Species/Life Stage	Distribution	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
<b>Winter-Run Chinook Salmon</b>													
Adult migration and holding	San Francisco Bay to upper Sacramento River												
Juvenile rearing (natal stream)	Upper Sacramento River to San Francisco Bay												
Juvenile movement and rearing	Upper Sacramento River to San Francisco Bay												
<b>Spring-Run Chinook Salmon</b>													
Adult migration	San Francisco Bay to upper Sacramento River and tributaries												
Juvenile movement	Upper Sacramento River and tributaries to San Francisco Bay												
<b>Late Fall-Run Chinook Salmon</b>													
Adult migration	San Francisco Bay to upper Sacramento River and tributaries												
Juvenile movement and rearing	Upper Sacramento River and tributaries												
<b>Fall-Run Chinook Salmon</b>													
Adult migration and holding	San Francisco Bay to upper Sacramento River and tributaries												
Juvenile movement	Upper Sacramento River and tributaries to San Francisco Bay												
<b>Steelhead</b>													
Adult migration	San Francisco Bay to upper Sacramento River and tributaries												
Juvenile and smolt movement	Upper Sacramento River and tributaries to San Francisco Bay												

Species/Life Stage	Distribution	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
<b>Green Sturgeon</b>													
Adult migration and holding	San Francisco Bay to upper Sacramento River		■	■	■	■	■						
Juvenile rearing (natal stream to estuary)	Upper Sacramento River to San Francisco Bay	■	■	■	■	■	■	■	■	■	■	■	■
Juvenile movement and rearing	Upper Sacramento River to San Francisco Bay					■	■	■	■				
<b>Delta Smelt</b>													
Adult migration	South Delta to north Delta and lower Sacramento River	■	■	■									■
Spawning	Upper Delta to lower Sacramento River	■	■	■	■	■	■	■					
<b>Longfin Smelt</b>													
Adult migration and spawning	San Francisco Bay to upper Delta	■	■	■	■	■	■						
<b>Sacramento Splittail</b>													
Adult migration and spawning	Suisun Bay/Marsh to lower Sacramento and San Joaquin Rivers, including Yolo Bypass	■	■	■	■	■	■						
<b>River Lamprey</b>													
Adult migration and spawning	Pacific Ocean to Sacramento River									■	■	■	■
Metamorphosis and movement	Sacramento River to Delta					■	■	■					

Sources: Wang and Brown 1993; U.S. Fish and Wildlife Service 1996; McEwan 2001; Moyle 2002; Hallock 1989; Beamesderfer et al. 2005.

Note: Gray shading indicates primary periods of species and life stage occurrence included in the assessment of project effects.

## Critical Habitat

The study area does not contain designated critical habitat for any plant or wildlife species. The study area contains critical habitat for the fish species listed below.

- Chinook salmon—Sacramento River winter-run ESU
- Chinook salmon—Central Valley spring-run ESU
- Steelhead—Central Valley DPS
- North American green sturgeon—southern DPS
- Delta smelt

## Wildlife Corridors

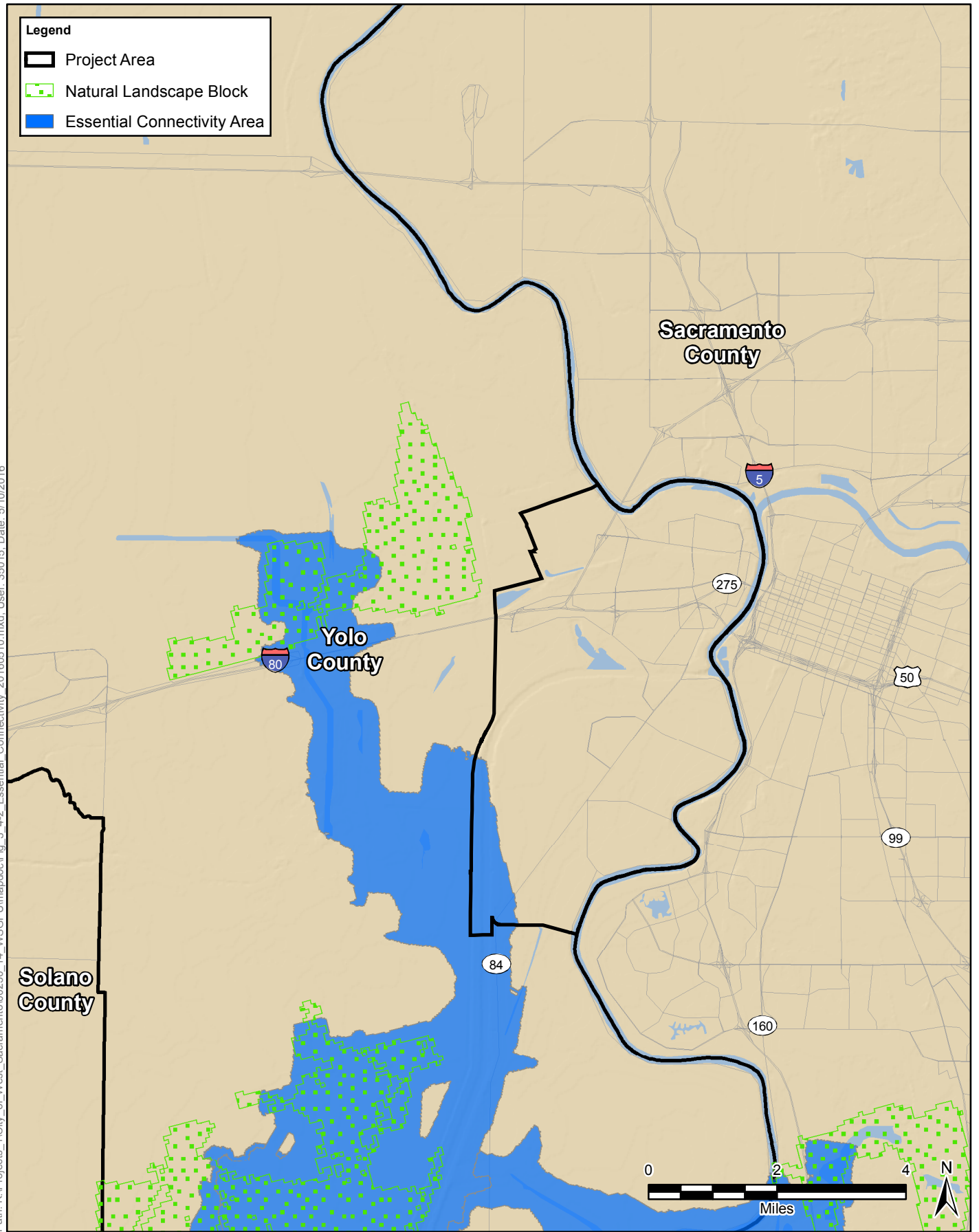
Riparian corridors play a critical role in helping connect remaining natural areas in the Great Central Valley. Wildlife movement corridors in California are identified and described for the California Essential Habitat Connectivity (CEHC) Project. The CEHC Project was commissioned by the California Department of Transportation and CDFW to identify a functional network of connected wildlands, which are essential for maintaining California's native biodiversity. The CEHC Project was also intended to make transportation and land-use planning more efficient and less costly, while helping reduce dangerous wildlife-vehicle collisions (Spencer et al. 2010).

The CEHC Project identified large, relatively natural blocks of habitat (Natural Landscape Blocks) across California and Essential Connectivity Areas (ECAs) that provide essential connectivity between the habitat blocks. ECAs are identified as lands likely to be important to wildlife movement between large, mostly natural areas at the statewide level. The ECAs form a functional network of wildlands that are considered important to the continued support of California's diverse habitat types. They were not developed for the needs of particular species but were based primarily on the concept of ecological integrity, which considers the degree of land conversion, residential housing impacts, road impacts, and status of forest structure (for forested areas). In addition, consideration was given to the degree of conservation protection and areas known to support high biological values, such as mapped critical habitat and areas of high species endemism. The ECAs are intended as placeholder polygons that can inform land-planning efforts, but they should eventually be replaced by more detailed linkage designs, developed at finer resolution at the regional and ultimately local scale based on the needs of particular species and ecological processes (Spencer et al. 2010).

The CEHC Project identified three Natural Landscape Blocks that are northwest, southwest, and southeast of the study area; the ECAs between these areas are west and south of the study area (Figure 3.4-2). The southwestern edge of the study area overlaps a portion of the ECA connecting the northwest and southwest blocks, encompassing the area along the DWSC and agricultural fields along the east side of the channel. The DWSC and edge of the agricultural fields would most likely support the movement of medium and small mammals, reptiles, and a variety of birds.

The Sacramento River and its associated riparian habitats provide an important movement corridor as well as breeding and/or foraging habitat for many common and special-status wildlife species, such as western pond turtle, great blue heron, Swainson's hawk, striped skunk, river otter, and migratory birds. The Sacramento River also provides important migration habitat for several

Path: K:\Projects\_1\City\_of\_West\_Sacramento\00230\_14\_WSGP\Umapdoc\Fig\_3\_4-2\_Essential\_Connectivity\_20160510.mxd; User: 35015; Date: 5/10/2016



Source: California Essential Habitat Connectivity Project

**Figure 3.4-2**  
**Wildlife Movement Corridors**



common and special-status fish species including Chinook salmon (four runs), steelhead, green and white sturgeon, Sacramento splittail, Pacific and river lamprey, striped bass, and American shad.

## 3.4.2 Environmental Impacts

### Methods for Analysis

Evaluation of the potential impacts on biological resources is based on information from database searches, reports, and other data that describe the biological conditions and/or potential biological resources in the study area and on professional judgment. No new field surveys were conducted for the evaluation of potential impacts on biological resources. The primary sources of information used for the biological resources impact analysis are listed below.

- California Natural Diversity Database (California Department of Fish and Wildlife 2015b).
- CNPS Inventory of Rare and Endangered Plants (California Native Plant Society 2015).
- CalVeg land cover data (USDA Forest Service 2014).
- *Request for Verification and Preliminary Jurisdictional Determination of the Delineation of Wetlands and Other Waters of the United States for the Southport Sacramento River Early Implementation Project* (ICF International 2015a).
- *Southport Sacramento River Early Implementation Project Environmental Impact Statement* (ICF International 2015b).
- *General Plan Public Review Draft Background Report* (City of West Sacramento 2009).
- Final rules for species listing and designated critical habitat for federally-listed fish species (Federal Register).
- California Essential Habitat Connectivity Project (Spencer et al. 2010).

The impact analysis for biological resources focuses on the land use changes associated with adoption of the General Plan update and how the updated policies address the potential impacts on biological resources. The analysis did not include projections for future development under the General Plan update because there is no reasonable way to ascertain how many of the uses allowable under the update may be approved in the future, and the locations of such uses are not known at this time. The analysis identified general areas where biological resources could be affected by proposed land use changes by comparing the baseline conditions presented in Figure 3.4-1 with the General Plan Proposed Land Uses map (Figure 2-3). The analysis was based on the assumption that there would be no loss of riparian habitat in any areas proposed as open space or agriculture. Additionally, it was assumed that the unnamed pond in the eastern portion of the planning area would be removed under the General Plan update.

Potential impacts on fish and aquatic resources were identified and evaluated based on the regulatory and professional standards described below; existing environmental conditions in the study area; relevant information on the life history, habitat requirements, and ecology of the key evaluation species; location of proposed project activities (e.g., in-water versus on land behind levees) and relative magnitude of activities related to development activities described in the proposed updates to the General Plan; and proposed impact mechanisms linking the environmental effects of these activities with the predicted responses of the key evaluation species. The key

evaluation species selected for this assessment were Chinook salmon and steelhead because of their special status, occurrence in the study area, sensitivity to anticipated project impacts, and general utility as indicators of the response of other native fishes to potential environmental effects and mitigation measures. These two species generally capture the full range of project impacts on other native fishes and their habitat in the study area. Where project impacts on other fish species are not adequately captured by these two species, the specific impacts on other species are described.

## Thresholds of Significance

In accordance with Appendix G of the State CEQA Guidelines, the proposed project would be considered to have a significant effect if it would result in any of the conditions listed below.

- A substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by CDFW or USFWS.
- A substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by CDFW or USFWS.
- A substantial adverse effect on federally protected wetlands as defined by CWA Section 404 (including, but not limited to, marshes, vernal pools, coastal wetlands, etc.) through direct removal, filling, hydrological interruption, or other means.
- Substantial interference with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impedance of the use of native wildlife nursery sites.
- Conflict with any local policies or ordinances protecting biological resources, such as the tree mitigation ordinance.
- Conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan.
- Introduction or spread of invasive species.

## Impacts and Mitigation Measures

### **Impact BIO-1: Potential for land use changes to result in the loss of special-status plants (less than significant)**

Three special-status plant species (Ferris's milk vetch, rose-mallow, and Mason's lilaepsis) have been recorded in or at the boundary of the study area. Special-status plants and their potential habitat could be affected by future development under updated General Plan land use designations. Future development could result in the direct removal of special-status plants and/or the loss or disturbance of habitat types that could support special-status plants, including annual grassland, fresh emergent wetland, oak woodland, and valley foothill riparian. These land cover types provide habitat for four state- and/or federally listed special-status plant species—palmate-bracted bird's-beak in alkaline grassland, Boggs Lake hedge hyssop in fresh emergent wetland, Mason's lilaepsis in tidal marsh or riparian habitat, and Crampton's tuctoria in mesic annual grassland—as well as multiple California Rare Plant Rank species that are not state- or federally listed. The degree of disturbance within these habitat types in the study area, particularly the annual grassland, is such that the potential for the occurrence of special-status plants is low.

The General Plan update includes policies that emphasize the conservation and protection of biological resources. The following policies in the Natural and Cultural Resources Element under Goal NCR-2 (To protect sensitive native vegetation and wildlife communities and habitat in West Sacramento) would help minimize, avoid, and compensate for potential project impacts on special-status plants.

**NCR-2.2 Yolo Natural Heritage Program.** The City shall continue to work cooperatively with other jurisdictions in the county, and with the State and Federal governments to conserve habitat through the preparation and implementation of the Yolo County Natural Heritage Program. The goal of this effort shall be to preserve and enhance habitat values in appropriate large areas while allowing the orderly development within the incorporated areas of the county.

**NCR-2.4 Habitat Surveys.** The City shall require site-specific surveys for discretionary development proposals that could potentially impact biological resources to determine if any significant wildlife habitat and vegetation resources will be adversely affected and, if so, to identify appropriate measures to avoid or mitigate such impacts.

**NCR-2.5 Habitat Buffer.** The City shall require the provision and maintenance of adequate setbacks between significant habitat and adjacent development. The buffer shall be landscaped with native vegetation and may be used for passive recreation purposes.

**NCR-2.7 Rare, Threatened, and Endangered Species Protection.** The City shall preserve rare, threatened, and endangered species by ensuring that development does not adversely affect such species or by fully mitigating adverse effects. For developments where adverse impacts cannot be mitigated, the City shall not approve the project.

**NCR-2.8 Habitat Preservation.** The City shall support State and Federal policies for preservation and enhancement of riparian and wetland habitats by incorporating, as deemed appropriate, the findings and recommendations of the California Department of Fish and Game and the U.S. Fish and Wildlife Service into site-specific development proposals.

**NCR-2.9 No Net Loss.** The City shall require new development to ensure no net loss of State and Federally regulated wetlands, other waters of the United States (including creeks, rivers, ponds, marshes, vernal pools, and other seasonal wetlands), and associated functions and values by regulating development in and near these habitats and promoting projects that avoid sensitive areas. Where habitat loss is unavoidable, the City shall require replacement consistent with State and Federal regulations protecting wetland resources.

**NCR-2.10 Wetland and Riparian Habitat Protection.** The City shall seek to minimize the loss or degradation of wetland and riparian habitats at the following sites: Lake Washington and associated wetlands, Bee Lakes and associated riparian woodlands, riparian woodlands along the Sacramento River north of the I Street Bridge and south of the barge canal, and riparian woodlands along the Deep Water Ship Channel and the Yolo Bypass.

**NCR-2.11 Riparian Vegetation Maintenance.** The City shall encourage the maintenance of marsh and riparian vegetation along irrigation/drainage canals and along the Deep Water Ship Channel through routine maintenance and clearing and by disturbing only one bank per year.

Implementation of these proposed updated policies would reduce the potential effects of implementation of the updated General Plan on special-status plants to a less-than-significant level. No mitigation is required.

### **Impact BIO-2: Potential for land use changes to result in the loss or disturbance of special-status wildlife and their habitats (less than significant)**

The study area has the potential to support 13 special-status wildlife species (Table 3-4.2) including valley elderberry longhorn beetle, giant gartersnake, and Swainson's hawk, all of which are state-

federally listed. Land use changes associated with the General Plan update that would result in the removal or disturbance of annual grassland, fresh emergent wetland, lacustrine, oak woodland, and valley foothill riparian communities could result in direct or indirect effects on special-status wildlife. Development activities and future use of these areas associated with land use changes could result in direct effects such as the loss or disturbance of suitable or occupied habitat, injury and mortality of special-status species, or disruption of normal behaviors that could reduce reproductive output and overall survivorship. Indirect effects on special-status wildlife that could occur as a result of increased human occupancy in formerly natural areas include increased mortality from vehicle collisions or predation by pets, increased trash and contaminants in waterways, and increased visual and noise disturbance from development encroaching on natural areas (e.g., Bees Lakes area).

The General Plan update includes policies that emphasize the conservation and protection of biological resources. The following policies in the Natural and Cultural Resources Element and the General Public Facilities Services Element would help minimize, avoid, and compensate for potential direct and indirect effects from land use changes on special-status wildlife.

**NCR-2.2 Yolo Natural Heritage Program** [see Impact BIO-1 for text].

**NCR-2.4 Habitat Surveys** [see Impact BIO-1 for text].

**NCR-2.5 Habitat Buffer** [see Impact BIO-1 for text].

**NCR-2.8 Habitat Preservation** [see Impact BIO-1 for text].

**NCR-2.9 No Net Loss** [see Impact BIO-1 for text].

**NCR-2.10 Wetland and Riparian Habitat Protection** [see Impact BIO-1 for text].

**NCR-2.11 Riparian Vegetation Maintenance** [see Impact BIO-1 for text].

**NCR-2.12 Floodway Design:** The City shall encourage floodway design and flood control facilities to foster riparian habitat enhancement, improved water quality, and groundwater recharge.

**NCR-3.3 Tree Mitigation Ordinance.** The City shall maintain and implement the tree mitigation ordinance, which regulates the removal of existing trees, preserves existing trees where possible, and requires mitigation where healthy trees must be removed either by planting on-site, planting in another location approved by the Tree Administrator, or a combination of planting and a contribution to a Tree Mitigation Fund.

**NCR-3.8 Property Owner Responsibility.** The City shall encourage property owners to maintain and protect trees on their property as well as street trees adjacent to their property.

**NCR-4.2 Open Space Buffers.** The City shall conserve and, where feasible, create or restore open space areas that serve to protect water quality such as riparian corridors, buffer zones, wetlands, undeveloped open space areas, levees, and drainage canals.

**NCR-4.5 No Adverse Impact:** The City shall not approve new development that has a significant potential for adversely affecting water quality in the city's natural water bodies and drainage systems including the Sacramento River, Deep Water Ship Channel, Lake Washington, or groundwater basin.

**NCR-4.6 New Development:** The City shall require new development to protect the quality of water resources and natural drainage systems through site design, source controls, runoff reduction measures, BMPs, and LID.

**NCR-4.7 Construction Site Impacts:** The City shall control pollutant sources to natural water bodies and drainage systems from construction activities through the use of stormwater protection measures in accordance with Federal, State, and local regulations such as the City's grading ordinance and NPDES permit.



**PFS-4.1 Public Improvement Design:** The City shall design public improvements such as streets, parks, and plazas for retention and infiltration of stormwater by diverting urban runoff to bio-filtration systems such as greenscapes.

**PFS-4.9 Grading Projects:** The City shall impose appropriate conditions on grading projects performed during the rainy season to ensure that silt is not conveyed to storm drainage systems.

Implementation of these proposed policies would reduce the direct and indirect effects on special-status wildlife resulting from proposed land use changes in the General Plan update. This impact would be less than significant, and no mitigation is required.

**Impact BIO-3: Potential for land use changes to result in the loss or disturbance of special-status fish and their habitats (less than significant)**

The study area provides habitat for nine special-status fish species (Table 3.4-3), six of which—winter- and spring-run Chinook salmon, steelhead, green sturgeon, and delta and longfin smelt—are listed as threatened or endangered under ESA or CESA. Special-status fish or their habitat could be directly and indirectly affected by future development and associated construction activities under the General Plan update. Effects are discussed in terms of temporary construction-related impacts (e.g., noise, disturbance, water quality) and long-term impacts (e.g., increased urban and stormwater runoff) associated with the proposed land use changes. Although proposed land use changes would occur largely behind existing levees, the potential remains for construction-related and long-term effects in adjacent waterways (i.e., Sacramento River, DWSC, Lake Washington) because drainage water is ultimately released to these waterways through a network of storm drains, ditches, canals, and pumps (e.g., Main Drain pump station). Additional information concerning potential water quality effects from implementing proposed land use changes is presented in Section 3.9, *Hydrology and Water Quality*.

**Construction**

Construction activities could result in temporary noise, physical disturbance, and water quality effects that may cause injury or death of fish by disrupting normal behaviors and potentially increasing the susceptibility of some individuals to predation. Noise and other disturbances would be limited to the immediate construction area, affecting only small numbers of individuals. Increases in turbidity, suspended sediment, and contaminants associated with ground-disturbing activities and operation of heavy equipment are likely to extend beyond the immediate construction area and could result in short- to long-term effects on fish and aquatic resources.

Noise, vibration, artificial light, and other physical disturbances can harass fish, disrupt or delay normal activities, and cause injury or mortality. Injury or mortality may result from direct and indirect contact with humans and machinery, as well as from physiological stress. Impact pile driving in or adjacent to aquatic habitats would be of particular concern because of the intensity of sounds and known occurrences of fish kills associated with impact pile driving (Popper and Hastings 2009).

Elevated concentrations of fine sediment and turbidity in the aquatic environment can have both direct and indirect effects on fish. Short-term increases in turbidity and suspended sediment may disrupt normal behavior patterns of fish, potentially affecting foraging, rearing, and migration. The level of disturbance may also cause fish, especially juveniles, to abandon protective habitat or reduce their ability to detect predators, potentially increasing their vulnerability to predation. Chronic exposure to high turbidity and suspended sediment may affect growth and survival by

impairing respiratory function, reducing tolerance to disease and contaminants, and causing physiological stress (Waters 1995). Increased sediment delivery can also smother aquatic invertebrates (a fish food item), degrade foraging habitat, and reduce cover for juvenile fish.

The operation of heavy equipment and construction vehicles can result in spills and leakage of fuel, lubricants, hydraulic fluids, and coolants. Other sources of potential contamination include asphalt, wet concrete, and other construction materials (e.g., paint, solvents, sealants) that may come in direct contact with surface water during construction activities. Contaminants can affect survival, growth, and reproductive success of fish and other aquatic organisms.

### ***Operations***

As described in Impacts WQ-1 and WQ-3 in Section 3.9, *Water Quality and Hydrology*, construction and operation of the redevelopment/infill and, in particular, the new growth associated with implementation of the General Plan update would change the area of impervious and pervious land cover resulting in changes to stormwater runoff. Loss of pervious land cover and the resultant concentration and redirection of runoff would increase the frequency and magnitude of small and moderate flow events. Ultimately, runoff events of increased volume and frequency could lead to increased channel erosion and degradation. The eroded sediment could be transported downstream, where it could lead to increases in turbidity and suspended sediment, with long-term or permanent consequences for fish and their habitat.

The increase in impervious surfaces could also result in increased pollutants in receiving waters, if the resultant increase in stormwater runoff is polluted by urban and rural land uses. Unlike wastewater that is treated in the sanitary sewer system, stormwater runoff is untreated before it enters local receiving waterways. Pollutants typically found in West Sacramento's urban stormwater can include sediments, non-sediment solids, nutrients, pathogens, oxygen-demanding substances, petroleum hydrocarbons, heavy metals, floatables, polycyclic aromatic hydrocarbons (PAHs), trash, and pesticides and herbicides. Heavy metals, oil, grease, and PAHs are common pollutants in road runoff and are of particular concern because some of these pollutants can accumulate in stream sediments—particularly following “first flush” rain events—with lethal and sublethal consequences for fish and other aquatic species.

PAHs are organic compounds—containing only carbon and hydrogen—that occur in motor vehicle exhaust, petroleum products, materials associated with asphalt, and various other municipal and industrial sources. PAHs are widely distributed in the environment and are important environmental pollutants because of their carcinogenicity and tendency to bioaccumulate. PAHs are readily absorbed by fish and other aquatic organisms and, depending on concentration, can lead to lethal and deleterious sublethal effects in these organisms (Tuvikene 1995). PAHs tend to adsorb to any particulate matter, including fine sediment; consequently, relative concentrations of PAHs in aquatic ecosystems are generally highest in sediments, followed by aquatic biota and the water column (Tuvikene 1995). There is evidence that urban runoff containing roadway sediment may be an important PAH input to aquatic habitats and that a significant contribution to the PAH content of roadway sediment comes from materials associated with asphalt (Wakeham et al. 1980).

The General Plan update includes policies that emphasize the conservation and protection of biological resources, including fish, and preserving and protecting water quality. The following policies in the Natural and Cultural Resources Element, General Public Facilities Services Element, and Multi-Modal System Element would help avoid, minimize, and compensate for potential direct and indirect effects on special-status fish from land use changes.

**NCR-2.2 Yolo Natural Heritage Program** [see Impact BIO-1 for text].

**NCR-2.5 Habitat Buffer** [see Impact BIO-1 for text].

**NCR-2.7 Rare, Threatened, and Endangered Species Protection** [see Impact BIO-1 for text].

**NCR-2.8 Habitat Preservation** [see Impact BIO-1 for text].

**NCR-2.9 No Net Loss** [see Impact BIO-1 for text].

**NCR-2.10 Wetland and Riparian Habitat Protection** [see Impact BIO-1 for text].

**NCR-2.12 Floodway Design** [see Impact BIO-1 for text].

**NCR-2.13 Fisheries:** The City shall implement measures to ensure that development in the city does not adversely affect fishery resources in the Sacramento River, Deep Water Ship Channel, and Lake Washington.

**NCR-4.6 New Development** [see Impact BIO-2 for text].

**NCR-4.7 Construction Site Impacts** [see Impact BIO-2 for text].

**PFS-4.9 Grading Projects** [see Impact BIO-2 for text].

**M-2.6 Street Greening:** The City shall require consistent landscaping, including street trees and landscaped medians and sidewalks, in street design that minimizes runoff and creates an inviting environment.

In addition, adherence to the updated General Plan policies and implementation programs listed under Impact WQ-1 and Impact WQ-3 in Section 3.9, *Hydrology and Water Quality*, and existing state regulations, such as preparation of SWPPPs with necessary BMPs and the City's NPDES Storm Water Management Program, would further minimize the potential for impacts on special-status fish. This impact would be less than significant, and no mitigation is required.

**Impact BIO-4: Potential for loss or disturbance of special-status fish from increased diversion of Sacramento River water to meet future water demand (less than significant)**

The City currently diverts surface flows from the Sacramento River to meet existing municipal and industrial water demand. Water is withdrawn from the Sacramento River at Bryte Bend, upstream of the American River confluence. Raw water is diverted from the Sacramento River through tee-type wedge wire fish screens and treated at the City's George Kristoff Water Treatment Plant (GKWTP) (formerly Bryte Bend Water Treatment Plant) before delivery to municipal and industrial customers (West Sacramento Public Works 2015). The GKWTP was initially constructed in 1988, and the facility was expanded in 2004 to increase capacity from 24 million gallons per day (mgd) to 58 mgd. As part of the expansion, the City replaced three existing fish screens and added two new fish screens that meet current criteria for listed fish (i.e., steelhead and delta smelt). Although the fish screens are designed to exclude fish from water that is diverted from the Sacramento River, larvae and small juveniles—because of their small size—are at risk of being entrained with diverted flow or becoming impinged on the fish screens.

Fish entrainment and impingement, and subsequent mortality, is a function of the size and dimensions of the fish screens, the proportion of flow diverted, the location of the diversion, the size and behavior of the fish, and other factors, such as the presence of predatory species and environmental conditions (e.g., water velocity, water temperature, turbidity). Low approach velocities (velocities perpendicular to the screen face) and high sweeping velocities (velocities parallel to the screen face) are assumed to minimize stress and protect fish from entrainment and

impingement. Generally, the potential for entrainment and impingement of fish increases as flow diversion increases.

Under the General Plan update, the conversion of existing agricultural fields, rural residential, and other undeveloped areas into new growth areas characterized by residential, retail, and industrial uses would result in additional water demand. Because the Sacramento River would continue to be the principal source of domestic water for the City, increases in the diversion of Sacramento River flows to meet this additional water demand could potentially result in additional entrainment and/or impingement of special-status species fish, particularly larvae and small juveniles.

The risk of entrainment for Chinook salmon, steelhead, and green sturgeon would likely be negligible because these species spawn and rear well upstream of the study area and are considerably larger than the fish screen openings at the time they typically migrate past the City's diversion, although they could be at risk of impingement because of their relatively small size. By contrast, delta smelt, longfin smelt, Sacramento splittail, and river lamprey are more likely to be at risk of entrainment because their larvae are more likely to occur in the vicinity of the water intake. However, the number of additional fish that would be expected to be affected by the additional diversion of Sacramento River flow to meet future water demand under the General Plan update would likely be low because the City's fish screen design meets current CDFW, USFWS, and NMFS fish screen guidelines, and because the incremental increase in the proportion of flow that would be diverted from the Sacramento River to meet future demand would be small relative to the river's total flow.

Increased diversions could also affect rearing habitat and migration conditions in the Sacramento River downstream of the water intake facility because of reduced flows. High flow increases rearing habitat area, while deeper inundation provides greater depth for migration and more overhead cover and protection from avian and terrestrial predators than shallow water. Generally, in broad, low-gradient rivers, change in flow can greatly increase or decrease the lateral area available for rearing juvenile fish, particularly in riffles and shallow glides. Changes in flow associated with increased diversion of Sacramento River water to meet future water demand under the General Plan update would not appreciably affect rearing and migration habitat conditions in the Sacramento River because the river is relatively wide and deep and is confined by levees with relatively steep slopes, and because the incremental increase in the proportion of flow that would be diverted from the river would be relatively small.

The General Plan update includes policies that emphasize the conservation and protection of biological resources and water conservation. The following existing and proposed policies in the Natural and Cultural Resources Element and the General Public Facilities Services Element would help avoid, minimize, and reduce potential direct and indirect effects on special-status fish from increased diversion of Sacramento River water.

**NCR-2.13 Fisheries** [see Impact BIO-2 for text].

**PFS-2.3 Water Conservation:** To minimize the need for the development of new water sources and facilities and to minimize sewer flows, the City shall promote water conservation both in City operations and in private development.

**PFS-2.6 Rehabilitate Water Lines:** The City shall replace or repair old, leaking water lines as is financially feasible.

In addition, adherence to state regulations, such as obtaining a water right permit or approval of water transfers from the State Water Board during the process to acquire additional surface water

rights or water transfers and any associated conditions, would further help avoid or minimize potential direct and indirect effects on special-status fish in the Sacramento River associated with increased water diversion. Implementation of the existing and proposed updated policies, in combination with adherence to state regulations discussed above, would reduce the potential effects of implementation of the General Plan update on special-status fish to a less-than-significant level, and no mitigation is required.

**Impact BIO-5: Potential for increased discharge of treated wastewater to result in the loss or disturbance of special-status fish and their habitats (less than significant)**

The City currently sends all its wastewater to the Sacramento County Regional Sanitation District (SRCSD) main treatment plant north of Elk Grove, where it is treated before being released to the Sacramento River through an outfall diffuser located downstream (south) of the Freeport Bridge. Currently, the SRCSD treatment plant provides “secondary” treatment of wastewater and is one of only three remaining large wastewater treatment plants under the Central Valley Regional Water Quality Control Board’s jurisdiction that discharge within the Delta and provide only secondary treatment. The current NPDES permit requires substantial changes to the character of SRCSD’s discharge and upgrades to the treatment plant to meet the NPDES permit’s requirements—primarily related to pathogens, ammonia, and nitrate. The NPDES permit grants SRCSD up to 10 years before some of the final effluent limitations take effect.

Treated effluent contains many constituents that can degrade the quality of receiving waters, including suspended solids, organic matter (resulting in biochemical oxygen demand [BOD]) nitrogen, phosphorus, pharmaceuticals, hormones (and synthetic materials such as phthalates that mimic hormones in their action), and pathogens, as well as other regulated effluent contaminants (e.g., heavy metals, salinity). In addition, treated effluent can affect the pH and temperature of receiving waters.

Projected development under the General Plan update is expected to result in an increase in the amount of wastewater sent to the SRCSD plant for treatment and eventual discharge to the Sacramento River, and could adversely affect special-status fish or their habitat through increased loading of pollutant constituents in the wastewater.

The General Plan update includes policies that emphasize the conservation and protection of biological resources and water conservation (hence reduction in sewer flows), that minimize wastewater disposal, and that ensure compliance with all EPA discharge requirements. The following policies in the Natural and Cultural Resources Element and the General Public Facilities Services Element would help avoid and minimize for potential direct and indirect effects on special-status fish from increased discharge of treated wastewater to the Sacramento River.

**NCR-2.13 Fisheries** [see Impact BIO-2 for text].

**PFS-2.3 Water Conservation** [see Impact BIO-4 for text].

**PFS-3.1 Innovative and Efficient Operations:** The City shall strive to adopt innovative and efficient wastewater treatment technologies that are environmentally-sound.

**PFS-3.4 New Treatment Facilities:** The City shall work as a member of the Sacramento County Regional Sanitation District (SRCSD) to expand and develop new wastewater treatment and disposal facilities to accommodate the needs of existing and planned development.

**PFS-3.6 Pre-Treatment:** The City shall actively cooperate with SRCSD staff to enforce appropriate industrial pretreatment standards and source control for toxic materials entering the wastewater

system. The City shall work with the business community to prepare realistic goals and implementation programs to ensure compliance with all EPA discharge requirements.

In addition, the SRSCD facility is constructing the EchoWater Project facility to meet stringent new treatment requirements from the State of California. The new treatment will include nutrient removal, filtration, and additional disinfection (Sacramento Regional County Sanitation District 2015). Adherence to NPDES permit conditions would further help avoid and/or minimize for potential direct and indirect effects on special-status fish in the Sacramento River associated with increased discharge of treated effluent. Therefore, this impact would be less than significant, and no mitigation is required.

**Impact BIO-6: Potential for in-water construction projects and maintenance activities to result in the loss or disturbance of special-status fish and their habitats (less than significant with mitigation)**

Under the updated General Plan, special-status fish species and their habitat could be affected by in-water construction projects (e.g., bridge, pier, and boat dock construction) and maintenance dredging in the DWSC. In-water construction activities (e.g., pile driving, cofferdam installation and removal) associated with new or replacement bridge, pier, or boat dock construction has the potential to result in direct and indirect effects on special-status fish including temporary disturbance or injury of fish from underwater noise, and temporary and permanent loss of aquatic habitat and SRA cover through the installation of structures in or adjacent to water (e.g., bridge piers and abutments, pilings, cofferdams, rock revetment).

Dredging in the DWSC to maintain shipping has the potential to create turbidity and sedimentation, release toxics and other harmful substances to surface waters, disturb or injure fish, modify shallow vegetated areas, and remove bottom substrates and associated benthic organisms (a food source for fish). The magnitude of these effects depends on a number of factors, including the type of dredging equipment used; the timing of dredging relative to the occurrence of sensitive life stages of affected fish species; and the frequency, intensity, and duration of dredging.

While proposed policy NCR-2.13 states that the City shall implement measures to ensure that development in the city does not adversely affect fishery resources in the Sacramento River, Deep Water Ship Channel, and Lake Washington, the policy does not include in-water construction and maintenance activities. Policy NCR-2.13 should specify that development in the planning area includes in-water construction and maintenance activities. Without these revisions, impacts of in-water construction and maintenance activities under the proposed General Plan update could result in loss or disturbance of special-status fish and their habitat. This would be a potentially significant impact. Implementation of Mitigation Measure BIO-6 would reduce this potential impact to a less-than-significant level.

**Mitigation Measure BIO-6: Amend NCR-2.13 (Fisheries) to include in-water construction and maintenance activities**

Revise Policy NCR-2.13 in the Natural and Cultural Resources Element as follows (addition underlined and deletion strikethrough).

**NCR-2.13 Fisheries.** The City shall implement measures to ensure that development in the city and in-water construction and maintenance activities do ~~does~~ not adversely affect fishery resources in the Sacramento River, Deep Water Ship Channel, and Lake Washington.

### **Impact BIO-7: Potential for land use changes to result in the loss of oak woodland and valley foothill riparian habitat (less than significant with mitigation)**

Valley oak woodland and foothill riparian habitat, including riparian vegetation supporting SRA cover, are sensitive communities that occur in areas planned for development and that could be affected under the General Plan update. Trees growing in these habitats that are protected under the City's Tree Preservation Ordinance could also be affected.

The General Plan update includes policies that emphasize the conservation and protection of sensitive communities, such as oak woodland and riparian habitat, as well as mature trees. The following policies in the Natural and Cultural Resources Element under Goal NCR-2 (To protect sensitive native vegetation and wildlife communities and habitat in West Sacramento), Goal NCR-3 (To protect existing mature trees and encourage the development of a healthy urban forest), and Goal NCR-4 (To preserve and protect water quality in the City's natural water bodies and drainage systems and the area's groundwater basin) would help minimize, avoid, and compensate for potential effects of the General Plan update on oak woodland and valley foothill riparian habitat.

**NCR-2.2 Yolo Natural Heritage Program** [see Impact BIO-1 for text].

**NCR-2.4 Habitat Surveys** [see Impact BIO-1 for text].

**NCR-2.5 Habitat Buffer** [see Impact BIO-1 for text].

**NCR-2.8 Habitat Preservation** [see Impact BIO-1 for text].

**NCR-2.10 Wetland and Riparian Habitat Protection** [see Impact BIO-1 for text].

**NCR-2.11 Riparian Vegetation Maintenance** [see Impact BIO-1 for text].

**NCR-3.3 Tree Mitigation Ordinance** [see Impact BIO-2 for text].

**NCR-3.8 Property Owner Responsibility** [see Impact BIO-2 for text].

**NCR-4.2 Open Space Buffers** [see Impact BIO-2 for text].

Implementation of these updated policies would reduce the potential effects of the General Plan update on oak woodlands and protected trees in the oak woodlands and riparian habitats to a less-than-significant level, and no mitigation is required.

While proposed Policy NCR-2.9 specifies no net loss of wetlands, the policy does not include riparian and associated SRA cover habitat. In addition, to prevent introduction of nonnative species or native species not naturally occurring locally, Policy NCR-2.9 should specify that replacement habitat will consist of locally occurring native species. Without these revisions, impacts of land use changes proposed under the General Plan could result in a net loss or modification of riparian habitat and associated SRA cover. This would be a potentially significant impact. Implementation of Mitigation Measure BIO-2 would reduce this potential impact to a less-than-significant level.

### **Mitigation Measure BIO-7: Amend NCR-2.9 (No Net Loss) to include riparian and associated SRA cover habitat and require the use of locally occurring native species**

Revise Policy NCR-2.9 in the Natural and Cultural Resources Element as follows (addition underlined).

**NCR-2.9 No Net Loss.** The City shall require new development to ensure no net loss of riparian habitat and associated shaded riverine aquatic (SRA) cover, State and Federally regulated wetlands, other waters of the United States (including creeks, rivers, ponds, marshes, vernal pools, and other seasonal wetlands), and associated functions and values by regulating

development in and near these habitats and promoting projects that avoid sensitive areas. Where habitat loss is unavoidable, the City shall require replacement consistent with State and Federal regulations protecting riparian, SRA cover, and wetland resources. The replacement riparian, SRA cover, or wetland habitat should consist of locally occurring native species.

**Impact BIO-8: Potential for land use changes to result in the loss of state- and federally protected wetlands and other waters through direct removal, filling, hydrological interruption, or other means (less than significant)**

State- and federally protected wetlands and other waters are sensitive resources that occur in areas planned for development under the General Plan update and could be affected by proposed land use changes. Wetland land cover types that could be affected are fresh emergent wetland, lacustrine, and some areas of valley foothill riparian. The riverine land cover type and other lacustrine areas could also be affected.

The General Plan update includes policies that emphasize the conservation and protection of wetlands. The following policies in the Natural and Cultural Resources Element under Goal NCR-2 (To protect sensitive native vegetation and wildlife communities and habitat in West Sacramento) and Goal NCR-4 (To preserve and protect water quality in the City's natural water bodies and drainage systems and the area's groundwater basin) would help minimize, avoid, and compensate for potential effects on wetlands and other waters.

**NCR-2.2 Yolo Natural Heritage Program** [see Impact BIO-1 for text].

**NCR-2.4 Habitat Surveys** [see Impact BIO-1 for text].

**NCR-2.5 Habitat Buffer** [see Impact BIO-1 for text].

**NCR-2.8 Habitat Preservation** [see Impact BIO-1 for text].

**NCR-2.9 No Net Loss** [see Impact BIO-1 for text].

**NCR-2.10 Wetland and Riparian Habitat Protection** [see Impact BIO-1 for text].

**NCR-2.11 Riparian Vegetation Maintenance** [see Impact BIO-1 for text].

**NCR-4.2 Open Space Buffers** [see Impact BIO-2 for text].

Implementation of these proposed updated policies would reduce the potential effects of the General Plan update on wetlands and other waters to a less-than-significant level, and no mitigation is required.

**Impact BIO-9: Potential for land use changes to interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites (less than significant)**

The proposed land use changes and subsequent development under the General Plan update could interfere with the movement of native wildlife species, particularly in the southwest portion of the study area where an ECA has been identified (Figure 3.4-2). Land use changes would result in a portion of the agricultural area that is part of the ECA being converted to low- and medium-density residential and recreation and parks. Although the corridor would be reduced from the identified ECA, a corridor consisting of the Sacramento River DWSC and an open space or agricultural buffer along the channel would be maintained. Wildlife may also use the recreation and parks area to move through the southwest portion of the study area. The proposed land use map shows that the area



along the Sacramento River south of the DWSC would be maintained as open space and would provide a wildlife movement corridor along the west side of the river.

Native wildlife nursery sites (e.g., nest or roost sites, burrows) could be removed or disturbed by development that occurs as a result of land use changes. Removal or disturbance of nursery areas could result in injury and mortality of special-status species, as well as disruption of normal behaviors that could reduce reproductive output and overall survivorship.

The proposed land use changes and subsequent development, including the construction of new bridges, boat docks, or marinas on the Sacramento River, would not create a physical or water quality barrier or impediment that would interfere with the movement or migration of fish because no new structures would be constructed, nor would any water quality degradation occur, that would have the capacity to interrupt or impede the movement or migration of fish in the area. Spawning habitat could be removed or disturbed by construction projects conducted in water or on the bed and banks of the Sacramento River or DWSC. Removal or disturbance of spawning habitat could disrupt normal behaviors or eliminate or degrade the quality of habitat, thereby reducing reproductive output or survival.

The General Plan update includes policies that emphasize the conservation and protection of biological resources. The following policies in the Natural and Cultural Resources Element would help minimize, avoid, and compensate for potential effects on fish and wildlife movement and the use of native wildlife nursery sites and fish spawning habitat.

**NCR-2.2 Yolo Natural Heritage Program** [see Impact BIO-1 for text].

**NCR-2.4 Habitat Surveys** [see Impact BIO-1 for text].

**NCR-2.5 Habitat Buffer** [see Impact BIO-1 for text].

**NCR-2.8 Habitat Preservation** [see Impact BIO-1 for text].

**NCR-2.9 No Net Loss** [see Impact BIO-1 for text].

**NCR-2.10 Wetland and Riparian Habitat Protection** [see Impact BIO-1 for text].

**NCR-2.13 Fisheries** [see Impact BIO-3 for text].

Implementation of these policies under the General Plan update would reduce the potential effects on fish and wildlife movement and the use of native wildlife nursery sites. This impact would be less than significant, and no mitigation is required.

**Impact BIO-10: Potential for updates to the General Plan biological resource policies to conflict with existing local policies or ordinances protecting biological resources, such as the West Sacramento tree mitigation ordinance (no impact)**

The proposed policies in the General Plan update would not conflict with any existing City policies or ordinances protecting biological resources; rather they would expand the existing policies to better address sensitive biological resources. NCR 3.3 Tree Mitigation Ordinance in the Natural and Cultural Resources Element maintains the tree mitigation ordinance. Accordingly, there would be no impact, and no mitigation is required.

**Impact BIO-11: Potential for land use changes to conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan (no impact)**

No natural community conservation plans have been adopted in the study area or in Yolo County; however, the Yolo County Natural Heritage Program, a county-wide multi-species NCCP/HCP, is currently in the administrative draft stage. The Yolo Natural Heritage Program will conserve habitats and natural communities in Yolo County. The General Plan update includes policies that emphasize the conservation and protection of biological resources. NCR-2.2 Yolo Natural Heritage Program in the Natural and Cultural Resources Element under Goal NCR-2 (To protect sensitive native vegetation and wildlife communities and habitat in West Sacramento) requires cooperation with the Yolo County Natural Heritage Program. Accordingly, there would be no impact with regard to conflict with provisions of adopted conservation plans, and no mitigation is required.

**Impact BIO-12: Potential for land use changes and subsequent development to introduce or spread invasive plant species (less than significant with mitigation)**

Invasive plants are present in the study area; however, development activities resulting from the proposed land use changes could introduce new invasive plants into the study area or contribute to the spread of existing invasive plants to uninfested areas outside the study area. Invasive plants or their seeds may be dispersed by construction equipment if appropriate preventive measures are not implemented. The potential introduction or spread of invasive plants as a result of project activities under the General Plan update could have a significant effect on sensitive habitat types within and outside the study area by displacing native flora.

Introduction or spread of invasive plant species is of concern to CDFW. This potential impact would be significant; however, implementation of Mitigation Measure BIO-12 would reduce this impact to a less-than-significant level.

**Mitigation Measure BIO-12: Amend NCR-2.4 (Habitat Surveys) and NCR-2.14 (Public Areas) to avoid the introduction and minimize spread of invasive plants**

Revise Policies NCR-2.4 and NCR-2.14 in the Natural and Cultural Resources Element by adding the following sentence to the end of each policy (addition underlined).

Include protection measures to avoid and minimize the introduction and spread of invasive plants in all habitat mitigation requirements.

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## 3.5 Cultural Resources

### 3.5.1 Existing Conditions

#### Regulatory Setting

This section describes the federal, state, and local regulations related to cultural resources that would apply to the General Plan Update.

A cultural resource may be designated as significant by national, state, or local authorities. For a resource to qualify for listing in the National Register of Historic Places (NRHP) or the California Register of Historical Resources (CRHR), it must meet one or more established criteria.

#### Federal

##### National Historic Preservation Act

Section 106 of the National Historic Preservation Act (NHPA) requires that, before beginning any undertaking, a federal agency must take into account the effects of the undertaking on historic properties and offer the Advisory Council on Historic Preservation and other interested parties an opportunity to comment on these actions. The NHPA applies to federal actions and is most commonly invoked at the local level when a development project is subject to federal permits. It is also invoked when local projects, such as road projects, receive federal funds. Specific regulations regarding compliance with Section 106 state that, although the tasks necessary to comply with Section 106 may be delegated to others, the federal agency is ultimately responsible for ensuring that the Section 106 process is completed.

The Section 106 review process involves a five-step procedure.

1. Initiate the Section 106 process (assess the potential for the undertaking to affect historic properties, identify consulting parties, and plan to involve interested parties).
2. Identify historic properties in the area of potential effect (APE).
3. Assess adverse effects.
4. Resolve adverse effects.
5. Implement the project according to the memorandum of agreement, or implement the project without a memorandum of agreement if one is unnecessary.

Section 106 requires federal agencies or those they fund or permit to consider the effects of their actions on properties that are determined eligible for listing or are listed in the NRHP. To determine whether an undertaking could affect NRHP-eligible properties, cultural resources (archaeological, historical, architectural, and traditional cultural properties) must be inventoried and evaluated for the NRHP.

To be listed in the NRHP, a property must be at least 50 years old (or be of exceptional historic significance if less than 50 years old) and meet one or more of the NRHP criteria. To qualify for listing, a historic property must represent a significant theme or pattern in history, architecture,

archaeology, engineering, or culture at the local, state, or national level. It must meet one or more of the four criteria listed below and have sufficient integrity to convey its historic significance. The criteria for evaluating the eligibility of a historic property for listing in the NRHP are defined as follows (36 Code of Federal Regulations [CFR] 60.4).

- Criterion A—Association with events that have made a significant contribution to the broad patterns of our history.
- Criterion B—Association with the lives of persons significant to our past.
- Criterion C—Resources that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction.
- Criterion D—Resources that have yielded, or may be likely to yield, information important to history or prehistory.

In addition to meeting the significance criteria, a significant historic property must possess integrity to be considered eligible for listing in the NRHP. *Integrity* refers to a property's ability to convey its historic significance. Integrity is a quality that applies to historical resources in seven specific ways: location, design, setting, materials, workmanship, feeling, and association. To be considered a significant historic property, a resource must possess two, and usually more, of these kinds of integrity, depending on the context and the reasons why the property is significant. The National Park Service's *National Register Bulletin 15: How to Apply the National Register Criteria for Evaluation* (National Park Service 1995) discusses the types of integrity.

- **Location**—the place where the historic property was constructed or the place where the historic event took place.
- **Design**—the combination of elements that create the form, plan, space, structure, and style of a property.
- **Setting**—the physical environment of a historic property.
- **Materials**—the physical elements that were combined or deposited during a particular period of time and in a particular pattern or configuration to form a historic property.
- **Workmanship**—the physical evidence of the crafts of a particular culture or people during any given period in history or prehistory.
- **Feeling**—a property's expression of the aesthetic or historic sense of a particular period of time.
- **Association**—the direct link between an important historic event or person and a historic property.

The NRHP criteria also limit the consideration of moved properties because significance is embodied in locations and settings. Under the NRHP, moving a building destroys the integrity of location and setting. A moved property can be eligible for listing if it is significant primarily for architectural value or if it is the surviving property most importantly associated with a historic person or event (National Park Service 1995).

Section 106 regulations define an adverse effect as an effect that alters, directly or indirectly, the qualities that make a resource eligible for listing in the NRHP (36 CFR 800.5[a][1]). Consideration must be given to the property's location, design, setting, materials, workmanship, feeling, and

association, to the extent that these qualities contribute to the integrity and significance of the resource. Adverse effects may be direct and reasonably foreseeable, or they may be more remote in time or distance (36 CFR 8010.5[a][1]). Examples of adverse effects are listed below.

- Physical destruction of or damage to all or part of the property.
- Alteration of a property, including restoration, rehabilitation, repair, maintenance, stabilization, hazardous material remediation, and provision of handicapped access, that is not consistent with the *Secretary's Standards for the Treatment of Historic Properties* (Weeks and Grimmer 1995) and applicable guidelines.
- Removal of the property from its historic location.
- Change of the character of the property's use or of physical features within the property's setting that contribute to its historic significance.
- Introduction of visual, atmospheric, or audible elements that diminish the integrity of the property's significant historic features.
- Neglect of a property that causes its deterioration, except where such neglect and deterioration are recognized qualities of a property of religious and cultural significance to a Native American tribe or Native Hawaiian organization.
- Transfer, lease, or sale of property out of federal ownership or control without adequate and legally enforceable restrictions or conditions to ensure long-term preservation of the property's historic significance.

## State

### California Environmental Quality Act

CEQA uses the term *historical resources* to describe buildings, sites, structures, objects, or districts that may have historical, prehistorical, architectural, archaeological, cultural, or scientific importance. CEQA states that “[a] project that may cause a substantial adverse change in the significance of an historical resource is a project that may have a significant effect on the environment” (Public Resources Code [PRC] Section 21084.1).

If implementation of a project could result in significant effects on historical resources, then alternative plans or mitigation measures that reduce the effects to a less-than-significant level must be incorporated into the project (14 California Code of Regulations [CCR] 15064.5, 15126.4). The first step in the analysis of a project's potential impacts on historical resources is to determine whether any significant historical resources are present. The State CEQA Guidelines define three ways that a property will qualify as a historical resource for the purposes of CEQA review.

- The resource is listed in or determined eligible for listing in the California Register of Historical Resources (CRHR).
- The resource is included in a local register of historical resources as defined in PRC 5020.1[k], or is identified as significant in a historical resource survey meeting the requirements of PRC 5024.1[g], unless the preponderance of evidence demonstrates that it is not historically or culturally significant.
- The lead agency determines the resource to be significant, as supported by substantial evidence in light of the whole record (14 CCR 15064.5[a]).



Each of these is related to the eligibility criteria for inclusion in the CRHR (PRC 5020.1[k], 5024.1, 5024.1[g]). A historical resource may be eligible for inclusion in the CRHR if it meets any of the following conditions (14 CCR 4850).

- It is associated with events or patterns of events that have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California or the United States.
- It is associated with the lives of persons important to local, California, or national history.
- It embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of a master, or possesses high artistic values.
- It has yielded, or has the potential to yield, information important to the prehistory or history of the local area, California, or the nation.

Properties that are listed in or eligible for listing in the NRHP are considered eligible for listing in the CRHR and thus are also significant historical resources for the purpose of CEQA (PRC 5024.1[d][1]).

Under CEQA, a substantial adverse change in the significance of a resource means the physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of the historical resource would be materially impaired. Actions that would materially impair the significance of a historic resource are any actions that would demolish or adversely alter the physical characteristics that convey the property's historical significance and qualify it for inclusion in the CRHR, the NRHP, or in a local register or survey that meets the requirements of PRC 5020.1(k) and 5024.1(g).

#### **Policies Concerning Native American Heritage**

PRC 5097.9 states that no public agency or private party on public property "shall...interfere with the free expression or exercise of Native American religion...." The code further states that "nor shall any such agency or party cause severe or irreparable damage to any Native American sanctified cemetery, place of worship, religious or ceremonial site, or sacred shrine located on public property, except on a clear and convincing showing that the public interest and necessity so require."

County and city lands are exempt from this provision, except for parklands larger than 100 acres.

#### **Policies Concerning Human Remains**

Disturbance of human remains without the authority of law is a felony (California Health and Safety Code 7052). If the remains are of Native American origin, they are under the jurisdiction of the Native American Heritage Commission (NAHC) (California Health and Safety Code 7050.5c; PRC 5097.98).

If human remains are discovered or recognized in any location other than a dedicated cemetery, there can be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent human remains until the following have taken place.

- The County Coroner has been informed and has determined that no investigation of the cause of death is required.
- The Coroner makes a determination that the remains are Native American or has reason to believe they are Native American, in which case the Coroner must contact NAHC.

- NAHC determines the most likely descendant, and:
  - The most likely descendants of the deceased Native American(s) have made a recommendation to the landowner or the person responsible for the excavation work, for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods as provided in PRC 5097.98; or
  - The NAHC was unable to identify a most likely descendant; or
  - The most likely descendent failed to make a recommendation within 24 hours after being notified by the NAHC (California Health and Safety Code 7050.5c; PRC 5097.98).

### **Senate Bill 18 (Chapter 905, Statutes of 2004)—Local and Tribal Intergovernmental Consultation**

Senate Bill (SB) 18 is a process separate from CEQA that requires cities and counties that include traditional tribal cultural places on both public and private lands to consult with federally and non-federally recognized Native American tribes prior to approving amendments to their general plans. A cultural place is a landscape feature, site, or cultural resource that has some relationship to particular tribal religious heritage, or is a historic or archaeological site of significance or potential significance.

SB 18 places the responsibility of initiating consultation on the relevant county by notifying tribal representatives of the proposed general plan amendment and giving the tribes at least 90 days to accept the offer of consultation. The purpose of SB 18 is to provide time for tribal input early in the planning process so that the general plan amendment can incorporate features that would protect tribal cultural places. Consultation is a “government to government” interaction between tribal representatives and representatives of the county. The NAHC maintains a list of Native American individual/groups, organized by county, for SB 18 Tribal Consultation.

### **Assembly Bill 52—Native American Consultation Under CEQA**

Assembly Bill (AB) 52 (Chapter 532, Statutes of 2014) establishes a formal consultation process for California Native American tribes as part of CEQA and equates significant impacts on “tribal cultural resources” with significant environmental impacts (new PRC 21084.2). Under AB 52, tribal cultural resources include features with the characteristics listed below.

- Sites, features, places, and objects with cultural value to descendant communities or cultural landscapes defined in size and scope that are:
  - Included or eligible for listing in the CRHR, or
  - Included in a local register of historical resources.
- Sacred places (e.g., Native American sanctified cemeteries, places of worship, religious or ceremonial sites, sacred shrines) that are:
  - Included or eligible for listing in the CRHR, or
  - Listed on the California NAHC’s Sacred Lands File and a California Native American tribe has submitted sufficient evidence to the lead agency demonstrating that the sacred place is of special religious or cultural significance or contains known Native American graves.

Both unique and non-unique archaeological resources, as defined in PRC 21083.2, can be tribal cultural resources if they meet the criteria detailed above.

AB 52 defines a *California Native American Tribe* as a Native American tribe located in California that is on the contact list maintained by NAHC. Under AB 52, formal consultation with California Native American Tribes is required prior to determining the level of environmental document if a tribe has requested to be informed by the lead agency of proposed projects. AB 52 also requires that consultation address project alternatives and mitigation measures for significant effects, if requested by the California Native American Tribe. AB 52 states that consultation is considered concluded when either (1) the parties agree to measures to mitigate or avoid a significant effect, or (2) the tribe or agency concludes that mutual agreement cannot be reached. Under AB 52, mitigation measures shall be recommended for inclusion in the environmental document and adopted mitigation monitoring program if such measures are determined to avoid or lessen a significant impact on a tribal cultural resource. AB 52 does apply to projects for which a notice of preparation was issued after July 1, 2015. Consequently, it does apply to this project as well as future development projects.

## Local

### City of West Sacramento General Plan

The goals and policies listed below are relevant to cultural resources in the City and are excerpted from the *Cultural Resources Element* in the existing General Plan (City of West Sacramento 2000).

#### **Goal F: To preserve and enhance West Sacramento's historical heritage.**

**Policy 1.** The City shall set as a high priority the protection and enhancement of West Sacramento's historically and architecturally significant buildings.

**Policy 2.** The City shall establish a historic district in the Old Broderick area and develop standards for preservation and rehabilitation of historic structures and compatible in fill development.

**Policy 3.** The City shall cooperate in the expansion and updating of the Yolo County Historical Resources Survey.

**Policy 4.** The City shall work with property owners in seeking registration of historical structures and sites as State Historic Landmarks or listing on the National Register of Historic Sites.

**Policy 5.** The City and Redevelopment Agency shall support the efforts of property owners to preserve and renovate historic and architecturally significant structures. Where such buildings cannot be preserved intact, the City shall seek to preserve the building facades.

**Policy 6.** Structures of historical, cultural, or architectural merit which are proposed for demolition shall be considered for relocation as a means of preservation. Relocation within the same neighborhood or to another compatible neighborhood shall be encouraged.

**Policy 7.** New development near designated historic landmark structures and sites shall be designed to be compatible with the character of the designated historic resource.

**Policy 8.** The City shall explore the possibility of establishing a city cultural center which might include a historical museum and an art gallery.

**Policy 9.** The City shall consider developing and maintaining the Stone Lock as a point of historical interest.

**Goal G: To protect West Sacramento's Native American heritage.**

**Policy 1.** The City shall refer development proposals that may adversely affect archaeological sites to the California Archaeological Inventory, Northwest Information Center, at Sonoma State University.

**Policy 2.** The City shall not knowingly approve any public or private project that may adversely affect an archaeological site without first consulting the California Archaeological Inventory, Northwest Information Center, conducting a site evaluation as may be indicated, and attempting to mitigate any adverse impacts according to the recommendations of a qualified archaeologist. City implementation of this policy shall be guided by Appendix K of the State CEQA Guidelines.

**Policy 3.** Archaeological sites shall be protected by means of requirements in development permits requiring on-site monitoring by qualified personnel of excavation work in areas identified as archaeologically sensitive. Development work shall be required to cease in any place where artifacts or skeletal remains have been discovered until these have been examined and evaluated by a qualified archaeologist and arrangements have been made to avoid or otherwise protect valuable resources.

## Environmental Setting

### Prehistoric Context

Although the Sacramento Valley may have been inhabited by humans as early as 10,000 years ago, the evidence for early human occupation is likely buried by deep alluvial sediments that accumulated rapidly during the late Holocene Epoch. Although rare, archaeological remains of this early period have allegedly been identified in and around the Central Valley. Johnson (1967:283–284) presents evidence for some use of the Mokelumne River area, under what is now Camanche Reservoir, during the late Pleistocene Epoch. These archaeological materials and similar materials in the region have been termed the *Farmington Complex*. Recent work in the vicinity of Camanche Reservoir, however, calls into question whether the Farmington Complex exceeds an age of 10,000 Before Present (B.P.) (Rosenthal et al. 2007:151).

Preliminary results from Tremaine & Associates' recent excavations at Sacramento City Hall (Sacramento City Hall overlies the Nisenan village of Sacum'ne, CA-SAC-38) reveal the earliest confirmed habitation of the immediate Sacramento vicinity. Obsidian hydration readings on artifacts suggest use of the site during 3000–8000 B.P. Tremaine & Associates also ran three radiocarbon assays, which yielded conventional dates of 5870, 6690, and 6700 B.P. The radiocarbon assays were taken between 9.8 and 11.5 feet below ground surface (Tremaine 2008:99–101).

Later periods of prehistory are better understood because of their more abundant representation in the archaeological record. Fredrickson (1973) identified three general patterns of cultural manifestations for the period between 4500 and 100 B.P.: the Windmill, Berkeley, and Augustine Patterns.

The Windmill Pattern (4500–2800 B.P.) shows evidence of a mixed economy consisting of the generalized hunting of game, fishing, and use of wild plant foods. Settlement strategies during the Windmill period reflect seasonal occupation of valleys during the winter and of foothills during the summer (Moratto 1984:201, 206).

Cultural changes are manifested in the Berkeley Pattern (3500–2500 B.P.). Technological changes in groundstone from handstones and milling slabs to the mortar and pestle indicate a greater

dependence on acorns, and the presence of a wide variety of projectile points and atlatls indicates that hunting was still an important activity (Fredrickson 1973).

The Berkeley Pattern was superseded by the Augustine Pattern around 1450 B.P., reflecting a change in subsistence and land use patterns similar to those of the ethnographically known people of the proto-historic era. This pattern exhibits a great elaboration of ceremonial and social organization, including the development of social stratification. Complex exchange systems, further reliance on acorns, and a wide variety of artifacts (flanged tubular smoking pipes, harpoons, clamshell disc beads, and an especially elaborate baked clay industry, which included figurines and pottery vessels called *Cosumnes Brownware*) are associated with the Augustine Pattern. Increased village sedentism, population growth, and an incipient monetary economy are also hallmarks of this pattern (Moratto 1984:211, 213).

## Ethnographic Context

The project vicinity is located at the interface of three Native American groups: the Patwin (or Wintun), the Nisenan, and the Plains Miwok. The banks of the Sacramento River and associated riparian and tule marshland habitats were inhabited by the River or Valley Patwin. The Plains Miwok and Nisenan (also called Southern Maidu), while primarily occupying territories east of the Sacramento River, used land west of the river as well (Johnson 1978:350, Figure 1; Levy 1978:Figure 1; Wilson and Towne 1978:Figure 1).

The material culture and settlement-subsistence behavior of these groups exhibit similarities, likely because of historical relationships and a shared natural environment. Historic maps and accounts of early travelers to the Sacramento Valley testify that tule marshes, open grasslands, and occasional oak groves (Jackson 1851; Ord 1843; Wyld 1849) characterized the project vicinity. The area was generally wet in the winter and often subject to flooding; the weather was exceedingly dry in summer. Much of the floodplain presumably was sparsely inhabited, and Native Americans typically situated their larger, permanent settlements on high ground along the Sacramento and American Rivers (Bennyhoff 1977; Kroeber 1925:351, 1932; Levy 1978; Wilson and Towne 1978:388).

The Native American economy in the project vicinity was based principally on the use of natural resources from the riparian corridors, wetlands, and grasslands adjacent to the Sacramento River. Fish, shellfish, and waterfowl were important sources of protein in the diet of these groups (Johnson 1978:355; Kroeber 1932). Salmon, sturgeon, perch, chub, sucker, pike, trout, and steelhead were caught with nets, weirs, lines and fishhooks, and harpoons. Mussels were harvested from the gravels along the Sacramento River channel. Geese, ducks, and mudhens were hunted using decoys and various types of nets. The majority of important plant resources in the Patwin diet came from the grasslands of the Sacramento River floodplain (Stevens 2004a: Table 1). Plants important to California Indians also were obtained from and managed in valley wetlands (Stevens 2004b:7). In addition to the staple acorn, numerous plants were important secondary food sources, including sunflower, wild oat, alfalfa, clover, and bunchgrass (Johnson 1978:355).

## Historic Context

### Early History

The project area is located in Yolo County, one of the original 27 counties created when California became a state in 1850. Woodland serves as the county seat (Hoover et al. 2002:566).

Spanish explorers visited Yolo County as early as the 1700s in their search for suitable inland mission sites. In 1772, Pedro Fages passed through San Francisco Bay and the Delta and reached the San Joaquin and Sacramento Rivers. Between 1793 and 1817, several other mission site reconnaissance expeditions were conducted. The first European American to travel through the area was Jedediah Strong Smith who, in the late 1820s, reported on the quantity and quality of furs in California. Joseph Walker and Ewing Young, during separate excursions, followed his general path in the 1830s. Mexican, American, and European settlers began to arrive and set down roots within the bounds of present-day Yolo County in the 1840s and 1850s (Hoover et al. 2002:566–567).

### **Sacramento River**

The Sacramento River played an important role in the development of Yolo County prior to and during Euroamerican occupation of the region. The river was a convenient landmark for the early explorations that also facilitated reconnaissance of the Sacramento Valley. The Spanish, in 1817, were the first Europeans to traverse the portion of the Sacramento River that passes through the study area, having made an exploratory boat trip up the river as far as its confluence with the Feather River (Goldfried 1988:8). This expedition was followed by a series of Spanish, Russian, British, and American land and water forays up the Sacramento River from the 1820s through 1840s (Goldfried 1988:8–9).

River traffic through the project study area became more frequent between 1839 and 1848 with the establishment of John Sutter's fort at his New Helvetia Rancho, as well other settlements upriver established by Peter Lassen, John Sinclair, John Bidwell, and others (Goldfried 1988:9; Lydecker and James 2009:9; Sutter et al. 1939 [1845–1848]:1–3). The 1848 gold discovery at Coloma, however, was responsible for the vast increase in Sacramento River traffic in the study area through the 1850s, as Sutter's embarcadero, at what is now Old Sacramento, served as the principal point of departure for persons and goods headed for the Sierra Nevada diggings. Crews frequently abandoned their ships at the embarcadero during the Gold Rush, leaving them to sink or be converted by others into warehouses, stores, and hotels on the river (Goldfried 1988:11).

The city of Sacramento and the communities of Washington and Riverbank/Bryte provided a lasting draw to river traffic through the 1920s because water transportation was a convenient and efficient way to move large amounts of goods and people to and from San Francisco and points beyond. River transportation from the mid-nineteenth century through the early twentieth century resulted in numerous marks along the river corridor, including ferries, wharves, shipwrecks, and many communities (Lydecker and James 2009:28, Figure 2-2).

### **Yolo County**

The decline of the California Gold Rush resulted in disenchanting miners who realized they could make a greater fortune through farming and ranching than in gold prospecting, transforming Yolo County from an isolated farming community into a booming agricultural region. Through both the mid-nineteenth and twentieth centuries, Yolo County commerce was generally agrarian in focus, the main crops being wheat, barley, and other grains. Commercial enterprises related to agriculture and livestock also sprang up during this period, furthering the development and growth of the region (Larkey and Walters 1987:25–45).

### ***Development***

Yolo County's first town was Fremont, founded in 1849 near the confluence of the Sacramento and Feather Rivers (south of present-day Knights Landing). It became the first county seat in 1850. After the damaging flood of 1851, the county seat was moved to the town of Washington (now part of present-day West Sacramento). Between 1857 and 1861, the county seat moved from Washington to Cacheville (present day Yolo) and back to Washington. However, in 1862, more flooding episodes motivated the community voters to select the centrally located town of Woodland as the permanent county seat (Hoover et al. 2002:566, 568–569).

### ***City of West Sacramento***

Present-day West Sacramento experienced little growth until the early 1900s, when levee construction along the Sacramento River encouraged settlement and development of the area. Early settlers included Jan Lows de Swart (holder of the Rancho Nueva Flandria land grant) and James McDowell. In 1911, the West Sacramento Company laid out the community of Riverbank (later called Bryte) just west of the Sacramento River. Shortly thereafter, plans were underway for the establishment of the town of West Sacramento (Corbett 1993; Hoover et al. 2002: 568).

Following World War I, West Sacramento remained an unincorporated area populated primarily by small farms and a handful of industries. By the 1920s, the main east-west transcontinental highway (U.S. Highway 40, now West Capitol Avenue) extended through West Sacramento; within a few years several hotels and motels were constructed along its route through town. During World War II, factories and other industries began to prosper along the west bank of the Sacramento River. Following the war, the region—like much of the state—experienced a housing boom that would last for several decades (Corbett 1993).

In 1987, after numerous attempts, the City of West Sacramento was officially incorporated. The new city included the former communities of Broderick, Bryte, and surrounding urban and rural areas on the west side of the Sacramento River into Southport (Walters 1987:46).

### **Resources and Studies**

A records search was conducted at the Northwest Information Center (NWIC) of the California Historic Resources Information System. The records search sought the number and types of cultural resources recorded within the city limits and the number of cultural resources studies conducted. At least 194 cultural resources studies of varying sizes have been conducted within the West Sacramento city limits. Recorded resources within West Sacramento comprise 71 historic era resources and 10 prehistoric resources.

## **3.5.2 Environmental Impacts**

### **Methods for Analysis**

A general records search was conducted at the NWIC of the California Historic Resources Information System.

## Thresholds of Significance

In accordance with Appendix G of the State CEQA Guidelines, the proposed project would be considered to have a significant effect if it would result in any of the conditions listed below.

- Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5.
- Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5.
- Disturb any human remains, including those interred outside of formal cemeteries.

According to State CEQA Guidelines Section 15126.4(b), public agencies should, whenever feasible, seek to avoid damaging effects on any historical resource of an archaeological nature. The following factors listed under Section 15126.4(b)(3) must be considered for a project involving such an archaeological site.

- (A) Preservation in place (avoidance) is the preferred manner of mitigating impacts to archaeological sites. Preservation in place maintains the relationship between artifacts and the archaeological context. Preservation may also avoid conflict with religious or cultural values of groups associated with the site.
- (B) Preservation in place may be accomplished by, but is not limited to, the following:
- Planning construction to avoid archaeological sites;
  - Incorporation of sites within parks, green space, or other open space;
  - Covering the archaeological sites with a layer of chemically stable soil before building tennis courts, parking lots, or similar facilities on the site.
  - Deeding the site into a permanent conservation easement.
- (C) When data recovery through excavation is the only feasible mitigation, a data recovery plan, which makes provisions for adequately recovering the scientifically consequential information from and about the historical resource, shall be prepared and adopted prior to any excavation being undertaken. Such studies shall be deposited with the California Historical Resources Regional Information Center. Archaeological sites known to contain human remains shall be treated in accordance with the provisions of Section 7050.5 Health and Safety Code.
- (D) Data recovery shall not be required for a historical resource if the lead agency determines that testing or studies already completed have adequately recovered the scientifically consequential information from and about the archaeological or historical resource, provided that the determination is documented and that the studies are deposited with the California Historical Resources Information Center.

## Impacts and Mitigation Measures

### **Impact CUL-1: Potential to cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5 (significant and unavoidable)**

The proposed General Plan update involves only minor revisions to the goal, policies, and implementation measures pertaining to cultural resources. Although the concentration of future development in already urbanized areas and circulation improvements may indirectly increase the number of projects entailing the demolition, alteration, or relocation of CEQA historic resources, the General Plan update would not substantially alter City policies regarding the significance of impacts on CEQA historic resources.



Similarly, the proposed General Plan update would not alter the significance of the impacts on historic resources. General plan updates do not modify the procedures or policies regarding how historical resources are identified or evaluated for eligibility, nor do they change how impacts on historic resources are assessed or mitigated under the general plan. Accordingly, any projects resulting from the promotion of increased urban density or the improvement of transportation networks would continue to require project-level review.

In general, prior to commencement of any action, development, or land use changes on lands subject to federal jurisdiction, or for projects involving federal funding, a cultural resource survey and an environmental analysis must be prepared. These, in concert with proposed General Plan policies NCR-9.1 and NCR-9.3 through NCR-9.11 and Natural and Cultural Resources Implementation Programs 24-29, as well as relevant state laws, would largely avoid substantial adverse changes in the significance of historical resources. Historical resources are also protected under the regulations of the NHPA when projects involve federal agencies.

Nevertheless, development pursuant to the proposed General Plan update would result in changes to existing cultural resources. At the individual project level, future projects could be consistent with the General Plan, comply with all state and local laws that are protective of significant historical resources, and still result in a significant adverse impact on a historical resource. Typically, such a project would be one that demolishes or otherwise destroys a significant historical resource. For example, Policy 6 states that “Structures of historical, cultural, or architectural merit which are proposed for demolition shall be considered for relocation as a means of preservation. Relocation within the same neighborhood or to another compatible neighborhood shall be encouraged.” Relocation may reduce the impacts on a historical resource, but not to a less-than-significant level.

Demolition or destruction cannot be mitigated under CEQA (*Architectural Heritage Association v. County of Monterey* [2004] 122 Cal. App. 4th 1095; *League for Protection of Oakland’s Architectural and Historic Resources v. City of Oakland* [1997] 52 Cal. App. 4th 896). It is reasonable to assume that development projects with such impacts would be undertaken in the future. Therefore, although the updated General Plan policies would reduce the potential impacts on historical resources, because the update itself would allow development to occur where potential historic resources would be affected (i.e., through loss of potential or known historic resources even after following the procedures set forth by federal, state, and local laws), the General Plan update could ultimately result in a significant and unavoidable impact. No further mitigation is available.

### **Impact CUL-2: Potential to cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5 (significant and unavoidable)**

Archaeological resources are known to be present in the West Sacramento planning area. Consequently, it is possible that future development, redevelopment, and construction activities proposed under the General Plan update may result in direct or indirect impacts on both prehistoric and historic archaeological resources. If archaeological resources are present in the areas where development is planned to occur, they could be damaged by earth-disturbing construction activities, such as excavation for foundations, placement of fills, trenching for utility systems, and grading for roads and staging areas. In particular, construction activities may disturb such resources, thereby exposing them to potential vandalism or causing them to be displaced from the original context and integrity. Additionally, transportation improvements could restrict access to previously accessible locations that are important to Native Americans. This is considered a significant impact. Specific analysis will be required under CEQA when individual projects are proposed. In general, however,

causing a substantial adverse change in the significance of an archaeological resource that has the potential to yield information important to the prehistory or history of the local area, California, or the nation in general, would be considered significant.

The state policies and regulations discussed above relating to Native American heritage and treatment of Native American burials will reduce the potential for significant impacts. AB 52 (2014) requires consultation with California Native American tribes when a tribe has concerns that a project could adversely affect a tribal cultural resource. Such consultation will provide further protections for tribal cultural resources as well as archaeological resources at the individual project level through the CEQA process. AB 52 requires the City to consult with affiliated California tribes, recommend mitigation measures resulting from the consultation, and prepare an EIR for those projects that could result in a significant adverse effect on a Native American cultural resource.

Policy NCR-9.2 of the General Plan update and the related implementation programs would further reinforce the notice and consultation approach to cultural resource identification and mitigation. Consequently, the anticipated impacts on existing cultural resources would not be substantially different than those under the existing General Plan. Implementation of this policy and the related implementation programs and compliance with AB 52 would reduce impacts from implementation of the project on existing archaeological and tribal cultural resources, but not to a less-than-significant level.

AB 52 establishes that an adverse effect on a tribal cultural resource is a significant effect on the environment. While it would require preparation of an EIR in those situations where a future development project would have such an effect or destroy a tribal cultural resource, the EIR would not prohibit approval of that development project. Accordingly, it is reasonably foreseeable that implementation of the General Plan update could support a project or projects that could result in a tribal cultural resource being irreparably harmed. For this reason, although the updated General Plan policies and Mitigation Measure CUL-2 would reduce the potential impact, the General Plan update could result in a significant and unavoidable impact. No further mitigation is available.

#### **Mitigation Measure CUL-2: Require appropriate treatment for inadvertent discovery of archaeological resources**

The City will require, through permit or tentative map conditions or contractual obligations, that in the event of any inadvertent discovery of archaeological resources, all such finds will be subject to PRC 21083.2 and State CEQA Guidelines 15064.5. Procedures for inadvertent discovery are listed below.

- All work within 100 feet of the find will be halted until a professional archaeologist can evaluate the significance of the find in accordance with NRHP and CRHR criteria.
- If any find is determined to be significant by the archaeologist, representatives of the City will meet with the archaeologist to determine the appropriate course of action. If necessary, a Treatment Plan will be prepared by an archeologist, outlining recovery of the resource, analysis, and reporting of the find. The Treatment Plan will be submitted to the City for review and approval prior to resuming construction.
- All significant cultural materials recovered will be subject to scientific analysis, professional curation, and a report prepared by the professional archaeologist according to current professional standards.

**Impact CUL-3: Disturbance of any human remains, including those interred outside of formal cemeteries (significant and unavoidable)**

The planning area is located in an area inhabited by Native Americans during pre-European times. Accordingly, Native American burials may be found in the future on sites where no record of such burials exists. Buried human remains that were not identified during previous research and field studies could be inadvertently unearthed during ground-disturbing activities, possibly resulting in damage to the human remains. Accordingly, human remains could be damaged or destroyed by future development related to buildout of the updated General Plan. In the absence of regulations, this impact would be significant.

The state regulations discussed above relating to the treatment of burials will reduce the potential for significant impacts. Future CEQA analysis of development projects will similarly promote the identification of remains and their proper, respectful disposition. In some cases, California Native American tribe consultation under AB 52 will identify burial locations that were not otherwise known. AB 52 identifies sacred sites as tribal cultural resources, the destruction of which could be a significant environmental effect. To the extent that burials are associated with sacred sites, destruction of such sites would result in a significant and unavoidable environmental impact. Implementation of Policy NCR-9.2 and related implementation programs, and measures required under state law, including CEQA, would reduce impacts on human remains, but not to a less-than-significant level. No mitigation is available.

**Mitigation Measure CUL-3: Implement appropriate treatment for discovery of human remains**

The City will require, through permit or tentative map conditions, that in the event that human remains are discovered, all work shall cease in the vicinity (minimum of 100 feet) of the find and the Yolo County coroner will be notified immediately. If the coroner determines the remains to be Native American in origin, the coroner will be responsible for notifying the NAHC, which will appoint a most likely descendant (MLD; PRC Section 5097.99). The project applicant, County, and MLD will make all reasonable efforts to develop an agreement for the dignified treatment of human remains and associated or unassociated funerary objects (CCR Title 14 Section 15064.5[d]). The agreement should take into consideration the appropriate excavation, removal, recordation, analysis, custodianship, curation, and final disposition of the human remains and associated or unassociated funerary objects. The MLD will have 48 hours after notification by the NAHC to make their recommendation (PRC Section 5097.98). If the MLD does not agree to the reburial method, the project will follow PRC Section 5097.98(b), which states, “the landowner or his or her authorized representative shall reinter the human remains and items associated with Native American burials with appropriate dignity on the property in a location not subject to further subsurface disturbance.”

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## 3.6 Geology, Soils, and Paleontological Resources

### 3.6.1 Existing Conditions

#### Regulatory Setting

##### Federal

###### **Clean Water Act Section 402 (National Pollutant Discharge Elimination System Program)**

Because the U.S. Environmental Protection Agency (EPA) has delegated enforcement of Section 402 to the states, this section is addressed below.

###### **Paleontological Resources Act of 2009**

The Paleontological Resources Act of 2009 (Public Law No. 111-11, Subtitle D) includes provisions for the protection and preservation of paleontological resources. The law also prohibits the collection of paleontological resources from federal land without a permit, except in the case of noncommercial collecting that complies with other regulations for that federal land.

##### State

###### **Alquist-Priolo Earthquake Fault Zoning Act**

California's Alquist-Priolo Earthquake Fault Zoning Act (Alquist-Priolo Act) (Public Resources Code [PRC] 2621 et seq.) is intended to reduce risks to life and property from surface fault rupture during earthquakes. The Alquist-Priolo Act prohibits the location of most types of structures intended for human occupancy<sup>1</sup> across the traces of active faults and strictly regulates construction in the corridors along active faults (earthquake fault zones). It also defines criteria for identifying active faults, giving legal weight to terms such as *active*, and establishes a process for reviewing building proposals in and adjacent to earthquake fault zones.

Under the Alquist-Priolo Act, faults are zoned, and construction along or across them is strictly regulated if they are "sufficiently active" and "well defined." A fault is considered sufficiently active if one or more of its segments or strands shows evidence of surface displacement during Holocene time (defined for purposes of the act as referring to approximately the last 11,000 years). A fault is considered well-defined if its trace can be identified clearly by a trained geologist at the ground surface, or in the shallow subsurface using standard professional techniques, criteria, and judgment (Bryant and Hart 2007).

###### **Seismic Hazards Mapping Act**

Like the Alquist-Priolo Act, the Seismic Hazards Mapping Act of 1990 (PRC 2690–2699.6) is intended to reduce damage resulting from earthquakes. While the Alquist-Priolo Act addresses

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<sup>1</sup> With reference to the Alquist-Priolo Act, a *structure for human occupancy* is defined as one "used or intended for supporting or sheltering any use or occupancy, which is expected to have a human occupancy rate of more than 2,000 person-hours per year" ( 14 California Code of Regulations [CCR] Div. 2, Section 3601[e]).

surface fault rupture, the Seismic Hazards Mapping Act addresses other earthquake-related hazards, including strong ground shaking, liquefaction, and seismically induced landslides. Its provisions are similar in concept to those of the Alquist-Priolo Act—the state is charged with identifying and mapping areas at risk of strong ground shaking, liquefaction, landslides, and other corollary hazards—and cities and counties are required to regulate development within mapped seismic hazard zones.

Under the Seismic Hazards Mapping Act, permit review is the primary mechanism for local regulation of development. Specifically, cities and counties are prohibited from issuing development permits for sites within seismic hazard zones until appropriate site-specific geologic and/or geotechnical investigations have been carried out and measures to reduce potential damage have been incorporated into the development plans. Geotechnical investigations conducted within Seismic Hazard Zones must incorporate standards specified by California Geological Survey Special Publication 117a, *Guidelines for Evaluating and Mitigating Seismic Hazards* (California Geological Survey 2008a).

#### **Clean Water Act Section 402 General Permit for Construction and other Land Disturbance Activities (General Order 2010-0014-DWQ)**

The Clean Water Act (CWA) is discussed in detail in Section 3.9, *Hydrology and Water Quality*. However, because Section 402 is directly relevant to grading activities, additional information is provided here.

Section 402 of the CWA mandates that certain types of construction activity comply with the requirements of EPA's NPDES program. EPA has delegated to the State Water Resources Control Board (State Water Board) the authority over the National Pollutant Discharge Elimination System (NPDES) program in California, where it is implemented by the state's nine Regional Water Quality Control Boards (RWQCB).

Dischargers whose projects disturb 1 or more acres of soil, or whose projects disturb less than 1 acre but are part of a larger common plan of development that in total disturbs 1 or more acres, are required to obtain coverage under General Order 2010-0014-DWQ. Construction activities subject to this permit include clearing, grading, and disturbances to the ground such as stockpiling or excavation, but do not include regular maintenance activities performed to restore the original line, grade, or capacity of the facility. General Construction Permit applicants are required to prepare a Notice of Intent and a stormwater pollution prevention plan (SWPPP) and to implement and maintain best management practices (BMPs) to avoid adverse effects on receiving water quality as a result of construction activities, including earthwork.

Coverage under the General Construction Permit is obtained by submitting permit registration documents to the State Water Board that include a risk level assessment and a site-specific SWPPP identifying an effective combination of erosion control, sediment control, and non-stormwater BMPs. The General Construction Permit requires that the SWPPP define a program of regular inspections of the BMPs and, in some cases, sampling of water quality parameters.

In West Sacramento, project applicants would need to obtain coverage under the NPDES general construction activity stormwater permit and obtain a state NPDES Stormwater Permit from the Central Valley RWQCB (Central Valley Water Board).

### **Clean Water Act Section 402 Municipal Separate Storm Sewer System Program**

EPA defines a municipal separate storm sewer system (MS4) as any conveyance or system of conveyances (roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, human-made channels, and storm drains) owned or operated by a state, city, town, country, or other public body having jurisdiction over stormwater, that is designed or used for collecting or conveying stormwater. As part of the NPDES program, EPA initiated a program requiring that entities having MS4s apply to their local RWQCB for stormwater discharge permits. The program proceeded through two phases. Under Phase I, the program initiated permit requirements for designated municipalities with populations of 100,000 or more to obtain NPDES permit coverage for their stormwater discharges. Phase II expanded the program to municipalities with populations less than 100,000 as well as small MS4s outside the urbanized areas that are designated by the permitting authority to obtain NPDES permit coverage for their stormwater discharges.

Generally, Phase I MS4s are covered by individual permits and Phase II MS4s are covered by a general permit. Each regulated MS4 is required to develop and implement a stormwater management plan to reduce the contamination of stormwater runoff and prohibit illicit discharges.

The City of West Sacramento is named as a small MS4 permittee in the Phase II stormwater permit. To meet requirements of Section E.12 of the Phase II MS4 permit, the City provides a Post-Construction Standard Plan to guide proponents and municipal plan reviewers through the requirements of the MS4 permit.

### **International Building Code**

The design and construction of engineered facilities in the state of California must comply with the requirements of the International Building Code (IBC) adopted by the State of California (State) (see *California Building Standards Code* under *State Regulations*).

### **California Building Code**

The state's minimum standards for structural design and construction are given in the California Building Code (CBC) (24 CCR). The CBC is based on the IBC, which is used widely throughout United States (generally adopted on a state-by-state or district-by-district basis) and has been modified for California conditions with numerous more detailed or more stringent regulations. The CBC requires that classification of the soil at each building site will be determined when required by the building official and that the classification will be based on observation and any necessary test of the materials disclosed by borings or excavations. The CBC provides standards for various aspects of construction, including (i.e., not limited to) excavation, grading, and earthwork construction; fills and embankments; expansive soils; foundation investigations; and liquefaction potential and soil strength loss. In accordance with California law, projects carried out under the General Plan update would be required to comply with all relevant provisions of the CBC.

The CBC requires extensive geotechnical analysis and engineering for grading, foundations, retaining walls, and other structures, and includes criteria for seismic design.



## Local

### West Sacramento Municipal Code

The West Sacramento Municipal Code adopts the 2013 CBC with additional amendments and addresses both building and grading standards.

### General Plan

The following goals and policies in the Health and Safety element of the current General Plan relate to geology and seismic hazards. The existing General Plan has no goals or policies pertaining specifically to soils or paleontological resources.

**Goal A:** To prevent loss of life, injury, and property damage due to geologic and seismic hazards.

1. The City shall require preparation of geotechnical reports and impose appropriate mitigation measures to ensure, within the limits of technical and economic feasibility, that new structures are able to withstand the effects of seismic activity, including liquefaction.
2. Underground utilities, particularly water and natural gas mains, shall be designed to withstand seismic forces.
3. The City shall request that responsible agencies regularly inspect and repair area levees, as needed, to ensure structural integrity in the event of seismic activity.
4. The City shall conduct an inventory of unreinforced masonry buildings within the city. No change in use to a higher occupancy or more intensive use shall be approved in such structures until an engineering evaluation of the structure has been conducted and any structural deficiencies corrected. The Redevelopment Agency shall be encouraged to assist property owners in reinforcing buildings.
5. The City shall require post-earthquake building replacement, reconstruction, and rehabilitation to conform to the latest City code requirements.

## Environmental Setting

The study area for geology, seismicity, soils, and paleontological resources is the planning area.

### Regional Geology

West Sacramento is in the Great Valley geomorphic province. A geologic map of the planning area is provided in Figure 3.6-1. The planning area is in the southern portion of the Sacramento Valley, which forms the northern portion of California's Great Valley geomorphic province (Norris and Webb 1990:412). The Great Valley, also called the Central Valley, is a nearly level alluvial plain situated between the Sierra Nevada on the east and the Coast Ranges on the west. Its south end is defined by the Tehachapi Mountains north of Los Angeles, and its north end is defined by the Klamath Mountains. Subdivided into the Sacramento Valley to the north and the San Joaquin Valley to the south, the valley has an average width of about 50 miles and is about 400 miles long overall (Norris and Webb 1990:412; Bartow 1991:2).

The Great Valley is floored by a thick sequence of sedimentary deposits that range in age from Jurassic through Quaternary. Under the eastern and central portions of the valley, the base of the sequence likely rests on Mesozoic crystalline rock allied to the plutons of the Sierra Nevada; to the west, basement rocks are believed to be Franciscan metasediments and/or mélangé similar to exposures in the Coast Ranges. Mesozoic sedimentary rocks are now in the subsurface record

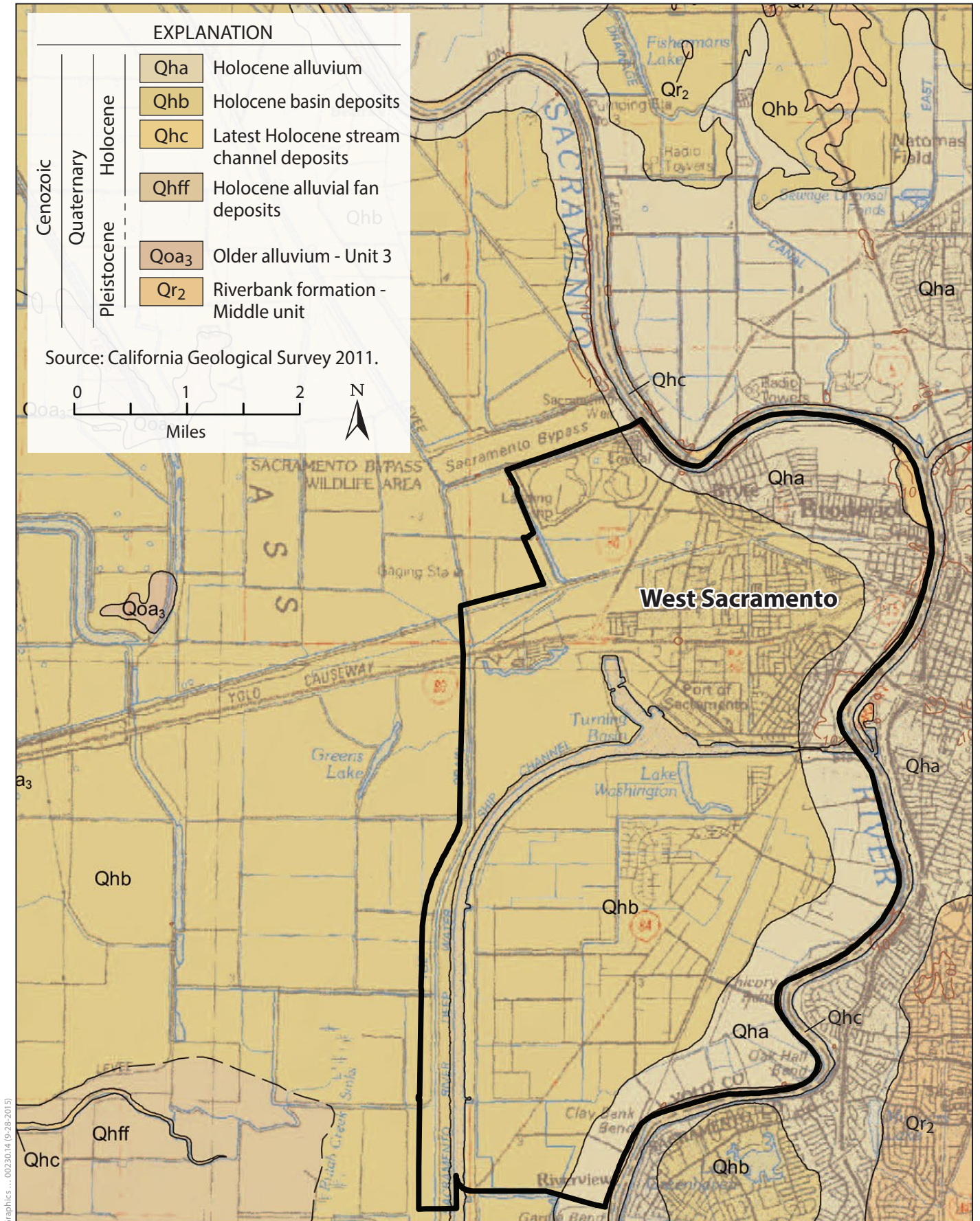


Figure 3.6-1  
Geology Map

marine deposition. They are overlain by Tertiary strata reflecting marine, estuarine, and terrestrial conditions, which are in turn overlain by Quaternary fluvial and alluvial strata recording uplift and erosion of the Sierra Nevada and Coast Ranges to approximately their present shape (Norris and Webb 1990:417–425; Bartow 1991:2).

## **Planning Area Geology**

The geology of the planning area has been shaped by fluvial processes and is underlain primarily by two alluvial units, both of which are of Holocene age. Directly adjacent and generally parallel to the river is a band of alluvium made up of sand, gravel, and silt (Qha) that are poorly to moderately sorted. Inland from this unit is a widespread basin deposit (Qhb) made up of fine-grained sediments with horizontal stratification deposited by standing or slow-moving water in topographic lows (California Geological Survey 2011).

Underlying these Holocene deposits are the well-known Modesto and Riverbank Formations of Pleistocene age (Ludhorff & Scalmanini 2012). The Modesto Formation is made up of arkosic gravel, sand, and silt laid down in an alluvial/fluvial environment during the last major series of depositional events in the eastern San Joaquin Valley. These deposits, representing sediment eroded from the uplifting Sierra Nevada, occur as a series of coalescing alluvial fans that once extended from the Kern River on the south to the Sacramento River tributaries on the north (Marchand and Allwardt 1981). The Riverbank Formation consists of weathered reddish gravels, sand, silt, and clay; ranges from less than 1 foot to more than 200 feet in thickness depending on location; and is distinctly older than the Modesto Formation (Helley and Harwood 1985). According to detailed geologic mapping conducted by William Lettis & Associates (in Ludhorff & Scalmanini 2012), exposures of Pleistocene sediments occur in the southwestern corner of the planning area and possibly in the northwestern portion of the planning area. These sediments are likely related to the Modesto and Riverbank Formations.

## **Seismicity**

Although the planning area is located in a region of California characterized by relatively low seismic activity, as described below, seismic hazards are present.

### **Primary Seismic Hazards**

The State of California considers two aspects of earthquake events as primary seismic hazards: surface fault rupture (i.e., visual disruption of the Earth's surface as a result of fault activity) and seismic ground shaking.

#### ***Surface Fault Rupture***

The risk of surface rupture in the planning area is low because there are no active faults in the area (California Geological Survey 2010) (Figure 3.6-2). The nearest active fault is the Cordelia fault approximately 30 miles west of the planning area in the Bay Area.

#### ***Strong Ground Shaking***

Unlike surface rupture, ground shaking is not confined to the trace of a fault but, rather, propagates into the surrounding areas during an earthquake. The intensity of ground shaking typically diminishes with distance from the fault, but ground shaking may be locally amplified and/or prolonged by some types of substrate materials.

The potential ground shaking hazard in the study area is relatively low for California. Based on a probabilistic seismic hazard map that depicts the peak horizontal ground acceleration values exceeded at a 10% probability in 50 years (California Geological Survey 2008b), the probabilistic peak horizontal ground acceleration values for the study area are 0.21 to 0.23g (where g equals the acceleration speed of gravity) (Figure 3.6-3). As a point of comparison, probabilistic peak horizontal ground acceleration values for the San Francisco Bay Area range from 0.4g to more than 0.8g. (California Geological Survey 2008b and c).

### **Secondary Seismic Hazards**

*Secondary seismic hazards* refers to seismically induced landsliding, liquefaction, and related types of ground failure. As discussed in *Regulatory Setting*, the State of California maps areas that are subject to secondary seismic hazards pursuant to the Seismic Hazards Mapping Act of 1990. The State of California has not issued any regulatory maps related to seismic hazards for the planning area. Seismically induced hazards are addressed briefly below based on available information.

#### ***Landslide and Other Slope Stability Hazards***

The planning area is located on very gentle valley floor topography. Consequently, the potential for slope failure, including seismically induced landsliding, is low.

#### ***Liquefaction and Related Ground Failures***

Liquefaction is a phenomenon in which the strength and stiffness of unconsolidated sediments are reduced by earthquake shaking or other rapid loading. The susceptibility of an area to liquefaction is determined largely by the depth to groundwater and the properties (e.g., texture and density) of the soil and sediment within and above the groundwater. The sediments most susceptible to liquefaction are saturated, unconsolidated sand and silt soils with low plasticity within 50 feet of the ground surface (California Geological Survey 2008a:35–36).

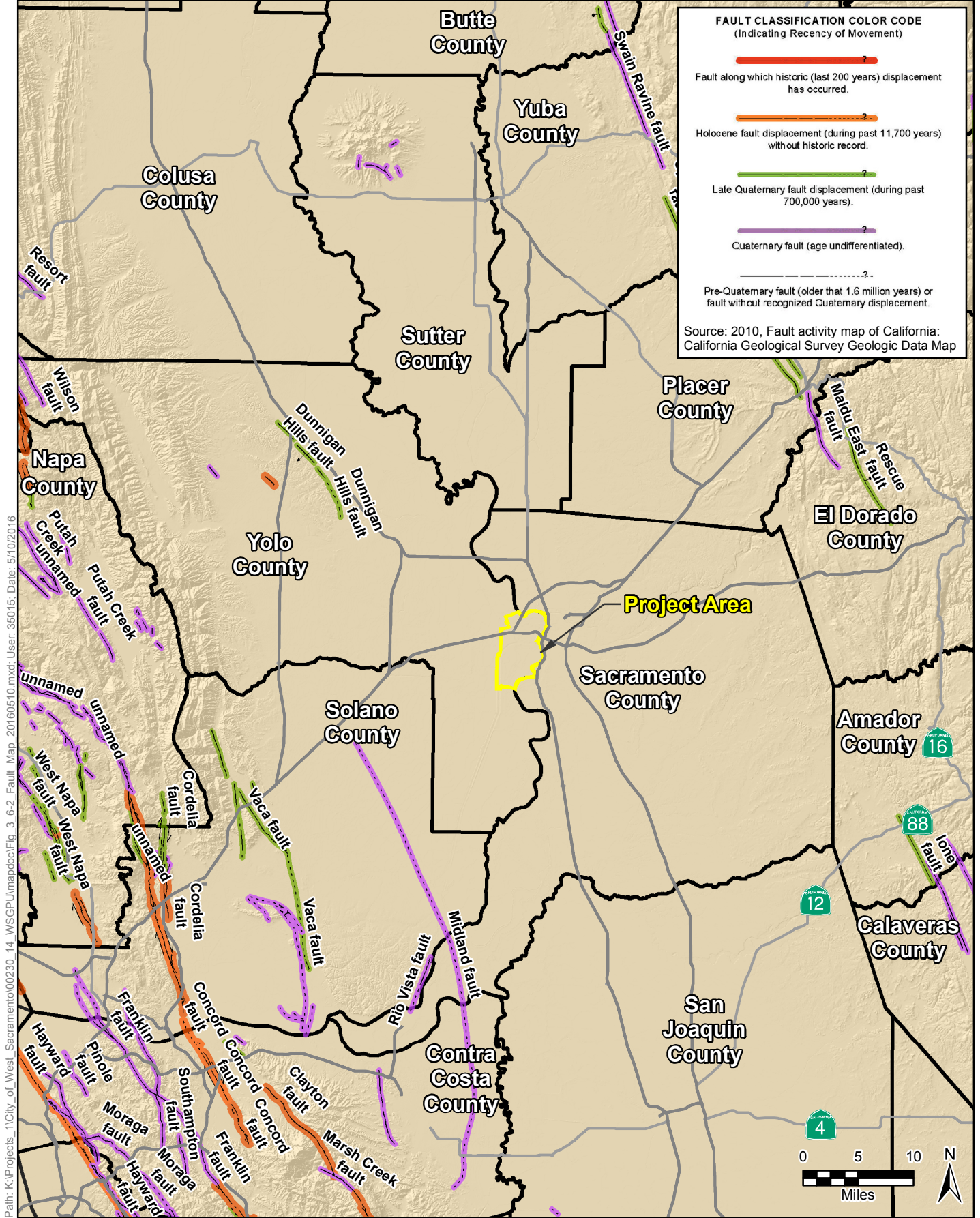
Other types of ground failure related to liquefaction include lateral spreading and differential settlement. Lateral spreading is a failure of soil/sediment within a nearly horizontal zone, which causes the soil to move toward a free face (such as a streambank or canal) or down a gentle slope. Lateral spreading can occur on slopes as gentle as one-half degree. Even a relatively thin seam of liquefiable sediment can create planes of weakness that could cause continuous lateral spread over large areas (California Geological Survey 2008a:36). Examples of locations susceptible to lateral spread include river channels and artificial fill placed on slopes.

Differential settlement, the uneven settling of soil, is the most common fill displacement hazard (California Geological Survey 2008a:49). Examples of fill in the planning area include road fills and foundation fills.

The potential for liquefaction in the planning area is uncertain, but a conservative assessment of the general conditions (i.e., groundwater levels, sediments, and shaking potential), based on the California Geological Survey guidance cited above, indicates that there is some potential for liquefaction.

- The groundwater levels in the project area are shallow (far less than the 40-foot threshold) (see Section 3.9, *Hydrology and Water Quality*).
- The uppermost sediments in the project area are unconsolidated Holocene alluvial deposits.



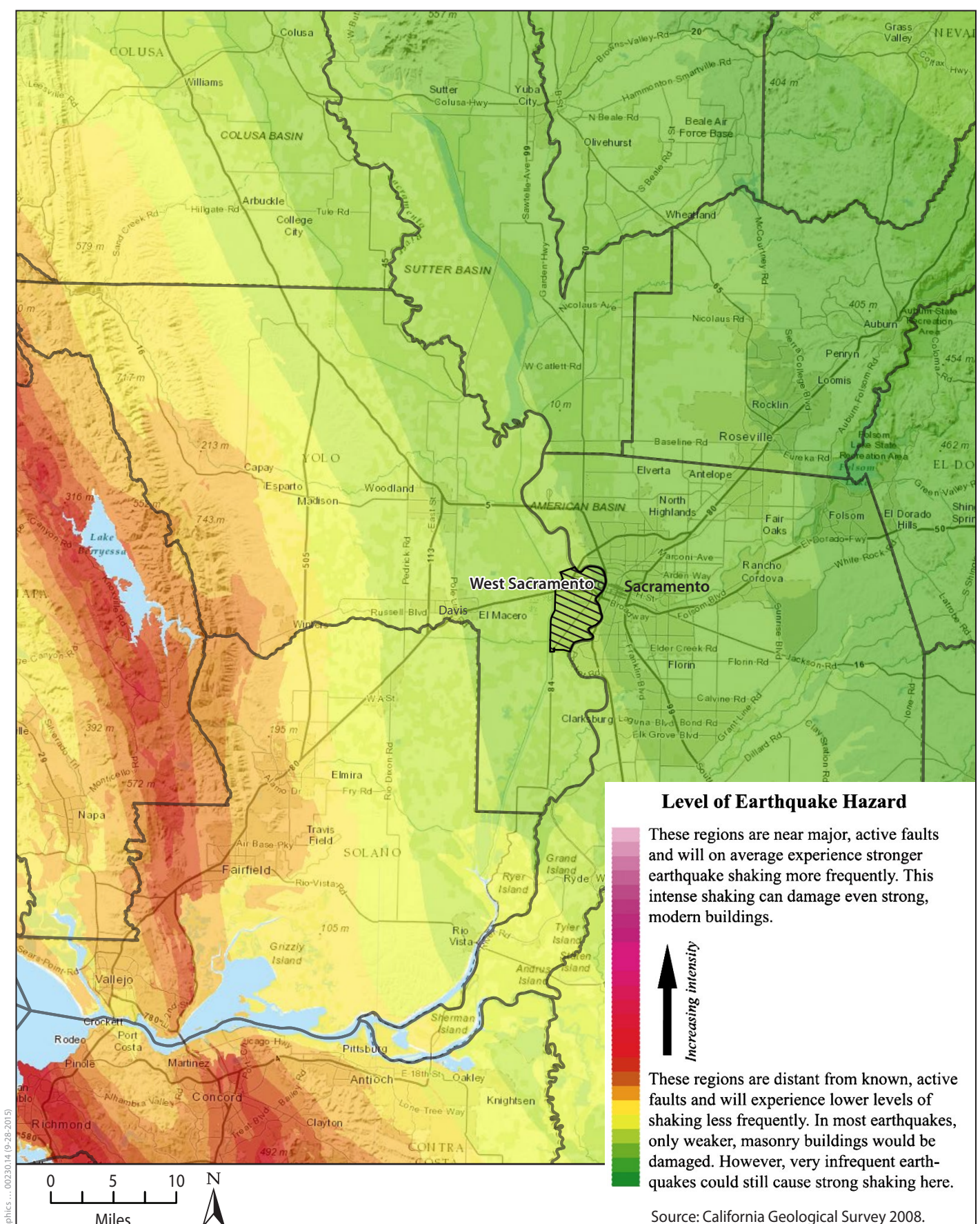


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**Figure 3.6-2**  
**Regional Fault Map**







**Figure 3.6-3**  
**Seismic Ground Shaking Potential**

However, the probabilistic peak horizontal ground acceleration values for the planning area is relatively low for California.

## Land Subsidence

Subsidence is the sinking of a large area of ground surface in which the material is displaced vertically downward, with little or no horizontal movement. Many areas in the Central Valley have experienced subsidence, most notably the San Joaquin Valley and San Joaquin–Sacramento River Delta (Faunt 2009:99). Subsidence occurs in three ways: as a result of groundwater overdraft or oil and gas withdrawal, compaction and oxidation of peat soils, and hydrocompaction (U.S. Geological Survey 2000:1–2). Land subsidence as a result of groundwater overdraft is discussed below. Land subsidence as a result of compaction/oxidation of peat soils and hydrocompaction are not significant concerns in the planning area and are not discussed.

Groundwater overdraft occurs when groundwater extraction results in compression of a clay bed within an aquifer to such an extent that it no longer expands to its original thickness after groundwater recharge. Clay beds often compress when wells pump groundwater and expand after pumping stops. Clay beds contain individual clay particles and small pores that fill with groundwater in saturated conditions. Groundwater maintains the pore space, expands the clay particles, and helps the bed maintain its thickness. A clay bed will yield a certain volume of groundwater (i.e., safe yield) without losing its storage capacity. If safe yield is not exceeded, the clay bed will compress and expand as the soil pores alternately fill with water and drain. This can lead to elastic land subsidence at the ground surface where elevation decreases when water is extracted then increases when water is recharged. If the safe yield of a clay bed is exceeded, however, its pores collapse and the surrounding clay particles settle in their place. When the clay particles settle, the clay bed is effectively thinned, resulting in permanent land subsidence at the ground surface.

Although the planning area is not currently experiencing subsidence (City of West Sacramento 2009), subsidence is occurring in other nearby areas in the Sacramento Valley (Department of Water Resources 2014:9).

## Soils

Twenty-four soil series occur in the planning area (Figure 3.6-4). Most of these soils are disturbed as a result of cultivation or construction.

Table 3.6-1 lists the soils found in the planning area and common building-related soil issues.

These issues, which are generally addressed through soil modification and site-specific engineering designs, are erosion factor, linear extensibility, risk of corrosion to concrete, and risk of erosion to steel. The Natural Resources Conservation Service (NRCS) (2015a and b) defines these issues as shown below.

- **Erosion factor K** is a measure of the susceptibility of a soil to erosion by water. Values of K range from 0.02 to 0.69, where the higher the K value, the more susceptible the soil is to erosion by water.

**Table 3.6-1. Soils That Occur in the Planning Area**


Soil Series	K Factor	Linear Extensibility (upper 12 inches only)		Corrosiveness		Septic System Rating
				Concrete	Steel	
Clear Lake soils flooded	.24	7.5	High	Moderate	High	Very limited
Lang sandy loam	.24	1.5	Low	Moderate	High	Very limited
Lang sandy loam deep	.24	1.5	Low	Moderate	High	Very limited
Lang silt loam	.43	2.1	Low	Moderate	High	Very limited
Merritt silty clay loam	.37	4.5	Moderate	Low	High	Very limited
Merritt silty clay loam deep	.37	4.5	Moderate	Moderate	High	Very limited
Merritt complex saline-alkali	.37	4.5	Moderate	High	High	Very limited
Myers clay	.24	7.5	High	Low	High	Very limited
Omni silty clay loam	.37	4.5	Moderate	Low	High	Very limited
Riz loam	.43	1.5	Low	High	High	Very limited
Riz loam flooded	.43	1.5	Low	High	High	Very limited
Sacramento silty clay loam, drained*	.28	4.5	Moderate	Low	High	Very limited
Sacramento silty clay loam	.28	4.5	Moderate	Low	High	Very limited
Sacramento soils flooded	.28	1.5	Low	Low	High	Very limited
Sycamore silt loam	.43	4.5	Moderate	Low	High	Very limited
Sycamore silty clay loam	.37	1.5	Low	Low	High	Very limited
Tyndall very fine sandy loam	.43	1.5	Low	Moderate	High	Very limited
Tyndall very fine sandy loam, deep	.43	1.5	Low	Moderate	High	Very limited
Valdez silt loam deep	.49	1.5	Low	Low	High	Very limited
Valdez complex flooded	.49	4.5	Moderate	Low	High	Very limited
Willows silty clay loam	.32	7.5	High	High	High	Very limited
Willows clay	.20	4.5	Moderate	High	High	Very limited
Willows soils flooded	.32	4.5	Moderate	High	High	Very limited
Yolo silty clay loam	.37	1.5	Low	Low	Moderate	Somewhat limited

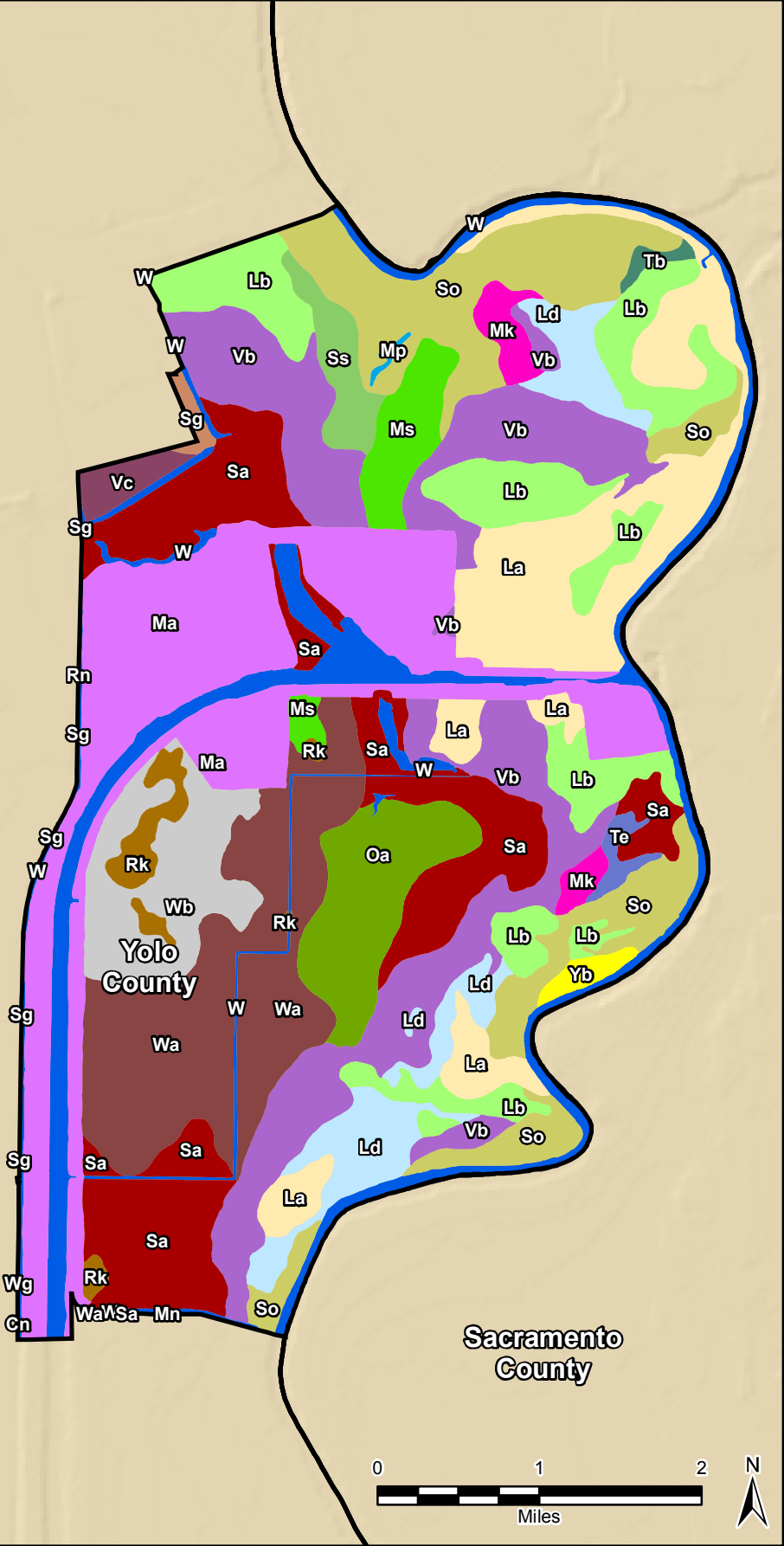
\* Values not available but assumed to be roughly the same as Sacramento silty clay loam.

- Linear extensibility** is a measure of how much a soil expands and contracts with changes in moisture content. Soils with a moderate to high linear extensibility, also known as expansive soils, do not provide a suitable substrate for construction without modification. Expansive soils generally have a high clay content. Values of linear extensibility range from 0 to 30, where 0–3 is low, 3–6 is moderate, 6–9 is high, and 9–30 is very high.
- Risk of corrosion to concrete** is a measure of the potential soil-induced electrochemical or chemical action that corrodes or weakens concrete. This measure is based mainly on the sulfate and sodium content, texture, moisture content, and acidity of the soil. Concrete that is installed across soil boundaries or soil layers is more susceptible to corrosion than concrete installed in one kind of soil.



Path: K:\Projects\_1\City\_of\_West\_Sacramento\00230\_14\_WSGF\Umapdoc\Fig\_3\_6-4\_Soils\_Map\_20160510.mxd; User: 35015; Date: 5/10/2016

- Legend**
-  Project Area
  - Soil Map Unit**
  -  Cn-Clear Lake soils, flooded
  -  La-Lang sandy loam
  -  Lb-Lang sandy loam, deep
  -  Ld-Lang silt loam
  -  Ma-Made land
  -  Mk-Merritt silty clay loam
  -  Mn-Merritt silty clay loam, deep
  -  Mp-Merritt complex, saline-alkali
  -  Ms-Myers clay
  -  Oa-Omni silty clay loam
  -  Rk-Riz loam
  -  Rn-Riz loam, flooded
  -  Sa-Sacramento silty clay loam
  -  Sg-Sacramento soils, flooded
  -  So-Sycamore silt loam
  -  Ss-Sycamore silty clay loam
  -  Tb-Tyndall very fine sandy loam
  -  Te-Tyndall very fine sandy loam, deep
  -  Vb-Valdez silt loam, deep
  -  Vc-Valdez complex, flooded
  -  W-Water
  -  Wa-Willows silty clay loam
  -  Wb-Willows clay
  -  Wg-Willows soils, flooded
  -  Yb-Yolo silty clay loam



Source: Soil Types, NRCS 2006



**Figure 3.6-4**  
**Soils Map**

- **Risk of corrosion to uncoated steel** is a measure of the potential soil-induced electrochemical or chemical action that corrodes or weakens uncoated steel. This measure is based mainly on soil moisture, particle-size distribution, acidity, and electrical conductivity of the soil. Steel that is installed across soil boundaries or soil layers is more susceptible to corrosion than the steel installed entirely within one kind of soil.
- **Septic system rating** is a measure of a soil's suitability for septic system installation, based on the extent to which a soil is limited by the soil features that affect the septic system use. *Very limited* indicates the soil has features that are unfavorable septic systems, and its limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. *Somewhat limited* indicates that the soil has features that are moderately favorable for septic system use, and the limitations can be overcome or minimized by special planning, design, or installation.

### Paleontological Resources

Paleontological sensitivity is a qualitative assessment based on the paleontological potential of the stratigraphic units present, the local geology and geomorphology, and other factors relevant to fossil preservation and potential yield. According to the Society of Vertebrate Paleontology (SVP) (2010), standard guidelines for sensitivity are (1) the potential for a geological unit to yield abundant or significant vertebrate fossils or to yield a few significant fossils, large or small, vertebrate, invertebrate, or paleobotanical remains; and (2) the importance of recovered evidence for new and significant taxonomic, phylogenetic, paleoecological, or stratigraphic data (Table 3.6-2).

Unlike archaeological sites, which are narrowly defined, paleontological sites are defined by the entire extent (both areal and stratigraphic) of a unit or formation. In other words, once a unit is identified as containing vertebrate or other rare fossils, the entire unit is a paleontological site (Society of Vertebrate Paleontology 2010:2). For this reason, the paleontological sensitivity of geologic units is described and analyzed broadly.

Most of the planning area is immediately underlain by Holocene dune sands, which are likely too young to contain fossils. According to the SVP, paleontological resources are considered to be older than approximately 5,000 years (i.e., older than middle Holocene) (Society of Vertebrate Paleontology 2010:11). The depth of these Holocene deposits is not known or the depth at which the middle Holocene occurs, but given the young age of these deposits and the degree to which they have been disturbed by cultivation and construction, fossils are not likely to occur in the upper 3 feet. In addition, there are no records of paleontological resources found in Holocene deposits in Yolo County (University of California, Berkeley Museum of Paleontology 2015a).

**Table 3.6-2. Paleontological Sensitivity Ratings**

Potential	Definition
High	Rock units from which vertebrate or significant invertebrate, plant, or trace fossils have been recovered are considered to have a high potential for containing additional significant paleontological resources. Paleontological potential consists of both (a) the potential for yielding abundant or significant vertebrate fossils or for yielding a few significant fossils, large or small, vertebrate, invertebrate, plant, or trace fossils and (b) the importance of recovered evidence for new and significant taxonomic, phylogenetic, paleoecologic, taphonomic, biochronologic, or stratigraphic data.
Undetermined	Rock units for which little information is available concerning their paleontological content, geologic age, and depositional environment are considered to have undetermined potential. Further study is necessary to determine if these rock units have high or low potential to contain significant paleontological resources.
Low	Reports in the paleontological literature or field surveys by a qualified professional paleontologist may allow determination that some rock units have low potential for yielding significant fossils. Such rock units will be poorly represented by fossil specimens in institutional collections, or based on general scientific consensus, will only preserve fossils in rare circumstances and the presence of fossils is the exception not the rule.
None	Some rock units, such as high-grade metamorphic rocks (e.g., gneisses and schists) and plutonic igneous rocks (e.g., granites and diorites), have no potential to contain significant paleontological resources. Rock units with no potential require neither protection nor mitigation measures relative to paleontological resources.

Source: Society of Vertebrate Paleontology 2010.

Underlying the Holocene deposits are the Pleistocene Modesto and Riverbank Formations (Wagner et al. 1991; Luhdorff & Scalmanini 2012), which are both known to be fossiliferous. California's Pleistocene sedimentary units—especially those that, like the Modesto and Riverbank Formations, record deposition in continental settings—are typically considered highly sensitive for paleontological resources because of the large number of recorded fossil finds in such units throughout the state. The University of California Berkeley Museum of Paleontology contains numerous records of fossils in both formations (University of California, Berkeley Museum of Paleontology 2015b, 2015c). Fossil species found in the Modesto Formation include horse (*Equus* sp.), mammoth (*Mammuthus* sp.), camel (*Camelops* sp.), bison (*Bison* sp.), and ground sloth (*Megalonyx jeffersoni*) (University of California, Berkeley Museum of Paleontology 2015b). In Yolo County, eight records of mammal and reptile fossils have been documented in the Modesto Formation. Fossil species found in the Riverbank Formation also include horses, mammoths, camels, and ground sloths, in addition to several canids (e.g., *Canis* spp. and *Vulpes* sp.), felids (*Smilodon* sp.), rodents (e.g., *Neotoma* and *Thomomys* sp.), and turtle (*Clemmys marmorata*) (University of California, Berkeley Museum of Paleontology 2015c). The Modesto and Riverbank Formations are therefore considered to be highly sensitive for paleontological resources.

## 3.6.2 Environmental Impacts

### Methods for Analysis

Evaluation of the geology, seismicity, and soils impacts in this section is based on information from published maps, reports, and other documents that describe the geologic, seismic, and soil conditions of the planning area, and on professional judgment. The analysis assumes that all development in the planning area would conform to the latest CBC standards, West Sacramento Municipal Code ordinances, and NPDES requirements.

The primary source of information used in developing the paleontological resources analysis is the paleontological database at the University of California, Berkeley. Effects on paleontological resources were analyzed qualitatively on a large-scale level, based on professional judgment and the SVP guidelines below.

SVP's *Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources* provides standard guidelines that are widely followed (Society of Vertebrate Paleontology 2010). These guidelines reflect the accepted standard of care for paleontological resources. The SVP guidelines identify two key phases in the process for protecting paleontological resources from project impacts.

- Assess the likelihood that the area contains significant nonrenewable paleontological resources that could be directly or indirectly affected, damaged, or destroyed as a result of the project.
- Formulate and implement measures to mitigate potential adverse impacts.

An important strength of SVP's approach to assessing potential impacts on paleontological resources is that the SVP guidelines provide some standardization in evaluating paleontological sensitivity. Table 3.6-3 defines the SVP's sensitivity categories for paleontological resources and summarizes SVP's recommended treatments to avoid adverse effects in each sensitivity category.

No new fieldwork, research, or engineering-level design was conducted for the preparation of this EIR.

**Table 3.6-3. Society of Vertebrate Paleontology's Recommended Treatment for Paleontological Resources**

Sensitivity Category	Mitigation Treatment
High or Undetermined	<p>An intensive field survey and surface salvage prior to earthmoving, if applicable.</p> <p>Monitoring by a qualified paleontological resource monitor of excavations.</p> <p>Salvage of unearthened fossil remains and/or traces (e.g., tracks, trails, burrows).</p> <p>Screen washing to recover small specimens, if applicable.</p> <p>Preliminary survey and surface salvage before construction begins.</p> <p>Preparation of salvaged fossils to a point of being ready for curation (i.e., removal of enclosing matrix, stabilization and repair of specimens, and construction of reinforced support cradles where appropriate).</p> <p>Identification, cataloging, curation, and provision for repository storage of prepared fossil specimens.</p> <p>A final report of the finds and their significance.</p>
Low or no	Rock units with low or no potential typically will not require mitigation measures to protect fossils.

Source: Society of Vertebrate Paleontology 2010.

## Thresholds of Significance

In accordance with Appendix G of the State CEQA Guidelines, the proposed project would be considered to have a significant effect if it would result in any of the conditions listed below.

- Exposure of people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving any of the following.
  - Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault. (Refer to Division of Mines and Geology Special Publication 42).
  - Strong seismic ground shaking.
  - Seismic-related ground failure, including liquefaction.
  - Landslides.
- Substantial soil erosion or the loss of topsoil.
- Location on a geologic unit or soil that is unstable or that would become unstable as a result of the project and potentially result in an onsite or offsite landslide or subsidence.
- Location on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property.
- Soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems in areas where sewers are not available for the disposal of wastewater.
- Direct or indirect destruction of a unique paleontological resource or site or unique geologic feature.

## Impacts and Mitigation Measures

### **Impact GEO-1: Exposure of people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving fault rupture (less than significant)**

If structures are located on or near an active fault, rupture of that fault could cause damage or destruction of the structure, resulting in injury, loss of life, or property damage. This would be a significant impact. However, there are no active faults in the planning area. In addition, Policy S-3.2 of Goal S-3 in the General Plan update requires that a geotechnical report be prepared and its mitigation measures be incorporated into the design. This policy is implemented through the regulation and development review process. The impact would be less than significant, and no mitigation is required.

### **Impact GEO-2: Exposure of people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving strong seismic ground shaking; seismic-related ground failure, including liquefaction; or landslides (less than significant)**

Construction in areas with potential to experience seismic-related ground failure, such as strong ground shaking, landsliding, and liquefaction, could expose people or structures to potential substantial adverse effects. If structures constructed under the updated General Plan were not properly designed and sited to withstand strong ground shaking conditions, these structures could

fail and cause harm to people or property in the immediate area. However, the policies of Goal S-3 address these issues. Policies S-3.1 and 3.2 require that new structures be designed to withstand seismic activity and that a geotechnical report be prepared and its mitigation measures be incorporated into the design. This policy is implemented through the regulation and development review process, which requires that all construction comply with the CBC. Policies S-3.3 to 3.6 address seismic issues related to existing unreinforced masonry structures: S-3.3 requires post-earthquake building replacement, reconstruction, and rehabilitation; S-3.4 requires that the City maintain an inventory of unreinforced masonry buildings in the city; S-3.5 prohibits increasing the intensity of use until the structure has been evaluated and any necessary retrofits completed; and S-3.6 enables the City to support owners in reinforcing structures. These policies are implemented through the regulation and development review process (S-3.3 and 3.5); the City's master plans, strategies, and programs (S-3.4); and the City's financing and budgeting (S-3.6). The General Plan update also specifically addresses seismic issues to ensure safety of critical facilities, utilities, gas lines, and levees in Policies S-3.7 through 3.10, respectively. These policies are implemented through the regulation and development review process (3.7 to 3.9) and inter-governmental coordination (3.10). This impact would be less than significant, and no mitigation is required.

**Impact GEO-3: Potential to result in substantial soil erosion or the loss of topsoil (less than significant)**

Ground-disturbing earthwork associated with projects conducted under the updated General Plan may increase erosion rates, potentially causing accelerated erosion. Construction activities would cause ground disturbance and vegetation removal at construction sites, exposing soil to rain and wind and potentially causing accelerated erosion, thereby resulting in significant impacts. However, the updated General Plan has two policies to address soil erosion: PFS-4.9 of Goal PFS-4, which imposes conditions on grading projects during the rainy season; and NCR-4.7 of Goal NCR-4, which requires compliance with the City's grading ordinance and NPDES permit, ensuring preparation of a SWPPP and issuance of a grading permit for all construction projects, as required by the Central Valley Water Board and the City's municipal code. These policies are implemented through the regulation and development review process, which requires that all construction comply with the CBC.

Compliance with the federal and local erosion-related regulations applicable to projects carried out under the General Plan update (i.e., the SWPPP that is developed for the site and the requirements of the City's municipal code) would ensure that construction activities do not result in significant erosion. This impact would be less than significant, and no mitigation is required.

**Impact GEO-4: Location on a geologic unit or soil that is unstable or that would become unstable as a result of the project and potentially result in an onsite or offsite landslide or subsidence (less than significant)**

In addition to the seismic-related ground failure described in Impact GEO-1, construction in areas with the potential to experience nonseismic-related landsliding caused by heavy precipitation or improper grading or cuts could also expose people or structures to potential substantial adverse effects. However, the planning area is fairly level; moreover, Policy S-3.2 of the General Plan update requires that a geotechnical report be prepared and its mitigation measures be incorporated into the design. This policy is implemented through the regulation and development review process, requiring that all construction comply with the CBC, which addresses engineered fills and cuts. This impact would be less than significant, and no mitigation is required.

Groundwater overdraft could cause subsidence, which could diminish the capacity of the aquifer and damage structures. This would be a significant impact. However, Policies NCR-5.1 to 5.3 of the General Plan update are designed to protect the City's groundwater resources: Policy NCR-5.1 encourages water conservation and efficiency and is implemented through inter-governmental coordination; Policy NCR-5.2 requires that the City protect the sustainability of groundwater resources for urban and agricultural uses and is implemented through the regulation and development review process; and Policy NCR-5.3 requires that new development preserve, where feasible, areas that provide important groundwater recharge and is implemented through the regulation and development review process.

**Impact GEO-5: Location on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property (less than significant)**

Expansive soils occur in the planning area, and structures built on expansive soils would be subject to the expansion and contraction of these soils, which could cause structural damage if the subsoil, drainage, and foundation are not properly engineered. However, soil sampling and treatment procedures for expansive soils, as well as other soil-related issues, are addressed by the CBC. Compliance with the CBC would create conditions suitable for construction. This impact would be less than significant, and no mitigation is required.

**Impact GEO-6: Presence of soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems in areas where sewers are not available for the disposal of wastewater (less than significant)**

Improperly located or designed septic systems could cause water quality issues, and most soils in the planning area are not suitable for use of septic tanks. Nevertheless, septic systems could be installed in portions of the planning area that have no public sewer. However, Policies NCR-4.3 and 4.4 in Goal NCR-4 of the General Plan update would limit construction of new septic systems and encourage the conversion of existing septic systems to public sewer service. In addition, septic system installations are subject to Yolo County regulation and permitting requirements that ensure proper operation of the system. The septic system's design depends on the permeability and other aspects of the soil in which it will be constructed. In areas where standard septic tank systems are not suitable, a licensed soil scientist would be required to design an alternative wastewater disposal system that can meet State and County requirements. This impact would be less than significant, and no mitigation is required.

**Impact GEO-7: Direct or indirect destruction of a unique paleontological resource or site or unique geologic feature (less than significant with mitigation)**

Although the surficial Holocene deposits in the planning area have a low sensitivity for paleontological resources, the underlying Pleistocene deposits of the Modesto and Riverbank Formations are highly sensitive for paleontological resources. If fossils are present where development is planned, they could be damaged by earth-disturbing activities during construction, such as excavation for foundations, placement of fills, trenching for utility systems, and grading for roads and staging areas. The more extensive and deeper the earth-disturbing activity, the greater the potential for damage to paleontological resources. The General Plan update does not specifically address paleontological resources, although it includes them in Policy NCR-9.1, *Significant Resource Protection*. Because there are no policies or practices identified to protect paleontological resources, such resources could be damaged or destroyed by future construction in the planning area. This

would constitute a significant impact. Implementation of Mitigation Measure GEO-7 would reduce this impact to a less-than-significant level.

### **Mitigation Measure GEO-7: Adopt new goal and policy to protect paleontological resources**

The City will add the following goal, policy, and implementation measures to the Natural and Cultural Resources Element of the updated General Plan.

**Goal NCR-10.** To preserve paleontological resources of scientific importance, when feasible

**NCR-10.1.** The City shall determine if paleontological resources are likely to be present. Prior to approval of a discretionary project that requires excavation deeper than 5 feet, a qualified paleontologist who meets the requirements set by the Society of Vertebrate Paleontology (2010) will determine, through literature and records research, the paleontological sensitivity of the geologic units affected by the project. If paleontological resources may be present, conditions will be added to the permit to monitor and salvage paleontological resources during ground-disturbing activities.

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## 3.7 Greenhouse Gas Emissions

This section discusses greenhouse gas (GHG) emissions and climate change. Criteria pollutants and air quality impacts are discussed in Section 3.3, *Air Quality*.

### 3.7.1 Existing Conditions

#### Regulatory Setting

##### Federal

Although there is currently no federal overarching law specifically related to climate change or the reduction of GHG, the U.S. Environmental Protection Agency (EPA) is developing regulations under the federal Clean Air Act (CAA) that may be adopted in the next 2 years pursuant to EPA's authority under the CAA. Foremost among recent developments have been the settlement agreements between EPA, several states, and nongovernmental organizations (NGOs) to address GHG emissions from electric generating units and refineries; the U.S. Supreme Court's decision in *Massachusetts v. EPA*; and EPA's "Endangerment Finding," "Cause or Contribute Finding," and Mandatory Reporting Rule. Although periodically debated in Congress, there is no federal legislation concerning limitations on GHG emissions. In *Coalition for Responsible Regulation, Inc., et al. v. EPA*, the United States Court of Appeals upheld EPA's authority to regulate GHG emissions under the CAA.

##### State

California has adopted statewide legislation addressing various aspects of climate change and GHG emissions mitigation. Much of this legislation establishes a broad framework for the state's long-term GHG reduction and climate change adaptation program. In the absence of federal regulations, control of GHGs is generally regulated at the state level and is typically approached by setting emission reduction targets for existing sources of GHGs, setting policies to promote renewable energy and increase energy efficiency, and developing statewide action plans. Summaries of key policies, regulations, and legislation at the state level that are relevant to the General Plan update are described below in chronological order.

##### **Executive Order S-03-05 (2005)**

Executive Order (EO) S-03-05 is designed to reduce California's GHG emissions to (1) 2000 levels by 2010, (2) 1990 levels by 2020, and (3) 80% below 1990 levels by 2050.

##### **Assembly Bill 1493—Pavley Rules (2002, Amendments 2009, 2012 rulemaking)**

Known as "Pavley I," Assembly Bill (AB) 1493 (California Health and Safety Code Section 42823) standards are the nation's first GHG standards for automobiles. AB 1493 requires the California Air Resources Board (ARB) to adopt vehicle standards that will lower GHG emissions from new light duty autos to the maximum extent feasible beginning in 2009. Additional strengthening of the Pavley standards (previously referred to as "Pavley II," now referred to as the "Advanced Clean Cars" measure) has been proposed for vehicle model years 2017–2025. Together, the two standards are expected to increase average fuel economy to roughly 43 miles per gallon by 2020, and to reduce

GHG emissions from the transportation sector in California by approximately 14%. In June 2009, EPA granted California's waiver request enabling the state to enforce its GHG emissions standards for new motor vehicles beginning with the current model year.

### **Senate Bills 1078/107 and Senate Bill X1-2 (2011)—Renewables Portfolio Standard**

Senate Bills (SBs) 1078 and 107,<sup>1</sup> California's Renewables Portfolio Standard (RPS), obligates investor-owned utilities (IOUs), energy service providers (ESPs), and Community Choice Aggregations (CCAs) to procure an additional 1% of retail sales per year from eligible renewable sources until 20% is reached, no later than 2010. The California Public Utilities Commission (CPUC) and California Energy Commission (CEC) are jointly responsible for implementing the program. SB X1-2 (2011)<sup>2</sup> set forth a longer range target of procuring 33% of retail sales by 2020.

### **Assembly Bill 32—California Global Warming Solutions Act (2006)**

AB 32 (Health and Safety Code Section 38500 et seq.) codified the state's GHG emissions target by requiring that the state's global warming emissions be reduced to 1990 levels by 2020. Since adoption of the act, ARB, CEC, CPUC, and the Building Standards Commission have been developing regulations that will help meet the goals of AB 32 and EO S-03-05. The 2008 *Climate Change Scoping Plan* for AB 32 (2008 Scoping Plan) identifies specific measures to reduce GHG emissions to 1990 levels by 2020, and requires ARB and other state agencies to develop and enforce regulations and other initiatives for reducing GHGs. Specifically, the 2008 Scoping Plan articulates a key role for local governments, recommending that they establish GHG reduction goals for both their municipal operations and the community consistent with those of the state. The first update to the 2008 Scoping Plan, the *First Update to the AB 32 Scoping Plan* (2014 First Update) was released in February 2014 and includes revised GHG reduction estimates based on updated statewide GHG inventories. The update also discusses the need for continued GHG reduction progress post-2020.

### **Executive Order S-01-07—Low Carbon Fuel Standard (2007)**

EO S-01-07 mandates that a statewide goal be established to reduce the carbon intensity of California's transportation fuels by at least 10% by 2020 and that a Low Carbon Fuel Standard (LCFS) for transportation fuels be established in California.<sup>3</sup> The EO initiates a research and regulatory process at ARB. Based on an implementation plan developed by the CEC, ARB will be responsible for implementing the LCFS. On December 29, 2011, a federal judge issued a preliminary injunction blocking enforcement of the LCFS, ruling that the LCFS violates the interstate commerce clause (Georgetown Climate Center 2012). ARB appealed this ruling in 2012, and on September 18, 2013, a 9<sup>th</sup> U.S. Circuit Court of Appeals panel upheld the LCFS, ruling that the program does not violate the Commerce Clause. ARB readopted the LCFS on September 15, 2015, in response to stakeholder feedback received during the legal challenges. The readopted regulation includes

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<sup>1</sup> Public Resources Code Sections 25620.1, 25740, 25470.5, 25741, 25742, 25743, 25744.5, 25746, 25751; and Public Utilities Code Sections 387, 399.11, 399.12, 399.13, 399.14, 399.15, 399.16, 635, and 2854.

<sup>2</sup> Fish and Game Code Section 705; Public Resources Code Sections 25519.5, 25740, 25740.5, 25741, 25741.5, 25742, 25746, 25747, and 25751; and Public Utilities Code Sections 399.11, 399.12, 399.13, 399.14, 399.15, 399.16, 399.17, 399.18, 399.19, 399.20, 399.26, 399.30, 399.31, 454.5, 910, 911, and 1005.1.

<sup>3</sup> ARB approved the LCFS on April 23, 2009, and the regulation became effective on January 12, 2010. The U.S. District Court for the Eastern District of California ruled in December 2011 that the LCFS violates the Commerce Clause of the U.S. Constitution. ARB appealed this ruling in 2012 and on September 18, 2013, a 9<sup>th</sup> U.S. Circuit Court of Appeals panel upheld the LCFS, ruling that the program does not violate the Commerce Clause, and remanded the case to the Eastern District.

additional cost containment measures, streamlines the application process for alternative fuels, and improves the process for earning credits for electric vehicles.

### **Senate Bill 375—Sustainable Communities Strategy (2008)**

SB 375<sup>4</sup> provides for a new planning process that coordinates land use planning, regional transportation plans (RTPs), and funding priorities to help California meet the GHG reduction goals established in AB 32. SB 375 requires regional transportation plans, developed by metropolitan planning organizations (MPOs), to incorporate a *sustainable communities strategy* (SCS). The goal of the SCS is to reduce regional vehicle miles traveled (VMT) through land use planning and consequent transportation patterns. ARB released the regional targets in September 2010.

The Sacramento Area Council of Governments (SACOG) is the MPO for the Sacramento region, which includes West Sacramento. SACOG adopted its SB 375-compliant *Metropolitan Transportation Plan/Sustainable Communities Strategy* (MTP/SCS) in February 2016. SB 375 also includes provisions for streamlined CEQA review for certain types of mixed-use and transit priority projects that meet specific criteria established by SB 375. According to State CEQA Guidelines Section 15183.5, quantified plans, such as the MTP/SCS EIR, “may be used in the cumulative impacts analysis of later projects.” More specifically, “[l]ater project-specific environmental documents may tier from and/or incorporate by reference” the “programmatic review” conducted for the GHG reduction plan. Section 15183.5 also states:

An environmental document that relies on a greenhouse gas reduction plan for a cumulative impacts analysis must identify those requirements specified in the plan that apply to the project, and, if those requirements are not otherwise binding and enforceable, incorporate those requirements as mitigation measures applicable to the project.

Environmental documents prepared for projects that are consistent with the MTP/SCS EIR are not required to reference, describe, or discuss the following in their GHG impact analysis.

1. Growth-inducing impacts.
2. A reduced-density alternative to address impacts on transportation or climate change of increased car and truck VMT induced by the project.
3. Any project-specific or cumulative impacts from cars and light-duty truck trips generated by the project on global warming or the regional transportation network.

The General Plan update does not qualify for streamlining under SB 375 because it does not meet the mixed-use project requirement of at least 75% of total building square footage for residential use (Sacramento Area Council of Governments 2016). However, future mixed-use or transit-priority projects under the General Plan update that are consistent with the MTP/SCS may qualify for CEQA streamlining and tier from the MTP/SCS EIR for their project-level GHG emissions analysis.

### **California Energy Efficiency Standards for Residential and Nonresidential Buildings—Green Building Code (2011), Title 24 Update (2014)**

The Green Building Standards Code (CALGreen) applies to the planning, design, operation, construction, use, and occupancy of newly constructed buildings and requires the installation of energy- and water-efficient indoor infrastructure for all new projects beginning after January 1,

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<sup>4</sup> California Government Code Sections 14522.1, 14522.2, 65080, 65080.01, 65400, 65583, 65584.01, 65584.02, 65584.04, 65587, 65588, and Public Resources Code Sections 2161.3, 21155, 21159.28.

2011. CALGreen also requires newly constructed buildings to develop a waste management plan and divert at least 50% of the construction materials generated during project construction.

Administrative regulations for CALGreen Part 11 and the California Building Energy Efficiency Standards were adopted in 2013 and took effect on January 1, 2014. The 2013 Building Energy Efficiency Standards are 25% more efficient than previous standards for residential construction. Part 11 also established voluntary standards that became mandatory in the 2010 edition of the code, including planning and design for sustainable site development, energy efficiency, water conservation, material conservation, and internal air contaminants. The standards offer builders better windows, insulation, lighting, ventilation systems, and other features that reduce energy consumption in homes and businesses.

The next set of energy efficiency standards will be the 2016 Building Energy Efficiency Standards, which are currently undergoing the rule-making process. These are expected to be adopted in 2016 and to take effect on January 1, 2017. According to CEC, single-family homes built to the 2016 standards will use about 28% less energy for lighting, heating, cooling, ventilation, and water heating than those built to the 2013 standards. While the 2016 standards do not require zero net energy (ZNE) buildings, the 2019 standards are expected to take the final step toward achieving ZNE for newly constructed residential buildings throughout California. Later standards are expected to require ZNE for newly constructed commercial buildings.

### **State CEQA Guidelines (2010)**

The State CEQA Guidelines require lead agencies to describe, calculate, or estimate the amount of GHG emissions that would result from a project. Moreover, the State CEQA Guidelines emphasize the necessity to determine the potential climate change effects of a project and propose mitigation as necessary. The State CEQA Guidelines confirm the lead agency's discretion to determine the appropriate significance threshold, but require the preparation of an EIR if "there is substantial evidence that the possible effects of a particular project are still cumulatively considerable notwithstanding compliance with adopted regulations or requirements" (Section 15064.4).

State CEQA Guidelines Section 15126.4 includes considerations for lead agencies related to feasible mitigation measures to reduce GHG emissions. Such measures may include, among others, measures in an existing plan or mitigation program for the reduction of emissions that are required as part of the lead agency's decision; implementation of project features, project design, or other measures that are incorporated into the project to substantially reduce energy consumption or GHG emissions; and offsite measures, including offsets that are not otherwise required.

The California Supreme Court has held that the Scoping Plan's statewide goal of reducing GHG emissions by 29% from business as usual to meet AB 32's target can be used as a threshold of significance for GHG emissions (*Center for Biological Diversity v. Department of Fish and Wildlife* (2015) 62 Cal.4<sup>th</sup> 204) (henceforth referred to as *Newhall Ranch*). However, if applied to a local project, the EIR must provide supporting evidence that the project emissions relate to the Scoping Plan. The Court stated, in overturning *Newhall Ranch's* application of the Scoping Plan goal to an individual project:

At bottom, the [Newhall Ranch] EIR's deficiency stems from taking a quantitative comparison method developed by the Scoping Plan as a measure of the greenhouse gas emissions reduction effort required by the state as a whole, and attempting to use that method, without consideration of any changes or adjustments, for a purpose very different from its original design: To measure the

efficiency and conservation measures incorporated in a specific land use development proposed for a specific location.

### **Executive Order B-30-15 (2015)**

EO B-30-15 established a medium-term goal for 2030 of reducing GHG emissions by 40% below 1990 levels and requires ARB to update its current AB 32 Scoping Plan to identify the measures to meet the 2030 target. The EO supports EO S-03-05, described above, but is currently only binding on state agencies. However, there are current (2015/2016) proposals (SB 32) at the state legislature to establish a statutory target for 2030.

### **Senate Bill 350—De Leon (Clean Energy and Pollution Reduction Act of 2015) (2015)**

SB 350 was approved by the California legislature in September 2015 and signed by Governor Brown in October 2015. Its key provisions are to require the following by 2030: (1) a renewables portfolio standard of 50% and (2) a doubling of energy efficiency (electrical and natural gas) by 2030, including improvements to the efficiency of existing buildings. These mandates will be implemented by future actions of CPUC and CEC.

## **Local**

### **Yolo-Solano Air Quality Management District**

The Yolo-Solano Air Quality Management District (YSAQMD) and a committee of air districts in the Sacramento Region,<sup>5</sup> have developed draft thresholds for evaluating GHG emissions from new stationary source and land development projects.<sup>6</sup> The goal of the thresholds is to capture at least 90% of GHG emissions from new stationary sources and land development projects. While the Sacramento Metropolitan Air Quality Management District (SMAQMD) formally adopted the mass emissions thresholds in November 2014, they are still considered draft in YSAQMD.

### **City of West Sacramento**

The City released a draft Climate Action Plan (CAP) in August 2010. The draft CAP included policies and strategies to reduce community and municipal GHG emissions. As discussed in Chapter 2, *Project Description*, the CAP has been updated as part of the proposed project. The updated CAP has been prepared consistent with State CEQA Guidelines Section 15183.5, and once adopted, it will enable streamlined CEQA review for future projects that are consistent with the CAP. The CAP is discussed further in Section 3.7.2, *Environmental Impacts*.

## **Environmental Setting**

The specific chemical properties of GHGs enable them to become well mixed within the atmosphere and transported over long distances. Consequently, unlike other resource areas that are primarily concerned with localized project impacts (e.g., within 1,000 feet of the project site), the global nature of climate change requires a broader analytic approach. The following subsections provide

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<sup>5</sup> Air districts in the region comprise YSAQMD, Sacramento Metropolitan Air Quality Management District, El Dorado County Air Quality Management District, Feather River Air Quality Management District, and Placer County Air Pollution Control District.

<sup>6</sup> Please note that once fully constructed, the project will not be a land use development or stationary source project. As such, the Sacramento Regional GHG guidance does not directly apply to the General Plan update.

background information on global climate change and principal GHGs associated with implementation of the General Plan update. Potential impacts of climate change on the study area are also identified.

## Greenhouse Effect and Climate Change

The phenomenon known as the *greenhouse effect* keeps the atmosphere near Earth's surface warm enough for the successful habitation of humans and other life forms. The greenhouse effect is created by sunlight that passes through the atmosphere. Some of the sunlight striking Earth is absorbed and converted to heat, which warms the surface. The surface emits a portion of this heat as infrared radiation, some of which is re-emitted toward the surface by GHGs. Human activities that generate GHGs increase the amount of infrared radiation absorbed by the atmosphere, thus enhancing the greenhouse effect and amplifying the warming of Earth (Center for Climate and Energy Solutions 2016).

Increases in fossil fuel combustion and deforestation have exponentially increased concentrations of GHGs in the atmosphere since the Industrial Revolution. Rising atmospheric concentrations of GHGs in excess of natural levels result in increasing global surface temperatures—a phenomenon commonly referred to as *global warming*. Higher global surface temperatures, in turn, result in changes to Earth's climate system, including increased ocean temperature and acidity, reduced sea ice, variable precipitation, and increased frequency and intensity of extreme weather events (Intergovernmental Panel on Climate Change 2007). Large-scale changes to Earth's system are collectively referred to as *climate change*.

The Intergovernmental Panel on Climate Change (IPCC) was established by the World Meteorological Organization and United Nations Environment Programme to assess scientific, technical, and socioeconomic information relevant to the understanding of climate change, its potential impacts, and options for adaptation and mitigation. The IPCC estimates that the average global temperature will rise by 0.3–4.8°C (0.5–8.6°F) during the twenty-first century (Intergovernmental Panel on Climate Change 2013). Large increases in global temperatures could have substantial adverse effects on the natural and human environments worldwide and in California.

## Greenhouse Gases

As noted above, the principle anthropogenic (human-made) GHGs contributing to global warming are carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), and fluorinated compounds, including sulfur hexafluoride (SF<sub>6</sub>), hydrofluorocarbons (HFCs), and perfluorinated carbons (PFCs). Water vapor, the most abundant GHG, is not included in this list because its natural concentrations and fluctuations far outweigh its anthropogenic sources. Principal characteristics surrounding the principle anthropogenic GHGs are discussed below.

- **CO<sub>2</sub>** enters the atmosphere through the burning of fossil fuels (oil, natural gas, and coal), solid waste, trees and wood products; respiration; and as a result of other chemical reactions (e.g., manufacture of cement). CO<sub>2</sub> is also removed from the atmosphere (or *sequestered*) when it is absorbed by plants as part of the biological carbon cycle.
- **CH<sub>4</sub>** is emitted during the production and transport of coal, natural gas, and oil. Methane emissions also result from livestock and other agricultural practices and by the decay of organic waste in municipal solid waste landfills.



- **N<sub>2</sub>O** is emitted during agricultural and industrial activities, as well as during combustion of fossil fuels and solid waste.
- **SF<sub>6</sub>**, an anthropogenic chemical, is used as an electrical insulating fluid for power distribution equipment, in the magnesium industry, in semiconductor manufacturing, and as a tracer chemical for the study of oceanic and atmospheric processes.
- **HFCs** are anthropogenic chemicals used in commercial, industrial, and consumer products and have high global warming potential (GWP). HFCs are generally used as substitutes for ozone-depleting substances in automobile air conditioners and refrigerants.
- **PFCs** are typically emitted as byproducts of industrial and manufacturing processes. They were originally introduced as alternatives to ozone-depleting substances.

Methods have been set forth to describe emissions of GHGs in terms of a single gas to simplify reporting and analysis. The most commonly accepted method to compare GHG emissions is the GWP methodology defined in the IPCC reference documents. The IPCC defines the GWP of various GHG emissions on a normalized scale that recasts all GHG emissions in terms of carbon dioxide equivalent (CO<sub>2</sub>e), which compares the gas in question to that of the same mass of CO<sub>2</sub> (CO<sub>2</sub> has a global warming potential of 1 by definition).

Table 3.7-1 lists the global warming potential of relevant GHGs, their lifetimes, and abundances in the atmosphere.

**Table 3.7-1. Atmospheric Lifetimes and Global Warming Potentials of Key Greenhouse Gases**

Greenhouse Gases	GWP (100 years)	Lifetime (years)	2014 Atmospheric Abundance
CO <sub>2</sub>	1	50–200	400 ppm
CH <sub>4</sub>	25	9–15	1,834 ppb
N <sub>2</sub> O	298	121	328 ppb
HFC-23	14,800	222	18 ppt
HFC-134a	1,430	13.4	84 ppt
HFC-152a	124	1.5	3.9 ppt
SF <sub>6</sub>	22,800	3,200	8.6 ppt

Sources: Myhre et al. 2013; Blasing 2016; Intergovernmental Panel on Climate Change 2007.

CH<sub>4</sub> = methane.

CO<sub>2</sub> = carbon dioxide.

N<sub>2</sub>O = nitrous oxide.

ppb = parts per billion.

ppm = parts per million.

## Greenhouse Gas Emissions Inventories

A GHG inventory is a quantification of all GHG emissions and sinks within a selected physical or economic boundary. GHG inventories can be performed on a large scale (e.g., for global and national entities) or on a small scale (e.g., for a particular building or person). Although many processes are difficult to evaluate, several agencies have developed tools to quantify emissions from certain sources.

Table 3.7-2 outlines the most recent global, national, and statewide GHG inventories.

**Table 3.7-2. Global, National, and State GHG Emissions Inventories**

Emissions Inventory	CO <sub>2</sub> e (metric tons)
2010 IPCC Global GHG Emissions Inventory	52,000,000,000
2013 EPA National GHG Emissions Inventory	6,673,000,000
2013 ARB State GHG Emissions Inventory	459,300,000

Sources: Intergovernmental Panel on Climate Change 2014; U.S. Environmental Protection Agency 2015a; California Air Resources Board 2015.

The City has quantified GHGs generated by the community in 2011<sup>7</sup> to identify existing emissions sources and the magnitude of their emissions (Table 3.7-3). The inventory indicates that in 2011, West Sacramento residents and businesses generated approximately 447,387 metric tons CO<sub>2</sub>e. The transportation sector represents the largest source of community emissions (48%), followed by building energy consumption (36%).

**Table 3.7-3. West Sacramento 2011 Community Greenhouse Gas Emissions Inventory (metric tons CO<sub>2</sub>e)**

Emission Sector	2011 Inventory	Percent of Inventory
Building Energy	159,038	36%
Onroad Transportation	216,228	48%
Offroad Vehicles and Equipment	13,800	3%
Solid Waste Generation	23,475	5%
Water Consumption	1,384	0%
Wastewater Treatment	16,056	4%
Agriculture	265	0%
Refrigerants	17,140	4%
<b>Total</b>	<b>447,387</b>	<b>100%</b>
<i>Emissions presented for informational purposes</i>		
Stationary Sources <sup>a</sup>	590,912	-

Source: Draft CAP.

<sup>a</sup> Stationary source emissions were not included because the City has limited jurisdictional control over stationary sources, and large stationary point source emissions are regulated by the State of California (under AB 32 through cap-and-trade) and through the EPA (under the Clean Air Act) for GHG emissions. Thus, for the larger stationary point sources, local regulation of such sources (as part of the CAP) can be duplicative of state and federal authority.

<sup>7</sup> The Draft CAP was begun prior to issuance of the NOP for the General Plan Update EIR. Accordingly, the CAP base year and existing conditions for the GHG analysis are 2011. While this differs from the existing year (2014) evaluated in other resource chapters (e.g., see Chapter 3.2, *Air Quality*), the magnitude of overall emissions between 2011 and 2014 is not expected to differ substantially, as limited growth experienced by the City between 2011 and 2014 would have marginal effects to emissions.

## Potential Effects of Climate Change in California and in the Project Area

Even with the efforts of municipalities throughout the state, a certain amount of climate change is inevitable because of existing and unavoidable future GHG emissions. With respect to the greater Sacramento region, including West Sacramento, climate change effects are expected to result in the following conditions.

- A hotter and drier climate, with average annual temperatures increasing by 3.9–6.5°F in Yolo County by 2090, relative to baseline conditions (1961–1990) (California Energy Commission 2016).
- Snowpack reduction in the Sierra Nevada by as much as 25–40%, relative to midcentury conditions, by 2050 (California Department of Water Resources 2009). Changes in snowfall and snow accumulation could reduce water supplies for all end users throughout the planning area.
- Increased frequency and intensity of winter storm events that could affect peak stream flows and increase flooding as large amounts of runoff move over pavement and other built surfaces. Although modeling results can vary, climate scientists predict an increase in warmer temperatures and months (California Energy Commission 2012). Changes in precipitation patterns may amplify the existing flood risk in the planning area.
- Changes in growing season conditions and species distribution (PRBO Conservation Science 2011).
- Increased heat and decreased air quality, with the result that public health will be placed at risk, and native plant and animal species may be lost (PRBO Conservation Science 2011).

### 3.7.2 Environmental Impacts

#### Methods for Analysis

Impacts of the General Plan update on GHGs from operations were assessed using emissions data from the Draft CAP. Construction emissions were assessed qualitatively because of the paucity of data for this planning-level document.

#### Thresholds of Significance

Climate change is a global problem and GHGs are global pollutants, unlike criteria air pollutants (such as ozone precursors), which are primarily pollutants of regional and local concern. Given their long atmospheric lifetimes (Table 3.7-1), GHGs emitted by countless sources worldwide accumulate in the atmosphere. No single emitter of GHGs is large enough to trigger global climate change on its own. Rather, climate change is the result of the individual contributions of countless past, present, and future sources. Therefore, GHG impacts are inherently cumulative.

In accordance with Appendix G of the State CEQA Guidelines, the proposed project would be considered to have a significant effect if it would result in any of the conditions listed below.

- Generation of GHG emissions, either directly or indirectly, that may have a significant impact on the environment.
- Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs.

The California Supreme Court's Newhall Ranch decision confirmed that there are multiple potential pathways for evaluating GHG emissions consistent with CEQA, depending on the circumstances of a given project. (*Center for Biological Diversity v. Department of Fish and Wildlife* (2015) 62 Cal.4<sup>th</sup> 204). The decision also identified the need to analyze both near-term and post-2020 emissions, as applicable, stating that an "EIR taking a goal-consistency approach to CEQA significance may in the near future need to consider the project's effects on meeting longer term emissions reduction targets." While not legally binding on local land use agencies, EO B-30-15 has set forth an interim reduction target to reduce GHG emissions by 40% below 1990 levels by 2030, and EO S-03-05 has set forth a long-term reduction target to reduce GHG emissions by 80% below 1990 levels by 2050 (see Section 3.6.1, *Existing Conditions*). There is also proposed state legislation that would adopt a binding interim (2030) GHG target.<sup>8</sup>

Given the recent legislative attention and judicial action<sup>9</sup> regarding post-2020 goals and the scientific evidence that additional GHG reductions are needed through 2050 to stabilize CO<sub>2</sub> concentrations, the Association of Environmental Professionals' (AEP) Climate Change Committee (2015) recommended in its *Beyond 2020: The Challenges of Greenhouse Gas Reduction Planning by Local Governments in California* (Beyond 2020) white paper that CEQA analyses for most land use development projects can continue to rely on current thresholds for the immediate future,<sup>10</sup> but that long-term projects should consider "post-2020 emissions consistent with 'substantial progress' along a post-2020 reduction trajectory toward meeting the 2050 target." The Beyond 2020 white paper further recommends that the "significance determination...should be based on consistency with 'substantial progress' along a post-2020 trajectory." Accordingly, project-related impacts in both 2020 and at full build (2035) are considered in this analysis using the threshold concepts summarized below.

### **Near-Term (2020) Operational Emissions**

The Newhall Ranch decision affirmed that the AB 32 Scoping Plan encourages the use of adopted local GHG reduction plans, and consistency with a geographically specific GHG reduction plan, or CAP, can relieve some of the burden taken on by local governments in analyzing the cumulative contribution of project-level GHG emissions. Consequently, if a project is consistent with a local CAP and that CAP is consistent with AB 32 and future GHG targets, then the project would be considered consistent with statewide GHG reduction goals for 2020.

The AB 32 Scoping Plan, which was originally adopted in 2008, provides a roadmap for meeting AB 32's reduction target and recommends a complementary reduction goal for local governments of 15% below current emissions levels. However, subsequent to the development of the AB 32 Scoping Plan, ARB released updated statewide emissions data that reflect the effect of the recent economic recession. The updated inventories indicate that a 10–11% reduction below current levels by 2020 is now needed to achieve the AB 32 target as opposed to the previous estimate of a 15% reduction (California Air Resources Board 2015).

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<sup>8</sup> The 2030 target of 40% below 1990 levels may be adopted in legislation per the proposed SB 32 (Pavley), which is expected to be considered during the 2016 legislative term.

<sup>9</sup> See the California Appellate Court, 4<sup>th</sup> District ruling in *Sierra Club vs. County of San Diego* (2014) 231 Cal.App.4<sup>th</sup> 1152.

<sup>10</sup> With the notable exception of the "percent below Business as Usual" approach under the recent Supreme Court Newhall Ranch ruling as described above.

As discussed above, the City has prepared a CAP as part of the General Plan update. The CAP includes a GHG reduction target of 20% below 2011 levels by 2020. Near-term (2020) emissions are therefore evaluated by examining consistency of the project, which includes the CAP, with the recommendations in the AB 32 Scoping Plan for municipalities to support the overall AB 32 reduction targets. If the project is consistent with AB 32, then near-term (2020) emissions would be less than significant.

### **Full-Build (2035) Emissions**

The City's CAP focuses on reducing community emissions consistent with the 2020 statewide GHG targets identified under AB 32. While the framework established by the CAP will continue to support GHG reductions beyond 2020, it does not establish long-term targets. Likewise, there is no current statewide GHG reduction plan that extends beyond 2020.<sup>11</sup>

While there are no local or state plans for reducing emissions beyond 2020, the AEP Climate Change Committee recommends that CEQA GHG analyses evaluate project emissions in light of the trajectory of state climate change legislation and assess their "substantial progress" toward achieving long-term reduction targets identified in available plans, legislation, or EOs. Consistent with AEP Climate Change Committee recommendations, full-build (2035) GHG impacts are analyzed in terms of whether the project would impede "substantial progress" toward meeting the reduction targets identified in EO B-30-15 and EO S-03-05.

This EIR uses a 2035 efficiency threshold to assess the project's potential to impede "substantial progress" toward meeting the executive order targets. The efficiency threshold represents the rate of emission reductions needed for the City to achieve a fair share of GHG reductions. A simple efficiency threshold can be calculated by dividing statewide GHG emissions by the sum of statewide jobs and residents.<sup>12</sup> However, not all statewide emission sources are present in the planning area (e.g., mining). Accordingly, consistent with the concerns raised in the Newhall Ranch decision regarding the correlation between state and local conditions, the 1990 statewide inventory was modified to exclude all sources not applicable to the West Sacramento planning area.

Table 3.7-4 summarizes the 1990 statewide inventory by sector and the adjusted 1990 inventory that was calculated to support the General Plan update EIR threshold. The calculated value is the difference between the total 1990 statewide inventory for the sector and the amount omitted from the inventory because all or a portion of that sector is not applicable to the planning area.

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<sup>11</sup> EO B-30-15 requires ARB to update the Scoping Plan to include a plan to achieve the 2030 target; this update is expected in late 2016.

<sup>12</sup> The sum of jobs and residents is called the "service population"; a project's service population is defined as the people that work and live within the project area.

**Table 3.7-4. 1990 Statewide Inventory and Adjusted 1990 Inventory for West Sacramento General Plan Update EIR (Million Metric Tons CO<sub>2</sub>e)**

Main Sector	1990 Statewide Inventory <sup>a</sup>	Adjusted 1990 Inventory <sup>b</sup>	Omitted from Statewide Inventory <sup>c</sup>		Notes
			Emissions	Percent	
Agriculture & forestry	19	5	14	72	Excluded cattle, livestock, and vineyards
Commercial	14	14	0	0	All included
Electricity generation (imports)	62	62	0	0	All included
Electricity generation (in state)	49	49	0	0	All included
Industrial	94	33	61	65	Excluded emissions from mining, oil & gas, petroleum refining, and metal, pulp & paper, textile, and stone and clay manufacturing
Not specified	1	1	0	0	All included
Residential	30	30	0	0	All included
Transportation	151	151	0	0	All included
Wastewater treatment	4	4	0	0	All included
Landfills	7	7	0	0	All included
<b>Total</b>	<b>431</b>	<b>356</b>	<b>74</b>	<b>17%</b>	-

<sup>a</sup> California Air Resources Board 2007.

<sup>b</sup> Represents the difference between the 1990 statewide inventory and amount omitted.

<sup>c</sup> Emissions not applicable to the City of West Sacramento.

Since the project horizon year is 2035, the threshold was calculated based on the adjusted 1990 inventory and a linear interpolation of the EO reduction goals. The resulting 2035 efficiency threshold is 2.7 metric tons CO<sub>2</sub>e per service population and was calculated using Equations 3.7-1 and 3.7-2.

**Equation 3.7-1**

$$\text{Efficiency Threshold} = \frac{2035 \text{ Emissions Goal}}{(2035 \text{ Population} + 2035 \text{ Employment})}$$

Where:

- Efficiency Threshold = Average emissions efficiency: 2.7 metric tons CO<sub>2e</sub> per service population
- 2035 Inventory Goal = 50% below adjusted 1990 inventory: 178.1 million metric tons CO<sub>2e</sub> (linear interpolation of EO goals; see Equation 3.7-2)
- 2035 Population = Statewide population in 2035: 45.7 million (California Department of Finance 2014)
- 2035 Employment = Adjusted<sup>13</sup> statewide jobs in 2035: 19.2 million (California Economic Forecast 2015; California Employment Development Department 2015)

**Equation 3.7-2**

$$2035 \text{ Inventory Goal} = 2030 \text{ Goal} + (2050 \text{ Goal} - 2030 \text{ Goal}) * \frac{(2035 - 2030)}{(2050 - 2030)}$$

Where:

- 2035 Inventory Goal = 50% below adjusted 1990 inventory: 178.1 million metric tons CO<sub>2e</sub>
- 2030 Goal = 40% below adjusted 1990 inventory: 213.8 million metric tons CO<sub>2e</sub> (per EO B-30-15)
- 2050 Goal = 80% below adjusted 1990 inventory: 71.3 million metric tons CO<sub>2e</sub> (per EO S-03-05)

Based on the above analysis, the proposed project must achieve an average emissions efficiency of 2.7 metric tons CO<sub>2e</sub> per service population at full build (2035). Emissions in excess of 2.7 metric tons CO<sub>2e</sub> per service population may conflict with the trajectory of long-term GHG reduction goals, as identified by EO B-30-15 and EO S-03-05, and the project's cumulative contribution of long-term GHG emissions would be considered significant.

**Construction Emissions**

The draft Sacramento regional thresholds currently propose evaluating construction emissions against a 1,100 metric ton CO<sub>2e</sub> emissions threshold. Since construction emissions are short term, using a threshold based on long-term operational emissions provides a conservative assessment of

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<sup>13</sup> The 1990 statewide inventory was adjusted to remove emissions associated with those sources that do not occur in the planning area (Table 3.7-4). The statewide jobs forecast was likewise adjusted to remove jobs within the statewide economy that are not provided by the planning area. In the "Agriculture" sector, this includes all jobs associated with "grape processing" and "animal production and aquaculture". In the "Industrial" sector, this includes all jobs associated with "mining and logging," "oil & gas extraction," and "textile," "apparel," and "paper" manufacturing (based on 1990–2015 historical average) (California Employment Development Department 2015). Jobs in the "tobacco manufacturing" and "stone, clay, glass & cement" emissions categories could not be disaggregated from larger labor categories. Accordingly, all jobs in these categories were conservatively included in the calculation.

construction impacts. Accordingly, annual construction emissions would be considered significant if they exceed 1,100 metric tons CO<sub>2</sub>e.

## Impacts and Mitigation Measures

### **Impact GHG-1: Generation of GHG emissions, either directly or indirectly, that may have a significant impact on the environment (significant and unavoidable)**

#### ***Construction***

Construction associated with the General Plan update would result in the temporary generation of CO<sub>2</sub>, CH<sub>4</sub>, and N<sub>2</sub>O. Emissions would originate from mobile and stationary construction equipment exhaust and employee and haul truck vehicle exhaust. Construction-related emissions would vary substantially depending on the level of activity, length of the construction period, specific construction operations, types of equipment and number of personnel.

The General Plan update does not propose any specific development projects, but construction would occur as buildout of the planning area proceeds under the proposed General Plan update. The actual level of construction activities that would take place with implementation of the General Plan update is currently unknown. Changes in the land use designations of certain areas could result in more intense construction activities under the General Plan update than would take place under the current General Plan (e.g., the development of an area previously zoned for a single-family residence that is zoned for high-rise apartments under the updated General Plan). Because specific details of future construction under the General Plan update are not known, emissions from construction activities associated with buildout of the planning area cannot be quantified and are evaluated qualitatively for purposes of this analysis.

Future development would be required to comply with policies described in the proposed General Plan update. Policies from the General Plan Update that would reduce GHG emissions from construction are listed below.

**S-5.3 New Development.** The City shall use the CEQA process to ensure development projects incorporate feasible mitigation measures to reduce construction and operational air quality emissions, and consult with the Yolo-Solano Air Quality Management District early in the development review process.

**S-5.9 Mitigation Measures.** The City shall maximize the use of current air quality mitigation measures, including offsets, into the construction and design of new development to aid in the reduction of regional air pollution emissions.

**S-5.10 Truck Idling.** The City shall enforce State idling laws for commercial vehicles, including delivery and construction vehicles. The City shall also encourage the use of electrical outlets in loading zones, including signage, to reduce vehicle idling associated with operating refrigeration for delivery trucks.

**S-5.11 Public Education.** The City shall educate the public about air quality, its effects on health, and efforts the public can make to improve air quality and reduce greenhouse gas emissions.

Compliance with these measures would reduce the amount of GHG emissions from future development under the proposed General Plan update. Additional reductions would be achieved by CAP actions that encourage use of alternatively fueled and electrified equipment. However, given the lack of specifics regarding construction projects at this time, it is uncertain what the intensity of future construction would be, and whether construction activities from individual future projects



developed under the General Plan update would result in CO<sub>2</sub>e emissions in excess of 1,100 metric tons. Consequently, this impact is conservatively determined to be significant. The General Plan Polices discussed above and the actions included in the CAP outline a comprehensive suite of best management practices (BMPs), including alternatively fueled equipment, vehicle idling restrictions, and offsets. There is no feasible mitigation beyond the strategies outline in the General Plan update and CAP to reduce construction-related emissions. Because ensuring that construction emissions are below applicable thresholds may not be feasible in all cases, this impact is considered significant and unavoidable.

### **Operation**

Operation of land uses supported by the General Plan update would generate direct and indirect GHG emissions. Sources of direct emissions include mobile vehicle trips, natural gas combustion, and landscaping activities. Indirect emissions would be generated by electricity generation and consumption, waste and wastewater generation, and water use. Estimated operational emissions in 2020 and at full project buildout in 2035 are summarized in Table 3.7-5. The table does not include emissions benefits achieved by General Plan update polices, CAP actions, or adopted state regulations designed to reduce GHG emissions.

**Table 3.7-5. West Sacramento 2020 and 2035 Business-as-Usual Community Greenhouse Gas Emissions Forecasts (metric tons CO<sub>2</sub>e)**

Emission Sector	2020 BAU	2035 BAU
Building Energy	177,868	332,528
Onroad Transportation	212,382	291,964
Offroad Vehicles and Equipment	17,462	26,724
Solid Waste Generation	26,741	40,109
Water Consumption	1,836	2,695
Wastewater Treatment	18,291	27,434
Agriculture	265	265
Refrigerants	19,525	29,285
<b>Total</b>	<b>474,369</b>	<b>751,005</b>
<i>Emissions presented for informational purposes</i>		
Stationary Sources <sup>a</sup>	635,006	1,257,197

Source: Draft CAP.

BAU = Emissions exclusive of future local, state, or federal actions to reduce GHG emissions.

<sup>a</sup> Stationary source emissions were not included because the City has limited jurisdictional control over stationary sources, and large stationary point source emissions are regulated by the State of California (under AB 32 through cap-and-trade) and through the EPA (under the Clean Air Act) for GHG emissions. Thus, for the larger stationary point sources, local regulation of such sources (as part of the CAP) can be duplicative of state and federal authority.

### **2020 Analysis**

Estimated community emissions in 2020 are 474,369 metric tons CO<sub>2</sub>e. This represents a 6% increase relative to 2011 levels (Table 3.7-3). Much of this growth is attributable to increases in building energy and water use, as well as offroad vehicles. The CAP developed as part of this project outlines a GHG reduction goal of 20% below 2011 levels by 2020, which based on the inventory

presented in Table 3.7-3, is 357,909 metric tons CO<sub>2</sub>e. This goal exceeds ARB's recommendation of 15% below 2005–2008 levels for municipalities to support the overall AB 32 reduction targets. As discussed above, updated statewide inventories suggest that a smaller percent reduction (11%) from 2005–2008 levels is actually needed to achieving the 2000 target (California Air Resources Board 2015).

The draft CAP includes a variety of regulatory and incentive-based actions that will reduce emissions from both existing and new development in West Sacramento consistent with the City's goal. Several of the CAP actions build on existing City programs, whereas others provide new opportunities to address climate change. Statewide sustainability efforts, which will have a substantial impact on future GHG emissions, serve as the foundation of the CAP. Local actions adopted by West Sacramento will supplement these state programs and achieve additional GHG emissions reductions. The local actions align with the goals and policies of the General Plan update.

The combined implementation of the state and local actions included in the CAP is expected to reduce 2020 community-wide GHG emissions consistent with the City's goal of 20% below 2011 levels. The majority of emissions reductions would be achieved by state programs, as is typical of other CAPs throughout California. Local actions implemented by West Sacramento supplement reductions achieved by the state programs to meet and exceed the reduction target.

The GHG actions summarized in the CAP have been identified as either mandatory or voluntary. Actions that are required by state law, such as compliance with Senate Bill X7-7, would be mandatory for both existing and new development. The City would require implementation of these strategies, pursuant to state and new or existing local laws and regulations. Strategies that would be implemented through incentive-based approaches, such as building retrofits, would be voluntary, but the City is confident that voluntary, incentive-based approaches can produce real and substantive reductions in part due to people acting to reduce their own costs related to the consumption of fossil fuels (e.g., making energy efficient improvements to their homes; carpooling, using public transit, or reducing driving; minimizing waste; reducing water use). GHG reductions associated with these incentive-based actions were quantified based on anticipated participation rates.

Based on the quantified emissions reductions included in the Draft CAP, implementation of the General Plan update, which includes the CAP, would enable the City to reduce its community GHG emissions to meet the reduction target of 20% below 2011 levels, which is consistent with AB 32 and the AB 32 Scoping Plan. Actions not currently quantified, as well as local effects of the state's cap-and-trade program,<sup>14</sup> will also likely contribute additional reductions beyond those estimated in the CAP.<sup>15</sup> This would be a less-than-significant impact through 2020.

### **2035 Analysis**

Estimated operational emissions at full buildout (2035) are presented in Table 3.7-6. The table also summarizes forecasted population and jobs (i.e., service population) associated with the General Plan update, and the corresponding emissions per service population.

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<sup>14</sup> Cap-and-trade is a market-based regulation that will reduce GHGs by establishing a limit or "cap" on GHGs.

<sup>15</sup> The effects of California's cap-and-trade system, which took effect in 2013, are not included in the draft CAP analysis. However, it is expected that by 2020, the cap-and-trade system will result in additional reductions in the building energy and transportation sectors due to changes in energy prices directly (at the consumer level) or indirectly (at the producer level).

**Table 3.7-6. Estimated 2035 GHG Emissions and Substantial Progress Analysis**

Parameter	Value
2035 GHG emissions <sup>a</sup>	751,005
2035 jobs forecast	83,808
2035 population forecast	53,635
Service population (jobs plus population)	137,443
2035 GHG emissions per service population	5.5
2035 efficiency threshold (metric tons per service population)	2.7

<sup>a</sup> Modeling does not include emissions benefits achieved by any CAP actions or General Plan Update polices or state regulations designed to reduce GHG emissions (e.g., Pavley standards, LCFS, and SB 350). Refer to Table 3.7-5.

Estimated emissions in 2035 are 751,005 metric tons CO<sub>2</sub>e per year or 5.5 metric tons CO<sub>2</sub>e per service population, which exceeds the 2035 efficiency threshold of 2.7 metric tons CO<sub>2</sub>e per service population. As noted in the draft CAP, the City will develop reduction targets for years beyond 2020 to continue the City's commitment to reducing GHG emissions. By that time, the City would have implemented the majority of the CAP and would have a better understanding of the effectiveness and efficiency of different reduction strategies and approaches. The new post-2020 reduction targets would be consistent with broader state reduction goals and with the scientific understanding of the needed reductions by 2030. The City would adopt the post-2020 reduction plan by December 31, 2019.

While the CAP commits to future development of a post-2020 reduction plan, it would be premature to assume the character of future actions or their effectiveness. Furthermore, as discussed above, while the state has the AB 32 Scoping Plan and multiple adopted regulations to achieve the AB 32 2020 target, there is no currently adopted state plan to meet long-term GHG reduction goals. With the exception of SB 350, which establishes new 2030 objectives for increasing the RPS to 50% and doubling energy efficiency, any calculation of post-2020 emissions therefore cannot account for future state or federal actions that may be taken to achieve long-term reductions.

As discussed in the analysis of consistency with the goals of EO B-30-15 and S-03-05 (Impact GHG-2), the achievement of long-term GHG reduction targets will require substantial changes in how energy is produced and consumed, as well as other substantial economy-wide changes, many of which can only be implemented by the state and federal governments. Accordingly, placing the entire burden of meeting long-term reduction targets on local government or individual new development projects would be disproportionate and likely ineffective. Nevertheless, given the proposed project's level of emissions compared to the 2035 efficiency threshold and the fact that there is no statewide plan for achieving a post-2020 GHG reduction goal, this analysis conservatively concludes that the project's cumulative contribution of GHG emissions in 2035 would be significant. There is no feasible mitigation beyond the strategies outline in the General Plan update and CAP to reduce operational emissions. Absent additional guidance from the state, it may not be feasible in all cases to ensure that operational emissions are below applicable thresholds; accordingly, this impact is considered significant and unavoidable.

**Impact GHG-2: Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs (significant and unavoidable)*****Assembly Bill 32***

AB 32 codifies the state's GHG emissions reduction targets for 2020. ARB adopted the 2008 Scoping Plan and 2014 First Update as a framework for achieving AB 32. The 2008 Scoping Plan and 2014 First Update outline a series of technologically feasible and cost-effective measures to reduce statewide GHG emissions. Some reductions would need to come in the form of changes pertaining to vehicle emissions and mileage standards. Some would come from changes pertaining to sources of electricity and increased energy efficiency at existing facilities. The remainder would need to come from state and local plans, policies, or regulations that will lower carbon emissions, relative to business as usual conditions.

As discussed above, the CAP developed as part of the project will reduce emissions by at least 20% below 2011 levels by 2020. This goal exceeds ARB's recommendation of 15% below 2005–2008 levels for municipalities to support the overall AB 32 reduction targets. The General Plan update also includes numerous policies to reduce operational and construction-related GHG emissions. These measures are consistent with strategies identified in the 2008 Scoping Plan and 2014 First Update, as well as statewide goals to improve energy efficiency, reduce building energy consumption, and increase renewable energy generation. Accordingly, GHG emissions associated with the General Plan update in 2020 would not conflict with AB 32.

***Metropolitan Transportation Plan and Sustainable Communities Strategy***

Environmental quality and sustainability is one of six MTP principles addressed in SACOG's MTP/SCS, which was adopted by SACOG on February 18, 2106. The MTP/SCS provides a long-range framework to minimize transportation impacts on the environment, improve regional air quality, protect natural resources, and reduce GHG emissions. The MTP/SCS supports and succeeds the Sacramento Region Blueprint (which implements smart growth principles and promotes infill development), and proactively links land use, air quality, and transportation needs in the region. The MTP/SCS is consistent with SB 375, which requires SACOG to adopt an SCS that outlines policies to reduce per capita GHG emissions from automobiles and light trucks. The SCS policies include a mix of strategies that encourage compact growth patterns, mixed-used design, alternative transportation, transit, mobility and access, network expansion, and transportation investment.

Implementation of the SCS is intended improve the efficiency of the transportation system and achieve a variety of housing types throughout the SACOG region that meet market demands in a balanced and sustainable manner. The General Plan update is built around the concept of sustainability. Density would be increased in appropriate locations, mixed-use development would be promoted, and green-building and transit-oriented development would be encouraged, as would energy efficiency and water conservation.

The General Plan update would allow development of residential land uses to help meet forecasted growth within the planning area. Consistent with SACOG goals, the General Plan update would create a mixed used and pedestrian/bicycle friendly community. The land use design would develop and manage a comprehensive on- and off-street parking system that would help reduce vehicle trips and support alternative transportation. The General Plan update policies would also provide convenient and secure bicycle parking, as well as dedicated parking for priority electric vehicles.

These policies would support alternative transportation within the community, which could help reduce per capita GHG emissions from passenger vehicles consistent with SACOG's MTP/SCS.

#### ***Executive Orders EO S-3-05 and EO B-30-15***

As discussed in Section 3.7.1, *Existing Conditions*, EO B-30-15 established an interim GHG reduction target of 40% below 1990 levels by 2030, and EO S-3-05 established a long-term goal of reducing statewide GHG emissions to 80% below 1990 levels by 2050. Achieving these long-term GHG reduction policies will require systemic changes in how energy is produced and used.

A number of studies discuss potential mechanisms for limiting statewide GHG emissions to meet the aggressive goals identified by EO B-30-15 and EO S-3-05. For example, ARB and other state agencies commissioned Energy + Environmental Economics in 2015 to develop feasible GHG reduction scenarios for 2030 (Energy + Environmental Economics 2015). Other studies include a report by the California Center for Science and Technology (2012), the California Department of Transportation's (2015) *California Transportation Plan 2040*, ARB's 2014 First Update, and a study published in *Science* that analyzes the changes that will be required to reduce GHG emissions to 80% below 1990 levels by 2050 (Williams et al. 2012). In general, these studies reach similar conclusions: deep reductions in GHG emissions can *only* be achieved with significant changes in electricity production, transportation fuels, and industrial processes (e.g., decarbonizing electricity production, electrifying transportation, utilizing alternative fuels for aviation).

The systemic changes that will be required to achieve EO B-30-15 and EO S-3-05, if they are legislatively adopted, will require significant policy, technical, and economic solutions. Some changes, such as the use of alternative fuels (e.g., biofuel) to replace petroleum for aviation, cannot be accomplished without action by the federal government. Similarly, achieving the reduction goals will require California to dramatically increase the amount of electricity that is generated by renewable generation sources and, correspondingly, advance the deployment of energy storage technology and smart-grid strategies, such as price-responsive demand and the smart charging of vehicles. This would entail a significant redesign of California's electricity system, which can only be accomplished through state action. Accordingly, in evaluating the project's emissions for consistency with EO S-3-05 and EO B-30-15, it is important to note that many of the broad-scale shifts needed to meet the reduction goals are outside of the control of the City and beyond the scope of the General Plan update.

The long-term climate change policy and regulatory changes that will be enacted to meet 2030 and 2050 emissions reduction targets are unknown at this time. Consequently, the extent to which the project's emissions and resulting impacts will be mitigated through implementation of statewide (and nationwide) changes is not known. However, some of the anticipated statewide actions (e.g., decarbonization, energy efficiency, alternative transportation) can be facilitated, at least to some extent, through implementation of specific GHG reduction measures in large-scale developments.

The framework established by the CAP will continue to support land use development reductions beyond 2020. The CAP also commits the City to developing reduction targets for years beyond 2020 to continue the City's commitment to reducing GHG emissions. The new post-2020 reduction targets would be consistent with broader state reduction goals and with the scientific understanding of the needed reductions by 2030 and potentially 2050. The General Plan update includes a comprehensive set of policies that will improve energy efficiency, reduce water consumption and waste generation, and encourage alternative transportation.

While the General Plan update policies and the CAP are consistent with anticipated long-term statewide strategies to reduce GHG emissions, they are not adequate on their own to reduce project-level emissions to a level below the 2035 efficiency indicator (Table 3.7-6). It is possible that future adopted state and federal actions would reduce project emissions below a level consistent with the 2030 and 2050 reduction targets in the EOs, but this cannot be known at this time; accordingly it is conservatively assumed that the project's emission levels would be inconsistent with the goals in EO S-3-05 and EO B-30-15.

### **Conclusion**

Based on the above analysis, the General Plan update is consistent with AB 32 and SACOG's MTP/SCS. However, it is conservatively concluded that the project's emission levels would be inconsistent with the goals of EO S-3-05 and EO B-30-15. Therefore, this impact would be significant and unavoidable.

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## 3.8 Hazards and Hazardous Materials

Hazardous materials are substances that are dangerous to the public's health and safety, particularly if they are improperly used, stored, transported, or disposed. Hazardous materials include substances known to be toxic, flammable, explosive, corrosive, infectious, carcinogenic, or radioactive. The primary concerns pertaining to hazardous materials in West Sacramento are their use, transportation, storage, and handling (i.e., potential accidents or spills). Additionally, hazardous materials (e.g., gasoline, diesel fuel, hazardous waste) are conveyed along highways and railways in the region.

### 3.8.1 Existing Conditions

#### Regulatory Setting

##### Federal

The primary federal laws regulating hazardous wastes/materials are the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA) and the Resource Conservation and Recovery Act of 1976 (RCRA).

The U.S. Environmental Protection Agency (EPA) is the principal federal regulatory agency responsible for the safe use and handling of hazardous materials. The key federal regulations pertaining to hazardous wastes relevant to the project are described below.

##### **Comprehensive Environmental Response, Compensation, and Liability Act**

The purpose of CERCLA, often referred to as *Superfund*, is to clean up contaminated sites so that public health and welfare are not compromised. CERCLA maintains a national trust for hazardous waste-related industries to be able to fund and coordinate large cleanup activities for hazardous waste spills and accidents and to clean up older abandoned waste sites. Amended in 1986, the act establishes two primary actions: (1) to coordinate short-term removal of hazardous materials; and (2) to coordinate and manage the long-term removal of hazardous materials identified on EPA's National Priorities List (NPL). The NPL is a record of known or threatened releases of hazardous substances, pollutants, or contaminants. A national database and management system, known as the Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS), is used by EPA to track activities at hazardous waste sites considered for cleanup under CERCLA. CERCLA also maintains provisions and guidelines dealing with closed and abandoned waste sites and tracks amounts of liquid and solid media treated at sites on the NPL or sites that are under consideration for the NPL.

##### **Resource Conservation and Recovery Act of 1976**

Resource Conservation and Recovery Act (RCRA) (42 United States Code 6901–6987) provides for *cradle to grave* regulation of hazardous wastes and includes the Hazardous and Solid Waste Amendments of 1984 (HSWA). RCRA and HSWA protect human health and the environment, and impose regulations on hazardous waste generators, transporters, and operators of treatment, storage, and disposal facilities (TSDFs). HSWA also requires EPA to establish a comprehensive

regulatory program for underground storage tanks. The corresponding regulations in 40 Code of Federal Regulations (CFR) 260–299 provide the general framework for managing hazardous waste, including requirements for entities that generate, store, transport, treat, and dispose of hazardous waste.

### **Toxic Release Inventory**

The Emergency Planning and Community Right-to-Know Act of 1986 and the Pollution Prevention Act of 1990 established the Toxic Release Inventory, a publicly available database that has information on toxic chemical releases and other waste management activities. The inventory is updated annually and lists chemical releases by industry groups and federal facilities managed by EPA.

### **Chemical Accident Prevention Provisions**

Under the authority of Section 112(r) of the Clean Air Act, the Chemical Accident Prevention Provisions require facilities that produce, handle, process, distribute, or store certain chemicals to develop a Risk Management Program, prepare a Risk Management Plan (RMP), and submit the RMP to EPA.

### **Occupational Safety and Health Standards**

Occupational safety standards exist in federal and state laws to minimize worker safety risks from both physical and chemical hazards in the workplace. The Occupational Safety and Health Administration (OSHA) is responsible for assuring worker safety in the workplace.

OSHA asbestos regulations are contained in 29 CFR. Lead-based paint regulations are described in the Lead-Based Paint Elimination Final Rule (24 CFR 33), governed by the U.S. Department of Housing and Urban Development.

### **Hazardous Materials Transportation Act**

The U.S. Department of Transportation (USDOT), the Federal Highway Administration (FHWA), and the Federal Railroad Administration are the three entities that regulate the transport of hazardous materials at the federal level. The Hazardous Materials Transportation Act (49 CFR 171 [C]) governs the transportation of hazardous materials. These regulations are promulgated by USDOT and enforced by EPA.

## **State**

California hazardous materials and wastes regulations are equal to or more stringent than federal regulations. EPA has granted the state primary oversight responsibility to administer and enforce hazardous waste management programs. State regulations require planning and management to ensure that hazardous materials are handled, stored, and disposed of properly to reduce risks to human health and the environment. State laws pertaining to hazardous materials and wastes are discussed below.

### **California Accidental Release Prevention Program**

As specified in 19 California Code of Regulations (CCR) 2, Chapter 4.5, Articles 1 through 11, all businesses that handle specific quantities of hazardous materials are required to prepare a

California Accidental Release Prevention (CalARP) Program risk management plan (RMP). The CalARP RMP is the state equivalent of the federal RMP. CalARP RMPs include the preparation of an offsite consequence analysis of worst-case release of the stored chemicals and the preparation of emergency response plans, including coordination with local emergency response agencies. CalARP RMPs are required to be updated at least every 5 years and when there are significant changes to the stored chemicals.

### **Hazardous Materials Release Response Plans and Inventory Act**

The Hazardous Materials Release Response Plans and Inventory Act (also referred to as the Business Plan Act) requires a business using hazardous materials to prepare a business plan describing the facility, inventory, emergency response plans, and training programs. The owner or operator of any business that has specified amounts of liquid and solid hazardous materials, compressed gases, extremely hazardous substances, or underground storage tanks onsite, or that generates or treats hazardous waste, is required to develop and submit a business plan to the local Certified Unified Program Agency (CUPA), which, for the General Plan update, is the Environmental Health Services Division of Yolo County.

### **California Health and Safety Codes**

The California Environmental Protection Agency (Cal-EPA) has been granted primary responsibility by EPA for administering and enforcing hazardous materials management plans within California. Cal-EPA, more generally than EPA, defines a hazardous material as a material that, because of its quantity, concentration, or physical or chemical characteristics, poses a significant present or potential hazard to human health and safety or to the environment if released (26 CCR 25501).

State regulations include detailed planning and management requirements to ensure that hazardous materials are properly handled, stored, and disposed of to reduce human health risks. In particular, the state has acted to regulate the transfer and disposal of hazardous waste. Hazardous waste haulers are required to comply with regulations that establish numerous standards, including criteria for handling, documenting, and labeling the shipment of hazardous waste (26 CCR 25160 et seq.).

### **Cortese List**

Cal-EPA maintains the Hazardous Wastes and Substances Site (Cortese) List, a planning document used by state and local agencies and developers to comply with CEQA requirements in providing information about the locations of hazardous materials release sites. Per Government Code Section 65962.5, the Cortese List must be updated at least once annually. The California Department of Toxic Substances Control (DTSC), State Water Resources Control Board, and California Department of Resources Recycling and Recovery contribute to the hazardous material release site listings.

### **Hazardous Waste Control Act**

The state equivalent of RCRA is the Hazardous Waste Control Act (HWCA). HWCA created the State Hazardous Waste Management Program, which is similar to but more stringent than the RCRA program. HWCA establishes requirements for the proper management of hazardous substances and wastes with regard to criteria for identification and classification of hazardous wastes; generation and transportation of hazardous wastes; design and permitting of facilities that recycle, treat, store,

and dispose of hazardous wastes; treatment standards; operation of facilities; staff training; closure of facilities; and liability requirements.

### **Emergency Services Act**

Under the California Emergency Services Act, the state developed an emergency response plan to coordinate emergency services provided by all governmental agencies. The plan is administered by the California Office of Emergency Services (OES). OES coordinates the responses of other agencies, including EPA, the Federal Emergency Management Agency (FEMA), the California Highway Patrol (CHP), regional water quality control boards, air quality management districts, and county disaster response offices. Local emergency response teams, including fire, police, and sheriff's departments, provide most of the services to protect public health.

The West Sacramento Fire Department (WSFD) serves as emergency management coordinator for the City of West Sacramento and is the lead agency fulfilling the City's requirements under the Emergency Services Act (Government Code Section 8550 et. seq.). WSFD works with all City departments and other mutual aid partners that have emergency management responsibilities, including the Yolo County OES. The office responds to disasters in West Sacramento.

### **Public School Siting Requirements**

The California Department of Education has developed a *School Site Selection and Approval Guide* to help school districts (1) select school sites that provide both a safe and a supportive environment for the instructional program and the learning process; and (2) gain state approval for the selected sites. Safety is the first consideration in the selection of school sites. Safety factors considered include the following: (1) proximity to airports; (2) proximity to high-voltage power transmission lines; (3) presence of toxic and hazardous substances; (4) hazardous air emissions and facilities within a quarter mile; (5) other health hazards; (6) proximity to railroads; (7) proximity to high-pressure natural gas lines, gasoline lines, pressurized sewer lines, or high-pressure water pipelines; (8) proximity to propane tanks; (9) noise; (10) proximity to major roadways; (11) results of geological studies and soils analyses; (12) condition of traffic and school bus safety; (13) safe routes to school; and (14) safety issues for joint-use projects.

The presence of potentially toxic or hazardous substances on or in the vicinity of a prospective school site is a concern relating to the safety of students, staff, and the public. The school district must submit materials documenting compliance with the toxic and hazardous substances requirements before submitting the balance of the site approval package documents required by the California Department of Education.

### **Worker Safety**

The California Division of Occupational Safety and Health (Cal/OSHA) is the state agency responsible for assuring worker safety in the workplace.

Cal/OSHA assumes primary responsibility for developing and enforcing standards for safe workplaces and work practices within the state. At sites known to be contaminated, a site safety plan must be prepared to protect workers. The site safety plan establishes policies and procedures to protect workers and the public from exposure to potential hazards at the contaminated site.

### **California Public Resources Code—State Responsibility Area**

The California Public Resources Code (PRC) requires the designation of State Responsibility Areas (SRAs), which are identified based on cover, beneficial water uses, probable erosion damage, and fire risks and hazards. The financial responsibility of preventing and suppressing fires in an SRA is primarily the responsibility of the state. Fire protection in areas outside SRAs are the responsibilities of local or federal jurisdictions and are referred to as local responsibility areas and federal responsibility areas, respectively.

### **California Public Resources Code Sections 4201–4204**

This section of the PRC was amended in 1982 to require the California Department of Forestry and Fire Protection (CAL FIRE) to classify Fire Hazard Severity Zones within SRAs. Lands within SRAs are classified in accordance with the severity of fire hazard present to identify measures to be used to retard the rate of spreading and reduce the potential intensity of uncontrolled fires that threaten to destroy resources, life, or property (California Department of Forestry and Fire Protection 2012).

### **Very High Fire Hazard Severity Zones**

Government Code Section 51178 requires CAL FIRE to identify very high fire hazard severity zones in the state. Government Code Section 51179 requires a local agency to designate, by ordinance, very high fire hazard severity zones in its jurisdiction.

## **Local**

### **Certified Uniform Program Agency**

Cal-EPA can delegate responsibility for many of its programs to a local government through certification as a CUPA. A CUPA is responsible for implementing a unified hazardous materials and hazardous waste management program. This program was established under the amendments to the California Health and Safety Code (HSC) made by Senate Bill 1082 in 1994. HSC 25505 requires handlers of hazardous materials to submit business plans to the CUPA if hazardous materials inventories meet or exceed established thresholds. A CUPA can be a county, city, or joint powers authority (JPA) that demonstrates its ability to administer the program.

### **Yolo County Environmental Health**

The Environmental Health Services Division of Yolo County has been designated by Cal-EPA as the CUPA for Yolo County. As the CUPA, the division is responsible for performing all assessments of environmental contamination and/or human exposure and providing oversight of cleanup activity and coordination with the lead state agency having cleanup jurisdiction. In addition, the division oversees permitting and inspection of water wells and sewage disposal, petroleum waste injection wells, implements programs for hazardous materials emergency response, hazardous waste generators, and regulates the construction, operation, repair and removal of both aboveground storage tanks (ASTs) and underground storage tanks (USTs).

### **Yolo County Multi-Agency HazMat Response Team**

The Yolo County Multi-Agency HazMat Response Team responds when a local jurisdiction needs assistance in responding to emergencies such as industrial and residential chemical spills, fuel spills resulting from vehicle accidents, chemical leaks due to natural disasters such as earthquakes and

floods, terrorist acts, bomb threats, abandoned waste, illegal drug labs, and radiological releases (Yolo County 2015). The team combines the resources of the Yolo County Environmental Health Division; the Woodland, Davis, and West Sacramento Fire Departments; and U.C. Davis Fire Department. The level of response depends on the size and nature of the incident and the level of threat to public health and the environment. During an incident, the Yolo County Environmental Health HazMat Unit provides information for managing the incident, including the dangers and hazards of the materials involved and the proper decontamination measures to use (Yolo County 2015).

**Yolo Operational Area Standard Multi-Hazard Mitigation Plan**

The Yolo Operational Area Standard Multi-Hazard Mitigation Plan identifies and evaluates specific local hazard mitigation strategies to be considered and provides planning support for those strategies developed by its political subdivisions, agencies, special districts, and organizations.

The plan is based upon the Yolo Operational Area Hazard Vulnerability Analysis (HVA), which considers the natural, technological, and anthropogenic risks to which the Yolo Operational Area is vulnerable. The plan describes strategies that the local governments and private sector organizations may use to mitigate those hazards.

**West Sacramento General Plan**

The following goals and policies excerpted from the Health and Safety and Public Facilities and Services Elements of the current General Plan pertain to hazards and hazardous materials.

**Health and Safety**

**Goal C:** To prevent loss of life, injury, and property damage due to wildland, cropland, and structural fires, explosions and release of hazardous materials.

**Policies:**

1. The City shall require that new development provides all necessary water service, fire hydrants, and roads consistent with Fire Department standards.
2. The City shall ensure that adequate water fire-flow capability is provided throughout the city and shall regularly monitor fire-flow to ensure adequacy. New development shall comply with the following minimum fire-flow rates:

<u>Development Category</u>	<u>Gallons Per Minute</u>
Single-Family Residential	1,000
Multi-Family Residential	1,500

Nonresidential fire flow requirements shall conform to those contained in Appendix IIIA of the Uniform Fire Code, 1988 edition, or as revised in a more recent edition of the Uniform Fire Code.

6. The City shall require property owners to remove fire hazards, including vegetation, hazardous structures and materials, and debris, as directed by the Fire Department.
7. In the development review process, the City shall ensure that adequate fire equipment access is provided and, where appropriate, shall require the use of fire-resistant landscaping and building materials.

8. The City shall regulate the storage and manufacture of flammable, explosive, or otherwise hazardous materials and shall develop standards addressing the transport of these materials within the city.
9. The City shall continue to maintain and update an inventory of businesses that manufacture or maintain hazardous materials on the premises.

**Goal D:** To ensure that City emergency response procedures are adequate in the event of natural or man-made disasters.

**Policies:**

1. The City shall maintain, periodically update, and test the effectiveness of its Emergency Operations Plan and Standard Emergency Management System (SEMS). As part of the periodic update, the City shall review county and state emergency response plans and procedures to ensure coordination with the City's plan.
3. The City shall identify emergency access routes and shall ensure that they are kept free of traffic impediments.
7. The City shall develop mutual aid agreements and communications links with surrounding jurisdictions for assistance during times of emergency.

**Public Facilities and Services**

**Goal A:** To maintain an adequate level of service in the City's water system to meet the needs of existing and future development.

**Policies:**

5. The City shall ensure the provision of adequate fire-flow rates in all new development.

**Best Management Practices**

As discussed in Section 3.9, *Hydrology and Water Quality*, a project that would disturb 1 or more acres of soil or that would disturb less than 1 acre but is part of a larger common plan of development must obtain coverage under General Permit Order 2010-0014-DWQ. Coverage under the General Permit requires the development and implementation of a stormwater pollution prevention plan (SWPPP). A SWPPP includes plans for erosion and sediment control and adheres to the County's grading ordinance and best management practices (BMPs). Standard BMPs used during construction for erosion control include the following.

- Limit construction access routes and stabilize designated access points.
- No cleaning, fueling, or maintaining vehicles onsite, except in a designated area where washwater is contained and treated.
- Properly store, handle, and dispose of construction materials/wastes to prevent contact with stormwater.
- Train and provide instruction to all construction contract employees/subcontractors on implementation of the BMPs.
- Control and prevent the discharge of all potential pollutants, including pavement cutting wastes, paints, concrete, petroleum products, chemicals, washwater or sediments, rinse water from architectural copper, and non-stormwater discharges to storm drains and watercourses.

## Environmental Setting

### Hazardous Materials Sites within the Planning Area

West Sacramento has a substantial number of industries and activities that transport, store, or use toxic or hazardous chemicals, posing significant potential safety hazards. There are 50 facilities and activities in the planning area that store and/or use toxic materials (City of West Sacramento 2009:Table 9-6).

There are 32 open cleanup sites listed in Geotracker (State Water Resources Control Board 2015). There is one active site listed in the California Department of Toxic Substances Control Envirostor Database (Department of Toxic Substances Control 2015). Types of sites can include leaking underground storage tanks, dry cleaning facilities, and landfills. Hazardous materials may be stored in ASTs, USTs, drums, and other types of containers. There are 50 permitted USTs and an unknown number of ASTs in West Sacramento (State Water Resources Control Board 2015).

One site within the planning area is listed on the DTSC's Cortese List. The Capitol Plating site is a former metal-plating facility located at 319 Third Street. Site assessment has been underway since 1999 and the status has been listed as Open-Inactive since 1999. The facility was demolished in 2005. The facility was a single 80- by 160-foot lot in a mixed commercial/residential area in the Washington neighborhood. Approximately 80% of the site is capped with either concrete or asphalt. Investigations indicate that soils and groundwater beneath the facility lot and adjacent lots are contaminated with heavy metals and the chlorinated solvent 1,2-DCA. DTSC conducted additional characterization work (Targeted Site Investigation) during 2005 pursuant to a Brownfields Grant from EPA. According to a recent inquiry, the potential for soil or groundwater contamination for this property is considered high (Blackburn Consulting 2016). While the site is acceptable for current land use, if it is proposed for development, further assessment may be required.

### Airports

Airport-related hazards are generally associated with aircraft accidents, particularly during takeoff and landing. Airport operation hazards include incompatible land uses, power transmission lines, wildlife hazards (e.g., bird strikes), and tall structures that penetrate the imaginary surfaces surrounding an airport.

West Sacramento is within the flight path of several airports. The closest public airport is the Sacramento Executive Airport, approximately 1.60 miles west of the southern portion of the city. Mather Airport is located approximately 15 miles east of the city. Sacramento International Airport is approximately 5 miles north of the city, and McClellan Airfield, formerly an Air Force base, is approximately 10 miles northeast of the city.

Military planes also fly over the area from Travis Air Force Base (approximately 30 miles southwest). According to the California Military Lane Use Compatibility Analyst, the city does not intersect with any military bases, special use airspaces, or low-level flight paths (State of California n.d.). Other regional aircraft may include crop-dusting planes and police and news helicopters. The nearest private airport is in the northwest portion of the city at the California Highway Patrol Academy.



## Fire-Related Hazards

Urban fires are generally human-caused fires that can be mitigated through proper building code requirements, such as the California Building Code; fire flow minimums; and zoning or subdivision ordinance requirements.

Areas adjacent to dense brush along the Sacramento River, properties overgrown with weeds, heavily vegetated areas, and agricultural areas such as the grain fields located in the southern portion of the city are considered part of the urban/wildland interface. Continued development of these areas increases the number of people living near the urban/wildland interface. Fires in these areas can potentially result in major losses to property and life (City of West Sacramento et al. 2009:9–28). Further information regarding fire protection services is in Section 3.14, *Public Services*, of this document.

## Schools-Related Hazards

Hazardous emissions and accidental release or combustion of hazardous materials near existing schools could result in health risks or other dangers to students. The Washington Unified School District (WUSD) serves all of the area within the West Sacramento city limits. WUSD serves a growing population of 7,421 students, with a staff of 400 certificated employees and 350 classified employees. The district currently operates seven elementary schools (six K–8 schools and one transitional K–5 school), a comprehensive high school, an alternative high school, an independent study program, and an adult education program. At least one additional elementary school is planned for the future to accommodate growth.

## 3.8.2 Environmental Impacts

### Methods for Analysis

The analysis of hazards and hazardous materials is based on a review of the *West Sacramento General Plan* (2000), review of the *General Plan Background Report* (City of West Sacramento 2009), and database research prepared in compliance with federal, state, and local ordinances and regulations and professional standards pertaining to hazards and hazardous materials.

The environmental baseline for the analysis consists of the hazards and hazardous materials that are known to occur in the planning area and that are identified in the General Plan and other sources cited above in *Environmental Setting*.

### Thresholds of Significance

In accordance with Appendix G of the State CEQA Guidelines, the proposed project would be considered to have a significant effect if it would result in any of the conditions listed below.

- Creation of a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.
- Creation of a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.

- Release of hazardous emissions or handling of hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.
- Location on a site that is on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and the creation of a significant hazard to the public or the environment.
- Location within an airport land use plan area or, where such a plan has not been adopted, location within 2 miles of a public airport or public use airport, resulting in a safety hazard for people residing or working in the planning area.
- Location within the vicinity of a private airstrip, resulting in a safety hazard for people residing or working in the planning area.
- Impairment of or physical interference with implementation of an adopted emergency response plan or emergency evacuation plan.
- Exposure of people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.

## Impacts and Mitigation Measures

### **Impact HAZ-1: Creation of a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials (less than significant)**

Implementation of the General Plan update would lead to urban development and other land use activities that would require the routine transport, use, or disposal of hazardous materials and wastes within the city, and that could result in reasonably foreseeable accident conditions involving the release of hazardous materials into the environment.

Yolo County would continue to offer its free hazardous household waste disposal program for all county residents. The CUPA would also provide oversight of cleanup activities and permitting for hazardous waste generators.

In the event of a hazardous materials incident, WSFD would respond; if WSFD requires assistance, the Yolo County Multi-Agency HazMat Response Team would respond.

Proposed Policy S-1.2 in the Safety Element of the General Plan update prescribes the maintenance of the Yolo Operational Area Standard Multi-Hazard Mitigation Plan. The plan identifies and evaluates specific local hazard mitigation strategies that, when accepted, will be further developed for funding and implementation by lead agencies (e.g., City) (Yolo County 2004).

All projects within the planning area would be required to be consistent with the proposed General Plan update. In addition, the General Plan update requires implementing actions to comply with existing regulations. Existing regulations would ensure that hazardous materials are handled in a safe manner. For these reasons, this impact would be less than significant, and no mitigation is required.

**Impact HAZ-2: Creation of a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment (less than significant)**

Implementation of the General Plan update would lead to continued development. Construction equipment that is typically used for development projects has the potential to release oils, greases, solvents, and other finishing materials through accidental spills. Given the nature of hazardous materials that would be used, stored, or disposed of (e.g., materials for construction equipment, contaminated soil), there is a possibility for upset and accident conditions involving the release of hazardous materials into the environment. Accidental releases of small quantities of these substances could contaminate soils and degrade the quality of surface water and groundwater, resulting in a public safety hazard. However, the handling and disposal of these materials would be governed according to regulations enforced by WSFD, CUPA, Cal/OSHA, and DTSC, as previously discussed. In addition, regulations under the federal Clean Water Act require contractors to avoid allowing the release of materials into surface waters as part of their SWPPP and National Pollutant Discharge Elimination System permit requirements (see Section 3-9, *Hydrology and Water Quality*, for a discussion of SWPPPs). Therefore, it is not anticipated that use of hazardous materials during construction would result in a reasonably foreseeable upset or accident condition that would cause significant hazard to the public or environment.

Reasonably foreseeable spills under operational conditions would be handled according to the specifications of the County Hazardous Waste Management Plan. This plan governs the preparation and implementation the County's Area Plan for emergency response to chemical spills in the community.

Based on the existing regulatory scheme, this impact would be less than significant, and no mitigation is required.

**Impact HAZ-3: Release of hazardous emissions or handling of hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school (less than significant)**

Implementation of the General Plan update would lead to urban development and the intensification of land uses that could result in the release of hazardous emissions or entail the handling of hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school. There are existing and proposed land uses designated for schools throughout the planning area. The General Plan does not explicitly incorporate policies to limit the use of hazardous materials near school sites or limit the development of proposed schools near existing contamination; however, Policy S-6.4 in the Safety Element of the General Plan update requires adequate separation between areas where hazardous materials are present and sensitive land uses, such as schools. The City also routinely consults with the school district prior to discretionary approval of new businesses and industry that use hazardous materials near existing school sites as part of the project review process. Additionally, school siting regulations implemented by the Department of Education prohibit locating proposed schools near existing contamination. Therefore, this impact would be less than significant, and no mitigation is required.

**Impact HAZ-4: Location on a site that is on a list of hazardous materials sites and the resultant creation of a significant hazard to the public or the environment (less than significant)**

As described above, one site in the planning area—Capitol Plating—appears on the DTSC Cortese List. Site assessment has been underway since 1999 and the site's status has been listed as Open-Inactive since 1999. DTSC conducted additional characterization work (Targeted Site Investigation) during 2005 pursuant to a Brownfields Grant from the EPA. The facility was demolished in 2005. The potential for soil or groundwater contamination for this property is considered high (Blackburn Consulting 2016).

No hazardous materials sites included on a list compiled pursuant to Government Code Section 65962.5 are present within the planning area. The planning area is not located on a Superfund or other NPL site and therefore would not result in a significant hazard to the public or the environment through exposure to such sites (Wallace Kuhl 2013).

All future projects would be required to be consistent with the updated General Plan. The proposed General Plan update would not change existing provisions regarding hazardous material sites. Existing regulations would ensure that sites containing hazardous materials be cleaned up to existing standards for the proposed land use prior to development. There would be no impact, and no mitigation is required.

**Impact HAZ-5: Location within an airport land use plan area or within 2 miles of a public airport or public use airport, resulting in a safety hazard for people residing or working in the planning area (less than significant)**

The closest public airport is Sacramento Executive Airport, approximately 1.60 miles west of the southern portion of the city. The planning area is not within the safety zone of Sacramento Executive Airport (Airport Land Use Commission 1998:Figure 11) or the Sacramento International Airport (Airport Land Use Commission 2013:Map 3); however, it is within the airport influence area of Sacramento International Airport (Airport Land Use Commission 2013:Map 5).

An aircraft crash occurring within the city would be a potentially disastrous hazard. Due to its 24-hour operation and large number of flights, Sacramento International Airport poses the greatest risk for aircraft hazards to the city.

The Yolo Operational Area Standard Multi-Hazard Mitigation Plan contains goals and strategies to help plan for disaster events such as an aircraft crash. Although arriving and departing planes from Sacramento International Airport do pass over the city, these flight paths are generally over rural and agricultural areas. In addition, WSFD has mutual aid agreements with other fire protection agencies, including airport crash vehicles, which could assist the City in the event of an accident. In view of these considerations and because Yolo County does not have a history of recent aircraft crashes, the plan classifies the risk from aviation disasters in all jurisdictions as a low risk priority (City of West Sacramento 2009). Accordingly, this impact is considered less than significant, and no mitigation is required.

**Impact HAZ-6: Location within the vicinity of a private airstrip, resulting in a safety hazard for people residing or working in the planning area (no impact)**

The closest private airstrip is in the northwest portion of West Sacramento at the California Highway Patrol Academy. Other regional aircraft may include cropdusting planes and police and

news helicopters. Although an aircraft crash would constitute a safety hazard for people residing or working in the planning area, Yolo County does not have a history of recent aircraft crashes, and aircraft regulations would prevent potential conflicts with future land uses. Accordingly, safety hazard impacts associated with private airstrips would be minimal. There is no impact.

**Impact HAZ-7: Impairment of or physical interference with implementation of an adopted emergency response plan or emergency evacuation plan (less than significant)**

Construction projects implemented under the General Plan update could cause temporary changes in emergency access. Existing City requirements for construction projects require signage and an access plan to ensure continued emergency access during construction. Consequently, the impact is considered less than significant, and no mitigation is required.

**Impact HAZ-8: Exposure of people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands (less than significant)**

The provision of fire protection is addressed in the discussion of the City's firefighting personnel and facilities, including wildland, structural, and basic hazardous materials response, in Section 3.14, *Public Services*.

Several factors contribute to susceptibility to wildfire danger in Yolo County: most notably climate, winds, vegetation, and water supply. According to CAL FIRE's Fire Hazard Severity Zone map (2007), the majority of West Sacramento is in an unzoned local responsibility area that is urbanized and not subject to wildland fires. However, several areas along the deep water ship channel, the Sacramento River, and just north of the city limits are mapped as moderately hazardous for wildland fires (California Department of Forestry and Fire Protection 2007).

Goal F in the Public Services and Facilities Element of the current General Plan ensures that an adequate level of fire service is maintained as new development occurs—specifically, that the City maintain a fire Insurance Service Office (ISO) rating of 3 or better in the developed portion of the City and that average response times to emergency calls (Priority 1) be 5 minutes for 95% of the calls. The average response time for the overall WSFD is 4:42 minutes from time of dispatch to arrival on scene (Ramirez pers. comm.). Although some areas in Southport have an ISO rating of 9, WSFD has Automatic Aid agreements with several Yolo County Fire Departments and with the City of Sacramento Fire Department (Ramirez pers. comm.).

The following proposed policies of the General Plan update relating to wildland fire hazards would also help reduce the risk of exposing people and structures to wildfires.

**Goal PFS-9:** To prevent loss of life, injury, and property damage due to wildland and structural fires, while ensuring an adequate level of fire protection service is maintained for all.

**PFS-9.1 Adequate Facilities.** The City shall provide new and expanded fire department facilities to adequately serve the needs of existing and future development. (MPSP)

**PFS-9.2 Fire Response Standards.** The City shall strive to achieve and maintain a fire insurance (ISO) rating of 3 or better in the developed areas of the city. The goal for average response time for Priority 1 (emergency) calls shall be 5 minutes for 90% of the calls.

As discussed above, there are sufficient facilities and fire personnel serving the planning area. Response rates throughout the city are adequate even in areas mapped as moderately hazardous for wildland fires. Therefore, this impact would be less than significant, and no mitigation is required.

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#### Personal Communications

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## 3.9 Hydrology and Water Quality

### 3.9.1 Existing Conditions

#### Regulatory Setting

##### Federal

##### Clean Water Act

The Clean Water Act (CWA) is the primary federal law that establishes regulations to protect the quality of the nation's surface waters, including lakes, rivers, and coastal wetlands. The act operates on the principle that all discharges into the nation's waters are unlawful unless specifically authorized by a permit. Permit review is the CWA's primary regulatory tool.

The State Water Resources Control Board (State Water Board) is the state agency with primary responsibility for implementing the CWA. Typically, the regulatory requirements are implemented by the State Water Board through nine regional water quality control boards (RWQCBs) established throughout the state. The Central Valley Regional Water Quality Control Board (Central Valley Water Board) is responsible for regulating discharges to the Sacramento River and its tributaries.

The following sections provide additional details on specific sections of the CWA.

##### **Sections 303(d) and 305(b)**

CWA Section 303(d) requires states to develop lists of impaired waters for which technology-based regulations and other required controls are not stringent enough to meet the water quality standards set by states. Each state must establish priority rankings for waters on the list and develop total maximum daily loads (TMDLs) that indicate the maximum amount of a pollutant that a water body can receive and still safely meet water quality standards.

The State of California adopts water quality standards to protect beneficial uses of waters of the state as required by Section 303(d) and the Porter-Cologne Water Quality Control Act of 1969 (Porter-Cologne Act). To identify candidate water bodies for TMDL analysis, a list of water quality-impaired segments is generated by the State Water Board that must be approved by the Environmental Protection Agency (EPA). Waters on the list do not meet water quality standards, even after point sources of pollution have installed the minimum required levels of pollution control technology.

In addition to the impaired water body list required by CWA Section 303(d), CWA Section 305(b) requires states to develop a report assessing statewide surface water quality. Both CWA requirements are addressed in a 303(d)/305(b) integrated report, which provides an update to the 303(d) list and a 305(b) assessment of statewide water quality. The State Water Board developed California's statewide *2010 Integrated Report Clean Water Act 303(d) List* (2010 Integrated Report) based on the integrated reports from each of the nine RWQCBs (U.S. Environmental Protection Agency 2010). The 2010 Integrated Report was approved by the State Water Board on August 4, 2010, and approved by EPA on November 12, 2010, and the 2012 Integrated Report with 303(d)

listings was approved by the State Water Board on April 8, 2015, and approved by the EPA on July 30, 2015.

#### **Section 401—Water Quality Certification**

Section 401 of the CWA requires that an applicant pursuing a federal permit to conduct an activity that may result in a discharge of a pollutant obtain a water quality certification (or waiver). A water quality certification requires the evaluation of water quality considerations associated with dredging or placement of fill materials into waters of the United States. Water quality certifications are issued by one of the RWQCBs. Under the CWA, the RWQCBs must issue a Section 401 water quality certification for a project to be permitted under CWA Section 404.

#### **Section 402—National Pollutant Discharge Elimination System**

The 1972 amendments to the federal Water Pollution Control Act established the National Pollutant Discharge Elimination System (NPDES) permit program to control discharges of pollutants from point sources (Section 402). The 1987 amendments to the CWA created a section devoted to stormwater permitting (Section 402[p]). EPA has granted the State of California (the State Water Board and RWQCBs) primacy in administering and enforcing the provisions of the CWA and NPDES. NPDES is the primary federal program that regulates point-source and nonpoint-source discharges to waters of the United States.

##### *NPDES General Permit for Construction Activities*

The *NPDES General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities (Order 2009-0009-DWQ as amended by Order No. 2010-0014-DWQ and Order No. 2012-0006-DWQ)* (Construction General Permit) regulates stormwater discharges for construction activities (CWA Section 402). Dischargers whose projects disturb 1 or more acres of soil, or whose projects disturb less than 1 acre but are part of a larger common plan of development that in total disturbs 1 or more acres, are required to obtain coverage under the Construction General Permit. The Construction General Permit requires the applicant to file a notice of intent (NOI) to discharge stormwater and to prepare and implement a stormwater pollution prevention plan (SWPPP). The SWPPP includes a site map and a description of proposed construction activities, along with a demonstration of compliance with relevant local ordinances and regulations, and an overview of the best management practices (BMPs) that would be implemented to prevent soil erosion and discharge of other construction-related pollutants that could contaminate nearby water resources. Permittees are further required to conduct annual monitoring and reporting to ensure that BMPs are correctly implemented and effective in controlling the discharge of stormwater-related pollutants.

BMPs included in the SWPPP may include measures such as the following.

1. Providing permeable surfaces where feasible.
2. Retaining and treating stormwater onsite using catch basins and filtering wet basins.
3. Minimizing the contact of construction materials, equipment, and maintenance supplies with stormwater.
4. Reducing erosion through soil stabilization, watering for dust control, installing perimeter silt fences, placing rice straw bales, and installing sediment basins. In order to minimize potential impacts on wildlife, no monofilament plastic mesh or line will be used for erosion control.



5. Maintaining water quality by using infiltration systems, detention systems, retention systems, constructed wetland systems, filtration systems, biofiltration/bioretenion systems, grass buffer strips, ponding areas, organic mulch layers, planting soil beds, sand beds, and vegetated systems such as swales and grass filter strips that are designed to convey and treat either fallow flow (swales) or sheetflow (filter strips) runoff.

In addition, a procedure for spill prevention and control is typically developed to minimize the potential for, and effects from, spills of hazardous, toxic, or petroleum substances during all construction activities. If a spill should occur during construction that causes a release of a hazardous material, including oil and radioactive materials, the proper agencies are typically notified and an Emergency Release Follow-up Notice Reporting Form is submitted no more than 30 days following the release.

#### *NPDES General Municipal Stormwater Permit*

CWA Section 402 mandates programmatic permits for municipalities to address stormwater discharges, which are regulated under the *NPDES General Permit for Municipal Separate Storm Sewer Systems (MS4) (MS4 Permit)*. Phase I MS4 regulations cover municipalities with populations greater than 100,000, certain industrial processes, or construction activities disturbing an area of 5 acres or more. Phase II (Small MS4) regulations require municipalities with populations smaller than 100,000 and construction activities disturbing 1 or more acres of land area to develop a stormwater management plan for its jurisdiction.

The State Water Board is advancing low impact development (LID) in California as a means of complying with municipal stormwater permits. LID incorporates site design, including the use of vegetated swales and retention basins and minimizing impermeable surfaces, to manage stormwater to maintain a site's predevelopment runoff rates and volumes.

#### *Waste Discharge Requirements for Dewatering and Other Low Threat Discharges to Surface Waters*

CWA Section 402 also includes waste discharge requirements (WDRs) for dewatering activities. "Dewatering" refers to the removal and discharge of water, including groundwater, from a site. Although small amounts of construction-related dewatering are covered under the Construction General Permit, the Central Valley Water Board has regulations specific to dewatering activities that typically involve reporting and monitoring requirements.

If dewatering is required as part of a proposed project, then the project applicant must comply with the Central Valley Water Board dewatering requirements. The Construction General Permit covers uncontaminated dewatering activities, which are considered in the permit to be authorized non-stormwater discharges. As part of the Construction General Permit, all dewatering discharges are required to be filtered or treated, using appropriate technology, from sedimentation basins. Authorized non-stormwater dewatering discharges may require a permit because some RWQCBs have adopted general permits for dewatering discharges. The Central Valley Water Board has adopted an NPDES Low Threat Discharge and Dewatering General Permit. Therefore, a project applicant or the project applicant's contractor would also need to obtain coverage under this permit, which will require the dewatering discharge be treated prior to discharge to any local water way.

If dewatering activities lead to discharges to the storm drain system or other water bodies, water treatment measures may be designed and implemented as necessary so that water quality objectives are met prior to discharge to waters of the State. As a performance standard, these

measures would be selected to achieve the maximum removal of contaminants found in the groundwater and would represent the best available technology (BAT) that is economically feasible. Implemented measures may include using infiltration areas and retaining dewatering effluent until particulate matter has settled before the water is discharged. The contractor would perform routine inspections of the construction area to verify that the water quality control measures are properly implemented and maintained; the contractor would also observe water conditions (e.g., check for odors, discoloration, or an oily sheen on groundwater). Other pre-discharge sampling and reporting activities required by the Central Valley Water Board would also be conducted as necessary. The final selection of water quality control measures would be subject to review by the Central Valley Water Board, if necessary. If the groundwater is found to not meet water quality standards and treatment measures are not effective, the water may need to be hauled offsite for treatment and disposal at an appropriate waste treatment facility.

#### **Section 404—Permits for Fill Placement/Dredging in Waters and Wetlands**

CWA Section 404 regulates the discharge of dredged and fill materials into *waters of the United States*, which include oceans, bays, rivers, streams, lakes, ponds, and wetlands. Project proponents must obtain a permit from the U.S. Army Corps of Engineers (USACE) for all discharges of dredged or fill material into waters of the United States before proceeding with a proposed activity. Before any actions that may affect surface waters are implemented, a delineation of jurisdictional waters of the United States must be completed, following USACE protocols, to determine if the project contains wetlands or other waters of the United States that qualify for CWA protection. Two types of jurisdictional waters could be present in the planning area.

- Sections within the ordinary high water mark (OHWM) of a stream, including non-perennial streams with a defined bed and bank and any stream channel that conveys natural runoff, even if it has been realigned.
- Seasonal and perennial wetlands.

Wetlands are defined for regulatory purposes as areas “inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions” (33 CFR 328.3, 40 CFR 230.3).

Applicants must obtain a permit from USACE for all discharges of dredged or fill material into waters of the United States, including wetlands, before proceeding with a proposed activity. As stated by the Counsel for the EPA’s January 19, 2001, determination in response to the *Solid Waste Agency of Northern Cook County v. USACE* ruling, nonnavigable, isolated waters may not be regulated by USACE. As part of the wetland delineation and verification process, USACE will determine whether the wetlands in the planning area are isolated and therefore not regulated under Section 404.

USACE may issue either an individual permit evaluated on a case-by-case basis or a general permit evaluated at a program level for a series of related activities. General permits are pre-authorized and are issued to cover multiple instances of similar activities expected to cause only minimal significant environmental effects. Nationwide permits (NWP) are a type of general permit issued to cover particular fill activities. Each NWP specifies particular conditions that must be met for the NWP to apply to a particular project. Potential waters of the United States in the planning area are under the jurisdiction of USACE’s Sacramento District.

Compliance with Section 404 requires compliance with several other environmental laws and regulations. USACE cannot issue an individual permit or verify the use of a general permit until the requirements of the National Environmental Policy Act (NEPA), the Federal Endangered Species Act (ESA), and National Historic Preservation Act (NHPA) have been met. In addition, USACE cannot issue or verify any permit until a water quality certification or a waiver of certification has been issued pursuant to CWA Section 401.

Certain activities, such as those listed below, are exempt from the Section 404 permitting process.

- Farming, ranching, and forestry activities that are considered normal and ongoing (as of 1985 conditions), such as plowing, harvesting, and minor drainage of upland areas to waters of the United States.
- Construction and maintenance of stock ponds and irrigation ditches.
- Maintenance of drainage ditches.
- Construction of temporary sedimentation basins in upland areas.
- Construction and maintenance of farm, forest, and mining roads in accordance with BMPs.
- Other activities regulated by an approved program of BMPs authorized by CWA Section 208(b)(4).

Section 404 permits may be issued for only the least environmentally damaging practical alternative (i.e., authorization of a proposed discharge is prohibited if there is a practical alternative that would have fewer significant effects and lacks other significant consequences). Section 404 will apply to future development under the proposed project when construction would occur within waters of the United States.

### **National Flood Insurance Program**

The National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973 were intended to reduce the need for large, publicly funded flood risk management structures and disaster relief by restricting development on floodplains. The Federal Emergency Management Agency (FEMA) administers the National Flood Insurance Program (NFIP) to subsidize flood insurance to communities that comply with FEMA regulations limiting development in floodplains. FEMA issues Flood Insurance Rate Maps (FIRMs) for communities participating in the NFIP. These maps delineate flood hazard zones in the community. These maps are designed for flood insurance purposes only and do not necessarily show all areas subject to flooding. The maps designate lands likely to be inundated during a 100-year event and elevations of this flooding. A 100-year event is the level of flooding for which there is a 1% statistical chance of occurrence in any given year. The maps also depict areas between the limits affected by 100-year and 500-year events and areas of minimal flooding. These maps often are used to establish building pad elevations to reduce risk to new development from flooding effects. The locations of FEMA-designated floodplains in the city are described below in the *Federal Emergency Management Agency Mapping Efforts* section.

### **Requirements for Federal Emergency Management Agency Certification**

For guidance on floodplain management and floodplain hazard identification, communities turn to FEMA guidelines, as defined in 44 CFR 59–77. For a levee to be recognized by FEMA under the NFIP, the community must provide evidence demonstrating that adequate design and operation and maintenance systems provide a level of performance adequate to address the base flood (1% or

100-year flood). These specific requirements are outlined in 44 CFR 65.10, Mapping of Areas Protected by Levee Systems, and are summarized below.

**Levee height.** Riverine levees must provide a minimum freeboard (the height of the top of a levee above a given level of water in a river) of 3 feet above the water-surface level of the base flood. An additional 1 foot above the minimum is required within 100 feet of either side of structures (such as bridges) riverward of the levee or wherever the flow is constricted. An additional 0.5 foot above the minimum at the upstream end of the levee, tapering to not less than the minimum at the downstream end of the levee, also is required.

**Closures.** All openings must be provided with closure devices that are structural parts of the system during operation and designed according to sound engineering practice.

**Embankment protection.** Engineering analyses that demonstrate that no appreciable erosion of the levee embankment can be expected during the base flood, as a result of either currents or waves, and that anticipated erosion will not result in failure of the levee embankment or foundation directly or indirectly through reduction of the seepage path and subsequent instability must be submitted to FEMA.

**Embankment and foundation stability.** Engineering analyses that evaluate levee embankment stability must be submitted to FEMA. The analyses provided must evaluate expected seepage during loading conditions associated with the base flood and demonstrate that seepage into or through the levee foundation and embankment will not jeopardize embankment or foundation stability.

**Settlement.** Engineering analyses that assess the potential and magnitude of future losses of levee height as a result of levee settlement and demonstrate that freeboard will be maintained within the minimum standards must be submitted to FEMA.

**Interior drainage.** An analysis of interior drainage conditions that identifies the source(s) of such flooding; the extent of the flooded area; and, if the average depth is greater than 1 foot, the water-surface elevation(s) of the base flood must be submitted to FEMA.

**Operation plans.** For a levee system to be recognized by FEMA, a formal plan of operation must be provided to FEMA. All closure devices or mechanical systems for internal drainage, whether manual or automatic, must be operated in accordance with an officially adopted operations manual, a copy of which must be provided to FEMA.

**Maintenance plans.** For levee systems to be recognized as meeting required levels of performance, they must be maintained in accordance with an officially adopted maintenance plan. All maintenance activities must be under the jurisdiction of a federal or state agency, an agency created by federal or state law, or an agency of a community participating in the NFIP that must assume ultimate responsibility for maintenance. The plan must document the formal procedure that ensures that the stability, height, and overall integrity of the levee and its associated structures and systems will be maintained. At a minimum, maintenance plans must specify the maintenance activities to be performed, the frequency of their performance, and the person by name or title responsible for implementation.

### **U.S. Army Corps of Engineers**

USACE uses General Reevaluation Reports (GRRs) to present the results of a reevaluation of a previously completed study. A GRR may be needed to update the previous study related to planning

criteria or policies, in consideration of changed conditions and assumptions. The GRR results may confirm the findings of the previous study, reformulate and modify those results, or find that no plan is currently justified. The results are documented in a GRR which, if recommended and supported, also serves as the decision document for a federal action (U.S. Army Corps of Engineers and Central Valley Flood Protection Board 2009). The primary objective of the West Sacramento GRR is to determine the extent of federal interest in further reducing the flood risk within the study area while concurrently exploring opportunities to increase recreation and restore the ecosystem along the Sacramento River. USACE released the draft GRR in 2014 (U.S. Army Corps of Engineers and Central Valley Flood Protection Board 2014). The final GRR was approved April 26, 2016 with the issuance of the USACE's Chief of Engineer's Report. The GRR will now be presented to Congress for funding of the project.

The federal government maintains oversight, but has no ownership of or maintenance responsibilities for the federal levee system, except for select features that continue to be owned and operated by USACE. The federal government can participate in improvements to the federal levee system in partnership with a local sponsor (the state and/or levee and reclamation districts). Under authority of the Flood Control Act of 1944, the Central Valley Flood Protection Board (CVFPB) is the non-federal sponsor of the flood control system from Lake Shasta to the San Joaquin River in Fresno County. By state law, most of the responsibilities of operating and maintaining the levee system have been delegated to local levee and reclamation districts. The levees surrounding the city are maintained by Reclamation District (RD) 537 and RD 900 and California Department of Water Resources (DWR) Maintenance Area 4. Levees not a part of the Sacramento River Basin Flood Management System include the Port North and South Levees that were constructed as part of the Port of Sacramento, the Sacramento Deep Water Ship Channel (DWSC) West navigation levee constructed as part of the Sacramento DWSC, and the private South Cross Levee (HDR 2008).

The primary purpose of the Southport Early Implementation Project (EIP) is to reduce flood risk for the entire city of West Sacramento by addressing known levee deficiencies along the Southport reach of the Sacramento River. The Southport EIP would not reduce all flood risks affecting the planning area, but it would contribute to flood-risk reduction for the entire city and would address the most immediate risk based on the factors listed below.

- Nature of Sacramento River West Levee being the longest and most contiguous portion of the planning area perimeter.
- Location of known levee deficiencies and the clarity and feasibility of available measures to address them.

The Southport EIP would not change the FEMA mapping for the city because it encompasses only a portion of the levees protecting the city. However, the Southport EIP would contribute to a greater overall level of flood protection consistent with federal and state standards. Future improvements will be implemented by the West Sacramento Area Flood Control Agency (WSAFCA) in coordination with DWR, CVFPB, and USACE based on available funding, the outcome of the West Sacramento's request for Congressional funding under the Water Resources Development Act, and implementation of the Central Valley Flood Protection Plan (CVFPP) and other flood management programs.

## Sacramento River Flood Control Project Levee Height Requirements

As specified in the *Design Memorandum, Volume I of II for the Sacramento River Flood Control Project, California, Mid-Valley Area, Phase III* (U.S. Army Corps of Engineers 1996) and the *Operation and Maintenance Manual for Channel and Levees, Sacramento River Deep Water Ship Channel Project* (U.S. Army Corps of Engineers 1963), the following minimum levee height (freeboard) requirements apply to the various reaches.<sup>1</sup>

- Sacramento River Levee: 3 feet
- Sacramento Bypass Levee: 6 feet
- Yolo Bypass Levee: 6 feet
- DWSC Levees, Port North Levee, and Port South Levee: 6 feet for the DWSC where it is adjacent to the Yolo Bypass and 3 feet for the Port (turning basin and barge canal).

## Executive Order 11988 Floodplain Management

Executive Order 11988 addresses floodplain issues related to public safety, conservation, and economics. The order generally requires federal agencies constructing, permitting, or funding actions meet the following requirements.

- Avoid incompatible floodplain development.
- Be consistent with the standards and criteria of the NFIP.
- Restore and preserve natural and beneficial floodplain values.

## State

### California Department of Water Resources

DWR performs a range of functions relating to water. As a planning agency it prepares the *California Water Plan* and drafted the CVFPP. As an operational agency it runs the State Water Project. As a funding agency, it provides money for flood protection projects among other things.

Pertinent to West Sacramento, DWR administers a funding program for constructing EIPs in coordination with the CVFPP. EIPs are funded by bonds approved by the voters of California under the ballot initiatives Propositions 84 and 1E. Three such projects have been constructed by WSAFCA for the benefit of West Sacramento: the I Street Bridge EIP in 2008 and the California Highway Patrol (CHP) Academy EIP and The Rivers EIP, both in 2011. The proposed Southport EIP would be the fourth such project.

### California Water Plan

The *California Water Plan* (California Department of Water Resources 2013) is the State's long-term strategic plan for guiding the management and development of water resources under emerging conditions and expectations, and in the face of uncertainties. The most recent update to the plan, released in 2013, provides a strategic vision and roadmap for California's water future rather than

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<sup>1</sup> The freeboard requirements listed are for the Sacramento River Flood Control Project, specifically the 1957 profiles for Sacramento River, the Sacramento Bypass, and the Yolo Bypass, and the design elevations referenced in U.S. Army Corps of Engineers (1963) for the DWSC, Port North, and Port South levees.

specifying mandates, prioritizing actions, or allocating funding. Volume II of the plan contains regional reports, including one pertaining to the San Joaquin River Hydrological Region and a regional water management strategic vision.

### **Groundwater Planning Legislation Passed in 2014**

This section summarizes important groundwater planning legislation passed in 2014. However, the requisite groundwater management entities have not been formed and the groundwater management plans have not been drafted or adopted. Accordingly, this legislation is years away from implementation and this discussion is for information only. The city is not dependent on groundwater for its water supply, nor does it expect to be in the future. Although it may participate in drafting the groundwater management plan, that plan is not expected to be influential in the city's development.

#### ***Assembly Bill 1739***

Assembly Bill (AB) 1739 requires sustainable groundwater management in all groundwater subbasins determined by DWR to be at medium to high risk of significant economic, social, and environmental impacts due to an unsustainable and chronic pattern of groundwater extractions exceeding the ability of the surface water supplies to replenish the subbasin. Most pertinent to the General Plan update, AB 1739 requires, prior to the adoption or any substantial amendment of a general plan, that the planning agency review and consider a groundwater sustainability plan, groundwater management plan, groundwater management court order, judgment, or decree, adjudication of water rights, or a certain order or interim plan by the State Water Board. This statute requires the planning agency to refer a proposed action to adopt or substantially amend a general plan to any groundwater sustainability agency that has adopted a groundwater sustainability plan or local agency that otherwise manages groundwater and to the State Water Board if it has adopted an interim plan that includes territory within the planning area. This is not applicable to the proposed project because no such plan has been adopted.

#### ***Senate Bill 1168***

California Senate Bill (SB) 1168 enacts the Sustainable Groundwater Management Act and states as the intent of the Legislature that, among other things, all groundwater basins and subbasins must be managed sustainably by local entities pursuant to an adopted sustainable groundwater management plan. SB 1168 requires that for all groundwater basins designated as high- or medium-priority basins by DWR, agencies must develop and implement a groundwater sustainability plan to be developed and implemented to meet the sustainability goal, established as prescribed, and would require the plan to include prescribed components. This bill encourages and authorizes basins designated as low- or very low priority basins to be managed under groundwater sustainability plans. At this time, no regional management agency has been established.

#### ***Senate Bill 1319***

SB 1319 additionally authorizes the State Water Board to designate certain high- and medium-priority basins as probationary if, after January 31, 2025, prescribed criteria are met, including that the State Water Board determines that the basin is in a condition where groundwater extractions result in significant depletions of interconnected surface waters. This bill adds to the prescribed determinations that would prevent the State Water Board from designating the basin as a probationary basin for a specified time period and requires that the State Water Board exclude from

probationary status any portion of a basin for which a groundwater sustainability agency demonstrates compliance with the sustainability goal.

### **Porter-Cologne Water Quality Control Act**

California's Porter-Cologne Act, passed in 1969, provides the legal basis for water quality regulation within California. It established the State Water Board and divided the state into nine regions, each overseen by an RWQCB. The State Water Board is the primary state agency responsible for protecting the quality of the state's surface and groundwater supplies, although much of its daily implementation authority is delegated to the RWQCBs, which are responsible for implementing CWA Sections 402 and 303(d). In general, the State Water Board manages both water rights and statewide regulation of water quality, while the RWQCBs focus exclusively on water quality within their regions.

### **Central Valley Regional Water Quality Control Board**

The Central Valley Water Board is responsible for implementing its *Water Quality Control Plan (Basin Plan) for the Sacramento River and San Joaquin River Basin* (Basin Plan) (Central Valley Regional Water Quality Control Board 2011). The Basin Plan identifies beneficial uses of the Sacramento River and its tributaries and water quality objectives to protect those uses. Numerical and narrative criteria are contained in the Basin Plan for several key water quality constituents, including dissolved oxygen (DO), water temperature, trace metals, turbidity, suspended material, pesticides, salinity, radioactivity, and other related constituents.

The methods the Central Valley Water Board uses to implement the Basin Plan criteria include issuing WDRs. WDRs are issued to any entity that discharges to a surface water body and does not meet certain water quality criteria such as those related to sediment. The WDR also serves as a federally required NPDES permit (under the CWA) and incorporates the requirements of other applicable regulations, and may be referred to as a WDR/NPDES permit.

### **Basin Plans and Water Quality Objectives**

The Porter-Cologne Act provides for the development and periodic review of basin plans that designate beneficial uses of California's major rivers and groundwater basins and establish narrative and numerical water quality objectives for those waters. Beneficial uses represent the services and qualities of a water body (i.e., the reasons the water body is considered valuable), while water quality objectives represent the standards necessary to protect and support those beneficial uses. Basin plans are implemented primarily by using the NPDES permitting system to regulate waste discharges so that water quality objectives are met (see *Clean Water Act, Section 402—National Pollutant Discharge Elimination System* above). Basin plans are updated every 3 years and provide the technical basis for determining WDRs and taking enforcement actions. The Central Valley Water Board Basin Plan was last updated in 2011.

### **Water Quality Objectives by Region**

The RWQCBs have set water quality objectives for all surface waters in their respective regions (including the Sacramento River basin) for the following substances and parameters: ammonia, bacteria, biostimulatory substances, chemical constituents, color, DO, floating material, oil and grease, pH, pesticides, radioactivity, salinity, sediment, settleable material, suspended material, tastes and odors, temperature, toxicity, and turbidity.



### **State Implementation Plan**

In 1994, the State Water Board and EPA agreed to a coordinated approach for addressing priority toxic pollutants in inland surface waters, enclosed bays, and estuaries of California. In March 2000, the State Water Board adopted a State Implementation Policy (SIP) for priority toxic pollutant water quality criteria contained in the California Toxics Rule (CTR). EPA promulgated the CTR in May 2000. The SIP also implements National Toxics Rule (NTR) criteria and applicable priority pollutant objectives in the basin plans. In combination, the CTR and NTR and applicable basin plan objectives, existing RWQCB beneficial use designations, and SIP compose water quality standards and implementation procedures for priority toxic pollutants in non-ocean surface waters in California, such as the Sacramento River.

### **California Department of Fish and Wildlife 1602 Streambed Alteration Agreement**

Under Chapter 6 of the California Fish and Game Code, the California Department of Fish and Wildlife (CDFW) is responsible for the protection and conservation of the state's fish and wildlife resources. Section 1602 et seq. of the code defines the responsibilities of CDFW and requires that public and private applicants obtain an agreement to "divert, obstruct, or change the natural flow or bed, channel, or bank of any river, stream, or lake designated by the CDFW in which there is at any time an existing fish or wildlife resource or from which those resources derive benefit, or will use material from the streambeds designated by the department." A streambed alteration agreement is required under Section 1602 of the California Fish and Game Code for all activities that involve temporary or permanent activities within state jurisdictional waters.

### **Central Valley Flood Protection Plan**

The purpose of the Central Valley Flood Management Planning (CVFMP) Program is to develop a sustainable, integrated flood risk management plan for areas protected by facilities of the state-federal flood risk management system in the Central Valley of California. The program is one of several the DWR is implementing within FloodSAFE California to accomplish the goals of Propositions 1E and 84. The CVFMP Program consists of two primary projects: the State Plan of Flood Control and the CVFPP.

SB 5 of 2007, the Central Valley Flood Protection Act, required that DWR and CVFPB address flooding problems in the Central Valley and report to the Legislature in 2012, with updates every 5 years. This landmark legislation obligated the State and local governments to approach flood management in a much more holistic way. Importantly, the act required that urban communities (communities with a population with 10,000 people or communities expected to have 10,000 people within 10 years) achieve a 200-year level of protection by 2016 or no new development entitlements may be granted unless the communities certify they have made (and annually are making) adequate progress in implementation and will achieve the State's 200-year standard by 2025. The act also required that DWR prepare maps showing areas subject to inundation in a 200-year event, and provide annual notices to all homes protected by levees to ensure homeowners understand their flood risk (California Department of Water Resources 2015b). DWR has not prepared new maps of 200-year flood zones, but provides "best available maps" (BAMs) on its website, with the expectation that local agencies will prepare the necessary detailed maps. The act also required that DWR prepare and the CVFPB adopt a CVFPP by July 2012. The CVFPP is to provide the framework for modification of and future investment decisions in the Central Valley's flood protection system. On June 29, 2012, the CVFPB adopted the CVFPP which included a strategy for reducing the flood risk of the citizens of the Central Valley. The plan focuses on: (1) urban areas

obtaining at least 200-year protection through structural improvements; (2) significant upgrades to system-wide facilities (such as bypasses) to add additional robustness and redundancies to the system; (3) investment in small community systems (structural improvements or nonstructural improvements, such as home elevation) to achieve at least 100-year protection; (4) spot repairs and operation and maintenance improvements for the rural areas of the Central Valley; and (5) investment to update emergency response and recovery plans. The CVFPP does not contain policies specific to the City of West Sacramento.

### **Central Valley Flood Protection Board**

The CVFPB undertakes a variety of activities to protect people and property within the Central Valley from catastrophic flooding, including adopting the CVFPP and regulating activities on and adjacent to state and federal levees. CVFPB works with local agencies, DWR, and USACE to protect the integrity of the levees. State law provides that any modification to the federal and state flood control system, encroachment, or project on or near the Sacramento and San Joaquin Rivers or their tributaries must receive prior approval from the CVFPB. In addition, California Planning Law requires all cities and counties within the boundaries of the Sacramento–San Joaquin Drainage District to provide a copy of proposed updates to their general plans to the CVFPB for review and comment prior to adoption.

### **California Department of Water Resources Urban Levee Design Criteria**

To further the objectives of SB 5 [Government Code Section 65007(l)], DWR has prepared Urban Levee Design Criteria (ULDC) to define the urban level of flood protection as the level of protection that is necessary to withstand flooding that has a 1-in-200 chance of occurring in any given year. The ULDC were developed through a collaborative process with stakeholders from local government (including representatives from the Central Valley, San Francisco Bay Area, and Los Angeles region), state government, and the federal government.

The ULDC provides guidance for design, construction, operation, and maintenance of levees and floodwalls in urban and urbanizing areas.

### **Delta Protection Act of 1992**

This act declares that one of the basic goals of the state for the Sacramento–San Joaquin Delta (Delta) is to improve flood protection, thereby ensuring an increased level of public health and safety, by structural and nonstructural means. It establishes the Delta Protection Commission (DPC), with the direction to adopt a “comprehensive long-term resource management plan for land uses within the primary zone of the delta” (Public Resources Code Section 29760) and to review local general plans for consistency with the plan. The city is within the bounds of the Delta, as defined by the State of California in California Water Code Section 12220 (also known as the “Legal Delta”). The Legal Delta is further subdivided into a primary zone and secondary zone for land use planning and resource protection purposes. Most of West Sacramento is in the secondary zone, while the extreme northern part of the city is outside of these Delta planning areas. The reach along the Sacramento DWSC West Levee is the only portion of the planning area within the primary zone.

Land uses within the primary zone must be consistent with the DPC’s Land Use and Resource Management Plan. The DPC also reviews proposed land uses within the secondary zone to ensure that they will not affect the primary zone.

### **Safe, Clean, Reliable Water Supply Act**

This act declares that the basic goals of the state for the Delta are, among other findings, to protect the integrity of the state's water supply system from catastrophic failure attributable to earthquakes and flooding.

### **Local**

Yolo County and the City each have adopted goals and policies related to flood risk management. For this analysis, the primary noteworthy item is the goal of 200-year level of performance and adoption of USACE's minimum freeboard requirements.

In addition to Yolo County's adopted goals and policies, according to Section 8-3.401 of the Yolo County Code, a Flood Hazard Development Permit must be obtained before any development begins within any area of special flood hazards. "Development" includes "any manmade change to improved or unimproved real estate, including filling, grading, and excavation operations.

### **West Sacramento Area Flood Control Agency**

WSAFCA is a Joint Powers Authority created in 1994 through a Joint Exercise of Powers Agreement by the City, RD 900, and RD 537. WSAFCA was established to coordinate the planning and construction of flood protection facilities and to finance the local share of flood control projects. WSAFCA is responsible for the operations and maintenance of the detention basins, pump stations, and levees that protect the city.

WSAFCA's goal is to achieve the state-mandated minimum 200-year level of flood protection for the city by modifying the approximately 50 miles of levees surrounding West Sacramento. A 200-year flood is an event that has a one-in-200 (0.5%) chance of occurring in any given year. WSAFCA administers local funding for flood protection improvements from three sources: a special parcel tax enacted in 2007; a 0.5 cent sales tax established in 2008 under City Measures U and V; and an in-lieu development fee on new development. This local funding is used as a match for state and federal funding sources.

WSAFCA is actively planning improvements to the levee system as part of the West Sacramento Levee Improvement Program (WSLIP) to protect the city in cooperation with the USACE, CVFPB, and DWR. These efforts include the Sacramento Bank Project and the Southport Sacramento River EIP. WSAFCA is advancing WSLIP to facilitate EIPs to more immediately address flood risk before the final West Sacramento GRR is complete. The WSLIP program evaluation and EIPs are intended to be consistent and compatible with the final GRR. Except for EIPs constructed in advance of the final GRR, the WSLIP improvements would be substantially implemented through the GRR once it is in place. The GRR will undergo independent NEPA review (separate from the WSLIP); however, the environmental review processes of the GRR and WSLIP are being coordinated for consistency and efficiency.

WSAFCA's approach is to provide a comprehensive evaluation of the City's entire levee system, develop and recommend strategies for improvement, and provide a basis for partnerships with federal and state agencies to implement improvements that meet the flood protection and compatible recreation and open space goals. The objectives under this approach are as follows.

- Construct levee improvements as soon as possible to reduce flood risk as quickly as possible.

- Construct improvements that are politically, socially, economically, and environmentally acceptable.
- Provide recreation and open space elements for the city that are compatible with flood improvement actions.
- Ensure continuing federal assistance for levee repairs and maintenance.

WSAFCA applies the following levee evaluation criteria to the West Sacramento levee system to identify levee deficiencies (HDR 2008).

### ***Inadequate Levee Height***

Flood management systems are designed to a target level of protection. Determining appropriate levee height is a complex evaluation based on many hydrologic and hydraulic factors, including estimation of the water surface elevation plus a factor of safety above that elevation (also known as freeboard). WSAFCA uses the minimum freeboard requirements set forth by USACE. Another consideration in determining adequate levee height is the contextual relationship of a given levee within the overall flood protection system (i.e., one levee or set of levees cannot be raised to a height such that flows would be directed to flood adjacent or downstream areas). Overtopping is not considered a failure if the event to which the levee was designed is exceeded, provided it was constructed and maintained to that design event (i.e., target level of protection). Results from the *Hydraulics Report for the City of West Sacramento Levee Alternatives Analysis* (MBK 2007) 200-year water surface conditions along the Sacramento River, DWSC, Sacramento Bypass, and Yolo Bypass hydraulic models were used to assess freeboard adequacy (i.e., having a minimum of 3 feet of freeboard above the 200-year water surface per project) in the assessment of adequate levee height.

### ***Through-Seepage and Under-Seepage***

Through-seepage occurs when water moves outward from the river channel through the levee cross section. The key problem associated with through-seepage is levee breach or collapse, which occurs when the earthen material within the levee is transported by the pressure of the seeping water. Soil piping can occur as the result of seepage. Soil piping is when a hole in a levee becomes exploited by moving water (which naturally seeks the path of least resistance), causing the hole to increase rapidly and threaten the levee integrity. Several factors contribute to seepage, including high water pressure (such as during periods of high water in the river or bypass), and pervious earth material (i.e., sandy soils) within or underlying the levee.

Similar to through-seepage, under-seepage occurs when water moves outward and downward from the river channel below the levee and surrounding land surface. The key problem with under-seepage occurs when the earth particles that comprise the levee foundation are transported from underneath the levee by the pressure of the seeping water. This undermining of the levee may result in levee instability or collapse. As with through-seepage, soil piping may occur and cause the levee to breach or collapse, and threatens levee integrity. Evidence of under-seepage can often be seen as boils on the land surface on the landward side of the levee. The factors that contribute to under-seepage are the same as those discussed for through-seepage.

An engineering analysis evaluating levee seepage for the 200-year event along the northern reaches of the basin is presented in *Phase 1 Geotechnical Evaluation Report (P1GER) West Sacramento Region* (USR 2007) and an engineering analysis of the southern reaches of the basin is presented in *West*

*Sacramento Levee System Problem Identification and Alternative Analysis: Volume 1 – Geotechnical Problem Identification Solano and Yolo Counties, California* (Kleinfelder 2007).

### **Slope Stability and Geometry**

Slope stability is a desirable quality and refers to the resistance of the levee slope to change (landside or waterside). A slope that has an unfavorable horizontal to vertical ratio can be unstable and vulnerable to slipping or sloughing, exacerbated by high flood water elevations. Generally, the approach to determining slope stability involves two categories: steady state and rapid drawdown. Steady state assumes that the flood stage water surface is present for a significant duration, and the presence of water in the levee and the weakening of the levee interior due to through-seepage can cause the landside slope of the levee to slip and wash away. Rapid drawdown also assumes that the flood-stage water surface is present for a significant amount of time, and then is removed quickly as if the river were drained. The water remaining within the levee section weakens the integrity of the levee and when the water surface drops, the waterside slope is vulnerable to slipping and washing away.

Geometry refers to the angle of the slope on both the waterside and landside of the levee as well as the width of levee crown. The USACE guidance regarding geometry has a standard of 3 horizontal feet to 1 vertical foot (3H:1V) on the waterside and landside slopes, and a 20-foot-minimum width of levee crown. Levees were evaluated according to USACE's standard for geometry and those levees that do not meet that standard are considered deficient.

The partial findings of an engineering analysis evaluating levee slope stability for the 200-year event along the northern reaches of the basin are presented in *Phase 1 Geotechnical Evaluation Report (P1GER) West Sacramento Region* (URS Corporation 2007), and results of an engineering analysis of the southern reaches of the basin are presented in *West Sacramento Levee System Problem Identification and Alternative Analysis: Volume 1 – Geotechnical Problem Identification Solano and Yolo Counties, California* (Kleinfelder 2007).

### **Erosion**

Erosion is the loss of levee material typically from the force of flowing water, which may be exacerbated by high water velocities, waves, wind action, and boat wake, or by uprooted trees. Evidence of levee erosion is often indicated by a lack of vegetation, minor slumping and loss of soil on the bank, steep undercut slopes, wave-cut benches, or deep scour near the bank toe. Erosion of revetment was identified by loss of riprap or by slumping and failure of the existing rock. The high variability in levee soil material, water surface elevation, flow velocities, and ship and boat traffic in local water courses results in commensurate variation in the point at which the levee is at risk (e.g., at lower flows, the levee toe is at risk to erosion; at high flows, the levee face may be at risk). An erosion assessment of the West Sacramento levee system is provided in *West Sacramento Levee System: Problem Identification Report; Erosion Assessment and Treatment Alternatives* (Northwest Hydraulic Consultants 2007).

### **Non-Compliant Vegetation and Levee Encroachments**

Federal project levees, like most of the system protecting West Sacramento, are subject to USACE standards for operations and maintenance. These standards are outlined in general policies and technical publications that apply to all federal project levees and in project-specific operations and maintenance (O&M) manuals. General guidance from USACE provides greater specificity for the

location, type, and amount of vegetation or other encroachments permitted on levees, such as the recently published *ETL 1110-2-583: Guidelines for Landscape Planting and Vegetation Management at Levees, Floodwalls, Embankment Dams, and Appurtenant Structures* to ensure aesthetic and environmental benefits are provided without compromising levee integrity (U.S. Army Corps of Engineers 2014). Under certain circumstances, vegetation and encroachments can exacerbate local erosion, limit the ability to observe levee performance, impair O&M practices, and otherwise affect levee integrity. WSAFCA has established compliance with USACE levee vegetation policies as a goal, and it is understood that projects must comply with USACE levee vegetation policies for Section 404 approval.

### **City of West Sacramento**

The City has undertaken a number of regulatory and financing initiatives as part of a flood management program to address flood risk, some of which are outlined below.

- The City has in place an Emergency Operations Plan which addresses flood safety through a Flood Plan and Evacuation Plan. To ensure adequacy, conformance with state-of-the-art standards, and to account for growth, the Emergency Operations Plan is reviewed annually and a comprehensive update is conducted every 3 years or more frequently as needed. Based on this review and revision cycle, the Emergency Operations Plan addresses residual flood risk as flood improvements are implemented and as the population and built environment change within WSAFCA's planning area.
- In May 2007 property owners in West Sacramento approved a new annual parcel assessment to provide funding for flood improvements.
- Since 2007 the City's municipal code (Chapter 15.50) requires new developments to provide 200-year protection or pay into an in-lieu fee program to fund WSAFCA's flood protection efforts.
- On June 1, 2016, the City Council made a finding of adequate progress (Council Resolution 16-45) in relation to achieving the 200-year level of protection as required under SB 5.

### **General Plan**

The following goals and policies excerpted from the Natural Resources and Health and Safety Elements of the current General Plan pertain to hydrology and water quality issues (City of West Sacramento 2004).

#### *Natural Resources*

**Goal A:** To protect water quality in the Sacramento River, Sacramento Deep Water Ship Channel, Lake Washington, and the area's groundwater basin.

#### **Policies:**

1. The City shall prohibit the establishment of any new septic systems within areas where City sewer and water service are available within one air mile and shall require that new septic tank installation elsewhere be limited to one acre or larger parcels.
2. The City shall seek the elimination of existing septic tanks in urbanized areas.
3. The City shall not approve new development that has a significant potential for adversely affecting water quality in the Sacramento River, the Deep Water Ship Channel, Lake Washington, or the area's groundwater basin.

4. The City shall regularly monitor water quality in City wells for evidence of toxics, saltwater intrusion, and other contaminants.
5. The City shall utilize the CEQA process to identify and avoid or mitigate potential groundwater pollution problems resulting from new commercial and industrial development.
6. The City shall support efforts on a county, regional, or statewide basis to reduce runoff of toxic agricultural chemicals into the Sacramento River.
7. The City shall implement measures to minimize the discharge of sediment into its watercourses.
8. The City shall continue to encourage responsible state agencies to prohibit the discharge of saltwater ballast into the Deep Water Ship Channel.

### *Health and Safety*

**Goal B:** To prevent loss of life, injury, and property damage due to flooding.

#### **Policies:**

1. The City shall continue to participate in the National Flood Insurance Program. To this end, the City shall ensure that local regulations are in full compliance with standards adopted by the Federal Emergency Management Agency.
6. Construction of storm drainage improvements shall be required, as appropriate, to prevent flooding during periods of heavy rainfall.
8. The City shall cooperate with area reclamation districts and other responsible agencies in the maintenance and improvement of levees and drainage channels.
9. The City shall support state and federal legislation which provides funding for the construction of flood control improvements in urbanized areas.
10. The City shall discourage uses that promote the erosion or structural deterioration of levees.

In April 2015, the City adopted General Plan policies intended to bring the existing Health and Safety Element into compliance with Government Code Sections 65302(g), 65302.9 and SB 5 (Chapter 364, Statutes of 2007). The new goal and policies, although they are not reflected in current versions of the existing General Plan, are listed below.

**Goal EC 2.1. Flood Protection.** Protect life and property from flooding.

#### **Policies:**

**EC 2.1.1. Interagency Flood Management.** The City shall work with local, regional, State, and Federal agencies to maintain an adequate information base, prepare risk assessments, and identify strategies to mitigate flooding impacts.

**EC 2.1.2. Regional Flood Management Planning Efforts.** The City shall participate in the California Department of Water Resources (DWR) Regional Flood Management Planning effort for the Lower Sacramento/Delta North region.

**EC 2.1.3. Interagency Levee Management.** The City shall work with local, regional, State, and Federal agencies to ensure new and existing levees are adequate in providing flood protection.

**EC 2.1.4. 200-year Flood Protection.** The City shall work with local, regional, State, and Federal agencies to achieve by 2025 at least 200-year flood protection for all areas of the city.

**EC 2.1.5. Funding for 200-year Flood Protection.** The City shall continue to cooperate with local, regional, State, and Federal agencies in securing funding to obtain the maximum level of

flood protection that is practical, with a minimum goal of achieving at least 200-year flood protection as quickly as possible.

**EC 2.1.6. Floodplain Capacity.** The City shall preserve urban creeks and rivers to maintain existing floodplain capacity.

**EC 2.1.7. Reservoir Storage Capacity.** The City shall partner with the West Sacramento Area Flood Control Agency to advocate for reservoir management practices and reservoir improvements that will increase West Sacramento's level of flood protection.

**EC 2.1.8. Floodplain Requirements.** The City shall regulate development within floodplains in accordance with State and Federal requirements and maintain the City's eligibility under the National Flood Insurance Program.

**EC 2.1.9. Community Rating System.** The City shall maintain eligibility in FEMA's [Federal Emergency Management Agency's] Community Rating System program, which gives property owners discounts on flood insurance.

**EC 2.1.10. Planned Land Use.** The City shall update, as necessary, the Land Use Element to reflect current floodplain mapping data.

**EC 2.1.11. New Development.** The City shall require evaluation of potential flood hazards prior to approval of development projects to determine whether the proposed development is reasonably safe from flooding and consistent with California Department of Water Resources (DWR) Urban Level of Flood Protection Criteria. The City shall not approve new development or a subdivision or enter into a development agreement for any property within a flood hazard zone unless the adequacy of flood protection specific to the area has been demonstrated.

**EC 2.1.12. New Development Design.** The City shall require new development located within a special (100-year) flood hazard area to be designed to minimize the risk of damage in the event of a flood.

**EC 2.1.13. Levee Certification.** The City shall work with WSAFCA [West Sacramento Area Flood Control Agency] to achieve local-certification of levees for 200-year flood protection by 2025.

**EC 2.1.14. Levee and Floodway Encroachment Permit.** The City shall require applicants to secure an encroachment permit from the Central Valley Flood Protection Board for any project that falls within the jurisdiction regulated by the Board (e.g., levees, designated floodways).

**EC 2.1.15. Levee Setbacks for New Development.** The City shall require adequate setbacks from flood control levees consistent with local, regional, State, and Federal design and management standards.

**EC 2.1.16. Levee Trees.** The City shall recognize the value of trees on levees for habitat and as carbon sinks and support West Sacramento Area Flood Control Agency efforts to develop a levee vegetation policy with the State and U.S. Army Corps of Engineers.

**EC 2.1.17. Dedication of Levee Footprint.** The City may require new development adjacent to a levee to dedicate the levee footprint in fee to the appropriate public agency.

**EC 2.1.18. Levees for Infill Development.** The City shall support the construction of levees that can increase levee stability and improve site characteristics, recreation, and river access adjacent to infill development and redevelopment areas.

**EC 2.1.19. Design and Operation of Critical Facilities.** The City shall require that critical facilities (e.g., emergency command centers, communication facilities, fire and police stations) and large public assembly facilities be designed to mitigate potential flood risk to ensure operation during a flood event. The City shall encourage non-City critical facilities (e.g., schools and County, State, and Federal buildings) be designed in a similar fashion.

**EC 2.1.20. Levees Used to Access Developments.** The City shall prohibit new development from using levees as a primary access point.



**EC 2.1.21. Roadway Systems as Escape Routes.** The City shall require that roadway systems for areas protected from flooding by levees be designed to provide multiple escape routes for residents and access for emergency services in the event of a levee or dam failure.

**EC 2.1.22. Unobstructed Access to Levees.** The City shall provide unobstructed access, whenever feasible, on City-owned land to levees for maintenance and emergencies and require setbacks and easements for access to levees from private property.

**EC 2.1.23. Comprehensive Flood Management, Emergency, and Evacuation Plans.** The City shall maintain, implement, update, and make available to the public the local Comprehensive Flood Management Plan, Emergency Plans, and Evacuation Plans, which address emergency preparedness, evacuation, hazardous materials, protection of critical facilities, development guidelines, and flood insurance outreach to better protect citizens in the event of a major flood event.

**EC 2.1.24. Flooding Evacuation and Rescue Maps.** The City shall maintain, update, and make available to the public, as appropriate, current flood evacuation and rescue maps.

**EC 2.1.25. Flood Risk Notification.** The City shall annually notify owners of residential development protected from flooding by a levee and/or subject to inundation in the event of levee failure of the risk.

**EC 2.1.26. Deed Notification.** The City shall require, for areas protected by levees, all new developments to include a notice within the deed that the property is protected from flooding by a levee and that the property can be subject to flooding if the levee fails or is overwhelmed.

**EC 2.1.27. Flood Insurance.** The City shall encourage all residents to purchase flood insurance.

**EC 2.1.28. Climate Change-related Flood Risks.** The City shall continue to partner with relevant organizations and agencies when updating FEMA and California Department of Water Resources (DWR) flood hazard maps and the City's Comprehensive Flood Management Plan and the County-wide Local Hazard Mitigation Plan to consider of the impacts of urbanization and climate change on long-term flood safety and long-term flood event probabilities.

### **West Sacramento Stormwater Management Program**

The City's blueprint for permit compliance with the CWA and California's NPDES permit process is its state-approved *City of West Sacramento Stormwater Management Program (SWMP) Planning Document*, which includes measures to help reduce the potential for pollutants to enter the storm drain system (City of West Sacramento 2003). Each year, the City must submit annual reports to the Regional Water Board on its progress in implementing these measures. The City must implement BMPs that reduce pollutants in stormwater to the "maximum extent practicable" (MEP). MEP is the technology-based standard established in CWA Section 402(p)(3)(B)(iii). Technology-based standards establish the level of pollutant reductions that dischargers must achieve. MEP is generally a result of emphasizing pollution prevention and source control BMPs as the first lines of defense in combination with treatment methods, where appropriate. The MEP approach is an ever-evolving, flexible and advancing concept, which considers technical and economic feasibility. The way in which MEP is met may vary among communities (City of West Sacramento 2003).

The MEP standard applies to municipalities regulated by the Small MS4 General Permit. Consistent with EPA guidance, the Small MS4 General Permit requires the City to develop and implement six "minimum control measures" (referred to as "program elements" for the SWMP). These six program elements are as follows.

- Public Education and Outreach.
- Public Involvement and Participation.

- Illicit Discharge.
- Construction Activities.
- New Development and Redevelopment.
- Municipal Operations.

In addition, the City may choose to include other program elements applicable to the community environment. In West Sacramento an additional program element is being considered to address the industrial facilities within the city. In choosing control measures and their associated BMPs for these program elements, the City considers technical feasibility, effectiveness, cost, and public acceptance (City of West Sacramento 2003).

## Environmental Setting

### Climate

West Sacramento has a mild, Mediterranean-type climate. Mean annual temperature is 62.2°F. Maximum average annual summer temperatures range from 87.1 to 93.1°F. Temperatures sometimes exceed 100° F. Winter temperature maximums vary from 54.5 to 60.6°F. Average low temperatures in the winter range from 40.2 to 43.7° F. Temperatures in the winter only occasionally drop below freezing. (Andrews 1972.)

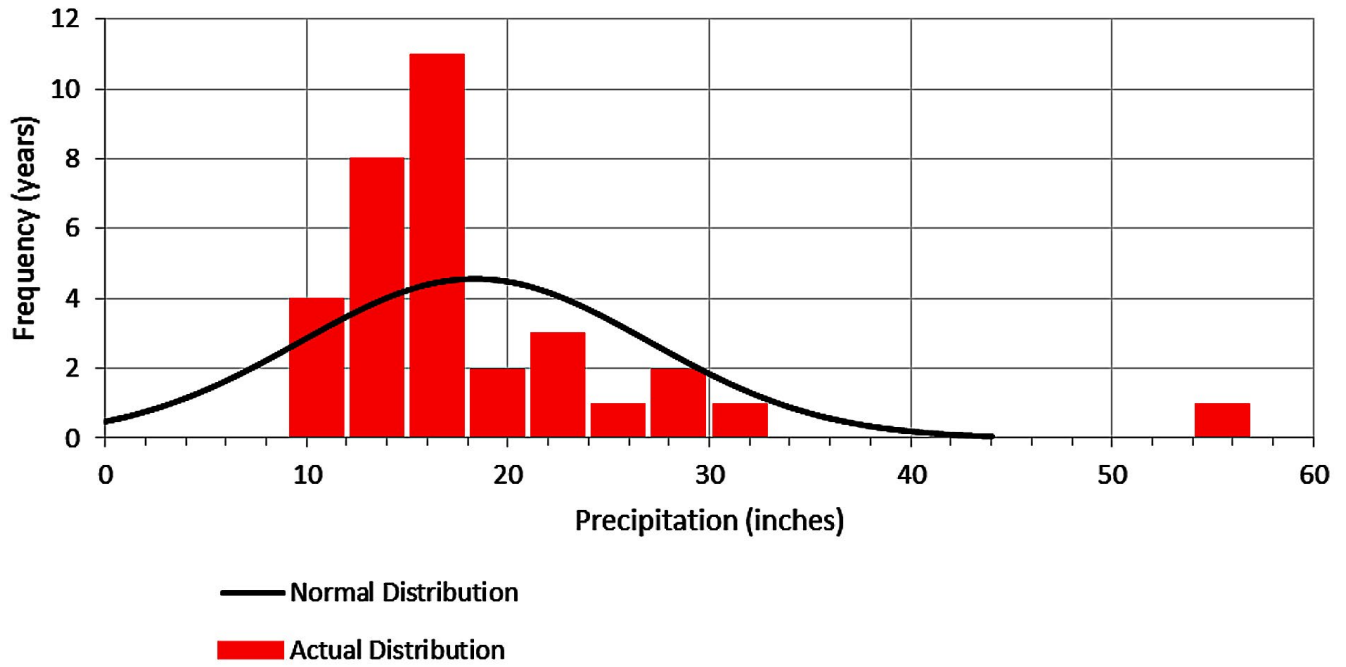
Average annual precipitation is about 18 inches, with approximately 80% of the total rainfall occurring between November and March<sup>2</sup> (California Department of Water Resources 2015a). Cloud-free skies generally prevail throughout the summer months, and in much of the spring and fall. Thunderstorms are relatively infrequent, although occasionally occur in the late summer and other times of the year when unstable air masses are situated over the region. The month of February has the highest average rainfall at 3.7 inches. The driest month is July, during which rainfall is rare.

The variability in precipitation is related to seasonal variation in atmospheric conditions. During the summer months, high pressure systems build over the Pacific Ocean off the California coast, promoting the transport of cool, dry air from the north. This effectively blocks major sources of moisture. During the winter rainy season, the jet stream migrates farther south, allowing low pressure systems off the California coast from as far away as the Gulf of Alaska to create conditions that transport moisture inland. Extreme variability of rainfall averages is indicative of wet and dry cycles as displayed in the frequency distribution of total annual precipitation in Figure 3.9-1. The frequency distribution also shows a normal distribution fit to the actual data to illustrate the distribution of years with total annual precipitation less than or more than the “average” (average being the peak of the normal distribution curve). The precipitation record shows that it is more likely that the annual precipitation will be less than the long-term average but that years with large amounts of precipitation infrequently occur. For the recent drought period of water years 2012–2015 the average annual precipitation is only 11.7 inches (approximately 90% of the years on

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<sup>2</sup> Measurement recorded at California Irrigation Management Information System (CIMIS) Station #6 in Davis, CA (38°32'09"N/121°46'32"W) for water years 1983–2015. Precipitation data is also available at CIMIS station #155 at Bryte on the Sacramento River but the period of record only goes back to water year 2000.

### CIMIS Davis, CA Station 6 1983-2015 Annual Precipitation



Data Source: California Department of Water Resources, Office of Water Use Efficiency, California Irrigation Management Information System, 2015.

Graphics ... 0023014 (9-30-2015)



**Figure 3.9-1**  
**Frequency Distribution of Total Annual Rainfall at CIMIS Station #6**  
**in Davis, California for 1983-2015**

record dating back to water year 1983 had greater total annual precipitation) with precipitation far below average because of the prevalence of stable, high-pressure systems during the winter months.

## Surface Water

The Sacramento River is the largest river in California, flowing along the east and northeast boundaries of the city. The Sacramento River watershed encompasses approximately 26,000 square miles (Natural Resources Conservation Service 2015). Principal reservoirs controlling flows in the lower Sacramento River are Shasta Reservoir (4.55 million acre-feet [af]) on the Sacramento River upstream of Redding and Trinity Reservoir (2.45 million af), which regulates deliveries made to the Sacramento River from the Trinity River basin. Folsom Reservoir on the American River tributary to the Sacramento River provides 0.98 million af of storage. The Feather River is a major tributary of the Sacramento River, and Oroville Reservoir provides 3.54 million af of storage.

### Daily Streamflow

The monthly minimum, average, and maximum mean daily flows on the Sacramento River near Verona at river mile (RM) 78.6 upstream of the American River and at Freeport (RM 46) downstream of the American River are presented in Table 3.9-1 (U.S. Geological Survey 2015). Most of the planning area is downstream of the American River watershed; as such, the Sacramento River at Freeport gage more closely reflects the actual flow conditions of the river along the city. The City's main water source is the Sacramento River and its intake structure is at Bryte Bend, upstream of the American River confluence.

The frequency distributions of mean annual flows for the Verona and Freeport gages are shown in Figure 3.9-2. The frequency distributions also show a normal distribution fit to the actual data to illustrate the distribution of drier and wetter than average water years (*average* being the peak of the normal distribution curve). As is common for many California rivers, both gages show that average water years are not the most frequently occurring, meaning it is more likely that the mean annual flow will be appreciably less than or greater than the flow averaged over all the years on record. Drier than average water years occur most often. Because of their magnitude, wetter than average years, although they occur relatively infrequently, skew the graphs to the right as shown in Figure 3.9-2.

The past 4 water years have been drier than average on the Sacramento River at West Sacramento because of the record drought in California. The mean annual flows for the 2012 and 2013 water years were just above the 25<sup>th</sup> percentile (i.e., 75% of the water years on record had greater mean annual flows), and the 2014 water year was below the 10<sup>th</sup> percentile (i.e., more than 90% of the water years on record had greater mean annual flows).

**Table 3.9-1. Monthly Mean Daily Flow Statistics for Sacramento River at Verona and Sacramento River at Freeport for 1995 through 2014 Water Years (cfs)<sup>a</sup>**

	Sacramento River at Verona Station 11425500			Sacramento River at Freeport Station 11447650		
	Minimum	Average	Maximum	Minimum	Average	Maximum
October	7,255	10,070	14,645	7,767	11,588	17,655
November	7,696	10,789	17,693	8,783	12,446	20,920
December	7,778	21,513	44,916	8,205	24,820	58,419
January	6,418	30,273	72,113	6,329	34,454	87,110
February	10,232	32,736	70,029	10,737	37,895	81,368
March	12,161	31,356	61,129	13,435	36,274	71,923
April	9,050	23,461	65,967	9,637	27,778	77,647
May	5,091	19,995	50,368	5,750	24,458	63,181
June	7,895	17,208	45,563	8,900	20,944	55,690
July	8,658	16,439	21,958	9,144	19,589	29,232
August	8,459	15,332	21,187	8,544	17,222	25,177
September	7,959	14,198	21,117	8,169	15,730	25,317

Source: U.S. Geological Survey 2015.

<sup>a</sup> Flow in cubic feet per second (cfs) from October 1, 1994 to September 30, 2014 (water years 1995 through 2014).

### Peak Streamflow

Simulated peak flows in the Sacramento and American Rivers were provided by MBK Engineers (MBK) (2008) based on the Comprehensive Study Sacramento River UNET model (U.S. Army Corps of Engineers 2002a, 2002b). In Table 3.9-2, the 100-year peak flow is based on a 145,000 cubic feet per second (cfs) American River peak flow and upstream Sacramento River levees overtopping without failing; the 200-year peak is based on 160,000 cfs American River peak flow and the same levees overtopping without failing.

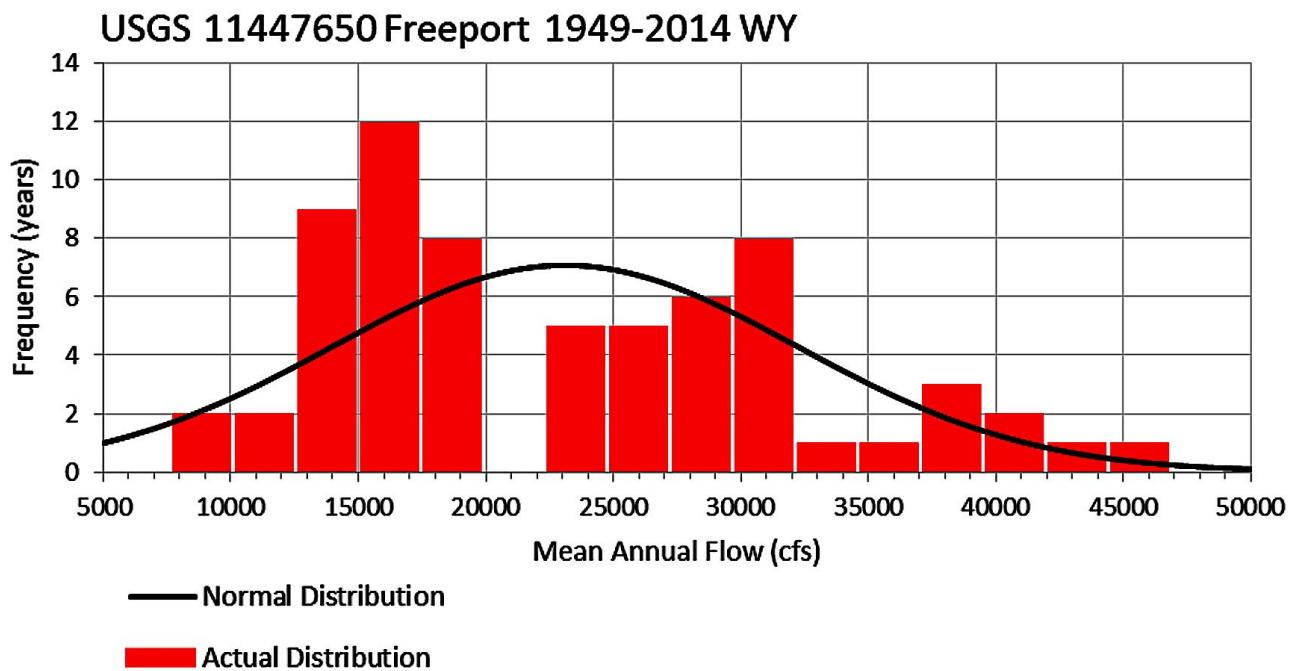
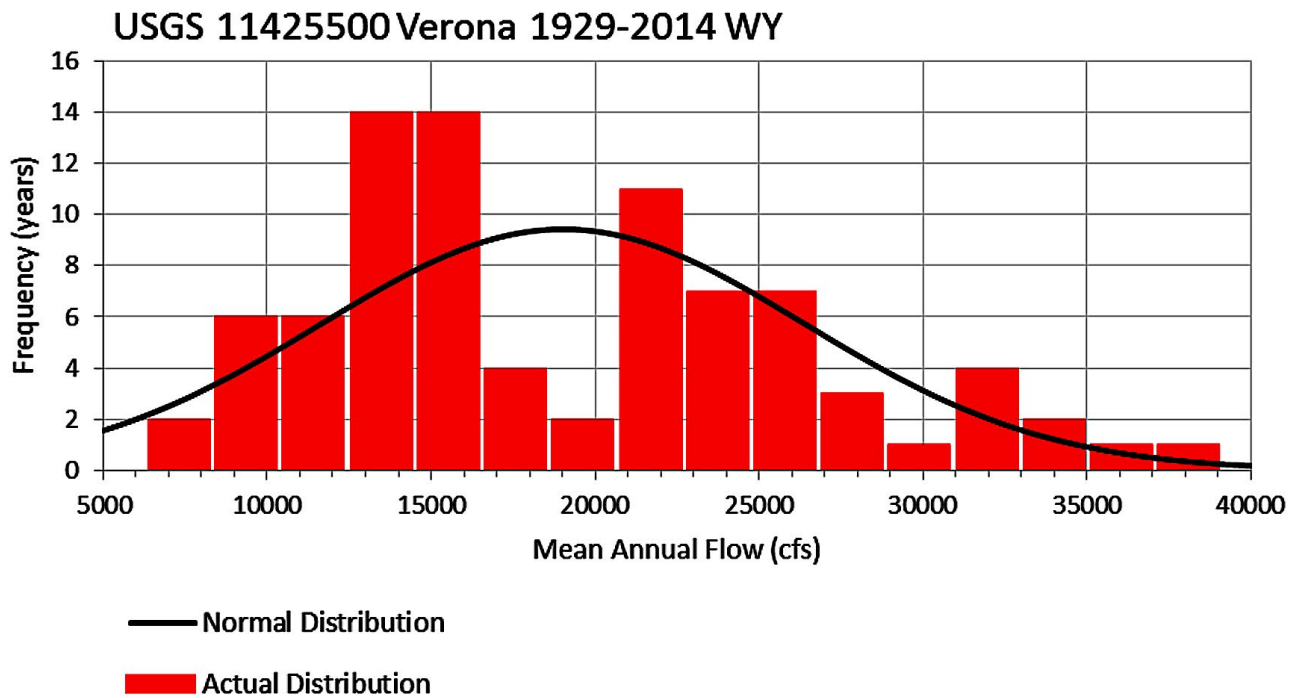
**Table 3.9-2. Peak Flows for the Sacramento River**

Location	Peak Flow (cfs)	
	100-year <sup>a</sup>	200-year <sup>b</sup>
Sacramento River at Verona Gage	117,500	142,600
Sacramento River at I Street	135,600	143,300
Sacramento River at Freeport Gage	135,200	143,000
American River at H Street	145,000	160,000

Source: MBK Engineers 2008.

<sup>a</sup> Assumes levees overtop without failing; existing conditions and operations.

<sup>b</sup> Assumes levees overtop without failing; urban levees have 3 feet of freeboard on 1/200 annual exceedance probabilities (AEP) water surface; non-urban levees satisfy Sacramento River Flood Control Project (SRFCP) design freeboard requirements; Folsom Dam Joint Federal Project in place.  
cfs = cubic feet per second.



Data Source: U.S. Geological Survey, 2015.

**Figure 3.9-2**  
**Frequency Distribution of Mean Annual Flow at the Verona (Top)**  
**and Freeport (Bottom) USGS Gages**

## Flood Protection

FEMA's FIRMs for West Sacramento are shown in Parcels 0607280005B and 0607280010B. All areas within the planning area but outside the main waterways are mapped as Zone X—area protected from the 1% chance (100-year) flood by levee, dike, or other structures subject to possible failure of overtopping during longer floods. The FIRM for West Sacramento was last updated in 1995. Extensive studies on the condition of West Sacramento's levee system and its ability to provide 100-year or 200-year flood protection have been conducted since 1995. FEMA's flood risk maps are currently being revised nationwide and based on the results of these studies new draft revised FEMA maps are expected to show that all or parts of West Sacramento may neither meet 100-year flood standards nor 200-year level of flood protection required by CVFPP for urban areas (U.S. Army Corps of Engineers 2014; City of West Sacramento 2015a). This section describes the West Sacramento levee system, results of studies undertaken to describe levee deficiencies, and actions the City is undertaking to improve levee conditions and reduce flood risk.

### West Sacramento Levee System

West Sacramento is within the natural floodplain of the Sacramento River at the confluence with the American River and is surrounded on all four sides by a series of levees designed to provide flood protection. The river levees channelize the river into a fixed alignment by preventing future channel meandering and separating the channel from its historic floodplain. Waterways surrounding the West Sacramento basin include the Sacramento River, the Yolo Bypass, the Sacramento Bypass, and the Sacramento DWSC. These waterways are lined with over 50 miles of levees in RD 900, RD 537, Maintenance Area 4, and Sacramento DWSC. Work is ongoing to bring the existing levee system up to current standards of providing a minimum 200-year flood protection.

The Sacramento DWSC and barge canal bisect the city into two subbasins, separating the developing Southport area from the more established neighborhoods of West Sacramento, Broderick, and Bryte to the north. The Sacramento DWSC provides a navigable passageway for commercial shipping to reach the Port of West Sacramento (formerly Port of Sacramento) from the Pacific Ocean via the San Francisco Bay, Delta, and connecting waterways. The Sacramento DWSC water surface elevation is directly influenced by changes in water levels in the Delta at the south end of the Yolo Bypass and is relatively insensitive to stage in the Sacramento River. The barge canal and lock system, formerly a federal facility but now de-authorized, was constructed to provide a navigable, gated connection between the Port of West Sacramento and the Sacramento River, but no longer functions for navigability because the channel approaches have silted in from naturally deposited sediment and because a fixed roadway crossing precludes passage of any commercial vessel.

The levees surrounding the City of West Sacramento and the Sacramento River Flood Control Project (SRFCP) date back to the 1840s and 1890s with the initial construction of low, discontinuous levees along the Sacramento, American, Feather, and Yuba Rivers by individual landowners. Historically, from the mid-1800s onward, most hydraulic engineers at the federal, state, and local level thought that the most effective way to control flood flows in the river system was to construct levees close to the main channel. This approach served two purposes. First it allowed reclamation of as much land as possible for agricultural purposes. Second it kept flows in the main channel and thus helped to flush out the hydraulic mining debris that clogged much of the river system and impaired navigation.

The record floods of 1907 and 1909 forced a reevaluation of this historic approach. It was clear from the size of these flood events in relation to existing channel capacities that major bypass systems

were needed to control excess flood flows. The bypass system is designed to keep all flows from floods up to a certain magnitude within the Sacramento River, and then to divert flow into the Yolo and Sacramento bypasses away from urban centers once this event is exceeded. Throughout the SRFCP, the frequency that flow starts to divert from the Sacramento River to the bypass system varies from a 3- to 5-year flood event. Locations where flow is allowed to spill from the Sacramento River into the bypass system include three overflow locations upstream of the City of West Sacramento's levees; Moulton Weir, Colusa Weir, and Tisdale Weir, and two overflow locations in the vicinity of West Sacramento, the Fremont Weir (approximately 10 miles north of the city) and the Sacramento Weir. Flow from these weirs (or overflow locations) enters the Butte Basin, the Sutter Bypass, or the Yolo Bypass.

The early history of the SRFCP was characterized by trial and error. Most of the levees surrounding the city were constructed by the USACE as part of the 1917 Flood Control Act. Although these structures have been extensively improved and upgraded since initial construction, the underlying foundation of most of the levees pre-dates any state or USACE involvement and still retains the original materials that include dredged riverbed sands, soil, and organic matter. This type of material is subject to under seepage whereby flood waters, driven by hydraulic pressure, seep under the levee leading to flooding or failure of the levee itself. At the time of the SRFCP authorization in 1917, the areas being protected by the levees were primarily agricultural lands with minimal improved infrastructure such as railroads and highways. Many of these areas are now heavily urbanized and densely populated, including West Sacramento.

The series of storms that struck California in February 1986 resulted in the flood of record for many areas in northern and central California. The estimated peak flows associated with the 1986 flood were nearly equal to or exceeded the design flows of the Sacramento River, Sacramento Bypass, and the Yolo Bypass in the vicinity of West Sacramento. These record flows in combination with high winds caused severe damage to the levees protecting both the cities of Sacramento and West Sacramento. Damage caused by erosion and seepage would likely have resulted in the failure of levees at a number of locations if not for extensive emergency operations and repairs. As a result of the problems experienced during the 1986 flood, USACE initiated a study of the levees comprising the SRFCP that were affected by the flood. Because of the large scale of the study, the review of the levee conditions was split into five phases. The first phase of this study included West Sacramento and was documented in the initial appraisal report, *Sacramento Urban Area Levee Reconstruction Project, California* in May 1988. This phase included review of approximately 110 miles of levees and recommended repair of 34 miles of levees.

The 1986 flood exposed structural problems and inability of the existing levees to provide critical flood protection to the urban area comprised of the cities of Sacramento and West Sacramento. As a result, USACE, in cooperation with the State of California, initiated the *Sacramento Metropolitan Area, California, Feasibility Report* (also known as the West Sacramento Project). This report, published in February 1992, indicated the existing flood control system in the study area provided significantly less than a 100-year level of protection. The study recommended a program of improvements which at the time were estimated to provide the city with a 400-year level of protection assuming implementation of a 200-year flood control dam on the American River; however, the recommended plan would provide at least a 150-year level of protection if this American River project element was not implemented. The repairs recommended by the study were authorized in the Water Resources Development Act (WRDA) of 1992 (Public Law [PL] 102-580); however, the 200-year flood control dam on the American River was never authorized by Congress. (U.S. Army Corps of Engineers and Central Valley Flood Protection Board 2009.)



USACE was preparing construction plans and specifications for the levee repairs authorized in the WRDA of 1992 when the 1997 New Year's Day flood occurred. The flood was one of the largest experienced in northern California since the beginning of the measured record in 1906. Over a 3-day period centered on New Year's Day, warm moist winds from the southwest poured more than 30 inches of rain onto watersheds covered with snow and already saturated from one of the wettest Decembers on record. In the wake of the 1997 flood, USACE identified under-seepage as an area of greater concern in the design and repair of levees. This determination resulted recommendations of a number of design revisions to the levee repairs identified in the West Sacramento Project Design Memorandum. These design revisions and the associated increase to the total estimated project cost were captured in a supplemental authorization through the Energy and Water Development Appropriation Act of 1999 (PL 105-245).

Previous milestones in flood management for West Sacramento include the activities listed below. More recent activities related to the WSLIP EIPs are described below.

- In 1992 USACE concluded that the levees along the Sacramento River and Yolo Bypass did not provide protection from a 100-year flood event.
- In 1993 a flood control project was completed as part of the Sacramento Urban Area Levee Reconstruction Project. This project placed a stability berm and related features to address through-seepage along the entire length of the Sacramento River levee bordering the Southport area (referred to in the WSLIP study area as the Sacramento River South Levee).
- In 1994 the City and reclamation districts formed a Joint Powers Authority, WSAFCA, to coordinate, fund, and construct major flood protection improvements that were beyond the means of the individual entities (City of West Sacramento 2000).
- In 1995 WSAFCA formed an assessment district to fund the local cost share for the West Sacramento Project. This project was part of the Federal Sacramento Metropolitan Area Project authorized by the WRDA of 1996. The WSAFCA assessment funded geotechnical and engineering investigations of the Sacramento River levees and the southern boundary cross levee in the Southport area (PB 2007). The West Sacramento Project was designed to provide the city with a greater than 200-year level of protection.
- During the 1997 record flood stage event, the levees surrounding the city sustained minor damage. As design work was nearing completion on the West Sacramento Project, under-seepage was noted along the Sacramento Bypass levee.
- In 1998 stability issues became apparent along a levee maintained by RD 537 just north of the Southern Pacific Railroad tracks.
- In 2002 the West Sacramento Project was substantially completed. This project involved raising more than 1 mile of the south levee of the Sacramento Bypass by up to 5 feet and raising 4.5 miles of the Yolo Bypass Levee by up to 5.5 feet.

The West Sacramento levee system is described by nine reaches mapped in Figure 3.9-3 and described below.

### ***Sacramento Bypass Levee***

This levee extends along the left bank (left and right refer to the direction when looking downstream) of the Sacramento Bypass approximately 1.2 miles from the Sacramento Weir in a westerly direction (downstream) to its confluence with the left bank levee of the Yolo Bypass. This

reach does not include the training levee that extends in a westerly direction approximately 0.4 mile into the Yolo Bypass.

***Sacramento River North Levee***

This levee extends along the right bank of the Sacramento River from its confluence with the Sacramento Bypass downstream approximately 6.0 miles to the entrance of the barge canal.

***Sacramento River South Levee***

This levee extends along the right bank of the Sacramento River from the entrance of the barge canal downstream approximately 6.4 miles to the South Cross Levee.

***Port North Levee***

This levee encompasses the combination of levees, structures, and high ground that exists along the right bank of the barge canal and DWSC from the Sacramento River westward to the levee along the left bank of the Yolo Bypass. This area includes the ground surrounding the Port of West Sacramento's turning basin.

***Port South Levee***

This levee encompasses the combination of levees and high ground that exists along the left bank of the barge canal and DWSC from the Sacramento River westward until it meets the DWSC East Levee on the left bank of the DWSC.

***South Cross Levee***

This levee extends for approximately 1.2 miles from the intersection of Jefferson Boulevard and the levee along the left bank of the DWSC to the Sacramento River where it intersects the southern limit of Sacramento River South Levee reach. This levee is the southernmost boundary of the city.

***DWSC East Levee***

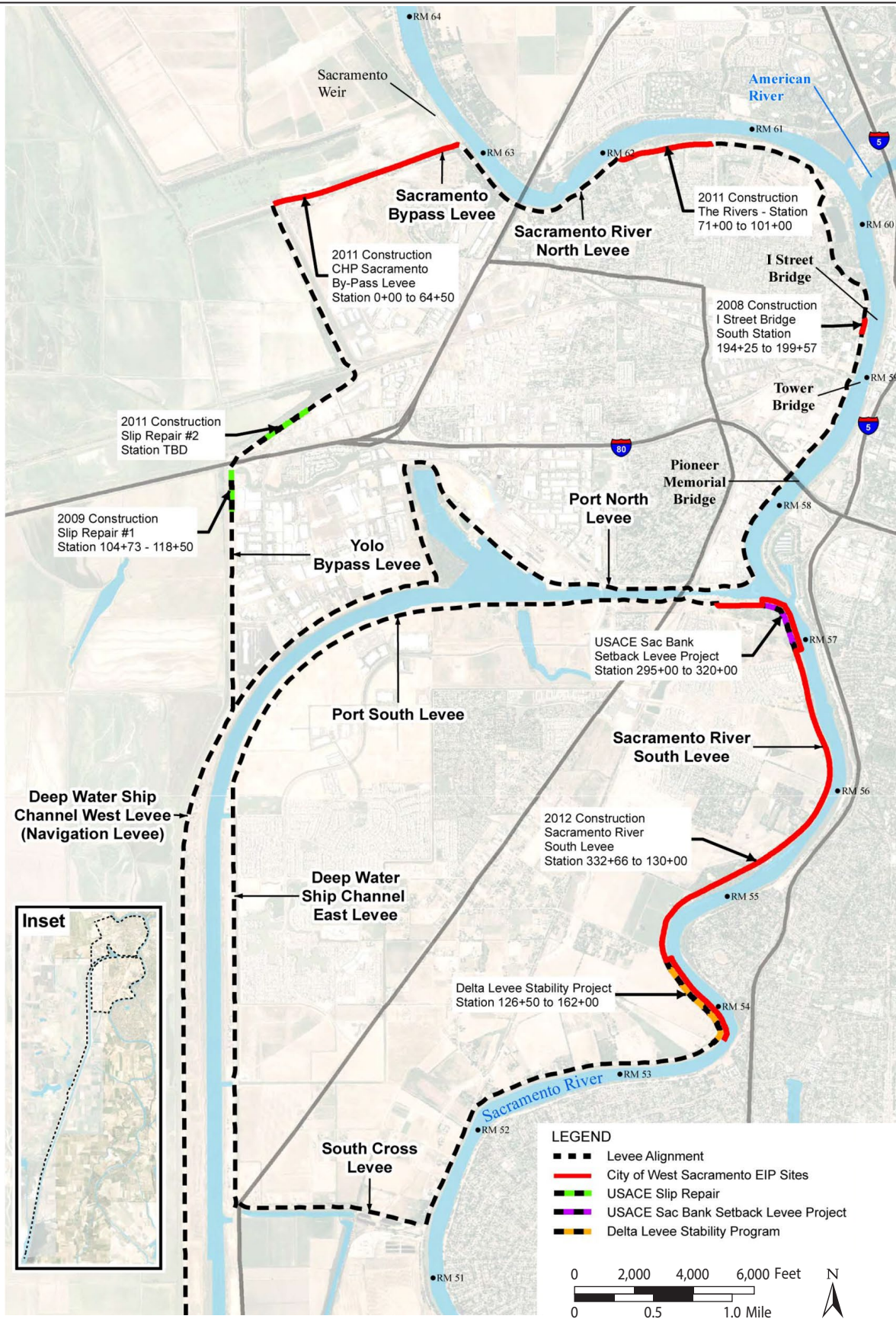
This levee extends along the left bank of the DWSC channel for approximately 2.8 miles in a southerly direction from the high ground making up the western limit of the Port South Levee reach to the intersection of Jefferson Boulevard with the South Cross Levee.

***DWSC West Levee***

This levee extends along the left bank of the Yolo Bypass and the right bank of the DWSC approximately 22 miles in a southerly direction from its intersection with the western limit of the Port North Levee to Miners Slough.

***Yolo Bypass Levee***

This levee extends in a southerly direction along the left bank of the Yolo Bypass approximately 3.8 miles from its intersection with the left bank levee of the Sacramento Bypass to its intersection with the DWSC West Levee.



Source: City of West Sacramento, 2015.

Graphics ... 00230.14 (12-7-2015)



**Figure 3.9-3**  
**City of West Sacramento Levee System**  
**and WSAFCA Flood Risk Reduction Projects**

### West Sacramento Levee Deficiencies

To protect human health and safety and prevent adverse effects on property and its economy, the City, as part of WSAFCA, and in partnership with DWR, embarked on a comprehensive evaluation to determine the type, location, and severity of deficiencies in the WSAFCA flood management system (HDR 2008). The evaluation was necessary to determine the level of flood protection provided by the existing levee system, identify the magnitude and severity of deficiencies, and propose potential levee improvements. The results of the comprehensive evaluation revealed several deficiencies that require substantial improvements to meet current flood protection standards.

Results showing the levees determined to be deficient in meeting the evaluation criteria established to measure acceptable levee performance to withstand a 200-year flood event are summarized by reach in Table 3.9-3. Additional information on the deficiencies can be found in the problem identification report (PIR) (HDR 2008) and an alternatives analysis (HDR 2009). Work has been ongoing as part of the WSLIP to rectify the deficiencies since they were originally identified.

**Table 3.9-3. Summary of Levee Deficiencies by Reach**

Study Reach	Inadequate Levee Height	Through-Seepage	Under-Seepage	Slope Stability and Geometry	Erosion	Non-Compliant Vegetation
Sacramento River North Levee	✓	✓	✓	✓	✓	✓
Sacramento River South Levee	✓		✓	✓	✓	✓
Port North Levee	✓			✓		✓
Port South Levee	✓		✓	✓		✓
South Cross Levee	✓	✓	✓	✓		✓
Sacramento DWSC East Levee		✓	✓	✓	✓	
Sacramento DWSC West Levee	✓	✓	✓		✓	✓
Yolo Bypass Levee	✓	✓	✓	✓	✓	✓
Sacramento Bypass Levee		✓	✓	✓		

DWSC = Deepwater Ship Canal.

The levee deficiency study results show that the levees in WSAFCA's area are deficient when compared against current federal standards. Data collected from the evaluation show that much of the existing system does not provide protection from the 100-year flood event (the event having a 1% chance of occurring in any given year), the commonly accepted minimum level of flood protection.

### Levee Failure Flood Depths

Work to correct the identified deficiencies in West Sacramento's levee system is ongoing. Presently, long sections of the levee system are still determined to be susceptible to failure as a result of identified deficiencies such as seepage, erosion, inadequate levee height, and slope instability. These conditions could cause portions of the levee system to fail, triggering widespread flooding in the city. The magnitude of the flooding depth and damage would depend on the location of the levee breach, severity of the storm, and river flows at the time of a levee failure.

In 2006 two hypothetical West Sacramento levee system failures were analyzed to assist the City in its flood emergency preparedness planning. One failure was located in the northern part of the city,

on the Sacramento River North Levee, and the other was located in the Southport area, on the Sacramento River South Levee (Figures 3.9-4 and 3.9-5) (Wood Rodgers 2006). The study used DHI's MIKE FLOOD hydraulic modeling software to evaluate 100-year water surface elevations and hydrology of the Sacramento River using a 100-year discharge of 90,000 cfs upstream of the American River and 120,000 cfs downstream of the American River based on the FEMA flood insurance study dated July 6. The model used a 10-day flood hydrograph simulated from the 1986 stage hydrographs for the I Street and Rio Vista bridges. (Wood Rodgers 2006.)

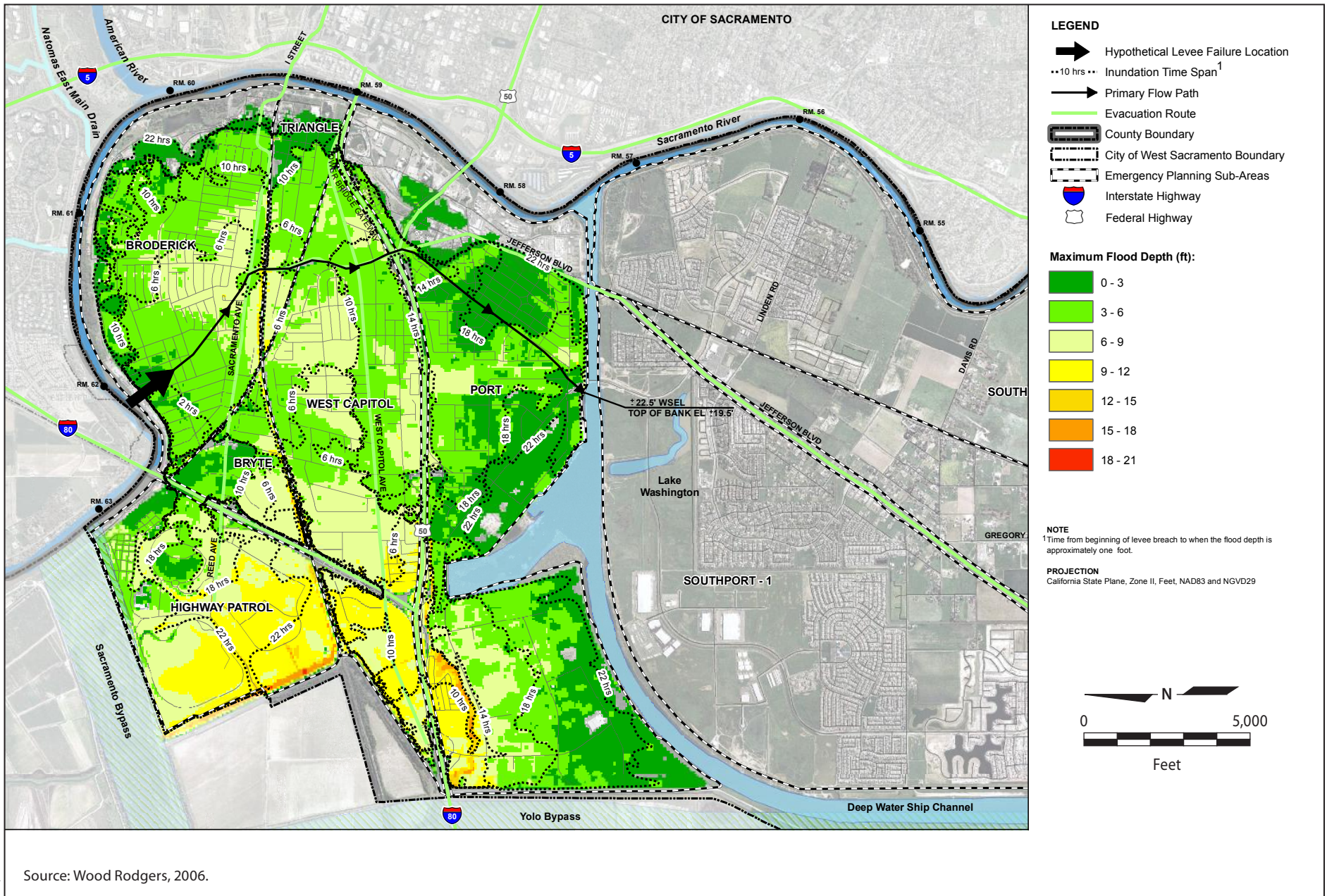
The analysis indicates that a levee failure on the Sacramento River North Levee during a 100-year event would flood the entire north area with at least 1 foot of water within 24 hours at which point vehicular evacuation would become severely limited (a water depth of 1 foot is regarded as impassable for vehicular traffic). Figure 3.9-4 shows the maximum flood depths and estimated time to 1-foot inundation depths throughout the northern area. Within 3 days, floodwater depths would reach 3–10 feet, depending on land surface elevation. Floodwaters would flow from north to south, seeking the lowest topographical elevation, and eventually discharge into the DWSC. The study estimates that floodwaters would begin to spill into the DWSC less than 24 hours after the levee breach. Modeling indicates that the DWSC could absorb up to 20,000 cfs in discharge flow from waters flooding the north area of the city before overtopping and flooding the Southport area (Wood Rodgers 2006).

A levee failure on the Sacramento River South Levee during a 100-year event would flood the entire Southport area with at least 1 foot of water within 24 hours. Jefferson Boulevard, the only vehicular evacuation route for Southport, would be inundated by 1 foot of water within 4 hours, making it impassable. Figure 3.9-5 shows the maximum flood depths and estimated time to 1-foot inundation depths throughout the southern area. Inundation depth could reach 3 feet in 36 hours and 10 feet after 3 days. Floodwaters would flow from east to west, then turn south, collecting at the South Cross Levee. The maximum stage from the floodwater was estimated at elevation 24.57 feet. The elevation at the top of the South Cross Levee is 24.07 feet. If the South Cross Levee were overtopped, further flooding would occur downstream of the city of West Sacramento (Wood Rodgers 2006).

The levee condition studies and levee failure modeling show action is needed to bring West Sacramento's levees up to current standards to maintain eligibility for federal emergency management assistance. Improvements are necessary to meet FEMA's minimum acceptable level of flood protection (commonly referred to as the 100-year flood) as specified by the NFIP (HDR 2008). FEMA's flood risk maps are currently being revised under the nationwide RiskMAP (mapping, assessment, and planning) program. It is anticipated that FEMA will issue updated flood maps that show all or parts of West Sacramento will not meet 100-year flood standards (City of West Sacramento 2015a; U.S. Army Corps of Engineers 2014). Furthermore, as required by SB 5, the CVFPP will require a 200-year level of flood protection for urban areas by the year 2025. Improvements to the West Sacramento levee system are needed to meet that requirement.

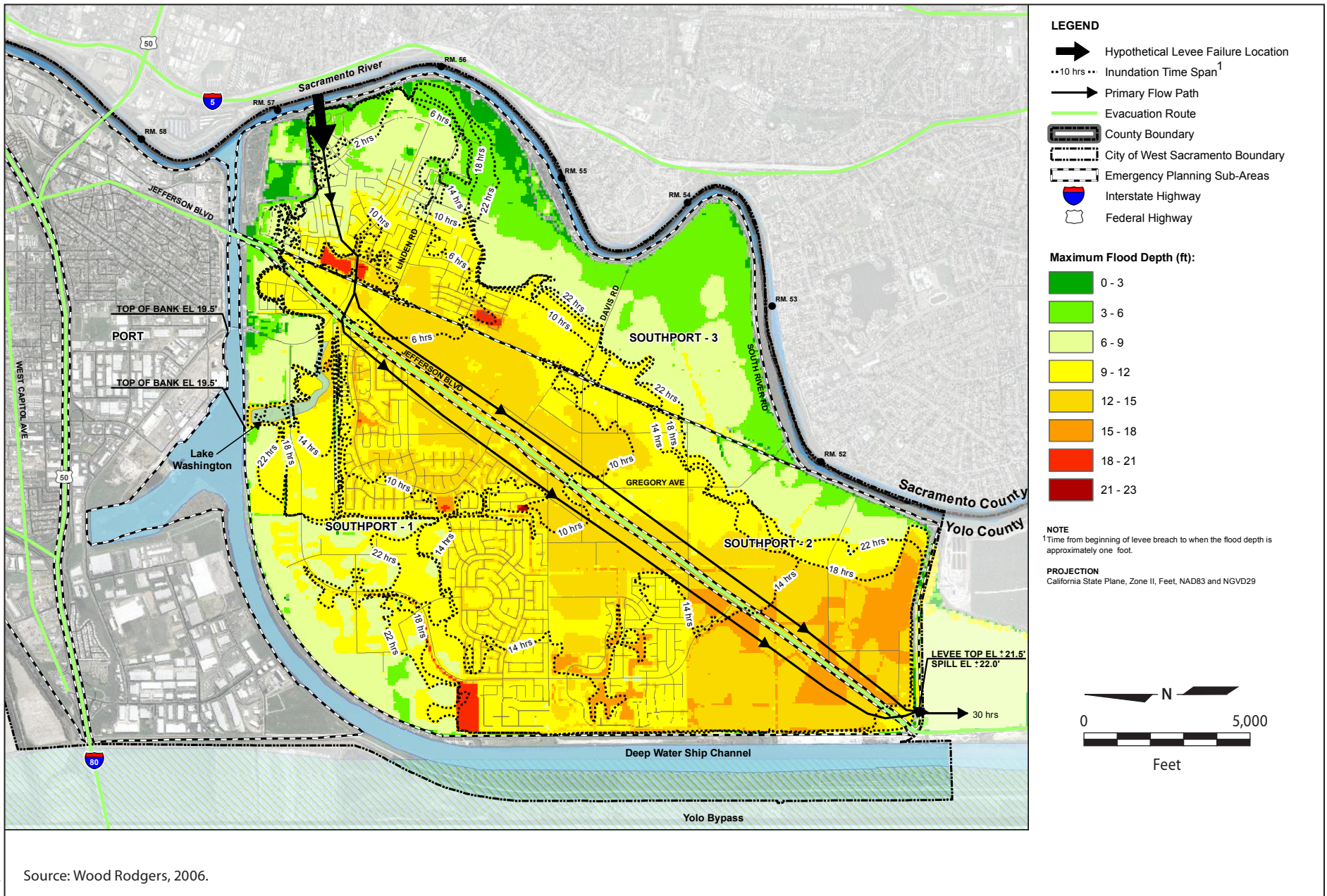
In addition, WSAFCA's area is the downstream-most metropolitan area in the SRFCP. As other projects have been implemented or improvements are being planned to reduce risk and increase flood protection for upstream communities, there is concern that the performance of the SRFCP needs to be evaluated comprehensively to ensure that the individual projects are kept in balance, that effects among the projects are being evaluated, and that risk is not being transferred between communities.





**Figure 3.9-4**  
 Modeled Flood Inundation Depths for a Hypothetical Levee Failure in the Northern Area of the City of West Sacramento





**Figure 3.9-5**  
**Modeled Flood Inundation Depths for a Hypothetical Levee Failure in the Southport Area of the City of West Sacramento**



## 200-Year Flood Inundation Predictions

The BAM for West Sacramento is shown in Figure 3.9-6 and can be viewed online at DWR's website <http://gis.bam.water.ca.gov/bam/>. The maps are updated as new data becomes available. The 200-year floodplain depicted in the BAM is based on the USACE 2002 *Sacramento and San Joaquin River Basins Comprehensive Study*. Figure 3.9-6 shows that large portions of northern and southern areas in the city of West Sacramento would be inundated by the 200-year flood event; however, the mapping is based on a 2002 study and several levee enhancement projects have been completed since that time the ongoing efforts to achieve 200-year flood protection for all levees surrounding the city.

## West Sacramento Levee Improvement Program

In light of the flood risk to West Sacramento, WSLIP is undertaking extensive measures to reduce risk and achieve a minimum of 200-year flood protection for the entire city within the existing levee system by improving the approximately 50 miles of levees protecting West Sacramento (City of West Sacramento 2015a). Specifically, the WSLIP and the EIPs under the program are targeted to reduce risk and are proposed in sponsorship by WSAFCA in coordination with USACE's project being studied under the West Sacramento GRR (see Table 3.9-4 for overview of levee improvement projects).

**Table 3.9-4. City of West Sacramento Levee Projects Overview**

Name	Lead Agency	Project Stage	Project Details	Levee Length	Construction Cost
Sacramento Bank Project – South River Road	USACE	Completed in 2015	Setback levee south of Stone Lock, including a seepage cutoff wall, relocation of South River Road onto the new levee.	2,200 feet	\$8,000,000 estimated
Southport Sacramento River Early Implementation Project	WSAFCA	Design	The Southport project involves construction of flood-risk-reduction measures along the Sacramento River South Levee in the city of West Sacramento. Flood-risk-reduction measures include the construction of a setback levee, a slurry cutoff wall, and seepage berms to address deficiencies of through-seepage, under-seepage, slope stability and geometry, erosion, and encroachments and non-compliant vegetation.	5.6 miles, extending from river mile 57.2 to river mile 51.6 within the Sacramento River South Levee	\$200,000,000 estimated
CHP Academy Early Implementation Project	WSAFCA	Completed 2011	Reconstructed the south levee of the Sacramento Bypass to correct seepage and geometry deficiencies, including a seepage cutoff barrier.	6,300 feet	\$10,000,000
The Rivers Early Implementation Project	WSAFCA	Completed 2011	Reconstructed the south levee of the Sacramento River north of Bryte Park to correct seepage and geometry deficiencies, including a seepage cutoff barrier.	3,100 feet	\$17,000,000



Name	Lead Agency	Project Stage	Project Details	Levee Length	Construction Cost
Yolo Bypass Slip Repair #2 Project	USACE	Completed 2011	Completed slip repairs to a section of the Yolo Bypass Levee north of Interstate 80/Highway 50 along the Yolo Bypass.	2,500 feet	\$3,500,000 estimated
Bridge District Levee Maintenance Road Project	City of West Sacramento	Completed 2011	Established horizontal footprint of the ultimate levee crown, restored authorized 1957 design elevation, removed unstable spoils on waterside hinge of levee crown, removed invasive plants, constructed all-weather paved inspection, maintenance and flood-fighting roadway.	3,250 feet	\$3,122,200
Yolo Bypass Slip Repair #1 Project	USACE	Completed 2009	Levee repair and reconstruction to the levee along the Yolo Bypass south of Interstate 80; included improving adjacent drainage facilities.	1,400 feet	\$2,400,000
I Street Bridge Early Implementation Project	WSAFCA	Completed 2008	Levee construction near I Street Bridge corrected seepage, tree removals and shaping of the levee; included removing vegetation as part of the USACE Standards.	475 feet	\$640,000

Source: City of West Sacramento 2015a.

USACE = U.S. Army Corps of Engineers.

WSAFCA = West Sacramento Area Flood Control Agency.

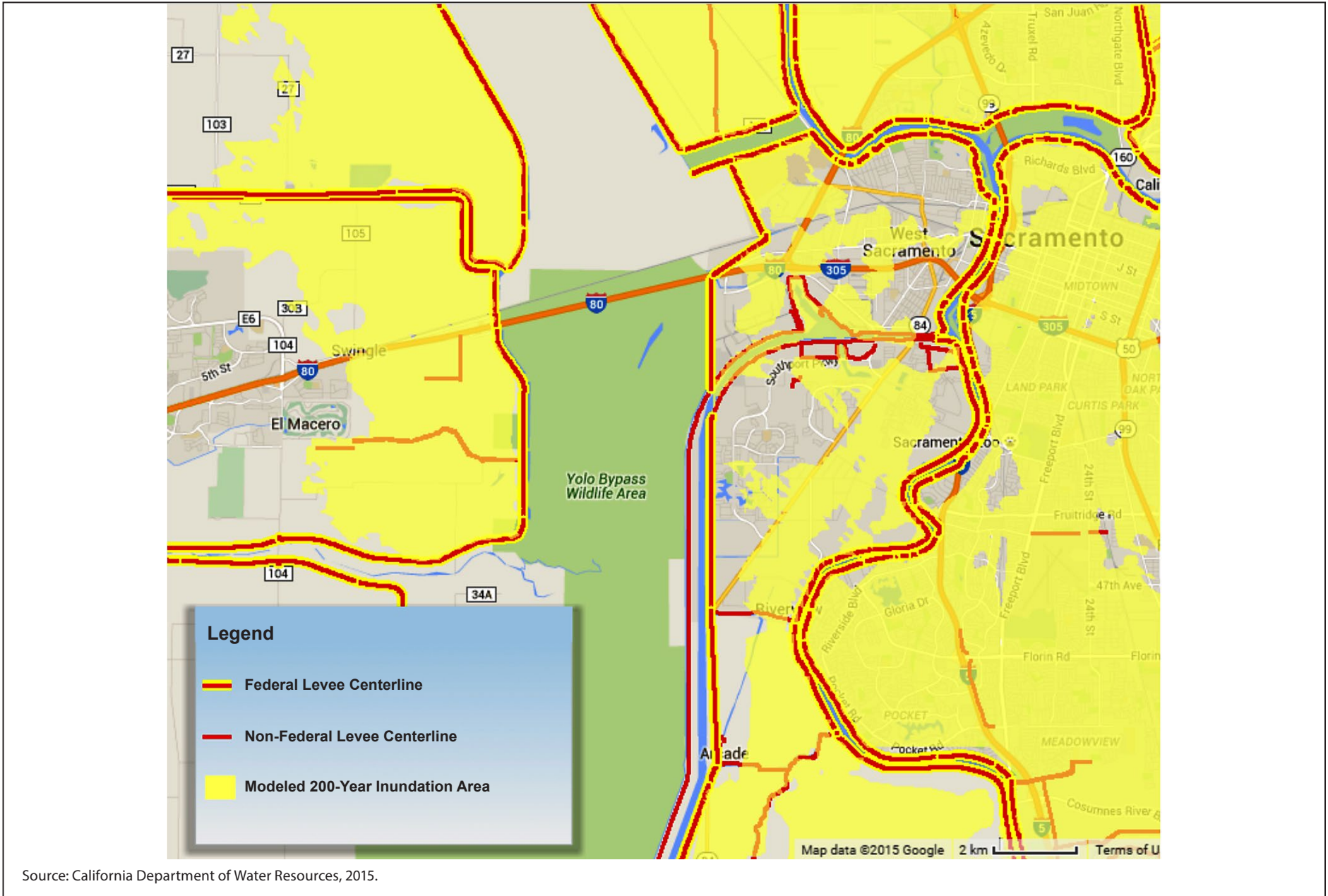
CHP = California Highway Patrol.

In 2015, WSAFCA developed an internet-based flood inundation simulation illustrating the effects of a breach in the system protecting West Sacramento. It shows through a time release model how quickly a given area of the city would flood and the depth of water from the breach. This model was developed to assist with emergency planning and evacuation.

### Potential Sea Level Rise in the City

MBK (2009a) applied the USACE sea level-rise guidance (U.S. Army Corps of Engineers 2009) to the WSLIP program area to determine the effects of potential sea level rise on water surface elevations. The MBK report uses the procedure for calculating sea level rise identified in the USACE guidance and applies that procedure to the proposed WSLIP design.

As described in the MBK report (2009a), the nearest tide station with sufficient period of record (40+ years recommended) is the National Oceanic and Atmospheric Administration (NOAA) Station 9414290 at San Francisco, California. Tidal records for this station have been maintained since the 1850s. The NOAA Center for Operational Oceanographic Products and Services (CO-OPS) analyzed the historical mean sea level for this station, which has been shown to be increasing at a rate of 2.01 millimeters per year (mm/yr) (California Climate Change Center 2009 as cited in MBK Engineers 2009a).



Source: California Department of Water Resources, 2015.

**Figure 3.9-6**  
**Modeled Flood Inundation Area for the 200-year Event**

As specified in the USACE policy, three future mean sea level trends were calculated for the WSLIP program area.

- Low—using historic trend of mean sea level change.
- Intermediate—considering most recent Intergovernmental Panel on Climate Change (IPCC) and National Research Council (NRC) Curve I projections of mean sea level change.
- High—considering NRC Curve III projections of mean sea level change.

Table 3.9-5 shows the results of applying the sea level rise rates and corresponding relationships for 25, 50, and 100 years based on a 2012 starting year (MBK Engineers 2009b).

The Sacramento River UNET Hydraulic Model was used to evaluate hydraulic impacts on the WSLIP area for low, intermediate and high rates of sea level change projected out 25, 50, and 100 years.

The results of the hydraulic simulations show the WSLIP program area is relatively insensitive to the rates of sea level rise. Of all the scenarios analyzed, only the high sea level rise rate 100 years after the project is constructed shows greater than 0.10-foot stage increase in the Sacramento River, Yolo Bypass, or Sacramento Bypass in the WSLIP program area.

The Port of West Sacramento and the DWSC see higher water surface elevations resulting from sea level rise. The DWSC is primarily backwater controlled and is hydraulically connected to the rest of the flood system fairly close to the sea (i.e., North Delta). The WSLIP design for the DWSC indicates there is adequate freeboard available to accommodate a water surface increase of the magnitudes reported herein due to sea level rise and still maintain the minimum project design freeboard of 3 feet (MBK Engineers 2009b).

**Table 3.9-5. Calculated Sea Level Rise for 25, 50, and 100 Years after 2012 using Intermediate and High Rates of Sea Level Rise**

Location	Existing Condition WSE [ft- NGVD29]	WSE for Given Scenario Minus Existing Condition WSE [ft-NGVD29]									
		Low Rate			Intermediate Rate			High Rate			
		25 yr	50 yr	100 yr	25 yr	50 yr	100 yr	25 yr	50 yr	100 yr	
<b>Sacramento River</b>											
West Sacramento city limit (63.44)	34.04	0.00	+0.01	+0.01	+0.01	+0.01	+0.01	+0.02	+0.01	+0.02	+0.08
American River (60.4)	34.10	+0.01	+0.01	+0.01	+0.01	+0.01	+0.01	+0.03	+0.01	+0.03	+0.09
I Street Bridge (59.695)	33.82	+0.01	+0.01	+0.01	+0.01	+0.01	+0.01	+0.02	+0.01	+0.03	+0.09
Stone Lock (57.86)	33.11	0.00	+0.01	+0.01	+0.01	+0.01	+0.01	+0.03	+0.01	+0.03	+0.11
Linden Road (56)	32.19	+0.01	+0.01	+0.02	+0.01	+0.02	+0.04	+0.02	+0.02	+0.04	+0.13
Davis Road (54.75)	31.78	+0.01	+0.01	+0.02	+0.01	+0.02	+0.04	+0.02	+0.02	+0.04	+0.14
West Sacramento city limit (51.75)	30.12	+0.01	+0.02	+0.03	+0.01	+0.03	+0.06	+0.03	+0.03	+0.06	+0.20
<b>Sacramento Bypass</b>											
Downtown of Sac. Weir (1.68)	33.58	+0.01	+0.01	+0.01	+0.01	+0.01	+0.03	+0.01	+0.01	+0.03	+0.09
Yolo Bypass east levee (0.56)	31.37	+0.01	+0.01	+0.01	+0.01	+0.02	+0.02	+0.01	+0.01	+0.03	+0.08
<b>Yolo Bypass</b>											
West Sacramento city limit (44.6)	30.85	0.00	+0.01	+0.01	0.00	+0.01	+0.02	+0.01	+0.01	+0.02	+0.08
SPRR Bridge (43.24)	30.25	+0.01	+0.01	+0.02	+0.01	+0.02	+0.03	+0.01	+0.01	+0.03	+0.10
Interstate 80 (42.96)	30.13	+0.01	+0.01	+0.02	+0.01	+0.02	+0.02	+0.01	+0.01	+0.03	+0.09
Navigation Levee north end (41.65)	29.79	+0.01	+0.01	+0.02	+0.01	+0.02	+0.03	+0.02	+0.02	+0.03	+0.10
West Sacramento city limit (38.46)	28.18	+0.01	+0.02	+0.02	+0.01	+0.02	+0.04	+0.02	+0.02	+0.05	+0.15
<b>Port of Sacramento</b>											
SA 236	17.66	+0.04	+0.04	+0.07	+0.04	+0.08	+0.24	+0.09	+0.09	+0.29	+1.12
<b>Sacramento Ship Channel</b>											
Marshall Road (40.72)	17.65	+0.04	+0.06	+0.09	+0.06	+0.09	+0.25	+0.10	+0.10	+0.30	+1.13
West Sacramento city limit (38.46)	17.64	+0.04	+0.07	+0.10	+0.06	+0.10	+0.25	+0.11	+0.11	+0.31	+1.14

## Groundwater

Since construction of the George Kristoff Water Treatment Plant in 1988, the City has used surface water from the Sacramento River to meet the water demands in the city. The City has one groundwater well currently on standby status and available to supply additional water during emergencies (City of West Sacramento 2015b). Areas not served by domestic water service still withdraw groundwater for domestic and agricultural purposes (City of West Sacramento 2009).

DWR delineates groundwater basins throughout California under the state's Groundwater Bulletin 118. The planning area is in the Sacramento Valley groundwater basin, mostly overlying the Yolo Subbasin (Basin No. 5-21.67) and with a small southern portion overlying the Solano Subbasin (Basin No. 5-21.66). Some DWR subbasin boundaries are geographic or institutional; there are no hydrologic or geologic boundaries separating the Yolo and Solano Subbasins in the West Sacramento area (Luhdorff & Scalmanini Consulting Engineers 2012).

Luhdorff & Scalmanini Consulting Engineers (2012) describe the groundwater conditions in the City of West Sacramento as shallow and deep zones. The division between shallow and deep zones is somewhat arbitrary but is based on available lithologic data. Most of the recharge to the shallow aquifer occurs directly from the Sacramento River. The lower portion of the shallow aquifer is used for water supply by a few older domestic and irrigation wells located near the river (Luhdorff & Scalmanini Consulting Engineers 2012).

The deep aquifer (below 120 feet in depth) is more confined but is also classified as a semiconfined aquifer. Most water supply wells in the Southport area of the city of West Sacramento appear to be perforated in this zone. No wells in the area are known to be more than 400 feet deep, so the discussion of the deep zone is based on the aquifer between 120 and 400 feet in depth. This zone receives significant leakage from the overlying shallow aquifer through the aquitard that separates the two water-bearing zones. Some direct recharge to the deeper semi-confined aquifers occurs as far away as the Coast, Klamath, and Sierra Nevada ranges (Luhdorff & Scalmanini Consulting Engineers 2012).

### ***Deep Zone Groundwater Contours***

Groundwater in the region surrounding the planning area used to generally flow from the Sierra Nevada foothills and Coast Range toward the Sacramento Valley prior to significant groundwater development (Luhdorff & Scalmanini Consulting Engineers 2012). By the 1940s, and possibly earlier, groundwater levels in Yolo County began to decline. DWR groundwater contour maps from 1961 and 1971 show the development of a regional gradient toward several pumping depressions in Sacramento County, with the deepest depressions near Elk Grove and McClellan Air Force Base (Luhdorff & Scalmanini Consulting Engineers 2012). Groundwater contour maps were prepared by Luhdorff & Scalmanini Consulting Engineers (2012) for the area encompassing the city of West Sacramento using DWR's Water Data Library (WDL). Luhdorff & Scalmanini Consulting Engineers (2012) note most of the WDL data are for relatively deep irrigation wells in the deeper, semi-confined aquifers from which most groundwater in the area occurs. The contours correspond to the deep zone defined as wells between about 120 and 400 feet in depth.

The fall 2003 groundwater elevations contours show a range of over 10 feet above mean sea level (msl) west of the Yolo Bypass to about -50 feet below msl in the Elk Grove area (Figure 3.9-7) (Luhdorff & Scalmanini Consulting Engineers 2012). Groundwater elevations range from about 0

feet to 7 feet above msl in the city of West Sacramento. The groundwater generally flows from west to east with an apparent hydraulic separation between the Sacramento River's surface water and the deep zone groundwater with groundwater flowing under the river from Yolo County to Sacramento County (Luhdorff & Scalmanini Consulting Engineers 2012). Evidence of the pumping depressions described by DWR in the 1960s and 1970s is still apparent in 2003 by the increases in depth to groundwater that occur in Sacramento County northeast (McClellan Air Force Base) and southeast of the city of West Sacramento (Elk Grove) (Luhdorff & Scalmanini Consulting Engineers 2012).

The spring 2004 groundwater elevations contours are approximately 5–10 feet higher than in fall 2003, with a range of over 18 feet above msl west of the Yolo Bypass to about -45 feet below msl in the Elk Grove area (Figure 3.9-8) (Luhdorff & Scalmanini Consulting Engineers 2012). Groundwater elevations range from about 0 feet to 13 feet above msl in the city of West Sacramento. The groundwater generally flows from west to east similar to fall 2003 with continued evidence of the pumping depressions that occur in Sacramento County northeast (McClellan Air Force Base) and southeast of the city of West Sacramento (Elk Grove) (Luhdorff & Scalmanini Consulting Engineers 2012).

### ***Deep Zone Groundwater Hydrographs***

Luhdorff & Scalmanini Consulting Engineers (2012) also prepared deep zone groundwater hydrographs from the WDL data for six wells in the vicinity of the city of West Sacramento (Figure 3.9-9). The hydrographs show how groundwater elevations (left axis on graphs) and depth to water from the ground surface (right axis on the graphs) have changed over time. The hydrographs show general temporal water level trends but not the full range of how groundwater levels fluctuate seasonally because the measurements in most wells are made only twice a year (typically in March and October) (Luhdorff & Scalmanini Consulting Engineers 2012). March measurements are typically representative of the highest groundwater levels of the year but the lowest levels often occur during July or August at the peak of the irrigation season (Luhdorff & Scalmanini Consulting Engineers 2012).

The long-term hydrographs of deep wells in or near the city of West Sacramento generally show stable groundwater levels with only small seasonal fluctuations. High and stable water levels in deep wells are due in part to the relatively small amount of groundwater pumping in the area.

## **Water Quality**

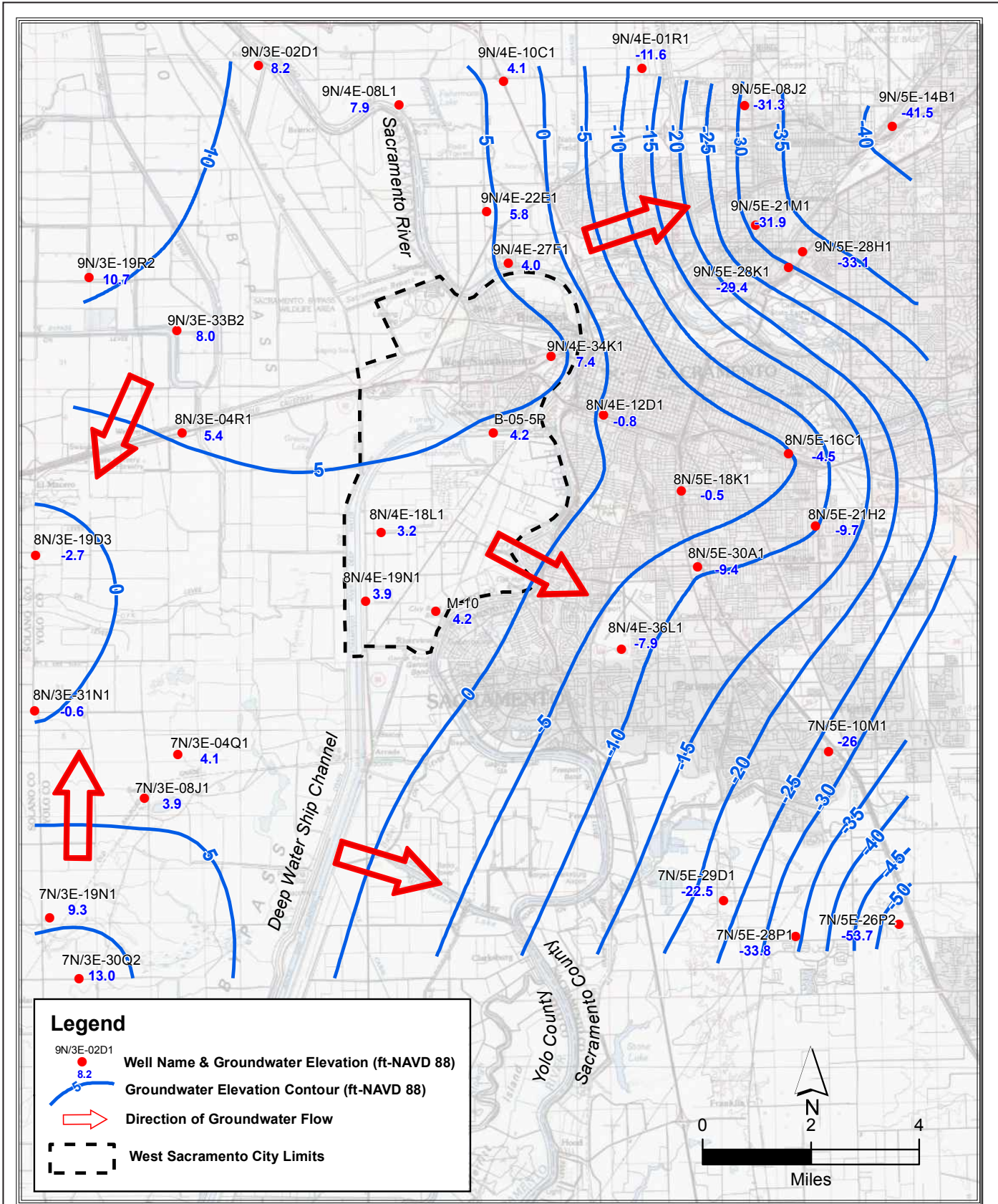
### **Surface Water**

#### ***Sacramento River***

Water management operations at Shasta Dam and other flow-regulating facilities substantially influence the flow regime of the Sacramento River. Water quality dynamics also have been influenced by the operation of these flow-regulating facilities. Although the water in the Sacramento River includes agricultural return flows, urban runoff, and natural sedimentation from scouring, the water quality of the Sacramento River is generally good to excellent. The river has relatively low biochemical oxygen demand (BOD), medium to high DO, and low mineral and nutrient content.

CWA Section 303(d) establishes the TMDL process to assist in guiding the application of state water quality standards. On the 303(d) list the Sacramento River is divided into four reaches: the portion

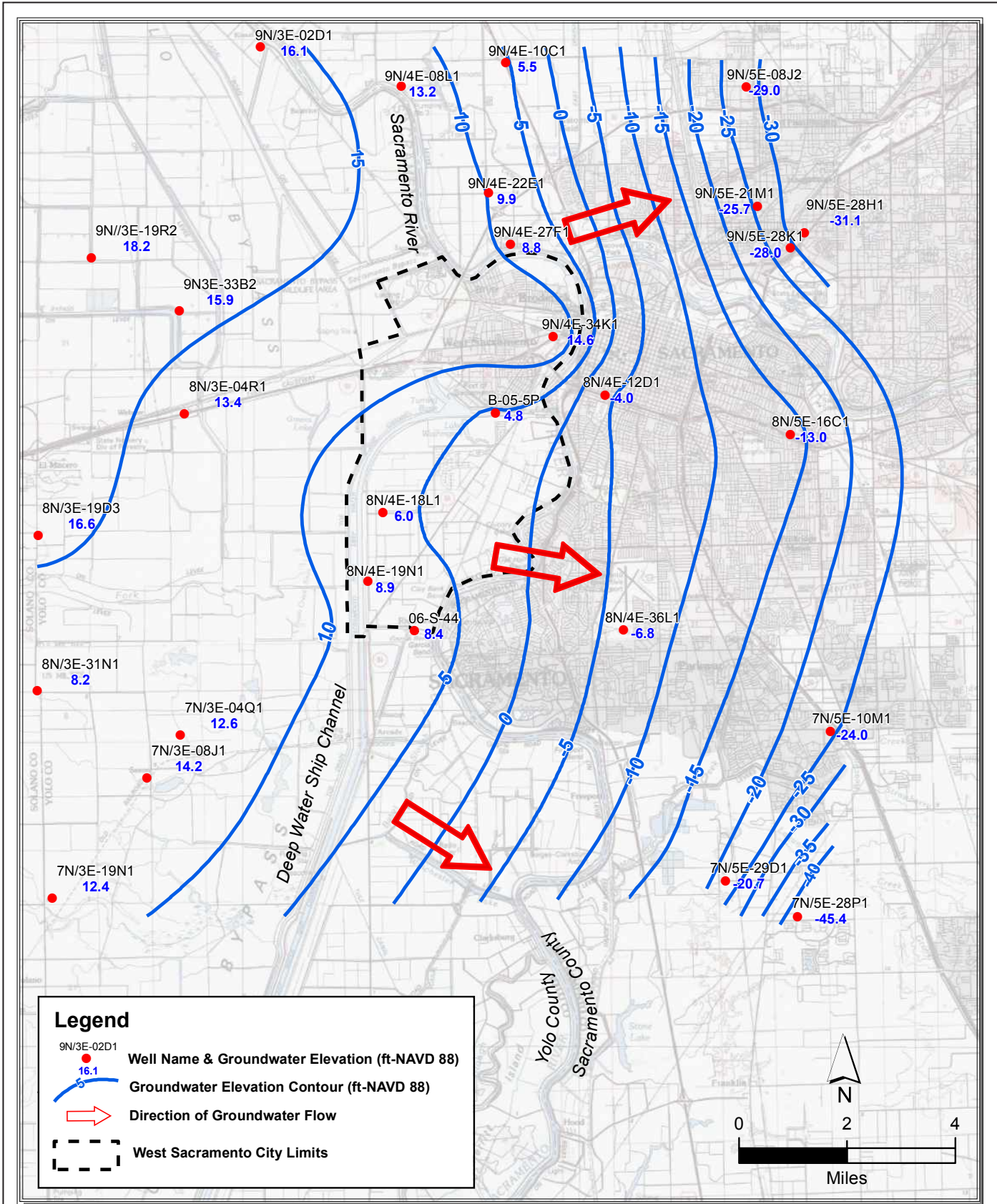




Source: Luhdorff & Scalmanini Consulting Engineers, 2012.



**Figure 3.9-7**  
**Deep Zone Groundwater Elevation Contours:**  
**October-November 2003**

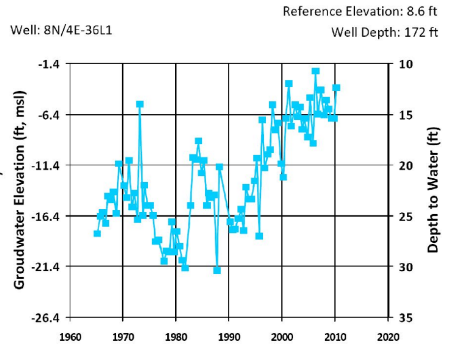
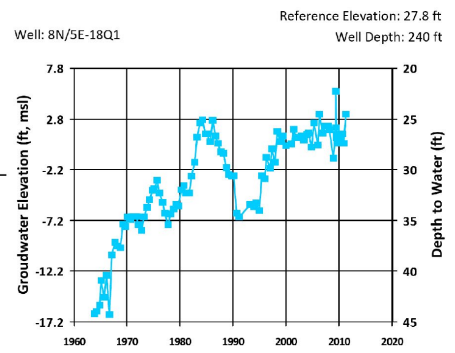
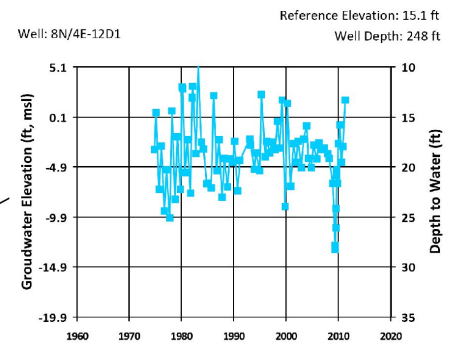
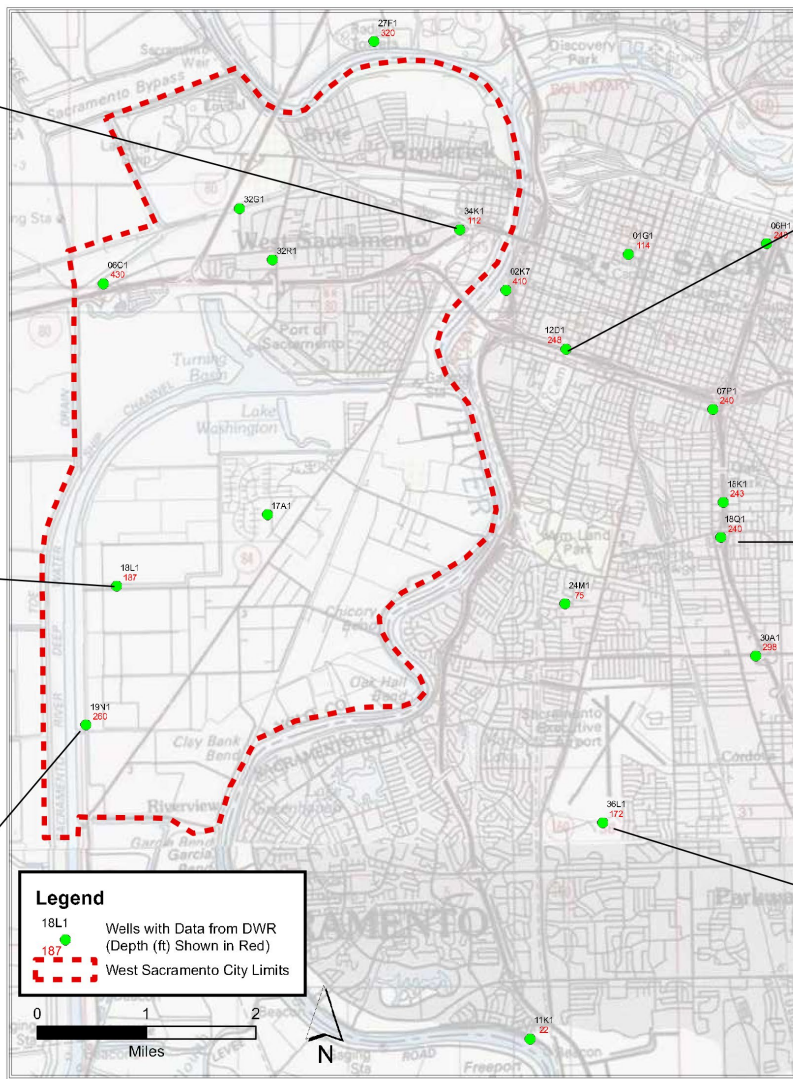
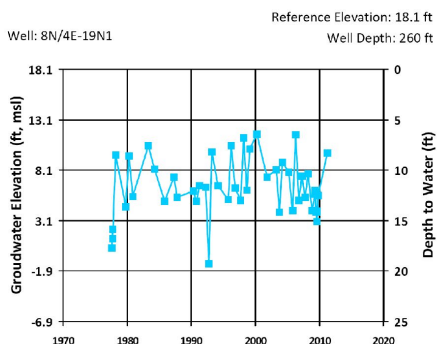
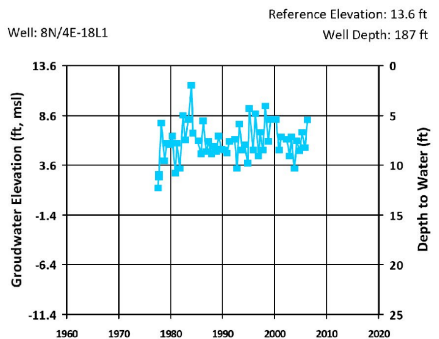
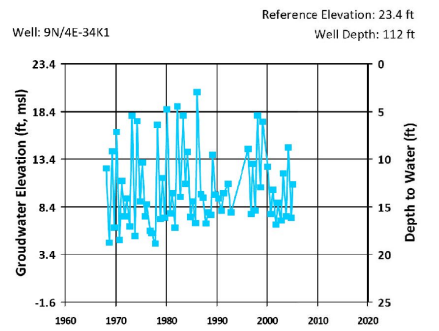


Source: Luhdorff & Scalmanini Consulting Engineers, 2012



**Figure 3.9-8**  
**Deep Zone Groundwater Elevation Contours:**  
**February-March 2004**





Source: Luhdorff & Scalmanini Consulting Engineers. 2012.



Figure 3.9-9 Hydrographs of Deep Wells in Eastern Yolo County and Western Sacramento County

of the Sacramento River adjacent to the city of West Sacramento falls in the Knights Landing to the Delta reach. All sections of the Sacramento River are listed on the 303(d) list for unknown toxicity, and the Knights Landing to the Delta reach is also listed for mercury. Mercury is primarily a legacy of gold mining.

Return flows from irrigated agriculture upstream of West Sacramento tend to degrade Sacramento River water quality. During the spring and fall, irrigation return flows are discharged to drainage canals that flow directly into the river; during the winter, local stormwater runoff also flows over agricultural lands, increasing the turbidity in the water and introducing herbicides and pesticides into the river (City of West Sacramento 2009).

Intensive agriculture in the Sacramento Valley, especially pesticide-dependent rice farming, increases the concentration of compounds such as Molinate and Thiobencarb. The California Department of Food and Agriculture, in cooperation with the State Water Board, has implemented a tailwater management program for Sacramento Valley rice growers to reduce discharges of Molinate and Thiobencarb into the Sacramento River. The City, in partnership with the City of Sacramento, the County of Sacramento, and the East Bay Municipal Utility District (EBMUD) participates in the Rice Pesticide Workgroup which monitors and reports rice pesticide discharge to the Central Valley Water Board (City of West Sacramento 2009).

The City also participates in many other programs to keep the river clean including the Keep the Waters Clean Campaign in partnership with the City of Sacramento, the County of Sacramento, and EBMUD; the Sanitary Survey of the Sacramento River Watershed in partnership with the City of Sacramento, City of Roseville, and EBMUD; the Drinking Water Source Assessment Program which works to identify sources of contamination and respond to possible contamination; and the Regional Water Authority Water Efficiency Program which works to help agencies better meet regulations in water conservation programs (City of West Sacramento 2009).

The City of Sacramento monitors water quality in the Sacramento River on a daily basis. Samples taken at the City of Sacramento water intake indicate that river water in the vicinity of the East Yolo water intake has very low concentrations of total dissolved solids (TDS) and has dissolved concentrations of heavy metals below laboratory analytical detection limits. The Sacramento River has historically been highly turbid and naturally carries high sediment loads. During peak storm events, the river's total sediment load often increases by several times its average levels. Turbidity and increased settlement load can result in longer particulate settling times at the water treatment plant. In addition, increased turbidity could result in reduced oxygen levels in the river, potentially causing adverse effects on aquatic species (City of West Sacramento 2009).

Numerous entities hold NPDES permits for discharges into the Sacramento River above West Sacramento. Some of these discharges are from wastewater treatment plants and cooling water facilities. Most of the permits are held by industrial dischargers such as food processing plants. Permitted discharge could contain a variety of contaminants including household pesticides, sediments, natural organic matter, heavy metals, oil, and grease. Nonpoint source dischargers to the Sacramento River above West Sacramento include agricultural drains and urban runoff outlets. Other nonpoint sources generally do not require NPDES permits (City of West Sacramento 2009).

The following sections discuss specific contaminants of concern pertinent to the planning area.

*Total Suspended Solids and Turbidity*

Total suspended solids (TSS) in a stream generally are indicative of upstream scouring, bank erosion, and agricultural return flow transporting and depositing sediment. Although sedimentation is a natural part of the flow regime for rivers, the Central Valley Water Board also considers it a pollutant because it can transport other contaminants such as phosphorus, and hydrophobic contaminants such as organochlorine pesticides. EPA does not have a quantified standard for TSS. The EPA criteria for suspended solids for freshwater fish and other aquatic life is: *Settleable and suspended solids should not reduce the depth of the compensation point for photosynthetic activity by more than 10 percent from the seasonally established norm for aquatic life*" (U.S. Environmental Protection Agency 1986). The Central Valley Water Board Basin Plan states: *Water shall not contain suspended material in concentrations that cause nuisance or adversely affect beneficial uses*" (Central Valley Regional Water Quality Control Board 2011a). For the 20-year period from 1994 to 2014, average monthly TSS in the Sacramento River at Freeport ranged from 22 milligrams per liter (mg/L) in November to 94 mg/L in January (Table 3.9-6).

Turbidity is another indicator of suspended material in water. The Basin Plan states that where ambient turbidity is between 5 and 50 nephelometric turbidity units (NTUs), projects must not increase turbidity by more than 20% above the ambient conditions. Where the ambient turbidity is between 50 and 100 NTUs, a project must not exceed 10 NTUs above ambient conditions. In determining compliance with these limits, appropriate averaging periods may be applied if beneficial uses for the water body will be fully protected. Average monthly turbidity during the 2014 water year for the Sacramento River at Freeport ranged from 3 formazin nephelometric units (FNU) (October) to 33.5 FNU (March) (Table 3.9-7).

**Table 3.9-6. Average Monthly Discharge and Total Suspended Solids for the Sacramento River at Freeport<sup>a</sup>**

Month	Discharge (cfs)	TSS (mg/L)	TSS Load (tons/day)
October	11,588	24	803
November	12,446	22	843
December	24,820	66	6,460
January	34,454	94	12,657
February	37,895	79	9,688
March	36,274	67	8,122
April	27,778	58	5,134
May	24,458	50	4,592
June	20,944	29	2,091
July	19,589	31	1,730
August	17,222	24	1,179
September	15,730	25	1,166

Source: U.S. Geological Survey 2015.

<sup>a</sup> Discharge and TSS monthly averages for 20 years from October 1, 1994 to September 30, 2014 (water years 1995 through 2014).

cfs = cubic feet per second.

TSS = total suspended solids.

mg/L = milligrams per liter.

**Table 3.9-7. Average Monthly Turbidity for the Sacramento River at Freeport<sup>a</sup>**

Month	Turbidity (FNU)
October	3.0
November	4.1
December	3.9
January	3.6
February	18.2
March	33.5
April	12.5
May	3.8
June	5.1
July	4.4
August	3.8
September	3.6

Source: U.S. Geological Survey 2015.

<sup>a</sup> Turbidity data are monthly averages for 1 year from October 1, 2013 to September 30, 2014 (water year 2014).

FNU = Formazin Nephelometric Unit.

#### *Dissolved Oxygen, Temperature, pH, and Electrical Conductivity*

DO is a critical water constituent for all forms of aquatic life. Its concentration in surface waters can be highly variable and subject to large oscillations over short periods of time. With calm waters and low flows, water bodies can stratify thermally, potentially resulting in low DO concentrations in the deeper zones. Additionally, high levels of nutrient loading can cause algal blooms. These blooms can cause large fluctuations in DO concentration as the algae populations fluctuate in size, producing oxygen while growing and consuming it while decaying. When DO concentrations fall below certain limits, the resulting low-DO zones can act as a barrier to fish migration and potentially adversely affect spawning success. In extreme cases, persistently low DO concentrations can result in mortality of benthic organisms and other aquatic species. The Basin Plan objective for DO in the Sacramento River from the I Street Bridge to the Delta is 7.0 mg/L (Central Valley Regional Water Quality Control Board 2011a). Based on data for the 2014 water year, monthly average DO concentrations in the Sacramento River at Freeport range from 8.0 mg/L (July) to 11.3 mg/L (December) (Table 3.9-8).

Water temperature is a critical constituent from the standpoint of aquatic life. The Basin Plan does not contain temperature objectives specific to the reach of the Sacramento River bordering the city. However, the Basin Plan states that at no time should the temperature of cold or warm intrastate waters be increased more than 5°F above natural receiving water temperature (Central Valley Regional Water Quality Control Board 2011a). Based on data for the 2014 water year, monthly average temperatures in the Sacramento River at Freeport range from 47°F in December to 75°F in July (Table 3.9-8).

The effective concentration (activity) of hydrogen ions in water is represented as pH and is reported on a scale from 0 (acidic) to 14 (alkaline). Many biological functions can occur only within a narrow range of pH values. The Basin Plan objective for pH is between 6.5 and 8.5. Furthermore, discharges

cannot result in changes of pH that exceed 0.5. Based on data for the 2014 water year, the monthly average pH of the Sacramento River at Freeport is relatively stable throughout the year and ranges from 7.6 in July to 8.1 in January (Table 3.9-8). Construction materials such as concrete or other chemicals could affect the pH of the Sacramento River if a discharge were to occur.

Electrical conductivity is a measure of a material's ability to conduct an electric current. The amount of TDS in water is related directly to electrical conductivity (i.e., high electrical conductivity is an indicator of high TDS). TDS and electrical conductivity are general indicators of salinity and are regulated under the Basin Plan. The Basin Plan objective for electrical conductivity on the Sacramento River is for electrical conductivity to be less than 340 microSiemens per centimeter ( $\mu\text{S}/\text{cm}$ ). Based on data for the 2014 water year, monthly average electrical conductivity in the Sacramento River at Freeport ranged from 129  $\mu\text{S}/\text{cm}$  (July) to 211  $\mu\text{S}/\text{cm}$  (February) (Table 3.9-8).

Additional water quality results for the Verona gage are shown in Table 3.9-9 for temperature, turbidity, and electrical conductivity.

**Table 3.9-8. Average Monthly Physical Data for the Sacramento River at Freeport<sup>a</sup>**

Month	Temperature (°F)	pH	DO (mg/L)	EC ( $\mu\text{S}/\text{cm}$ )
October	62	8.0	9.4	149
November	55	7.8	9.8	150
December	47	7.9	11.3	173
January	49	8.1	11.2	192
February	54	8.0	9.8	211
March	59	7.9	9.3	194
April	64	7.9	8.9	169
May	71	7.8	8.6	148
June	73	7.7	8.1	135
July	75	7.6	8.0	129
August	74	7.7	8.1	154
September	72	7.8	8.1	184

Source: U.S. Geological Survey 2015.

<sup>a</sup> Monthly averages for 1 year from October 1, 2013 to September 30, 2014 (water year 2014).

°F = degrees Fahrenheit.

DO = dissolved oxygen.

mg/L = milligrams per liter.

EC = electrical conductivity.

$\mu\text{S}/\text{cm}$  = microSiemens per centimeter.

**Table 3.9-9. Average Monthly Physical Data for the Sacramento River at Verona<sup>a</sup>**

Month	Discharge (cfs)	Temperature (°F)	Turbidity (FNU)	EC (µS/cm)
October	10,070	61	7.2	120
November	10,789	54	9.0	131
December	21,513	49	22.5	131
January	30,273	47	15.3	151
February	32,736	51	24.5	155
March	31,356	55	27.1	136
April	23,461	60	12.3	125
May	19,995	66	8.9	109
June	17,208	70	9.6	109
July	16,439	71	8.9	104
August	15,332	70	6.7	116
September	14,198	68	7.2	139

Source: U.S. Geological Survey 2015.

<sup>a</sup> Monthly averages for 4 years from October 1, 2010 to September 30, 2014 (water years 2011–2014).

cfs = cubic feet per second.

°F = degrees Fahrenheit.

FNU = Formazin Nephelometric Unit.

EC = electrical conductivity.

µS/cm = microSiemens per centimeter.

### ***Drinking Water***

The Bryte Bend Water Treatment Plant, at Bryte Bend on the Sacramento River upstream of the confluence of the Sacramento and American Rivers, provides the city with treated water for municipal use. Over 4.1 billion gallons of Sacramento River water was treated at the Bryte Bend Water Treatment Plant in 2014 (City of West Sacramento 2015b). No violations were reported in the drinking water quality monitoring results for 2014 (Table 3.9-10) (City of West Sacramento 2015b).

**Table 3.9-10. City of West Sacramento 2014 Drinking Water Quality Test Results**

Inorganic	Type MCL	Violation	Max Level Detected	Units	DLR	MCL	CA PHG	Sources
Aluminum	Primary	No	39	PPB	50	200	600	Erosion of natural deposits; residue from some surface water treatment processes
Arsenic	Primary	No	1.2	PPB	2.0	10	0.004	Erosion of natural deposits; runoff from orchards; glass and electronics production wastes
Barium	Primary	No	20	PPB	100	100	200	Discharges of oil drilling wastes and from metal refineries; erosion of natural deposits
Chloride	Secondary	No	6.7	PPM	N/A	500	N/A	Runoff/leaching from natural deposits; seawater influence
Fluoride	Primary	No	0.86	PPM	0.1	4.0	1.0	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories
Sodium	N/A	No	14	PPM	N/A	N/A	N/A	Naturally occurring in the environment
Total Hardness	N/A	No	64	PPM	N/A	N/A	N/A	Erosion of naturally occurring mineral deposits
<b>Other</b>								
Calcium	N/A	N/A	13	PPM	N/A	N/A	N/A	Runoff/leaching from natural deposits
Hexachlorocyclopentadiene	Primary	No	0.069	PPB	1.0	50	2.0	Discharge from chemical factories
Potassium	N/A	N/A	1.2	PPM	N/A	N/A	N/A	Runoff/leaching from natural deposits

Inorganic	Type MCL	Violation	Max Level Detected	Units	DLR	MCL	CA PHG	Sources
Odor	Secondary	No	2	TON	N/A	3	N/A	Naturally occurring organic materials
Magnesium	N/A	N/A	7.6	PPM	N/A	N/A	N/A	Runoff/leaching from natural deposits
Specific Conductance	Secondary	No	180	umhos/cm	N/A	1600	N/A	Substances that form ions when in water; seawater influence
Sulfate	Secondary	No	6.7	PPM	0.5	500	N/A	Runoff/leaching from natural deposits; industrial wastes
Total Dissolved Solids	Secondary	No	84	PPM	N/A	1000	N/A	Runoff/leaching from natural deposits

Contaminant	MCL	PHG	Level Found	Sample Data	Violation	Source
Turbidity	TT = 1 NTU TT = 95% of samples ≤0.3 NTU	N/A	0.110 NTU 100%	2014	No	Soil runoff

Source: City of West Sacramento 2015b.

Primary Drinking Water Standard (PDWS)—MCLs for contaminants that affect health along with their monitoring and reporting requirements, and water treatment techniques.

Secondary Drinking Water Standard (SDWS)—MCLs for contaminants that may influence consumer acceptance of water, but are not otherwise harmful. These standards relate to taste, odor, color, mineral content and clarity.

Detection Limit For Purposes of Reporting (DLR)—The concentration of a contaminant in drinking water at or above which is reported to the California Department of Public Health.

Maximum Contaminant Level (MCL)—The maximum level of a contaminant that is allowed in drinking water. It is set as close to the maximum contaminant level goal as feasible, using the best available treatment technology.

Parts Per Billion (PPB) or Micrograms Per Liter (MG/L)—A measurement of chemical concentration.

Parts Per Million (PPM) or Milligrams Per Liter (MG/L)—A measurement of chemical concentration.

TON—Threshold Odor Number.

Micro Ohms per Centimeter (UMHOS/CM)—A unit of measurement.

Public Health Goal (PHG)—The level of a contaminant in drinking water below which there is no known or expected risk to health. The California Environmental Protection Agency sets public health goals.

Treatment Technique (TT)—A required process intended to reduce the level of a contaminant in drinking water

Nephelometric Turbidity Unit (NTU)—A measurement of the clarity of water. Turbidity in excess of 5 NTU is noticeable to the average person.



### **Stormwater**

Stormwater runoff is generated in the city when rainfall, pavement washing, excess lawn irrigation, or other water sources exceed soil infiltration capacity or occur on impervious surfaces such as pavement, building roofs, or heavily compacted earth. Most of the runoff ultimately makes its way into gutters, storm drains, retention basins, and ultimately receiving waterways. Unlike wastewater that is treated in the sanitary sewer system, stormwater runoff is untreated before it enters local receiving waterways. Pollutants typically found in the West Sacramento's urban stormwater can include sediments, non-sediment solids, nutrients, pathogens, oxygen-demanding substances, petroleum hydrocarbons, heavy metals, floatables, polycyclic aromatic hydrocarbons (PAHs), trash, and pesticides and herbicides. All of these pollutants could negatively affect the existing and potential beneficial uses in the receiving waters. West Sacramento does not have monitoring data available to indicate that stormwater pollutants in West Sacramento are different from typical urban areas (City of West Sacramento 2003).

While most storm runoff in West Sacramento is conveyed by gravity flow to the larger earthen channels or pipelines, the City or a reclamation district also operates twelve pumping stations. One pump station, located near the Tower Bridge, receives runoff from a small area of Broderick. This station discharges to the Sacramento River. Another pump station near River City High School discharges to the RD 900 drainage canal. This station serves the area west of Park Boulevard. The City operates four other pump stations, one near the underpass at the eastern end of West Capitol Avenue, one at the Harbor Boulevard undercrossing, one at Second Street and B Street, and another at the Fifth Street undercrossing. There are two pump stations in Southport which discharge into the Sacramento DWSC. The main pump station for Southport is located at the southwest corner of Bridgeway Lakes. The second pump station is located at the southwest corner of the Southport Industrial Park and serves the industrial park and the Bridgeway Island subdivision. Additional pump stations are located at retention ponds on Lake Washington Boulevard, at the new high school, at Summerfield Park, and in the Rivermont subdivision (City of West Sacramento 2009).

In general, pumping stations in the northern half of the City are owned, operated, and maintained by the City. Stormwater from the city north of I-80 is carried through a system of both surface ditches (in more residential areas) and pipes (in more commercial areas). Approximately 95% of the water is then discharged (pumped) by RD 900 into a toe drain in the Yolo Bypass. This toe drain flows along the edge of the west levee of the Sacramento DWSC to Rio Vista (City of West Sacramento 2003, 2009). Approximately 5% of the water (no more than 500 acres) is discharged to the Sacramento River (City of West Sacramento 2003).

In the south section of the city, rain water is conveyed by gravity pipe to a retention basin. As needed, flows are then pumped out of the retention basin into a drainage canal (mostly the Main Drain). The drainage canals flow to the main pump station at the southwest corner of Southport where excess is pumped over the levee into the Sacramento DWSC. In the south half of the city, all drainage facilities are owned, operated, and maintained by RD 900. Both the Yolo Bypass and the Deep Water Ship Channel drain southward into the San Francisco Bay-Delta (City of West Sacramento 2003).

### **Groundwater Quality**

The City has not been reporting groundwater quality monitoring results in recent years because its drinking water is supplied by pumping of Sacramento River water at the Bryte Bend Water Treatment Plant. The City has one groundwater well currently on standby status and available to

supply additional water during emergencies (City of West Sacramento 2015b). Table 3.9-11 lists the most recent groundwater quality monitoring data available for the City's wells from 2006 (City of West Sacramento 2009).

Areas not served by water mains still withdraw groundwater for domestic and agricultural purposes (City of West Sacramento 2009). Shallow groundwater for domestic or industrial use must be treated extensively through use of chlorine and filtering to remove iron, manganese, methane, and hydrogen sulfide, which are present in large quantities (City of West Sacramento 2009). The groundwater basin, part of an old tule marsh that once covered the Central Valley, holds water that retains residuals of the organic matter decomposition. Groundwater quality is adequate for domestic and industrial uses if treated and is also adequate for agricultural use. Levels of iron, manganese, and chloride at or near EPA standards warrant treatment of water prior to domestic or industrial consumption. Water hardness also limits untreated industrial use. Boron in concentrations large enough to damage some crops was found near the Knights Landing source of water.

**Table 3.9-11. City of West Sacramento July 2006 Groundwater Quality Test Results**

Contaminant	Type of MCL	Violation Yes/No	Maximum Level Detected	Units of Measurement	MCL	MCLG	Likely Source of Contamination
<b>Inorganic Contaminants</b>							
Sodium	N/A	N/A	8.4	mg/L	N/A	N/A	Naturally occurring in the environment
Hardness	N/A	N/A	57	mg/L	N/A	N/A	Erosion of naturally occurring mineral deposits
Turbidity	Primary	No	0.05	NTU	1	N/A	Suspended matter occurs naturally in water
<b>Microbiological Contaminants</b>							
Coliform Bacteria	Primary	No	0	Number of tests	Presence of coliform bacteria in 5% of monthly samples		Naturally present in the environment or in the feces of warm-blooded animals. The presence of these organisms indicates that the water may be contaminated with human or animal wastes

Source: City of West Sacramento 2006a, 2006b.

MCL = maximum contaminant level.

MCLG = maximum contaminant level goal.

N/A = not applicable.

mg/L = milligrams per liter.

NTU = Nephelometric Turbidity Unit.

Historical groundwater quality data for the Southport area are available from the U.S. Geological Survey (USGS), Yolo County, California Department of Public Health (CDPH) and the Lower Northwest Interceptor (LNWI) project. Luhdorff & Scalmanini Consulting Engineers (2012) collected additional data from 15 private wells near the Southport levee in May 2012. The water quality data span the time period from 1970 to 2012, but the data are limited because most wells were only sampled once and most of the samples were not analyzed for a complete suite of constituents. In the Southport area, the available data suggest that groundwater quality in deeper zones is generally better than in the shallow zone (Luhdorff & Scalmanini Consulting Engineers 2012).

Much of the groundwater quality data available for shallow wells are from electrical conductivity measurements made in 2002 in LNWI wells. These data indicate that the salinity of shallow groundwater is highly variable with electrical conductivity values ranging from less than 200  $\mu\text{S}/\text{cm}$  to above 5,000  $\mu\text{S}/\text{cm}$ , with an average of about 2,300  $\mu\text{S}/\text{cm}$ . The electrical conductivity values exceed the secondary maximum contaminant level (MCL) of 900  $\mu\text{S}/\text{cm}$  in 16 out of 20 wells analyzed for this parameter. The salinity indicated by these electrical conductivity values is higher than the rest of the Yolo and Solano Subbasins (California Department of Water Resources 2004a, 2004b).

More complete shallow well water quality data are available for two LNWI dewatering wells sampled in 2002 and two private wells sampled in 2012. Hardness concentrations in the LNWI wells indicate hard to very hard water with values of 164 and 303 mg/L measured as calcium carbonate. Hardness was much lower (72–82 mg/L) in the two private wells sampled in 2012. Concentrations of nitrate as nitrogen in seven shallow wells ranged from less than the laboratory reporting limit to 5.6 mg/L. None of the nitrate concentrations exceeded the primary MCL of 10 mg/L.

Water quality analyses conducted for trace elements in shallow wells include arsenic, boron, iron, and manganese. Arsenic concentrations in the two private wells sampled in 2012 were slightly less than the primary MCL of 0.01 mg/L. Boron concentrations ranged from non-detect (<0.1 mg/L) to 2.9 mg/L. Water with boron concentrations above 2 mg/L is suitable only for moderately to highly boron tolerant crops. Iron concentrations were generally low in the four sampled wells, but manganese concentrations ranged from 0.054 to 0.92 mg/L, all above the secondary MCL of 0.05 mg/L (Luhdorff & Scalmanini Consulting Engineers 2012).

More water quality data are available for deep wells because most water supply wells in the area are classified as deep. Salinity is generally lower in the deep wells, and electrical conductivity values ranged from 200 to 1,470  $\mu\text{S}/\text{cm}$ , with an average of 863  $\mu\text{S}/\text{cm}$ . Electrical conductivity results for 6 out of 22 deep wells exceed the secondary MCL of 900  $\mu\text{S}/\text{cm}$ . Hardness as calcium carbonate ranged from 30 to 250 mg/L, with an average of 114 mg/L. Several wells had hardness concentrations above 180 mg/L, which is considered very hard. Sulfate concentrations in all wells were below the secondary MCL of 250 mg/L. Chloride concentrations ranged from about 5 to 350 mg/L, with five wells exceeding the secondary MCL of 250 mg/L. Nitrate concentrations in most wells were below the laboratory reporting limit. The highest concentration of nitrate as nitrogen was about 8 mg/L, and concentrations at all other wells were below 4 mg/L. Nitrate concentrations in all wells were below the primary MCL of 10 mg/L (Luhdorff & Scalmanini Consulting Engineers 2012).

Water quality samples from 28 deep wells were analyzed for metals and other trace elements. Detectable arsenic concentrations ranged from 0.001 to 0.012 mg/L, and arsenic concentrations in

two domestic wells were slightly above the primary MCL of 0.01 mg/L. Boron concentrations ranged from non-detect (<0.1 mg/L) to 2 mg/L, with an average of 1.1 mg/L. Iron concentrations ranged from less than the reporting limit to 0.8 mg/L. Iron concentrations in five deep wells exceeded the secondary MCL of 0.3 mg/L. Manganese concentrations were generally high, ranging from 0.026 to 0.7 mg/L with most wells exceeding the secondary MCL of 0.05 mg/L. Elevated manganese concentrations is the most common water quality problem observed in deep wells in the Southport area (Luhdorff & Scalmanini Consulting Engineers 2012).

## 3.9.2 Environmental Impacts

### Methods for Analysis

The major sources used in this analysis are listed below.

- California Water Plan (<http://www.waterplan.water.ca.gov/cwpu2013/final/>).
- Central Valley Water Board (<http://www.waterboards.ca.gov/centralvalley/>).
- State Water Board's list of impaired water bodies ([http://www.waterboards.ca.gov/water\\_issues/programs/tmdl/integrated2010.shtml](http://www.waterboards.ca.gov/water_issues/programs/tmdl/integrated2010.shtml)).
- DWR's "best available maps" of 200-year flood zones (<http://gis.bam.water.ca.gov/bam/>).

Impacts related to hydrology, water quality, and water resources were assessed based on technical reports prepared for the proposed project, other available data (e.g., flood maps), and professional judgment.

Potential impacts were analyzed by comparing existing conditions, as described in the *Environmental Setting*, with conditions that could result from changes in land use designations under the General Plan update. The analysis assesses the potential impacts related to surface water hydrology, flood hazards, groundwater recharge, and surface and groundwater quality as described below.

- **Surface Water Hydrology:** The surface water hydrology impact analysis considered potential changes in the physical characteristics of water bodies, impervious surfaces, and drainage patterns throughout the city as a result of project implementation.
- **Flood Hazards:** The impact analysis for flood risk was conducted using FEMA NFIP and BAM maps to determine whether the city overlaps with existing designated 100-year and 200-year floodplains.
- **Groundwater Recharge:** Impacts on groundwater recharge were assessed by comparing existing sources of recharge versus recharge capabilities following project implementation. Recharge is determined by the ability of water to infiltrate into the soil.
- **Surface and Groundwater Quality:** Impacts of the proposed project on surface water and groundwater quality were analyzed using existing information on existing water quality conditions (i.e., CWA Section 303[d] listed water bodies). These conditions were then compared to conditions under the proposed project for potential project-related sources of water contaminants generated or inadvertently released during project construction (e.g., sediments, fuel, oil, concrete) and operation. The potential for water quality objectives to be exceeded and beneficial uses to be compromised as a result of the proposed project was also considered.

## Thresholds of Significance

In accordance with Appendix G of the State CEQA Guidelines, the proposed project would be considered to have a significant effect if it would result in any of the conditions listed below.

- Violate any water quality standards or waste discharge requirements.
- Substantially deplete groundwater supplies or interfere substantially with groundwater recharge, resulting in a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level that would not support existing land uses or planned uses for which permits have been granted).
- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in substantial erosion or siltation onsite or offsite.
- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding 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.
- Otherwise substantially degrade water quality.
- Place housing within a 100-year flood hazard area, as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map.
- Place within a 100-year flood hazard area structures that would impede or redirect floodflows.
- 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.
- Contribute to inundation by seiche, tsunami, or mudflow.

## Impacts and Mitigation Measures

### **Impact WQ-1: Violate any water quality standards or waste discharge requirements (less than significant)**

Implementation of the General Plan, including the new policies in the General Plan update, would result in land use changes within the city. The General Plan identifies three types or relative amounts of change expected to occur over the next 20 years.

1. *Preserve and Enhance*. These areas are expected to retain their current form and character but will experience some minor infill and reuse (e.g., Broderick/Bryte, Rural Core, Old West Sacramento).
2. *Transformation–Redevelopment/Infill*. These areas are expected to experience significant change through infill, reuse, and redevelopment (e.g., West Capitol Avenue, Pioneer Bluff).
3. *Transformation–New Growth*. These areas with existing open space and vacant land are expected to change through major new development and the continued buildout of planned projects (e.g., South West Village of Southport, South East Village of Southport).

Most of the city north of the DWSC would be preserved and enhanced or undergo redevelopment/infill with little new growth. The vast majority of the new growth would take place in the southern area of the city. The potential water quality effects from implementing these land use changes would vary widely among the three types of change because of the nature of disturbance and differences between existing and proposed conditions. Effects of the project are discussed in terms of initial construction and eventual operation of the land use changes.

### **Construction**

Typical construction-related ground-disturbing activities would introduce the potential for increased erosion, runoff, and sedimentation, with subsequent effects on water quality and storm drain capacity. During site grading, trenching, and other construction activities, areas of bare soil could be exposed to erosive forces during rainfall events. Bare soils are much more likely to erode than vegetated areas because of the lack of dispersion, infiltration, and retention properties created by covering vegetation. The extent of the impacts would depend on soil erosion potential, construction practices, disturbed area size, precipitation events, and topography and proximity to drainage channels. Pollutants such as solvents, petroleum products, pesticides, and fertilizers can attach to and be transported by the sediment and lead to water quality impacts. In addition, construction equipment and activities would have the potential to leak hazardous materials, such as oil and gasoline, and potentially affect surface water or groundwater quality. Improper use or accidental spills of fuels, oils, and other construction-related hazardous materials such as pipe sealant, solvents, and paints could also pose a threat to the water quality of local water bodies. These potential leaks or spills, if not contained, would be considered a significant impact on groundwater and surface water quality. If precautions were not taken to contain or capture sediments and accidental hazardous spills, construction activities could produce substantial pollutants in stormwater runoff and result in a significant impact on the existing surface water quality.

Projects that would disturb more than 1 acre of land are required to prepare a SWPPP as part of compliance with the NPDES Construction General Permit. The purpose of a SWPPP is to reduce the amount of construction-related pollutants that are transported by stormwater runoff to surface waters. The SWPPP would emphasize standard temporary erosion control measures to reduce sedimentation and turbidity of surface runoff from disturbed areas within the planning area.

In addition to compliance with the latest NPDES and other water quality requirements (i.e., Construction General Permit, Small MS4 Permit, and the General Dewatering Permit) construction projects would also comply with other federal and state regulations, City standards, and other local ordinances, as noted in the *Regulatory Setting*.

Construction dewatering in areas of shallow groundwater may be required during excavation for some construction projects. In the event groundwater is encountered during construction, dewatering would be conducted locally, and according to the dewatering permit obtained from the Central Valley Water Board, as described in the *Regulatory Setting*. In areas where groundwater is shallow and there would be potential to adversely affect riparian habitat, project features would be installed using the vibration method, which minimizes subsurface disruption.

The General Plan update includes policies focused on mitigating construction-related water quality impacts.

**NCR-4.7 Construction Site Impacts:** The City shall control pollutant sources to natural water bodies and drainage systems from construction activities through the use of stormwater protection measures in accordance with Federal, State, and local regulations such as the City's grading ordinance and NPDES permit.

Therefore, potential construction-related water quality impacts, such as violations of water quality objectives or WDRs, would be less than significant. No mitigation is required.

## Operations

Urban stormwater runoff from existing and future development, as well as discharges of waters from storm drains into natural water bodies, can contain a variety of pollutants, including household chemicals, landscape chemicals, heavy metals, and other substances. Urbanization, agricultural operations, and industrial activities that would continue under the General Plan update have the potential to release nutrients, chemical pollutants, and excess sediment into nearby waterways, degrading surface water and groundwater quality over the long term. As discussed below, additional urban growth also has the potential to change the magnitude and frequency of stormwater draining off the landscape and into receiving water bodies, which could alter flow and sediment loads and degrade drainage channels.

Several factors related to implementation of the General Plan update and areas of new development could affect the volume of stormwater generated from the planning area.

- **Decreased Interception** – The surface area of vegetation and leaf litter intercepts some of the rainfall until it becomes completely wetted and water drips off leaves or runs down stems. The interception prevents rainfall from immediately becoming stormwater runoff. The actual percentage of intercepted rainfall depends on vegetation cover type and the intensity and duration of the rainfall event. Though the values vary widely, reducing vegetation cover and the related rainfall interception may produce the hydrologic equivalent of a storm that is 10–30% larger than if vegetation cover were still present (Stein et al. 2012).
- **Decreased Infiltration** – Conversion of pervious soils to impervious roads, parking lots, and rooftops eliminates water infiltration into the covered or excavated soils. Compaction of soils by heavy-equipment, or removal of surface soils and exposure of subsurface soils also reduce infiltration capacities and lead to an increased volume of stormwater runoff. Recent studies have shown how compaction of soils unrelated to construction or heavy-equipment can significantly reduce infiltration capacities (Stein et al. 2012). For example, in some locations impervious areas may generate only 20% more runoff than green playing fields and ornamental lawns previously thought to have high infiltration capacities (Pitt et al. 2008; Stein et al. 2012).
- **Increased Connectivity and Efficiency of the Drainage System** – Under natural, undeveloped conditions, most rainfall runoff that is not evaporated or transpired enters streams by way of groundwater paths with flow rates at least one to two orders of magnitude slower than surface water. Reducing infiltration into groundwater and instead hydromodifying the landscape to route runoff through gutters and storm drains results in near instantaneous delivery of stormwater to the stream network. The runoff efficiency is enhanced by characteristics of roofs, pavement, storm sewers, and concrete flood control channels: (1) straight flow path alignments that reduce travel distances and thus travel times and (2) smooth surfaces with decreased

friction that enable higher velocities compared to natural flow paths (Hollis 1975 as cited in Stein et al. 2012).

Increased routing of rainfall into West Sacramento's receiving waterways as stormwater instead of natural runoff could increase in the frequency and magnitude of small and moderate flow events. The magnitude of a 1-year flow event could be factors of ten times greater if substantial portions of the watershed are paved and no BMPs are implemented. The increased runoff could be coupled with a reduction in sediment supply as previous sources of sediment are paved or otherwise covered by development. Ultimately, the higher runoff volumes that occur more frequently could enter receiving waters with an increased potential to erode channel sediment that could lead to channel degradation.

Under the General Plan update, the conversion of existing agriculture fields, rural residential, and undeveloped areas into subdivisions, retail establishments, and other impervious areas would occur. These newly developed areas would increase runoff and potential pollutants and require the construction of new stormwater treatment facilities. Runoff increases would be greatest in the new growth areas south of the Sacramento DWSC because the new growth areas would result in net loss of pervious land cover and water infiltration potential. In areas where land use changes would result in redevelopment/infill areas where open space would replace impervious industrial land uses, there would be potential water quality benefits from increases in pervious land cover and associated increases in water infiltration, relative to the existing condition

The General Plan update includes several policies focused on mitigating for potential stormwater increases and water quality impacts.

**PFS-4.1 Public Improvement Design:** The City shall design public improvements such as streets, parks, and plazas for retention and infiltration of stormwater by diverting urban runoff to bio-filtration systems such as greenscapes.

**PFS-4.9 Grading Projects:** The City shall impose appropriate conditions on grading projects performed during the rainy season to ensure that silt is not conveyed to storm drainage systems.

**NCR-4.2 Open Space Buffers:** The City shall conserve and, where feasible, create or restore open space areas that serve to protect water quality such as riparian corridors, buffer zones, wetlands, undeveloped open space areas, levees, and drainage canals.

**NCR-4.5 No Adverse Impact:** The City shall not approve new development that has a significant potential for adversely affecting water quality in the city's natural water bodies and drainage systems including the Sacramento River, Deep Water Ship Channel, Lake Washington, or groundwater basin.

**NCR-4.6 New Development:** The City shall require new development to protect the quality of water resources and natural drainage systems through site design, source controls, runoff reduction measures, BMPs, and LID.

The General Plan update includes implementation programs that would improve stormwater management in the city and reduce impacts on water quality.

**Public Facilities and Services Implementation Programs 10:** The City shall review, and update a Drainage Master Plan at least every five years consistent with the land use patterns and densities/intensities provided for in the General Plan.

**Natural and Cultural Resources Implementation Program 2:** The City shall continue to apply Public Open Space (POS) zoning to significant habitat areas as well as setbacks or buffers of at least 100-feet between these areas and new development.



**Natural and Cultural Resources Implementation Program 4:** The City shall develop a replacement plan for the loss of State and Federally regulated wetlands, other waters of the United States, and associated functions and values by requiring that replacement include: creating habitats that are similar in extent and ecological value to that displaced development; consist of locally-occurring, native species; and are located as close as possible to the development site or be a part of a larger replacement habitat.

**Natural and Cultural Resources Implementation Program 5:** The City shall develop and adopt an Urban Forest Management Plan.

**Natural and Cultural Resources Implementation Program 12:** The City shall prepare an annual report to the City Council on the status of groundwater quality throughout the city.

**Natural and Cultural Resources Implementation Program 13:** The City shall make mailers, brochures, and other materials available to the public for education on the practices and programs to minimize water pollution, conserve water, and use water more efficiently.

Compared to the current General Plan policies, implementation of the General Plan update policies would increase the emphasis on requiring open space buffers and runoff reduction measures related to new development. Development of these management efforts as proposed in the General Plan update's goals and policies would help address the causes of increased stormwater from development described above and help minimize the potential for the release of pollutants and violation of water quality standards. Furthermore, compliance with regional, state, and federal regulations would reduce the potential for new development to result in violations of water quality standards.

The General Plan update would implement other policies focused on water quality benefits not directly related to new development.

**NCR-4.3 New Septic Systems:** The City shall prohibit the establishment of any new septic systems in areas where City sewer and water services are available within one air mile, and require that new septic tank installations elsewhere be limited to parcels that are one acre or larger.

**NCR-4.4 Existing Septic Systems:** The City shall seek to eliminate existing septic tanks in urbanized areas to maintain the city's water quality.

**NCR-4.8 Monitor Water Quality:** The City shall monitor water quality in City wells for evidence of toxins, saltwater intrusion, and other contaminants.

**NCR-4.9 Agricultural Chemicals:** The City shall support efforts on a countywide, regional, or statewide basis to reduce runoff of toxic agricultural chemicals into the city's natural water bodies and drainage systems.

**NCR-4.10 Industrial Discharge:** The City shall minimize pollutants entering the overall water system by regulating discharge from industrial users in accordance with local and State regulations.

**NCR-4.11 Ship Ballast Discharge:** The City shall continue to encourage the Port of West Sacramento and responsible State agencies to prohibit the discharge of saltwater ballast into the Sacramento Deep Water Ship Channel.

**NCR-4.12 Education:** The City shall educate the public on practices and programs to minimize water pollution.

Water quality protection measures are enforced by the Central Valley Water Board under various NPDES programs for MS4s, construction sites greater than 1 acre, and industrial operations. These programs are either in the process of being, or recently have been, upgraded to include more rigorous standards, WDRs, and methods for meeting water quality objectives based on current data and understanding. As described above in the *Regulatory Setting* section, the City has implemented

its SWMP under the NPDES Phase II MS4 General Permit that includes programs to eliminate illicit discharges, control construction site stormwater runoff, and meet post-construction stormwater runoff goals to improve water quality protection (City of West Sacramento 2003).

Adherence to the SWMP and the various municipal, industrial, and construction NPDES program requirements would ensure that pollutants are not released to nearby surface water bodies or groundwater during short-term construction efforts, or long-term operation of industrial or agricultural facilities. Therefore, this impact would be less than significant.

**Impact WQ-2: Substantially deplete groundwater supplies or interfere substantially with groundwater recharge, resulting in a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level that would not support existing land uses or planned uses for which permits have been granted) (less than significant)**

Changes in land use designations under the General Plan update could result in increased water supply demand. The City would continue meet water supply demands with Sacramento River water from the Bryte Bend Water Treatment Plant. The City has one groundwater well currently on standby status and available to supply additional water during emergencies (City of West Sacramento 2015b). Areas not served by water mains still withdraw groundwater for domestic and agricultural purposes (City of West Sacramento 2009). Implementation of the General Plan update would not substantially deplete groundwater resources from increased groundwater pumping or result in over-withdrawal.

Under the General Plan, the conversion of existing agriculture fields, rural residential, and undeveloped areas into new subdivisions, retail establishments, and other impervious areas would occur. These newly developed areas would increase runoff and decrease the surface area available for groundwater recharge. Decreased infiltration would be greatest in the new growth areas south of the Sacramento DWSC because the new growth areas would result in a net loss of pervious land cover and water infiltration potential. Increases in impervious land cover and water infiltration into the groundwater could be obtained in the redevelopment/infill areas where expansive and impervious industrial land uses are redeveloped or converted to new areas of open space that would allow for increased water infiltration compared to the existing condition.

The General Plan update includes policies focused on groundwater sustainability and recharge.

**PFS-2.1 Surface Water Priority:** The City shall continue to use treated surface water from the Sacramento River as the principal source of domestic water for the city, relying on treated groundwater only to supply the Port pressure zone and as an emergency backup to the surface water source. The City shall pursue, as expeditiously as possible, acquisition of additional surface water rights necessary to accommodate projected water demand.

**NCR-5.2 Groundwater Sustainability:** The City shall protect the sustainability of groundwater resources for urban and agricultural uses.

**NCR-5.3 Groundwater Recharge:** The City shall protect and require new development to preserve, where feasible, areas that provide important groundwater recharge and stormwater management benefits such as undeveloped open spaces, natural habitat, riparian corridors, wetlands, and natural drainage areas.

Furthermore, in addition to the policies in the General Plan update, statewide groundwater management legislation passed in 2014 includes a long-term goal of reducing overdraft (AB 1739 and SB 1168). The legislation requires preparation of a groundwater sustainability plan that meets

the content requirements established in Water Code Section 10727.2 and 10727.4. The groundwater management plan will include specific actions to avoid overdraft of the subbasins within Yolo County within 20 years of adoption of the plan. (Water Code Section 10727.2, subsections (b) and (d)).

The potential for the General Plan update to deplete groundwater resources is not substantial. Most of the recharge to the shallow groundwater aquifer occurs directly from the Sacramento River (Luhdorff & Scalmanini Consulting Engineers 2012), thus changes to the percent of impervious land cover would not be significant compared to the controlling factor of the water surface elevations in the river and Sacramento DWSC. Furthermore, areas of new development would require open space, BMPs, and LID to manage the volume and rate of stormwater runoff and would create opportunities for groundwater infiltration. Implementation of the General Plan update policies would increase use of development features that would protect groundwater sustainability and provide for groundwater recharge. Accordingly, the potential for substantial groundwater depletion as a result of the land use designation changes of the General Plan update would be less than significant. No mitigation is required.

**Impact WQ-3: 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 (less than significant)**

The existing drainage network within the planning area is highly altered from its natural, pre-disturbance condition. The Sacramento River and Sacramento DWSC are leveed and channelized. Other smaller drainages were straightened by construction of ditches or canals for agricultural and stormwater drainage purposes. Implementation of the General Plan update would not lead to alteration of natural channels that have not previously been disturbed. However, land use designation changes as a result of the General Plan update would result in changes to existing runoff patterns. As described in Impact WQ-1, construction and operation of the redevelopment/infill and, in particular, the new growth associated with implementation of the General Plan update would change the location and amounts of impervious and pervious land cover resulting in changes to stormwater runoff and drainage.

During construction, site grading, trenching, and other activities could concentrate and redirect existing runoff patterns that could lead to erosion of temporarily exposed areas of bare soil during rainfall events with subsequent sedimentation onsite or offsite. The extent of the impact would depend on soil erosion potential, type of construction practice, extent of disturbed area, timing of precipitation events, and topography and proximity to drainage channels.

For long-term operation potential stormwater effects would be most pronounced in the new growth areas where conversion of existing agriculture fields, rural residential, and other undeveloped areas into subdivisions, retail establishments, and other impervious areas would occur. Loss of pervious land cover and the resultant concentration and redirection of runoff would increase the frequency and magnitude of small and moderate flow events. The increased runoff could be coupled with a reduction in sediment supply as previous sources of sediment are paved or covered by development. Ultimately, the higher runoff volumes that occur more frequently could enter receiving waters with a large potential to erode channel sediment that could lead to channel erosion and degradation. The eroded sediment could be transported downstream and cause substantial sedimentation problems. Research in the past decade has shown how increased stormwater runoff from smaller events (e.g., the 2-year event) can lead to 95% of the erosion and sediment transport

that occurs in receiving channels (Central Valley Regional Water Quality Control Board 2011b). Thus, detention basins designed to bypass all but the large runoff events may lead to channel degradation and sedimentation downstream because they do not effectively mitigate for the increase in smaller, frequently occurring runoff events created by hydromodification. Furthermore, detention basins are designed to trap and store water, which causes sediment transported by the runoff to deposit into the basin. The water that spills or is pumped out of the basin is often clear water (i.e., does not contain sediment), and thus has additional energy available to erode sediment from receiving channels.

Compared to the current General Plan policies, implementation of the General Plan update policies would place increased emphasis on requiring open space buffers and runoff reduction measures related to new development. As described in Impact WQ-1, the General Plan update includes several policies and implementation programs focused on minimizing potential erosion or sedimentation issues, such as emphasis on infiltration of stormwater into greenscapes; use of open space buffers; and through site design, source controls, runoff reduction measures, BMPs, and LID.

The State Water Board and RWQCBs recognize the need to manage and control the effects of hydromodification to protect beneficial uses in receiving water bodies and the agencies often now require development of "hydromodification management plans" (HMPs) in many Phase 1 and some Phase 2 MS4 permits (Stein et al. 2012). Most HMPs require the permitted municipalities to develop programs and policies to assess the potential effects of hydromodification associated with new development and redevelopment, to require the inclusion of management measures to control the impacts of hydromodification, and to develop monitoring programs to assess the effectiveness of HMP implementation at controlling and mitigating the impacts of hydromodification (Stein et al. 2012).

The City is named as a Small MS4 Permittee in the NPDES Phase II Stormwater Permit and implements its SWMP locally to prevent and eliminate stormwater pollution to the maximum extent practicable through actions such as elimination of illicit discharges, controlling construction site stormwater runoff, and implementing sediment control measures. In recognition of the increasing importance placed on assessing hydromodification effects, and in order for the City to meet current requirements of Section E.12 of its current Phase II MS4 Permit, an update of the post-construction requirements was needed. Thus, the City entered into a collaboration with 16 other Central Valley municipalities and WGR Southwest Inc. to develop the "Post-Construction Standard Plan" (City of West Sacramento 2014). The "Post-Construction Standard Plan" guides proponents and municipal plan checkers through the various requirements of the Phase II Municipal Separate Storm Water Sewer System (MS4) Permit and includes a section on how to incorporate required hydromodification management measures into future development projects.

Implementation of the recently prepared Post-Construction Standard Plan (City of West Sacramento 2014) will require assessments be performed that demonstrate how post-project flow rates and durations deviate from pre-project hydrology, and how stormwater detention designs may affect sediment transport continuity. The results of these studies will be used to develop necessary hydromodification measures required to help minimize the potential for erosion and sedimentation effects and adversely affect receiving waterbodies. No mitigation is required.

**Impact WQ-4: Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding onsite or offsite (less than significant)**

As described in Impact WQ-1, construction and operation of the redevelopment/infill and new growth associated with implementation of the General Plan update will change the impervious and pervious land cover resulting in changes to stormwater runoff. Development in new growth areas would increase the amount of impervious land cover and the resultant concentration and redirection of runoff would increase the frequency and magnitude of small and moderate flow events that could lead to increased flooding.

Compared to the current General Plan policies, implementation of the General Plan update policies would increase emphasis on requiring open space buffers and runoff reduction measures related to new development. As described in Impact WQ-1, these measures include several policies and implementation programs focused on reducing stormwater runoff, such as emphasis on infiltration of stormwater into green spaces; use of open space buffers; and through site design, source controls, runoff reduction measures, BMPs, and LID.

The General Plan update includes policies that would reduce the potential for onsite or offsite flooding in addition to the policies stated in Impact WQ-1.

**PFS-4.7 Fix Local Flooding:** The City shall continue to identify and correct problems of localized flooding within the city. Where practical and economical, the City shall upgrade existing drainage facilities as necessary to correct localized flooding problems.

**PFS-4.10 Diversion:** The City shall require new development to be designed to prevent the diversion of floodwaters onto neighboring parcels.

**PFS-4.11 Storm Drain Improvements:** The City shall require construction of storm drainage improvements, as appropriate, to prevent flooding during periods of heavy rainfall.

**S-2.2 Minimize Risk of Flood Damage:** The City shall evaluate and regulate development in areas subject to flooding in accordance with local, State, and Federal requirements to avoid or minimize the risk of flood damage.

**S-2.8 Disclosure of Flood Risk:** The City shall require new development that would be located in areas subject to flood hazards to provide disclosure information to future homebuyers and tenants regarding the status of flood protection within the community, the purchase of flood insurance by property owners, and evacuation plans.

**S-2.10 Multi-Purpose Flood Control Projects:** The City shall encourage multi-purpose flood control projects that incorporate recreation, resource conservation, natural riparian habitat, and other natural resources.

**S-2.11 Clear Channels:** The City shall maintain flood control channels and routinely clear them of vegetation and debris to maintain stormwater flows, while protecting significant riparian vegetation.

**S-2.13 Inter-Agency Coordination:** The City shall cooperate with area reclamation districts and other responsible agencies in the maintenance and improvement of levees and drainage channels to protect life and property.

**S-2.16 District Consolidation:** The City shall investigate the possibility of consolidating existing reclamation districts as a means of providing better levee maintenance and flood protection.

In addition to the implementation programs listed under Impact WQ-1, the General Plan update includes the following implementation programs that would reduce the potential for onsite or offsite flooding.

**Public Facilities and Services Implementation Programs 9:** The City shall prepare a study to identify problems of localized flooding within the city. Based on findings from the study, the City shall consider funding improvements to upgrade existing drainage facilities as necessary to correct localized flooding problems.

Development of these management efforts as proposed in the General Plan update's goals and policies would help address the causes of increased stormwater from development described above and help minimize the potential for onsite or offsite flooding. As described in the *Regulatory Setting* section, the City has implemented its SWMP under the NPDES Phase II MS4 General Permit that includes programs to eliminate illicit discharges, control construction site stormwater runoff, and meet post-construction stormwater runoff goals to manage flood risk (City of West Sacramento 2003).

Adherence to the SWMP and the various municipal, industrial, and construction NPDES program requirements would ensure that additional increases in stormwater runoff from development under the General Plan update are adequately managed and do not result in a substantial increase in the rate or amount of surface runoff in a manner that would result in flooding onsite or offsite. Therefore, this impact would be less than significant. No mitigation is required.

**Impact WQ-5: 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 (less than significant)**

As discussed under Impact WQ-4, implementation of the land use designation changes under the General Plan update would lead to development of roads, buildings, houses, and other impermeable surfaces that would alter surface drainage. These changes would result in increased volumes of stormwater runoff and the runoff could be polluted by contaminants from urban and rural land uses. Adherence to the General Plan update policies and implementation programs described in Impact WQ-1 and Impact WQ-3, and existing regulations, such as preparation of SWPPPs with appropriate BMPs and the City's NPDES SWMP, would minimize this impact. Accordingly, the impact would be less than significant. No mitigation is required.

**Impact WQ-6: Otherwise substantially degrade water quality (less than significant)**

Impact WQ-1 discusses impacts involving violations of water quality objectives and standards. This impact addresses "other" water quality impacts, such as those that can result from wetland dredge and fill. Projects implemented under the General Plan update would be required to comply with CWA Section 404 which regulates the discharge of dredged and fill materials into "waters of the United States," including oceans, bays, rivers, streams, lakes, ponds, and wetlands.

The General Plan update includes implementation programs and policies focused on retaining or creating wetland features and ensuring their ability to store runoff, filter pollutants, and contribute to groundwater recharge.

**Natural and Cultural Resources Implementation Program 4:** The City shall develop a replacement plan for the loss of State and Federally regulated wetlands, other waters of the United States, and associated functions and values by requiring that replacement include: creating habitats that are similar in extent and ecological value to that displaced development; consist of locally-

occurring, native species; and are located as close as possible to the development site or be a part of a larger replacement habitat.

**NCR-4.2 Open Space Buffers:** The City shall conserve and, where feasible, create or restore open space areas that serve to protect water quality such as riparian corridors, buffer zones, wetlands, undeveloped open space areas, levees, and drainage canals.

**NCR-5.3 Groundwater Recharge:** The City shall protect and require new development to preserve, where feasible, areas that provide important groundwater recharge and stormwater management benefits such as undeveloped open spaces, natural habitat, riparian corridors, wetlands, and natural drainage areas.

The rigorous review required for developments in or within the vicinity of wetlands requires that BMPs be implemented to ensure that wetlands are not negatively affected by construction activities. In addition to compliance with CWA Section 404, implementation of the General Plan update's implementation programs and policies would minimize impacts on wetlands. Accordingly, impacts would be less than significant. No mitigation is required.

**Impact WQ-7: Place housing within a 100-year flood hazard area, as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map (significant and unavoidable)**

The history of previous flood protection activities and ongoing work to improve the conditions of the levees that surround the city and reduce flood risk is described in the *Environmental Setting* section. In brief, FEMA's FIRMs for the City of West Sacramento, last updated in 1995, show all areas within the city located outside of the main waterways are mapped as Zone X - area protected from the 1% chance (100-year) flood by levee, dike, or other structures subject to possible failure of overlapping during longer floods. Extensive studies have been conducted since 1995 that identify deficiencies in the City of West Sacramento's levee system and likely inability to truly provide 100-year or 200-year flood protection, and subsequently new draft revised FEMA maps anticipated to be issued in the near future are expected to show that all or parts of the city may neither meet 100-year flood standards nor 200-year level of flood protection required by CVFPP for urban areas (City of West Sacramento 2015a; U.S. Army Corps of Engineers 2014).

Legislation adopted by the State of California, and flood planning required by the legislation, is strengthening flood protection oversight and requirements within the Sacramento Valley, including within the city of West Sacramento. Two state agencies, DWR and CVFPB, adopted the CVFPP in 2012. The CVFPP and key legislation under the 2008 CVFPA set a higher standard for a 200-year level of flood protection. The CVFPP requires local governments modify their general plans and zoning codes to be consistent with state flood management requirements. The City must achieve a 200-year level of protection by 2016 or no new development entitlements may be granted, unless the City certifies it is making adequate progress in implementation and will achieve the State's 200-year standard. On June, 1, 2016, the City Council adopted a finding of adequate progress in the form of Resolution 16-45, based on the Adequate Progress Report prepared by WSAFCA and related other evidence.

Any new development allowed under the General Plan update would occur within the existing levee system surrounding the city. Like existing development, this new development could occur in areas not meeting current 100-year and 200-year level of flood protection requirements. FEMA is revising West Sacramento's flood maps and WSAFCA officials expect that FEMA will eventually change West Sacramento's flood zone designations from Flood Zone X to a Special Flood Hazard Area, which would require property owners to obtain flood insurance (City of West Sacramento 2015a; U.S.

Army Corps of Engineers 2014). Even though some sections of development would be located adjacent to levees recently improved to provide 200-year protection (e.g., the Sacramento Bank Project—South River Road), they could still be subject to flooding due to levee failures elsewhere. A levee failure anywhere in the North Basin or Southport Basin would likely inundate the entire basin (U.S. Army Corps of Engineers 2014). The generally flat topography of the city and large flood depths predicted for a levee failure mean that flood water would spread extensively throughout the city into areas relatively far from the failure location.

WSAFCA is taking proactive measures to reduce risk and achieve a minimum of 200-year flood protection for the entire city by incrementally improving the approximately 50 miles of levees protecting West Sacramento (see projects list in Table 3.9-4). Specifically, WSAFCA implementing EIPs under the WSLIP targeted to reduce risk in advance of finalization of the USACE's West Sacramento GRR. The primary objective of the GRR is to determine the extent of federal interest in additionally reducing the flood risk within the study area. USACE released the draft GRR report in 2014 (U.S. Army Corps of Engineers and Central Valley Flood Protection Board 2014). Except for EIPs constructed in advance of the GRR, the WSLIP improvements would be substantially implemented through the GRR. The final GRR was approved April 26, 2016 with the issuance of the U.S. Army Corps of Engineers' Chief of Engineer's Report. The GRR will now be presented to Congress for funding of the project through the Water Resources Development Act.

The General Plan update includes the essential requirements of recent flood protection standards and the following policies contained within are consistent with FEMA's, the State's, and WSAFCA's goals to reduce flood risk.

**S-2.1 Flood Insurance Program:** The City shall continue to participate in the National Flood Insurance Program, and ensure that local regulations are in full compliance with standards adopted by FEMA.

**S-2.2 Minimize Risk of Flood Damage:** The City shall evaluate and regulate development in areas subject to flooding in accordance with local, State, and Federal requirements to avoid or minimize the risk of flood damage.

**S-2.3 Flooding Evacuation and Rescue Maps:** The City shall maintain, update, and make available to the public, as appropriate, current flood evacuation and rescue maps.

**S-2.4 Flood Risk Notification:** The City shall be proactive in educating and informing residents and businesses protected from flooding by a levee and/or subject to inundation in the event of levee failure of the risk.

**S-2.5 Deed Notification:** The City shall require, for areas protected by levees, all new developments to include a notice within the deed that the property is protected by flooding from a levee and that the property can be subject to flooding if the levee fails or is overwhelmed.

**S-2.6 Deed Notification:** The City shall encourage all residents to purchase flood insurance.

**S-2.7 200-Year Flood Protection:** The City shall work with local, regional, State, and Federal agencies to achieve by 2025 at least 200-year flood protection for all areas of the city. Priority shall be given to the levees protecting the people and property within the existing City limits.

**S-2.14 Construction Standards in New Development:** The City shall require new development, including manufactured homes, within a special flood hazard area designated by FEMA to be constructed to the standards, and elevated and floodproofed consistent with the requirements, outlined in the City's Floodplain Management Ordinance (Title 18 of the Municipal Code).

**S-2.15 Substantial Improvements in Existing Development:** The City shall require existing development located within a special flood hazard area designated by FEMA to comply with the City's Floodplain Management Ordinance (Title 18 of the Municipal Code) when improvements are made



costing at least 50 percent of the estimated current market value of the structure before the improvements.

**S-2.16 Central Valley Flood Protection Plan:** The City shall comply with the provisions of the Central Valley Flood Protection Plan, when adopted.

**S-2.17 Development in Dam Inundation Areas:** The City shall require all new development to consider the risks of dam inundation.

**S-2.18 Disclosure of Flood Risk:** The City shall require new development that would be located in areas subject to flood hazards to provide disclosure information to future homebuyers and tenants regarding the status of flood protection within the community, the purchase of flood insurance by property owners, and evacuation plans.

**S-2.19 Essential Facilities:** The City shall require that new essential public facilities (e.g., hospitals, health care facilities, emergency shelters, fire stations, etc.) are located, when feasible, outside of flood hazard zones, as defined by FEMA, or designed to maintain the structural integrity of the facility during flooding events.

**S-2.20 Multi-Purpose Flood Control Projects:** The City shall encourage multi-purpose flood control projects that incorporate recreation, resource conservation, natural riparian habitat, and other natural resources.

**S-2.21 Clear Channels:** The City shall maintain flood control channels and routinely clear them of vegetation and debris to maintain stormwater flows, while protecting significant riparian vegetation.

**S-2.22 Discourage Levee Erosion:** The City shall discourage, and restrict to the extent feasible, uses that promote the erosion or structural deterioration of levees.

**S-2.23 Inter-Agency Coordination:** The City shall cooperate with area reclamation districts and other responsible agencies in the maintenance and improvement of levees and drainage channels to protect life and property.

**S-2.24 Regional Flood Management Planning Efforts:** The City shall participate in the California Department of Water Resources (DWR) Regional Flood Management Planning effort for the Lower Sacramento/Delta North region.

**S-2.25 Maintenance and Improvement of Levees:** The City shall cooperate with other responsible agencies in ensuring that levees surrounding the city are maintained and improved to provide either i) a minimum 200-year flood protection level; or ii) the minimum level of flood protection for urban areas, as defined by an appropriate State or Federal agency, whichever level is higher. Priority shall be to give the levees protecting people and property within the existing city limits.

**S-2.26 Levee Certification:** The City shall work with WSAFCA to achieve by 2020 local certification of levees for 200-year flood protection.

**S-2.27 Levee and Floodway Encroachment Permit:** The City shall require applicants to secure an encroachment permit from the Central Valley Flood Protection Board for any project that falls within the jurisdiction regulated by the Board (e.g., levees, designated floodways).

**S-2.28 Levee Setbacks for New Development:** The City shall require adequate setbacks from flood control levees consistent with local, regional, State, and Federal design and management standards.

**S-2.29 Levee Trees:** The City shall recognize the value of trees on levees for habitat and as carbon sinks and support West Sacramento Area Flood Control Agency efforts to develop a levee vegetation policy with the State and U.S. Army Corps of Engineers.

**S-2.30 Dedication of Levee Footprint:** The City may require new development adjacent to a levee to dedicate the levee footprint in fee to the appropriate public agency.

**S-2.31 Levees for Infill Development:** The City shall support the construction of levees that can increase levee stability and improve site characteristics, recreation, and river access where infill development and redevelopment occurs next to a levee.

**S-2.32 Design and Operation of Critical Facilities:** The City shall require that critical facilities (e.g., emergency command centers, communication facilities, fire and police stations) and large public assembly facilities be designed to mitigate potential flood risk to ensure operation during a flood event. The City shall encourage non-City critical facilities (e.g., schools and County, State, and Federal buildings) be designed in a similar fashion.

**S-2.33 Levees Used to Access Developments:** The City shall prohibit new development from using levees as a primary access point.

**S-2.34 Unobstructed Access to Levees:** The City shall provide unobstructed access, whenever feasible, on City-owned land to levees for maintenance and emergencies and require setbacks and easements for access to levees from private property.

**S-2.35 Improvements Outside City Limits:** The City shall consider supporting and/or funding construction of flood conveyance system improvements outside the city limits if they can be shown to be a cost effective benefit to flood safety within the city.

**S-2.36 District Consolidation:** The City shall investigate the possibility of consolidating existing reclamation districts as a means of providing better levee maintenance and flood protection.

**S-2.37 Legislation:** The City shall support State and Federal legislation that provides funding for the construction of flood control improvements in urbanized areas.

**S-2.38 Funding:** The City shall pursue available funding in order to achieve and maintain either: i) a minimum 200-year flood protection level; or ii) the minimum level of flood protection for urban areas, as defined by an appropriate State or Federal agency, whichever level is higher.

**S-2.39 WSAFCA:** The City shall support efforts by the West Sacramento Area Flood Control Agency (WSAFCA) to finance necessary construction and maintenance to achieve and maintain the appropriate level of flood protection. These efforts may include, but are not limited to, parcel assessment elections.

**S-2.40 Education:** The City shall be proactive in educating and informing its residents and businesses of the risks and responsibilities of living within a levee system.

**S-2.41 Floodplain Capacity:** The City shall preserve existing canals, ditches, and lakes to maintain floodplain capacity.

**S-2.42 Reservoir Storage Capacity:** The City shall partner with the West Sacramento Area Flood Control Agency to advocate for reservoir management practices and reservoir improvements that will increase the Sacramento region's level of flood protection.

**S-2.43 Floodplain Requirements:** The City shall regulate development within floodplains in accordance with State and Federal requirements and maintain the City's eligibility under the National Flood Insurance Program.

**S-2.44 Community Rating System:** The City shall maintain eligibility in FEMA's Community Rating System program, which gives property owners discounts on flood insurance.

The General Plan update includes implementation programs tailored to meet the essential requirements of recent flood protection standards and they are consistent with FEMA's, the State's, and WSAFCA's goals to reduce flood risk by:

**Safety Implementation Programs 9:** The City shall annually review those areas subject to flooding as identified by floodplain mapping prepared by FEMA or DWR, and amend the General Plan as appropriate to reflect any changes.

**Safety Implementation Programs 11:** Once the CVFPP is adopted, the City shall amend the General Plan within 24 months and Zoning Code within 36 months to be consistent with the CVFPP.

**Safety Implementation Programs 12:** The City shall work with local, regional, State, and federal agencies to develop funding mechanisms to finance local flood protection responsibilities, and pursue funding to improve flood protection in the City of West Sacramento.

The risk of flooding to the City of West Sacramento by the Sacramento River is significant and has prompted ongoing implementation of new projects under the WSLIP to enhance the levee system and ultimately provide 200-year level of flood protection throughout the city. Implementation of Policy S-2.6 and Safety Program 11 will require the City to comply with the Central Valley Flood Protection Act of 2008 and any subsequent amendments, thus ensuring that 200-year flood protection will be provided (City of West Sacramento 2015a). Furthermore, all new development is required to demonstrate 200-year flood protection or to contribute in-lieu fees toward making physical improvements to the existing levee system (City of West Sacramento 2011). The end result of the WSLIP will be 100-year and 200-year flood protection. However, it will be many more years until the flood protection goal is achieved, and in the meantime, new development in the City of West Sacramento that occurs prior to completion of improvements ensuring full protection will not have 100-year flood protection. Therefore, the impact is significant and unavoidable until the WSLIP is complete and the required flood protection for development protected by the levee system is obtained.

**Impact WQ-8: Place within a 100-year flood hazard area structures that would impede or redirect floodflows (less than significant)**

As described for Impact WQ-7, FEMA's FIRMs for the City of West Sacramento, last updated in 1995, show all areas within the city located outside of the main waterways as Zone X—area protected from the 1% chance (100-year) flood by levee, dike, or other structures subject to possible failure of overtopping during longer floods. No portions of the city covered by the General Plan update are within zones mapped as *Floodway Areas in Zone AE* (Zone AE referring to the special hazard flood area inundated by the 100-year flood with base elevations determined). According to FEMA, a *Regulatory Floodway* means the channel of a river or other watercourse and the adjacent land areas that must be reserved to discharge the base flood without cumulatively increasing the water surface elevation more than a designated height. Communities must regulate development in these floodways to ensure that there are no increases in upstream flood elevations (Federal Emergency Management Agency 2015).

Based on flooding and levee deficiency studies described in the *Environmental Setting*, new draft revised FEMA maps show that all or parts of the city may not meet 100-year FEMA flood standards. However, this change will not affect FEMA's mapping of the *Floodway Areas in Zone AE*. Although new development allowed under the General Plan update may be subject to flood inundation, the development within the established levee system would not increase base flood height elevations in violation of FEMA standards.

Furthermore, the General Plan includes policies that would prevent development from impeding or redirecting flood flows.

**S-2.1 Flood Insurance Program:** The City shall continue to participate in the National Flood Insurance Program, and ensure that local regulations are in full compliance with standards adopted by FEMA.

**S-2.14 Construction Standards in New Development:** The City shall require new development, including manufactured homes, within a special flood hazard area designated by FEMA to be constructed to the standards, and elevated and floodproofed consistent with the requirements, outlined in the City's Floodplain Management Ordinance (Title 18 of the Municipal Code).

Therefore, the impact is less than significant. No mitigation is required.

**Impact WQ-9: 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 (less than significant)**

Dam failure is the collapse or failure of an impoundment that could cause significant downstream flooding. Flooding of the area below the dam may occur as the result of structural failure or overtopping of the dam. A severe storm, earthquake, or erosion of the embankment and foundation leakage could cause the collapse and structural failure of dams. Several major dams with large inundation areas are located upstream of the city, including Folsom Dam on the American River, Oroville Dam on the Feather River, and Shasta Dam on the Sacramento River, or the dams at Indian Valley Reservoir or Lake Berryessa (Yolo County 2009:HS-15, Figure HS-5, Dam Inundation ). The risk of flooding to the City of West Sacramento from a levee failure on the Sacramento River is significant. The generally flat topography of the city south of the river and the flood depths predicted for a levee failure (see the *Environmental Setting* section) mean that flood water could spread extensively throughout the city even if the levee failure was isolated to a particular area.

As described in Impact WQ-7, the General Plan update includes numerous policies and implementation programs focused on flood risk disclosures to residents living within the city's levee system, evacuation planning, discouraging uses that cause deterioration of levee structural integrity, establishing levee maintenance and improvement programs, requiring levee inspections, and coordinating with other agencies on maintaining levee integrity. Additionally, ongoing implementation of new projects under the WSLIP enhances the levee system and works toward the objective of ultimately providing 200-year level of flood protection throughout the city. Finally, all new development would be undertaken in compliance with requirements of SB 5; the existing General Plan has been amended to include policies designed to ensure such compliance, and these policies would be retained in the updated General Plan.

Future development under the General Plan update would result in an increase in the number of persons and property potentially at risk from flooding caused by a catastrophic levee or dam failure. However, compliance with the requirements of existing emergency management plans and the CVFPA, coupled with implementation of the General Plan update's policies and implementation programs would reduce this potential effect to less than significant. No mitigation is required.

**Impact WQ-10: Contribute to inundation by seiche, tsunami, or mudflow (less than significant)**

The city is not at risk due to inundation from a tsunami because of its distance from the ocean. The city is also not particularly prone to mudflows because of its generally flat topography and long distance from locations where mudflows would originate.

Seiches are earthquake-generated waves within enclosed or restricted bodies of water. Major earthquakes, miles away from West Sacramento, can produce oscillations or waves in local bodies of water which could overtop and damage levees (City of West Sacramento 2009). The bodies of water most susceptible to seiches in or near West Sacramento are the Sacramento River, Yolo and Sacramento Bypasses, and the Sacramento DWSC. The danger of seiches during seismic events is limited to those periods when the Yolo and Sacramento Bypasses and Sacramento River are full during the flood season. Overtopping of levees during this period could cause a limited amount of flooding; however, the risk under these conditions is greatly reduced because the Sacramento River

and Yolo and Sacramento Bypasses are at these stages for a limited time (City of West Sacramento 2009). Although implementation of the General Plan update would increase the number of persons and property potentially at risk from seiche, it would not contribute to inundation depth if an event were to occur. Therefore, the impact is less than significant. No mitigation is required.

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## 3.10 Land Use and Planning

### 3.10.1 Study Area

The study area for the analysis of land use and planning is the General Plan planning area (Figure 2-2).

### 3.10.2 Existing Conditions

#### Regulatory Setting

##### State

##### Planning and Zoning Law

Government Code Section 65300 requires cities and counties in the state to “adopt a comprehensive, long-term general plan for the physical development of the county.” The general plan must include at least seven elements: land use, circulation, housing, conservation, open space, noise, and safety. The general plan is considered to be the city’s “constitution” for development and conservation in that it contains policies that address these required issues as well as other issues that the city may wish to include. The general plan is implemented by the zoning and subdivision ordinances.

##### Senate Bill 375—Sustainable Communities and Climate Protection Act of 2008

Senate Bill (SB) 375 was passed to support the state’s climate action goals related to reducing greenhouse gas (GHG) emissions. Under the act, the California Air Resources Board (ARB) sets regional GHG emission reduction targets. Each of California’s Metropolitan Planning Organizations (MPOs) must prepare a Sustainable Communities Strategy (SCS) illustrating how that target will be met as an integral part of its Regional Transportation Plan (RTP). The Sacramento Area Council of Governments (SACOG) adopted its Metropolitan Transportation Plan/Sustainable Communities Strategy (MTP/SCS) in September 2012 (see *Regional* below).

SB 375 does not directly govern local general planning efforts. Instead, it requires consistency between regional transportation planning processes and local housing planning processes. Each SCS must be consistent with the Regional Housing Needs Allocation (RHNA), a process established under the State Housing Element law that requires general plans to accommodate projected housing demand as their share of the regional housing needs. The California Department of Housing and Community Development (HCD) provides housing need projections to each region. The regional Council of Governments (COG) must distribute to each jurisdiction in the region its fair share of the RHNA (Sacramento Area Council of Governments 2015a). SACOG’s RNHA allocation is discussed below and in Section 3.13, *Population and Housing*.

##### SB 5—Floodplain Management

General plan law requires cities to include extensive discussions of flood safety and floodplain management. SB 5 of 2007 further requires that a city restrict new development within urbanizing areas (such as West Sacramento) unless it can make specific findings regarding the existence of a

200-year level of flood protection for the area or site being developed. A *200-year flood* is one that, based on statistical frequency, may be expected to occur once every 200 years.

The California Department of Water Resources' (DWR's) publication *Urban Level of Flood Protection Criteria* (November 2013) offers some specific examples of what DWR recommends for project findings and what it considers to be substantial evidence to support findings. However, despite extensive use of the term "shall" in the criteria, which implies a requirement, none of DWR's examples is mandated by law. Accordingly, they are not the only approaches that may be used to make a defensible finding that a project has "an adequate level of flood protection."

## Regional

### Metropolitan Transportation Plan/Sustainable Communities Strategy

SACOG adopted its current MTP/SCS on April 19, 2012. The MTP/SCS addresses various requirements, including those of SB 375 and federal mandates under MAP-21. As noted above, SB 375 calls for reductions in GHG emissions from the transportation sector. MAP-21 emphasizes a performance-based planning approach. The MTP/SCS matches transportation investment priorities with the desired land use. The MTP/SCS itself does not control land use but is a "voluntary growth strategy that the Sacramento region's 28 local jurisdictions are actively encouraged to use as they make local land use decisions" (Sacramento Area Council of Governments 2012).

SACOG is currently at work on the 2016 MTP/SCS (SACOG 2015a, 2015b, 2015c). The update to the MTP/SCS "focuses on overcoming challenges to plan implementation and making progress on the policy commitments of the 2012 plan with the goal of accelerating the region's progress toward the transportation, air quality, and quality of life outcomes set forth in 2012" (Sacramento Area Council of Governments 2015d).

### Regional Housing Needs Allocation

SACOG adopted the RHNA in concert with its work on the MTP/SCS. The RHNA embodies housing needs during the period from 2013 to 2021.

### Airport Land Use Planning

The California State Aeronautics Act (California Public Utilities Code Sections 21670–21679.5) requires, with limited exceptions, the creation of an Airport Land Use Commission in each county that has a public use or military airport. The commission is required to prepare an Airport Land Use Compatibility Plan (ALUCP) for each public use and military airport. An ALUCP must reflect anticipated growth at an airport for at least 20 years based on a long-range master plan or airport layout plan. Each ALUCP includes policies to prevent conflicts between planned airport development and proposed land uses within the Airport Influence Area (AIA) identified in the ALUCP. These policies are implemented through the requirement for review of projects within the cities and counties affected by the ALUCP.

The SACOG Board serves as the Airport Land Use Commission for Sacramento, Sutter, Yolo, and Yuba Counties. The SACOG Board adopted the ALUCP for Sacramento International Airport on December 12, 2013 (Sacramento Area Council of Governments 2013). The ALUCP identifies West Sacramento as being within the airport's "Referral Area 2." Referral Area 2 includes locations where airspace protection (other than bird hazards) and overflight are compatibility concerns, but noise

and safety are not. This obligates the City to refer the following types of projects to the Airport Land Use Commission for an ALUCP consistency review.

- Any proposed object (including buildings, poles, antennas, and other structures) having a height that requires review by the Federal Aviation Administration in accordance with Part 77 of the Federal Aviation Regulations.
- Any project having the potential to create electrical or visual hazards to aircraft in flight through the mechanisms listed below.
  - Electrical interference with radio communications or navigational signals.
  - Lighting that could be mistaken for airport lighting.
  - Glare in the eyes of pilots of aircraft using the airport.
  - Impaired visibility near the airport.
- Any project having the potential to create a thermal plume extending to an altitude where aircraft fly.

## **Local**

### **City of West Sacramento General Plan**

Following its incorporation, the City adopted its first General Plan in 1990 and in 2000 adopted an update to the General Plan. The vision expressed in the General Plan includes creation of a vibrant central city, transition away from a mix of older commercial and industrial uses to more viable uses, planned expansion into the Southport area, and a renewed emphasis on reclaiming the Sacramento River waterfront as a focal point for activities. The current General Plan consists of the following elements: Land Use, Housing, Transportation and Circulation, Public Facilities and Services, Recreational and Cultural Resources, Natural Resources, Health and Safety, Urban Structure and Design, and Child Care. These elements reflect the City's concern for its environment and the quality of life of its people, in addition to policies guiding future land use development.

The City's development policies are also expressed in a number of other plans that are subordinate to the General Plan. These include the Bridge District Specific Plan, Grand Gateway Master Plan, Southport Framework Plan, and Washington Specific Plan. The Southport Framework Plan is the largest of these, covering much of the city that lies south of the ship channel.

Since 2000, the City has implemented the vision expressed in the 2000 General Plan. The central city has been revitalized by actions and developments such as improvements to West Capitol Avenue, a new city hall, library, community college, transit center and other community facilities, the Raley Field baseball stadium, and compact new mixed-use developments. The riverfront has been and continues to be improved with parks, trails, and other amenities. Southport has been the primary residential growth area, while major retail has been developed in the northwestern portion of the city along Interstate (I)-80.

### **City of West Sacramento Zoning Ordinance**

The City's Zoning Ordinance, Title 17 of the City's Municipal Code, regulates land use. It regulates the size, type, structure, and use of land or buildings according to zones that allow various intensities and densities of residential, commercial, industrial, recreational, and other development. The Zoning

Ordinance implements the policies and land use designations set out in the General Plan. Zoning maps illustrate the applicable zoning designations for each parcel in the city.

### **City of West Sacramento Subdivision Ordinance**

The City's Subdivision Ordinance, Title 16 of the City's Municipal Code, implements and supplements the requirements of the California Subdivision Map Act. It also regulates subdivisions, land divisions, and mergers and ensures that the resulting lots or parcels are adequately served by the necessary utilities, that the required public improvements are made to meet present and anticipated future needs, and that proposed development will not adversely affect the character of the city or its immediate surroundings. The City is responsible for regulation and control of subdivision design and improvement, including proper grading and erosion control.

### **Habitat Conservation Programs**

The draft Yolo County Natural Heritage Program is a countywide Natural Communities Conservation Plan/Habitat Conservation Plan (NCCP/HCP) to conserve the natural open space and agricultural landscapes that provide habitat for many special-status species in the county (Yolo Habitat Conservancy 2015).

The Yolo County Habitat Conservation Joint Powers Agency (JPA) was formed in August 2002 for the purpose of acquiring habitat conservation easements and to serve as the lead agency for the preparation of a NCCP/HCP for Yolo County and the Cities of Davis, Woodland, Winters, and West Sacramento.

The NCCP/HCP and the Yolo County Habitat Conservation JPA are described in Section 3.4, *Biological Resources*.

## **Environmental Setting**

West Sacramento is in eastern Yolo County near the southern end of the Sacramento Valley. It is directly across the Sacramento River from Sacramento. It is bounded by the Sacramento River on the east and the Yolo Bypass on the west. I-80 crosses the northwestern part of the city and Business 80/Capital City Freeway bisects the city east-west through the center of town.

Existing land uses in the city range from small single-family residences to industrial complexes and the Port of West Sacramento. The northwestern quadrant, including the areas around the Port of West Sacramento and Riverpoint Marketplace (occupied by IKEA, Walmart, and other retail businesses), is largely industrial and commercial. The northeastern quadrant includes the Central Business District, Raley Field, commercial and office uses, and existing and developing residential neighborhoods such as the Bridge District and the established neighborhoods of Broderick and Bryte north of Sacramento Avenue and along Park Boulevard north of the Sacramento Deepwater Ship Channel. The area immediately south of the Ship Channel is largely industrial. Farther south, the Southport area contains residential areas and associated commercial uses. Portions of Southport remain rural-residential in character, and its southern tier is still largely undeveloped.

### 3.10.3 Environmental Impacts

#### Methods for Analysis

The policies of the General Plan update, as represented in its text and land use map, were compared to existing conditions to determine the level of change that would occur with development under the update. The analysis was undertaken at a *program* level—that is, at a general rather than a parcel-specific level of detail. This approach is consistent with State CEQA Guidelines Section 15146(b), which states:

An EIR on a project such as the adoption or amendment of a comprehensive zoning ordinance or a local general plan should focus on the secondary effects that can be expected to follow from the adoption or amendment, but the EIR need not be as detailed as an EIR on the specific construction projects that might follow.

The planning horizon for the proposed General Plan is 2035. The following analyses generally consider the level of development that may reasonably be expected to occur by that time.

#### Thresholds of Significance

In accordance with Appendix G of the State CEQA Guidelines, the proposed project would be considered to have a significant effect if it would result in any of the conditions listed below.

- Physical division of an established community.
- Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to, a general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect.
- Conflict with any applicable habitat conservation plan or natural community conservation plan.

#### Impacts and Mitigation Measures

##### **Impact LU-1: Physical division of an established community (less than significant)**

The project is a comprehensive update of the current General Plan. No change in the distribution of land use types (e.g., single-family residential, multi-family residential, commercial) is proposed. As explained in Chapter 2, *Project Description*, the General Plan update would revise some land use designations to provide for more intensive levels of development, including mixed-use development in some cases.

The types of general plan features that can physically divide an established community include new roads through existing contiguous land uses, new developments that prevent movement between existing land uses, and physical features such as sound walls that create barriers between or within existing land uses. Areas of West Sacramento that are largely built out have a low potential for new development under the General Plan update to result in physical division. The greatest potential would occur in areas such as Southport, where the southern portion of Jefferson Boulevard would be widened and Village Parkway would be constructed, and the newly developing areas of the Bridge District, Pioneer Bluff, and Stone Lock.

- Jefferson Boulevard and Village Parkway have the potential to separate existing uses if these facilities are not designed to provide for accessible crossing points.
- The Bridge District is a new community within the planning area, although it has been subject to a specific plan since 1993. The General Plan update would allow for development of this area as a series of urban neighborhoods that include a mixture of commercial, office, residential, and retail uses. No existing development would be divided by additional development in this area.
- Pioneer Bluff is an industrial area transitioning to a mixed-use district. The potential for physical separation would depend on the design of future development and its provisions for interconnectivity.
- Stone Lock is essentially vacant and is proposed for development of a Stone Lock mixed-use district with a focus on residential and office uses; entertainment and destination-oriented commercial uses (e.g., entertainment, retail, restaurants); and public gathering places. Like Pioneer Bluff, the potential for physical separation would depend on the design of future development and its provisions for interconnectivity.

In addition, the General Plan update would facilitate the transformation of West Capitol Avenue and Sacramento Avenue to include a broader mix of uses, both horizontal and vertical, that provide opportunities for medium and higher density housing, while also addressing local and citywide demand for retail and services. These changes could result in physical division if specific improvements are not designed for interconnectivity.

The General Plan update includes numerous policies intended to avoid dividing established communities and ensuring that new development remains interconnected. A selection of the key policies from the proposed Urban Design and Mobility Elements are listed below.

**UD-3.5 Connectivity.** The City shall ensure that development along the waterfront provides for and strengthens connectivity through improved public open space, pedestrian and bicycle circulation, transportation systems, and visual corridors.

**UD-3.6 Removing Barriers.** The City shall seek to overcome or remove barriers to connectivity along the waterfront that divides neighborhoods and districts (e.g., Pioneer Bridge, railroad).

**M-1.1 Connectivity.** The City shall strive to develop a comprehensive, connected, and safe multimodal transportation system that connects residents and employees to the city and region through all available transportation modes.

**M-1.9 Eliminate Gaps.** The City shall strive to eliminate roadway, bikeway, and pedestrian way gaps between neighborhoods and districts to create a completely connected city.

**M-2.12 Adequate Travel and Crossing of Right of Ways.** The City shall ensure that in constructing and reconstructing streets that adequate rights-of-way and crossing of rights-of-way be provided for all users including bicyclists, pedestrians, transit riders, and motorists.

**M-6.6 Large-Scale Redevelopment.** As large industrial blocks are redeveloped with more urban uses, the City shall ensure that connectivity is provided through direct and safe pedestrian connections.

With implementation of these policies in future development projects, the proposed General Plan update would not result in the physical division of existing communities. This impact would be less than significant, and no mitigation is required.

**Impact LU-2: 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 (less than significant)**

The City regulates land uses within West Sacramento through its zoning and subdivision ordinances and, indirectly, through the goals and policies of its General Plan that guide development. Accordingly, the City is the only entity with jurisdiction over the project with regard to land use and the avoidance of environmental effects. At a project-specific level, individual development projects under the General Plan update may be subject to federal and state regulations to protect waters of the United States, special-status species, and water quality. See Sections 3.4, *Biological Resources*, and 3.9, *Hydrology and Water Quality*, for a discussion of these requirements.

In addition, SB 5 mandating 200-year flood protection in urbanized areas requires that the City, when approving new development projects, certify that work is underway to provide such protection. The extensive flood protection work now in progress to upgrade the levees that surround the city is discussed in Section 3.9, *Hydrology and Water Quality*.

Certain entities have an advisory role in protecting the environment. The City must refer certain proposed land uses to the Airport Land Use Commission for a determination of consistency with the ALUCP.

The MTP/SCS embodies compact growth principles intended to reduce GHG emissions from future development. While these principles are not binding on West Sacramento, the City has chosen to incorporate them into the text of the General Plan update.

The General Plan update does not reduce the effectiveness of any its plans or regulations that protect the environment. A climate action plan (CAP), with policies and implementation measures intended to reduce the City's GHG emissions, is proposed to be adopted separately from the updated General Plan. It will be consistent with the MTP/SCS principles and statewide AB 32 requirements. Additionally, the proposed Safety and Natural and Cultural Resources Elements include numerous policies that protect the environment. Some illustrative examples are listed below.

**NCR-1.1 Continuation of Agriculture.** The City shall support the continuation of agricultural uses on lands designated for urban uses until urban development is imminent.

**NCR-2.2 Yolo Natural Heritage Program.** The City shall continue to work cooperatively with other jurisdictions in the county, and with the State and Federal governments to conserve habitat through the preparation and implementation of the Yolo County Natural Heritage Program. The goal of this effort shall be to preserve and enhance habitat values in appropriate large areas while allowing the orderly development within the incorporated areas of the county.

**NCR-2.7 Rare, Threatened, and Endangered Species Protection.** The City shall preserve rare, threatened, and endangered species by ensuring that development does not adversely affect such species or by fully mitigating adverse effects. For developments where adverse impacts cannot be mitigated, the City shall not approve the project.

**NCR-2.9 No Net Loss.** The City shall require new development to ensure no net loss of State and Federally regulated wetlands, other waters of the United States (including creeks, rivers, ponds, marshes, vernal pools, and other seasonal wetlands), and associated functions and values by regulating development in and near these habitats and promoting projects that avoid sensitive areas. Where habitat loss is unavoidable, the City shall require replacement consistent with State and Federal regulations protecting wetland resources.

**NCR-2.10 Wetland and Riparian Habitat Protection.** The City shall seek to minimize the loss or degradation of wetland and riparian habitats at the following sites: Lake Washington and associated

wetlands, Bee Lakes and associated riparian woodlands, riparian woodlands along the Sacramento River north of the I Street Bridge and south of the barge canal, and riparian woodlands along the Deep Water Ship Channel and the Yolo Bypass.

**NCR-3.3 Tree Mitigation Ordinance.** The City shall maintain and implement the tree mitigation ordinance, which regulates the removal of existing trees, preserves existing trees where possible, and requires mitigation where healthy trees must be removed either by planting on-site, planting in another location approved by the Tree Administrator, or a combination of planting and a contribution to a Tree Mitigation Fund.

**NCR-8.2 Complementary Site and Design.** The City shall require new development to be sited and designed to visually complement the natural environment, which include features such as the Sacramento River, Sacramento Deepwater Ship Channel, agricultural fields, and other natural landscapes.

**NCR-8.3 Reducing Light Pollution.** The City shall encourage project designs, lighting configurations, and operational practices that reduce light pollution and preserve views of the night sky.

**NCR-9.2 Consultation.** The City shall consult with appropriate organizations and individuals early in the development process (e.g., Information Centers of the California Historical Resources Information System, the Native American Heritage Commission (NAHC); applicable Native American groups and/or individuals; and historical societies and organizations) to minimize impacts to cultural resources.

**S-2.3 200-Year Flood Protection in New Development.** The City shall require new development to achieve a minimum of 200-year level of flood protection either through: i) the construction of flood management improvements or other mitigation measures beyond those required by the City's Floodplain Management Ordinance (Title 18 of the Municipal Code); or ii) payment of in-lieu flood management fees.

With implementation of these and additional policies in future development projects, the General Plan update would not conflict with applicable policies and regulations intended to protect the environment. This impact would be less than significant, and no mitigation is necessary.

### **Impact LU-3: Conflict with any applicable habitat conservation plan or natural community conservation plan (less than significant)**

There are no habitat conservation plans or natural community conservation plans in effect that apply to the planning area. As discussed above, the Yolo Natural Heritage Program has been under development for a number of years. Proposed Policy NCR-2.2, described above, will ensure that the City conforms to the requirements of that program at such time as it may be adopted.

With implementation of this policy in future development projects, the General Plan update would not conflict with any applicable conservation plan. This impact would be less than significant, and no mitigation is necessary.

## **3.10.4 References Cited**

- Sacramento Area Council of Governments. 2012. *Metropolitan Transportation Plan/Sustainable Communities Strategy 2035*. Last revised: 2012. Available:< <http://sacog.org/mtpscs/files/MTP-SCS/MTPSCS%20WEB.pdf>>. Accessed: October 20, 2015.
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## 3.11 Mineral Resources

### 3.11.1 Existing Conditions

#### Regulatory Setting

##### California Surface Mining and Reclamation Act of 1975

The principal legislation addressing mineral resources in California is the Surface Mining and Reclamation Act of 1975 (SMARA) (PRC Sections 2710–2719), which was enacted in response to land use conflicts between urban growth and essential mineral production. The stated purpose of SMARA is to provide a comprehensive surface mining and reclamation policy that will encourage the production and conservation of mineral resources while ensuring that adverse environmental effects of mining are prevented or minimized; that mined lands are reclaimed and residual hazards to public health and safety are eliminated; and that consideration is given to recreation, watershed, wildlife, aesthetic, and other related values. SMARA governs the use and conservation of a wide variety of mineral resources, although some resources and activities are exempt from its provisions, including excavation and grading conducted for farming, construction, and recovery from flooding or other natural disaster.

SMARA provides for the evaluation of an area's mineral resources using a system of Mineral Resource Zone (MRZ) classifications that reflect the known or inferred presence and significance of a given mineral resource. The MRZ classifications are based on available geologic information, including geologic mapping and other information on surface exposures, drilling records, and mine data, and on socioeconomic factors such as market conditions and urban development patterns. The MRZ classifications are defined as follows.

- **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 available data.
- **MRZ-4**—areas where available information is inadequate for assignment into any other MRZ.

Although the State of California is responsible for identifying areas containing mineral resources, the county or city is responsible for SMARA implementation and enforcement by providing annual mining inspection reports and coordinating with the California Geological Survey.

Mining activities that disturb more than 1 acre or 1,000 cubic yards of material require a SMARA permit from the lead agency, which is the county, city, or board that is responsible for ensuring that adverse environmental effects of mining are prevented or minimized. The lead agency establishes its own local regulations and requires a mining applicant to obtain a surface mining permit, submit a reclamation plan, and provide financial assurances, pursuant to SMARA.

Certain mining activities do not require a permit, such as excavation related to farming, grading related to restoring the site of a natural disaster, and grading related to construction.

### **California Department of Conservation, Division of Oil, Gas, and Geothermal Resources Construction-Site Plan Review Program**

The California Department of Conservation Division of Oil, Gas, and Geothermal Resources (DOGGR) regulates drilling, operation, maintenance, and abandonment of oil, gas, and geothermal wells. Before issuing building or grading permits, local permitting agencies review and implement DOGGR's preconstruction well requirements. Interaction between local permitting agencies and DOGGR helps resolve land use issues and allows for responsible development in oil and gas fields.

### **Yolo County Code**

Title 10 of the Yolo County Code addresses surface mining and reclamation policies and regulations for carrying out the requirements of SMARA and other applicable regulations. Its aim is to prevent or minimize the effects of surface mining operations and ensure that the reclamation of mined lands will provide for the long-term productive use of the mined and reclaimed lands. It also puts in place regulations to protect public health and safety and avoid or minimize adverse effects on the environment.

## **Environmental Setting**

### **Mineral Resources**

Generally, the most economically significant and commonly mined mineral resources in California are sand, gravel, and crushed stone, which are used as sources for aggregate (road materials and other construction). The two major sources of aggregate are alluvial deposits (river beds and floodplains) and hard rock quarries.

According to the mineral land classification study conducted for the Sacramento-Fairfield consumption-production region (Department of Mines and Geology 1988), no areas designated as MRZ-2 (likelihood of significant mineral deposits) are present in the planning area, most of which is designated as MRZ-1 (no significant mineral deposits), with a band of MRZ-3 (unknown) along the river. There are no mines regulated under SMARA in the planning area (Office of Mine Reclamation 2015).

### **Natural Gas**

Although natural gas extraction has occurred in portions of the planning area and vicinity, there are currently no active wells in the planning area. There are 33 natural gas fields in the planning area, but all of these wells are abandoned. The most recent wells were drilled in 1997 and abandoned that same year. Four natural gas fields border or extend slightly into the planning area. Two of these fields area abandoned, and two are considered active but have no active wells (Division of Oil, Gas and Geothermal Resources 2010, 2015; City of West Sacramento 2009).

## 3.11.2 Environmental Impacts

### Methods for Analysis

To determine whether mineral resources are present, the mineral land classification map for the Sacramento-Fairfield production-consumption region (Department of Mines and Geology 1988) was reviewed to determine if any portion of the planning area is in or near an area designated as MRZ-2 (known to contain mineral resources).

To determine whether natural gas resources were present, the website of the Division of Oil, Gas and Geothermal Resources was searched (Division of Oil, Gas and Geothermal Resources 2010, 2015).

### Thresholds of Significance

In accordance with Appendix G of the State CEQA Guidelines, the proposed project would be considered to have a significant effect if it would result in any of the conditions listed below.

- Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state.
- Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan.

### Impacts and Mitigation Measures

#### **Impact MIN-1: Potential loss of availability of a known mineral resource that would be of value to the region and the residents of the state (no impact)**

The development of land on or near a mine or known mineral resource would be a significant impact because development would preclude the extraction of that mineral resource. The General Plan update does not contain policies to protect mineral resources. However, no mines or MRZ-2 areas of value to the region occur in the planning area. There would be no impact, and no mitigation is required.

#### **Impact MIN-2: Potential loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan (no impact)**

The development of land delineated for mining on a local general plan, specific plan, or other land use plan would be a significant impact. The General Plan update does not delineate any land uses for mineral resource extraction, and no mines or MRZ-2 areas of value to the region occur in the planning area. There would be no impact, and no mitigation is required.

### 3.11.3 References Cited

- California Department of Conservation, Division of Mines and Geology. 1988. *Mineral Land Classification: Portland Cement Concrete-Grade Aggregate in the Sacramento-Fairfield Production-Consumption Region*. Special Report 156. Prepared by Don Dupras.
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## 3.12 Noise

### 3.12.1 Existing Conditions

#### Fundamentals of Environmental Noise and Vibration

*Noise* is commonly defined as unwanted sound that annoys or disturbs people and potentially causes an adverse psychological or physiological effect on human health. Because noise is an environmental pollutant that can interfere with human activities, an evaluation of noise is necessary when considering the environmental impacts of a proposed project.

*Sound* is mechanical energy (vibration) transmitted by pressure waves over a medium such as air or water. Sound is characterized by various parameters, including the rate of oscillation of sound waves (frequency), the speed of propagation, and the pressure level or energy content (amplitude). In particular, the sound pressure level is the most common descriptor for characterizing the loudness of an ambient (existing) sound level. Although the decibel (dB) scale, a logarithmic scale, is used to quantify sound intensity, it does not accurately describe how sound intensity is perceived by human hearing. The human ear is not equally sensitive to all frequencies in the entire spectrum, so noise measurements are weighted more heavily for frequencies to which humans are sensitive. This process is called *A-weighting*, written as *dBA* and referred to as *A-weighted decibels*. Table 3.12-1 defines sound measurements and other terminology used in this chapter, and Table 3.12-2 summarizes typical A-weighted sound levels for different noise sources.

In general, human sound perception is such that a change in sound level of 1 dB cannot typically be perceived by the human ear, a change of 3 dB is barely noticeable, a change of 5 dB is clearly noticeable, and a change of 10 dB is perceived as doubling or halving the sound level as it increases or decreases, respectively.

Different types of measurements are used to characterize the time-varying nature of sound. These measurements include the equivalent sound level ( $L_{eq}$ ), the minimum and maximum sound levels ( $L_{min}$  and  $L_{max}$ ), percentile-exceeded sound levels (such as  $L_{10}$ ,  $L_{20}$ ), the day-night sound level ( $L_{dn}$ ), and the community noise equivalent level (CNEL).  $L_{dn}$  and CNEL values differ by less than 1 dB. As a matter of practice,  $L_{dn}$  and CNEL values are considered to be equivalent and are treated as such. These measurements are defined in Table 3.12-1.

For a point source, such as a stationary compressor or a piece of construction equipment, sound attenuates (lessens in intensity), based on geometry, at a rate of 6 dB per doubling of distance. For a line source, such as free flowing traffic on a freeway, sound attenuates at a rate of 3 dB per doubling of distance (California Department of Transportation 2013a). Atmospheric conditions, including wind, temperature gradients, and humidity, can change how sound propagates over distance and can affect the level of sound received at a given location.

**Table 3.12-1. Definition of Sound Measurements**

Sound Measurements	Definition
Decibel (dB)	A unitless measure of sound on a logarithmic scale that indicates the squared ratio of sound pressure amplitude with respect to a reference sound pressure amplitude. The reference pressure is 20 micropascals.
A-weighted decibel (dBA)	An overall frequency-weighted sound level in decibels that approximates the frequency response of the human ear.
C-weighted decibel (dBC)	The sound pressure level in decibels as measured using the C-weighting filter network. The C-weighting is very close to an unweighted or <i>flat</i> response. C-weighting is used only in special cases (i.e., when low-frequency noise is of particular importance). A comparison of measured A- and C-weighted level gives an indication of low-frequency content.
Maximum sound level ( $L_{max}$ )	The maximum sound level measured during the measurement period.
Minimum sound level ( $L_{min}$ )	The minimum sound level measured during the measurement period.
Equivalent sound level ( $L_{eq}$ )	The equivalent steady-state sound level that in a stated period of time would contain the same acoustical energy.
Percentile-exceeded sound level ( $L_{xx}$ )	The sound level exceeded xx % of a specific time period. $L_{10}$ is the sound level exceeded 10% of the time, and $L_{90}$ is the sound level exceeded 90% of the time. $L_{90}$ is often considered to be representative of the background noise level in a given area.
Day-night level ( $L_{dn}$ )	The energy average of the A-weighted sound levels occurring during a 24-hour period, with 10 dB added to the A-weighted sound levels occurring during the period from 10 p.m. to 7 a.m.
Community noise equivalent level (CNEL)	The energy average of the A-weighted sound levels occurring during a 24-hour period, with 5 dB added to the A-weighted sound levels occurring during the period from 7 p.m. to 10:p.m. and 10 dB added to the A-weighted sound levels occurring during the period from 10 p.m. to 7 a.m.
Vibration velocity level (or vibration decibel level, VdB)	The root-mean-square velocity amplitude for measured ground motion expressed in dB.
Peak particle velocity (peak velocity or PPV)	A measurement of ground vibration, defined as the maximum speed (measured in inches per second) at which a particle in the ground is moving relative to its inactive state. PPV is usually expressed in inches/second.
Frequency: Hertz (Hz)	The number of complete pressure fluctuations per second above and below atmospheric pressure.

**Table 3.12-2. Typical A-weighted Sound Levels**

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
	—110—	Rock band
Jet flyover at 1,000 feet		
	—100—	
Gas lawnmower at 3 feet		
	—90—	
Diesel truck at 50 feet at 50 mph		Food blender at 3 feet
	—80—	Garbage disposal at 3 feet
Noisy urban area, daytime		
Gas lawnmower at 100 feet	—70—	Vacuum cleaner at 10 feet
Commercial area		Normal speech at 3 feet
Heavy traffic at 300 feet	—60—	
		Large business office
Quiet urban daytime	—50—	Dishwasher in next room
Quiet urban nighttime	—40—	Theater, large conference room (background)
Quiet suburban nighttime		
	—30—	Library
Quiet rural nighttime		Bedroom at night, concert hall (background)
	—20—	
		Broadcast/recording studio
	—10—	
	—0—	

Source: California Department of Transportation 2013a.

The degree to which the ground surface absorbs acoustical energy also affects sound propagation. Sound that travels over an acoustically absorptive surface such as grass attenuates at a greater rate than sound that travels over a hard surface such as pavement. The increased attenuation is typically in the range of 1–2 dB per doubling of distance. Barriers such as buildings or topographic features that block the line of sight between a source and receiver also increase the attenuation of sound over distance.

Community noise environments are generally perceived as *quiet* when the 24-hour average noise level is below 45 dBA, *moderate* in the 45–60 dBA range, and *loud* above 60 dBA. Very noisy urban residential areas are usually around 70 dBA CNEL. Along major thoroughfares, roadside noise levels are typically between 65 and 75 dBA CNEL. Incremental changes of 3–5 dB in the existing 1-hour  $L_{eq}$ , or the CNEL, are commonly used as thresholds for an adverse community reaction to a noise increase. However, there is evidence that incremental thresholds in this range may not be sufficiently protective in areas where noise-sensitive uses are located and CNEL is already high (i.e., above 60 dBA). In these areas, limiting noise increases to 3 dB or less is recommended (Federal Transit Administration 2006). Noise intrusions that cause short-term interior noise levels to rise



above 45 dBA at night can disrupt sleep. Exposure to noise levels greater than 85 dBA for 8 hours or longer can cause permanent hearing damage.

### Overview of Groundborne Vibration

Operation of heavy construction equipment, particularly pile-driving equipment and other impact devices (e.g., pavement breakers), create seismic waves that radiate along the surface of and downward into the ground. These waves can be felt as ground vibration. Vibration from the operation of this type of equipment can result in effects that range from annoying people to damaging structures. Variations in geology and distance result in different vibration levels, including different frequencies and displacements. In all cases, vibration amplitudes decrease with increased distance.

Perceptible groundborne vibration is generally limited to areas within a few hundred feet of construction activities. As seismic waves travel outward from a vibration source, they cause rock and soil particles to oscillate. The actual distance that these particles move is usually only a few ten-thousandths to a few thousandths of an inch. The rate or velocity (in inches per second) at which these particles move is the commonly accepted descriptor of vibration amplitude, referred to as peak particle velocity (PPV).

Vibration amplitude attenuates over distance. This is a complex function of how energy is imparted into the ground and the soil or rock conditions through which the vibration is traveling. The following equation is used to estimate the vibration level at a given distance for typical soil conditions (California Department of Transportation 2013b).  $PPV_{ref}$  is the reference PPV at 25 feet (Table 3.12-3).

$$PPV = PPV_{ref} \times (25/Distance)^{1.1}$$

Table 3.12-3 summarizes typical vibration levels generated by construction equipment at the reference distance of 25 feet.

**Table 3.12-3. Vibration Source Levels for Construction Equipment**

Equipment	PPV at 25 Feet
Vibratory Roller	0.210
Large bulldozer	0.089
Caisson drilling	0.089
Loaded trucks	0.076
Jackhammer	0.035
Small bulldozer	0.003
Crack-and-seat operations 2.4	2.4

Source: California Department of Transportation 2013b.  
PPV = peak particle velocity

Tables 3.12-4 and 3.12-5 summarize the guidelines developed by the California Department of Transportation (Caltrans) for damage and annoyance potential from the transient and continuous vibration that is usually associated with construction activity. Activities that typically cause single-impact (transient) or low-rate, repeated impact vibration include drop balls, blasting, and the use of impact pile drivers, “pogo stick” compactors, and crack-and-seat equipment. Activities that typically generate continuous vibration include the use of excavation equipment, static compaction

equipment, tracked vehicles, vehicles on a highway, vibratory pile drivers, pile-extraction equipment, and vibratory compaction equipment (California Department of Transportation 2013b).

**Table 3.12-4. Vibration Damage Potential Threshold Criteria Guidelines**

Structure and Condition	Maximum PPV (in/sec)	
	Transient Sources	Continuous/Frequent Intermittent Sources
Extremely fragile historic buildings, ruins, ancient monuments	0.12	0.08
Fragile buildings	0.2	0.1
Historic and some old buildings	0.5	0.25
Older residential structures	0.5	0.3
New residential structures	1.0	0.5
Modern industrial/commercial buildings	2.0	0.5

Source: California Department of Transportation 2013b.

Note: Transient sources create a single, isolated vibration event (e.g., blasting or drop balls).

Continuous/frequent intermittent sources include impact pile drivers, pogo-stick compactors, crack-and-seat equipment, vibratory pile drivers, and vibratory compaction equipment.

PPV = peak particle velocity

**Table 3.12-5. Vibration Annoyance Potential Criteria Guidelines**

Structure and Condition	Maximum PPV (in/sec)	
	Transient Sources	Continuous/Frequent Intermittent Sources
Barely perceptible	0.04	0.01
Distinctly perceptible	0.25	0.04
Strongly perceptible	0.9	0.10
Severe	2.0	0.4

Source: California Department of Transportation 2013b.

Note: Transient sources create a single, isolated vibration event (e.g., blasting or drop balls).

Continuous/frequent intermittent sources include impact pile drivers, pogo-stick compactors, crack-and-seat equipment, vibratory pile drivers, and vibratory compaction equipment.

PPV = peak particle velocity

Groundborne vibration can also be quantified by the root-mean-square (RMS) velocity amplitudes, which is useful for assessing human annoyance. The RMS amplitude is expressed in terms of the velocity level in decibel units (VdB). The background vibration velocity level in residential areas is usually around 50 VdB or lower. The vibration velocity level threshold of perception for humans is approximately 65 VdB. Most perceptible indoor vibration is caused by sources within buildings, such as the operation of mechanical equipment, movement of people, or the slamming of doors. Typical outdoor sources of perceptible groundborne vibration are heavy construction equipment, steel-wheeled trains, and traffic on rough roads. If a roadway is smooth, the groundborne vibration from traffic is rarely perceptible.

Table 3.12-6 summarizes the typical groundborne vibration velocity levels and average human response to vibration that may be anticipated when a person is at rest in quiet surroundings. If the person is engaged in any type of physical activity, vibration tolerance increases considerably. The

duration of the event has an effect on human response, as does its daily frequency of occurrence. Generally, as the duration and frequency of occurrence increase, the potential for adverse human response increases.

**Table 3.12-6. Typical Levels of Groundborne Vibration**

Human or Structural Response	Vibration Velocity Level (VdB)	Typical Sources (50 feet from source)
Threshold for minor cosmetic damage to fragile buildings	—100—	Blasting from construction project  Bulldozer or heavy-tracked construction equipment
Difficulty in reading computer screen	—90—	Upper range of commuter rail
Threshold for residential annoyance for occasional events (e.g., commuter rail)	—80—	Upper range of rapid transit
Threshold for residential annoyance for frequent events (e.g., rapid transit)	—70—	Typical commuter rail Bus or truck over bump
Approximate threshold for human perception of vibration; limit for vibration-sensitive equipment	—60—	Typical rapid transit Typical bus or truck on public road
	—50—	Typical background vibration

Source: Federal Transit Administration 2006.

Groundborne noise is a secondary component of groundborne vibration. When a building structure vibrates, noise is radiated into the interior of the building. Typically, this is a low-frequency sound that can be perceived as a low rumble. The magnitude of the sound depends on the frequency characteristic of the vibration and the manner in which the room surfaces in the building radiate sound. Groundborne noise is quantified by the A-weighted sound level inside the building. The sound level accompanying vibration is generally 25 to 40 dBA lower than the vibration velocity level in VdB. Groundborne vibration levels of 65 VdB can result in groundborne noise levels of up to 40 dBA, which can disturb sleep. Groundborne vibration levels of 85 VdB can result in groundborne noise levels of up to 60 dBA, which can be annoying to daytime noise-sensitive land uses such as schools (Federal Transit Administration 2006).

Table 3.12-7 summarizes the criteria developed by the Federal Transit Administration (FTA) for assessing groundborne vibration from train passages. The criteria vary, depending on the frequency of events.

**Table 3.12-7. Groundborne Vibration Impact Criteria**

Land Use Category	Groundborne Vibration Impact Level (VdB)		
	Frequent Events <sup>a</sup>	Occasional Events <sup>b</sup>	Infrequent Events <sup>c</sup>
Category 1: Buildings where vibration would interfere with interior operations	65 <sup>d</sup>	65 <sup>d</sup>	65 <sup>d</sup>
Category 2: Residences and buildings where people normally sleep	72	75	80
Category 3: Institutional land uses with primarily daytime uses	75	78	83
Theater	72	80	N/A

Source: California Department of Transportation 2013b.

<sup>a</sup> *Frequent Events* is defined as more than 70 vibration events of the same source per day. Most rapid transit projects fall into this category.

<sup>b</sup> *Occasional Events* is defined as between 30 and 70 vibration events of the same source per day. Most commuter trunk lines have this number of operations.

<sup>c</sup> *Infrequent Events* is defined as fewer than 30 vibration events of the same kind per day. This category includes most commuter rail branch lines.

<sup>d</sup> This criterion limit is based on levels that are acceptable for most moderately sensitive equipment, such as optical microscopes. Vibration-sensitive manufacturing or research will require detailed evaluation to define the acceptable vibration levels. Ensuring lower vibration levels in a building often requires special design of the heating, ventilation, and air-conditioning systems and stiffened floors.

N/A = not applicable

## Regulatory Setting

Federal, state, and local agencies regulate different aspects of environmental noise. Generally, the federal government sets noise standards for transportation-related noise sources that are closely linked to interstate commerce. These sources include aircraft, locomotives, and trucks. No federal noise standards are directly applicable to the General Plan update. The state government sets noise standards for transportation noise sources such as automobiles, light trucks, and motorcycles. Noise sources associated with industrial, commercial, and construction activities are generally subject to local control through performance standards for noise and General Plan policies. Local general plans identify general principles that are intended to guide and influence development plans. The state and local noise policies and regulations that are applicable to the General Plan update are described below.

### California Code

Title 24 of the California Code of Regulations, Part 2, California Noise Insulation Standards, establishes minimum noise insulation standards to protect persons within new hotels, motels, dormitories, long-term care facilities, apartment houses, and dwellings other than single-family residences. Under this regulation, interior noise levels that are attributable to exterior noise sources cannot exceed the 45 day-night level ( $L_{dn}$ ) in any habitable room. Where such residences are located in an environment in which exterior noise is 60  $L_{dn}$  or greater, an acoustical analysis is required to ensure that interior levels do not exceed the 45  $L_{dn}$  interior standard.

## Local

Implementation of the proposed General Plan update may affect noise-sensitive uses in West Sacramento. The following local policies related to noise may apply to implementation of the General Plan update.

### City of West Sacramento's Performance Standards for Noise

The City's performance standards for noise are the primary enforcement tool for the operation of locally regulated noise sources, such as construction activity or outdoor recreation facilities, and is set forth in Chapter 17.32 of the City's Municipal Code. This section of the Municipal Code sets noise level performance standards for non-transportation noise sources, summarized in Table 3.12-8. Examples of non-transportation noise sources are construction equipment, industrial operations, outdoor recreation facilities, heating, ventilation, and air-conditioning units, and loading docks. The City's performance standards do not specify an exemption for temporary daytime construction activity, so the daytime and nighttime limits specified in the City's performance standards for noise are considered to apply to all construction activities in the city. City of West Sacramento transportation noise level standards are listed in Table 3.12-9.

**Table 3.12-8. City of West Sacramento Noise Level Standards for Non-Transportation Uses**

Land Use	Noise Level Descriptor	Exterior Noise Levels		Interior Noise Levels	
		Daytime (7:00 a.m. to 10:00 p.m.)	Nighttime (10:00 p.m. to 7:00 a.m.)	Daytime (7:00 a.m. to 10:00 p.m.)	Nighttime (10:00 p.m. to 7:00 a.m.)
Residential	Hourly $L_{eq}$ , dBA	50	45	45	35
	Max. level, dBA	70	65	-	-
Transient lodging	Hourly $L_{eq}$ , dBA	-	-	45	35
Hospital, nursing homes	Hourly $L_{eq}$ , dBA	-	-	45	35
Theaters, auditoriums, music halls	Hourly $L_{eq}$ , dBA	-	-	35	35
Churches, meeting halls	Hourly $L_{eq}$ , dBA	-	-	40	40
Office buildings	Hourly $L_{eq}$ , dBA	-	-	45	45
Schools, libraries, museum	Hourly $L_{eq}$ , dBA	-	-	45	45

Note: Each noise level specified above will be lowered by 5 dB for simple tone noises, noises consisting primarily of speech or music, or for recurring impulsive noises. These noise level standards do not apply to residential units established in conjunction with industrial or commercial uses (e.g., caretaker dwellings).

dBA = A-weighted decibel.

$L_{eq}$  = equivalent sound level.

**Table 3.12-9. City of West Sacramento Maximum Allowable Noise Exposure for Transportation Noise Sources**

Land Use	Outdoor Activity Areas <sup>a</sup> L <sub>dn</sub> /CNEL, dB	Interior Spaces	
		L <sub>dn</sub> /CNEL, dB	L <sub>eq</sub> , dB <sup>b</sup>
Residential	60 <sup>c, d</sup>	45	–
Transient lodging	60 <sup>c, d</sup>	45	–
Hospitals, nursing homes	60 <sup>c, d</sup>	45	–
Theaters, auditoriums, music halls	–	–	35
Churches, meeting halls	60 <sup>c</sup>	–	40
Office buildings	–	–	45
Schools, libraries, museum	–	–	45
Playgrounds, neighborhood parks	70	–	–

<sup>a</sup> Where the location of outdoor activity is unknown, the exterior noise level standard must be applied to the property line of the receiving land use.

<sup>b</sup> As determined for a typical worst-case hour during period of use.

<sup>c</sup> Where it is not possible to reduce noise in outdoor activity areas to 60 dB L<sub>dn</sub>/CNEL or less using a practical application of the best-available noise reduction measures, an exterior noise level of up to 65 dB L<sub>dn</sub>/CNEL may be allowed, provided that practical exterior noise level reduction measures have been implemented and that interior noise levels are in compliance with this table. An exterior noise level of 70 dB L<sub>dn</sub>/CNEL will be allowed in the Bridge District Specific Plan area and the Washington Specific Plan area.

<sup>d</sup> Outdoor activity areas such as private balconies on residential buildings may be constructed within the Bridge District Specific Plan area in areas that are predicted to exceed 70 L<sub>dn</sub> provided that an alternative common outdoor activity area for the residences is designated that meets the City's performance criteria.

dB = decibels

L<sub>dn</sub> = day-night level

L<sub>eq</sub> = equivalent sound level

CNEL = community noise equivalent level

In addition, the City Code (Section 17.32) stipulates that no operation may be installed that by its construction or nature habitually or consistently produces noticeable vibration beyond the property line. At or above 0.25 in/sec PPV, transient vibration sources (such as impact pile driving) typically become “distinctly perceptible” to humans (California Department of Transportation 2013b).

### Existing West Sacramento General Plan

Noise is addressed in the Health and Safety element of the current General Plan. The primary purpose of the noise portion of the Health and Safety element of the West Sacramento General Plan is to protect city residents from the harmful effects of excessive noise (City of West Sacramento Community Development Department 2000). The noise guidance in the Health and Safety element serves to set land use compatibility standards for new developments or land uses related to noise exposure. The City's current General Plan applies the noise standards in Table 3.12-8 and Table 3.12-9 as land use compatibility standards for new development.

The City's development policies are also expressed in a number of other plans that are subordinate to the General Plan. These include the Bridge District Specific Plan, Grand Gateway Master Plan, Southport Framework Plan, and Washington Specific Plan.

## Environmental Setting

West Sacramento is located in eastern Yolo County across the Sacramento River from Sacramento, and is bounded by the Sacramento River on the east and the Yolo Bypass on the west. Interstate (I-) 80 runs through the northwestern part of the city; US Highway 50 (US 50)/Capital City Freeway bisects the city, running east-west through the center of town.

The study area for this analysis corresponds to the General Plan planning area, which is the existing city limits. Existing land uses range from single-family residences to industrial complexes and the Port of West Sacramento. The northwestern quadrant, including the areas around the Port of West Sacramento, is largely industrial and commercial. The northeastern quadrant includes the Central Business District; Raley Field; commercial and office uses; and existing and developing residential neighborhoods, such as the Bridge District and the established neighborhoods of Broderick and Bryte north of Sacramento Avenue and along Park Boulevard north of the Sacramento Deepwater Ship Channel. The area immediately south of the Deepwater Ship Channel is largely industrial. Farther south, the Southport area contains residential areas and associated commercial uses. Portions of Southport remain rural-residential in character, and the southern portion is largely undeveloped, with some areas in agriculture.

### Existing Noise Levels

Long-term noise monitoring was conducted in three locations in the city. Continuous (24-hour) ambient noise measurements were taken between September 23 and 27, 2015. Figure 3.12-1 shows the locations of the long-term noise monitoring sites. Table 3.12-10 summarizes the measured long-term noise levels ( $L_{dn}$ ).

Existing traffic noise levels on roadway segments located throughout the planning area have been characterized with traffic noise modeling using existing traffic volumes presented in the Transportation Impact Analysis (DKS Associates 2015), and the Federal Highway Administration's (FHWA's) Traffic Noise Model (TNM) (Federal Highway Administration 2011). Using these tools, existing traffic noise was modeled along all 99 planning area roadway segments described in the Transportation Impact Analysis, at a reference distance of 50 feet from the centerline of the roadway segment.

**Table 3.12-10. Long Term Measurements**

Date	Day of Week	Position 1 $L_{dn}$	Position 2 $L_{dn}$	Position 3 $L_{dn}$
23-Sep	Wednesday	55.4	57	59.8
24-Sep	Thursday	56.5	55.7	60.1
25-Sep	Friday	- <sup>a</sup>	- <sup>a</sup>	60.8
26-Sep	Saturday	- <sup>a</sup>	55.5	59.5
27-Sep	Sunday	51.7	52.9	- <sup>a</sup>

<sup>a</sup> Data not reported because of potential contamination from tampering with the meter or unknown outlying events.





Graphics ... 0023014 (11-30-2015)



**Figure 3.12-1**  
**Noise Measurement Locations—2015**



In addition to the noise measurements conducted in 2015, noise measurements were conducted in May 2007 for the *City of West Sacramento General Plan Background Report* (City of West Sacramento 2009). These were short-term (15-minute) noise measurements taken throughout the study area. During the noise measurements, the main sources of noise contributing to the measured noise level were also documented to help characterize the existing noise environment and largest contributors to ambient noise levels in the study area. Table 3.12-11 provides the noise measurement results from the 2007 field survey.

**Table 3.12-11. Short-Term Noise Measurements from West Sacramento General Plan Background Report**

Measurement Location/Time	Noise Sources	Leq
3rd Street between E Street and the Union Pacific Railroad tracks Start time: 2:05 pm.	Primary: Vehicular traffic on 3rd Street. Secondary: Train pass-bys/horn, distant construction activity.	61.5
Poplar Avenue between Michigan Boulevard and Oxford Street Start: 2:50 pm.	Primary: Vehicular traffic on Poplar Avenue and Michigan Boulevard. Secondary: Distant train horn.	58
Bridgeway Lakes Drive south of Marshall Road Start: 3:35 pm.	Very light vehicular traffic on Bridgeway Lakes Drive, distant commercial and private aircraft fly-overs.	56
Jefferson Boulevard north of Davis Road Start: 4:05 pm.	Primary: Vehicular traffic on Jefferson Boulevard. Secondary: Distant private aircraft operations, fire truck pulled into station across street (no siren/horns).	66.7
Lassen Street south of Donner Road Start: 4:35 pm.	Distant aircraft operations (no vehicular traffic on Lassen Street during measurement period).	48.4
Roaring Creek Street near Sacramento River Start: 5:10 pm.	Distant aircraft operations, vehicular traffic on I-5 across Sacramento River.	51.4
Park Boulevard north of Stone Boulevard Start: 5:40 pm.	Vehicular traffic on Park Boulevard, distant truck backup horns audible at times.	60.5
Meadow Road between Haverhill and Fernwood Streets Start: 6:05 pm.	Primary: Vehicular traffic on Meadow Road. Secondary: Vehicular traffic on Interstate 80.	58.9
Outside Raley Field Start: 6:21 pm (May 24).	Primary: Crowd noise, Raley Field public address system, helicopter fly-overs. Secondary: Railroad operations on surrounding tracks, motor vehicle activity in parking lot.	62.7

Source: City of West Sacramento 2009.

Note: Measurements were made on May 23 and 24, 2007. Each measurement was 15 minutes in duration.

### Existing Noise Sources

Existing noise sources are discussed in the *City of West Sacramento General Plan Background Document* (City of West Sacramento 2009), and are summarized in this section. Sources of noise include motor vehicle traffic, rail operations, aircraft overflights, motorized watercraft on the Sacramento River, industrial facilities, and events (baseball games and concerts) at Raley Field.

### ***Motor Vehicle Traffic***

The primary noise source in the study area is vehicle traffic. Ambient noise levels in the study area are influenced by traffic on major roads such as I-80 eastbound and westbound, US 50 eastbound and westbound, Beacon Boulevard, Jefferson Boulevard, Harbor Boulevard, Industrial Boulevard, and Enterprise Boulevard.

### ***Rail Operations***

Two major railroad lines cross West Sacramento, as well as a network of freight transport/switching tracks. The Union Pacific Railroad (UPRR) line traverses the northern part of the city from west to east and is the east-west transcontinental line from Oakland to Salt Lake City, Utah. This line carries both freight and scheduled Amtrak passenger service between Sacramento and Oakland. UPRR also operates on various spurs and sidings in the Port industrial area (DKS Associates 2015).

The Sierra Railroad merged with the former Yolo Shortline Railroad in 2003 to form the Sierra Northern Railroad (SERA). This railroad line enters the northwest corner of the city, crosses the UPRR tracks, then turns south at Riske Lane, terminating just north of Locks Drive in Southport (City of West Sacramento 2009). Sierra Northern serves rail customers along a 17-mile line between West Sacramento and Woodland. The line includes the Port of West Sacramento.

Amtrak operates three regional and national passenger rail routes that pass through West Sacramento, with the nearest stations in downtown Sacramento and Davis. The Capitol Corridor Rail Service is administered by the Capitol Corridor Joint Powers Authority and operated by Amtrak on UPRR tracks. It operates 15 roundtrips on weekdays and 11 roundtrips on weekends between Sacramento and Oakland. Some of the train routes extend to San Jose to the southwest and Auburn to the northeast. The Coast Starlight service operates daily trips between Seattle and Los Angeles that pass through Sacramento. The California Zephyr service offers daily trips between Chicago and Emeryville through the Sierra Nevada, the Wasatch Range, and the Rockies.

### ***Aircraft Operations***

There are no airports in the study area. Sacramento International Airport is approximately 6 miles northwest of the city. According to the *Sacramento International Airport Land Use Compatibility Plan*, West Sacramento is within the airport influence area but not within the 60 CNEL contour for this airport (Sacramento Area Council of Governments 2013). Sacramento Executive Airport is approximately 1.5 miles from the city (Sacramento Area Council of Governments 1998). The city is approximately 1.5 miles outside the 65 CNEL contour (which does not extend beyond the airport footprint) for this airport.

### ***Industrial Facilities***

There are a large number of truck terminals in West Sacramento. Truck terminals are concentrated in the Iron Triangle area, the Terminal/Cebrian Street area, the industrial park on the northwest side of the city, and on the north side of West Capitol Avenue near Harbor Boulevard. In the Iron Triangle area (the area north of West Capitol Avenue and the area along Cebrian Street), some truck terminals are adjacent to residential land uses. Noise conflicts have been reported in these areas where trucking activities may take place on a 24-hour basis with peak truck movements occurring in early morning and evening hours. Noise impacts are also possible along roadways used by trucks to access the truck terminals. Other industrial uses are common in the city, especially in the area north

and south of US 50 between South River Road and the Sacramento River, and in the area adjacent to and northeast of the Port of West Sacramento. Noise from these industrial sources could affect adjacent residential areas, particularly in the residential area west of Jefferson Boulevard and east of the Port (City of West Sacramento 2009).

### **Other Noise Sources**

In addition to transportation and industrial noise sources, ambient noise levels in east-central West Sacramento are affected by baseball games and other large events that take place frequently at Raley Field. Also, sporting events such as softball games are common at city parks, with some games played at night. Such late-night games with their attendant crowd noise and traffic can be annoying to nearby residents (City of West Sacramento 2009). Motorized watercraft using the Sacramento River could have noise impacts on noise-sensitive uses adjacent to the river (City of West Sacramento 2009).

### **Existing Noise Sensitive Land Uses**

Noise sensitive land uses or sensitive receptors are those uses that are most sensitive to high noise levels. Sensitive noise receptors typically include residences, religious facilities, schools, child care centers, hospitals, long-term health care facilities, convalescent centers, and retirement homes. All of these land use types, except hospitals, occur within the General Plan area.

## **3.12.2 Environmental Impacts**

### **Methods for Analysis**

Potential noise impacts associated with implementation of the General Plan update were assessed at a program level of detail. Potential construction and operational (traffic and stationary) noise effects on existing noise-sensitive land uses were analyzed, as were potential noise effects on proposed or future noise-sensitive uses.

Existing noise levels are characterized based on information in the *City of West Sacramento General Plan Background Report*, noise monitoring, and traffic noise modeling. Traffic noise modeling was conducted using traffic data provided by the City's traffic engineer and FHWA's TNM. Existing and future traffic noise was evaluated along the major roadway segments in the city, including all segments identified in the Transportation Impact Analysis (DKS Associates 2015). Long-term noise monitoring (multi-day) was conducted at three locations in the city.

Construction noise and vibration levels were determined qualitatively using equipment noise and vibration reference levels developed by the FTA and Caltrans. Operational noise impacts (transportation and stationary sources) were also assessed using standards described in the City's existing performance standards for noise and the existing General Plan. Specifically, a conservative threshold of 60  $L_{dn}$ , which is the transportation noise threshold for most sensitive land uses (residential, transient lodging, hospitals, nursing homes, religious facilities, and meeting halls) described in the performance standards and existing General Plan, was used as a threshold to assess each of the modeled roadway segments. In areas where increases in traffic may cause noise levels to exceed 60  $L_{dn}$ , a potentially significant impact was identified. In areas where existing noise levels already exceed 60  $L_{dn}$ , project impacts were determined to be significant if noise levels would increase by 3 dB or more with traffic increases related to implementation of the General Plan

update(as described above in *Overview of Noise and Sound*, a 3 dB change is generally considered to be “barely noticeable”).

## Thresholds of Significance

In accordance with Appendix G of the State CEQA Guidelines, the proposed General Plan update would be considered to have a significant effect if it would result in any of the conditions listed below.

- Exposure of persons to or generation of noise levels in excess of standards established in a local general plan or noise ordinance or applicable standards of other agencies.
- Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels.
- Substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.
- Substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.
- Location within an airport land use plan area, or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport and exposure of people residing or working in the project area to excessive noise levels.
- Location in the vicinity of a private airstrip and exposure of people residing or working in the project area to excessive noise levels.

## Impacts and Mitigation Measures

### Impact NOI-1: Exposure of persons to or generation of noise levels in excess of standards established in a local general plan or noise ordinance or applicable standards of other agencies (significant and unavoidable)

#### *Construction*

Implementation of the General Plan update will result in construction activities that could generate temporary noise. Table 3.12-12 summarizes typical noise levels produced during key construction phases for various types of projects (U.S. Environmental Protection Agency 1971).

**Table 3.12-12. Noise Levels of Key Construction Phases**

Construction Phase	Sound Level at 50 Feet (dB)			
	Housing	Industrial	Public Works	Non-Residential
Ground clearing	85	87	88	91
Excavation	89	90	90	87
Foundations	82	89	92	87
Building/facility construction	81	85	88	88
Finishing and clean-up	86	89	90	87

Source: Based on U.S. Environmental Protection Agency 1971.

Construction activities associated with new development would be temporary, and related noise impacts would be short-term. However, because construction activities could substantially increase ambient noise levels at noise-sensitive locations, construction could result in excess noise in the vicinity of sensitive receptors. The potential for construction-related noise effects depends on the proximity of construction activities to sensitive receptors, the presence of intervening barriers, the number and types of equipment used, and the duration of the activity.

General Plan 2035 does not propose any specific development projects, but outlines what future development is expected to look like in the city; future development under the proposed General Plan update would be required to comply with noise limitations specified in Section 17.32 of the City's Municipal Code (Table 3.12-9). If the construction of future projects complies with the City's performance standards for noise, impacts from construction noise would be less than significant. However, it may not be feasible in all cases to mitigate construction noise of individual projects to less-than-significant levels. Because construction noise associated with the proposed project may expose people to noise levels in excess of thresholds, and because it may not be feasible to mitigate future construction noise to levels below the applicable noise standards, this impact would be significant.

Policy S-7.10 described in the proposed General Plan update would reduce potential noise impacts related to construction by requiring that new development prepare an acoustical study and recommend appropriate mitigation to achieve compliance with the adopted policies and standards.

**S-7.10 Acoustical Study.** The City shall require new development that has the potential to generate noise that will exceed the levels contained in Tables S-7.1 through Table S-7.4 and may affect a noise-sensitive use to prepare an acoustical study. The acoustical study shall:

- Be prepared by a qualified person experienced in the fields of environmental noise assessment and architectural acoustics; the person preparing the acoustical study shall consult with Planning Department staff to review specific issues or circumstances prior to commencing the study;
- Provide a general description of the project and the noise sources of concern; appropriate maps shall be included;
- Describe the methodology that will be used to assess noise impacts. If computer models are to be used for noise predictions, they should be standard versions approved by the Federal Highway Administration (FHWA), Federal Aviation Administration (FAA), Caltrans, or other government agencies;
- Include representative noise level measurements with sufficient sampling periods and locations to adequately describe local conditions and predominant noise sources;
- Estimate existing and projected noise levels and compare those levels to the adopted policies and standards of the Noise Element;
- Recommend appropriate mitigation to achieve compliance with the adopted policies and standards of the Noise Element; where feasible, noise mitigation measures should focus on site planning and project design solutions rather than the creation of noise barriers; mitigation measures must be written with specific mitigation needed, and include any proposed follow-up noise monitoring if needed; and
- Estimate noise exposure after the prescribed mitigation measures have been implemented.

Although this policy outlined in the proposed General Plan update would help to reduce the potential impacts of construction noise on noise-sensitive land uses, mitigation of potential future noise impacts may not be feasible in all cases. Accordingly, noise impacts related to construction would be significant and unavoidable.

### ***Traffic Noise***

Future development occurring as part of the General Plan update would result in increases in a variety of land uses in the city as compared to existing conditions. Consequently, implementation of the General Plan update would increase traffic and associated traffic noise in the city for future conditions as compared to existing conditions.

Traffic noise modeling was conducted for all segments identified in the Transportation Impact Analysis, using traffic data provided by the traffic engineer (DKS Associates 2015) and the FHWA TNM. Noise levels were rounded to the nearest whole number, and then compared to the City's transportation noise thresholds (Table 3.12-9).

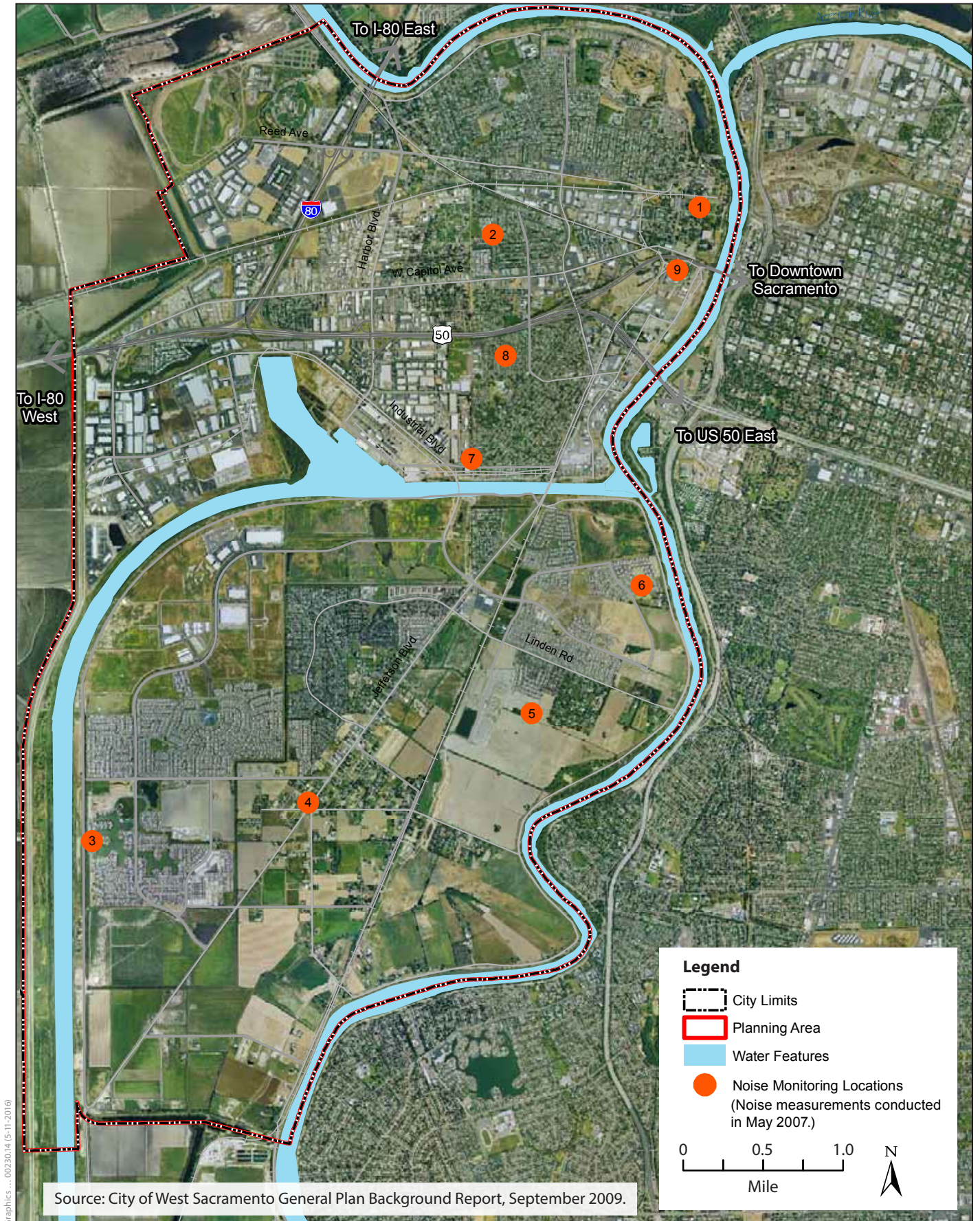
Although not all segments are located within 50 feet of a noise-sensitive land use, a reference distance of 50 feet was utilized in the TNM modeling to conservatively assess potential noise impacts. Modeling indicates that a total of 45 of the analyzed 99 roadway segments are exposed to traffic noise levels that exceeds 60  $L_{dn}$  under existing conditions. For the 2035 horizon year for the General Plan update (partial buildout), traffic noise along 55 of the analyzed 99 segments is predicted to exceed 60  $L_{dn}$ . Therefore, 10 segments that are not currently exposed to noise levels above the 60  $L_{dn}$  threshold at a distance of 50 feet would potentially be exposed to noise levels above 60  $L_{dn}$  under 2035 conditions. Residential or noise-sensitive land uses are adjacent to 6 of these 10 segments; impacts would be potentially significant along these 6 segments under 2035 conditions of the updated General Plan.

Additionally, 14 other segments that are currently exposed to noise levels in excess of 60  $L_{dn}$  would be exposed to increased noise levels of 3 dB or greater under year 2035 conditions. Residential or noise-sensitive land uses are adjacent to 10 of these 14 segments; impacts would be potentially significant along these 10 segments because of their proximity to noise-sensitive uses. Table 3.12-13 presents the modeling results for the potentially affected segments. Refer to Figure 3.12-2 for a map of the City with relevant roadway segments labeled. Appendix C provides the modeling results for all analyzed segments.

The results in Table 3.12-13 indicate that a total of 13 segments would potentially be exposed to significant traffic noise impacts under 2035 conditions under the General Plan update.

The proposed General Plan update includes an update to policies in the Safety Element. These goals and policies have not yet been adopted, but would be applicable within the city if the proposed General Plan update is approved. These goals and policies could reduce the level of significance of potential traffic noise impacts in the planning area.





Graphics ... 0023014 (5-11-2016)

Source: City of West Sacramento General Plan Background Report, September 2009.



**Figure 3.12-2**  
Noise Measurement Locations—2007

**Table 3.12-13. Traffic Noise Impacts along City Roadway Segments**

Roadway	Segment	Existing L <sub>dn</sub>	Year 2035 L <sub>dn</sub>	Existing Noise Levels > 60 L <sub>dn</sub> or 70 L <sub>dn</sub> <sup>a</sup> ?	2035 Noise Levels > 60 L <sub>dn</sub> or 70 L <sub>dn</sub> <sup>a</sup> ?	Exceedance of 60 L <sub>dn</sub> <sup>b</sup> or 70 L <sub>dn</sub> <sup>a</sup>	Existing to 2035 Delta	Greater than 3 dB increase? <sup>c</sup>	Adjacent Land Use <sup>d</sup>	Significant Impact
<b>Increase to above 60 L<sub>dn</sub> where existing traffic noise is below 60 L<sub>dn</sub></b>										
Lake Washington Blvd	Stonegate Dr to Village Pkwy	58	61	No	Yes	Yes	3	Yes	R	<b>Yes</b>
Lighthouse Dr	Fountain Dr to A St	59	63	No	Yes	Yes	4	Yes	R	<b>Yes</b>
Riverfront St	Tower Bridge Gateway to Bridge St	56	67	No	Yes	Yes	11	Yes	C	No
South River Rd	15th St to Mike McGowan Bridge	57	69	No	Yes	Yes	12	Yes	I	No
South River Rd (Village Pkwy—2035)	South River Rd to Linden Rd	50	67	No	Yes	Yes	17	Yes	R	<b>Yes</b>
South River Rd (Village Pkwy—2035)	Linden Rd to Davis Rd	51	60	No	Yes	Yes	9	Yes	I	No
Southport Pkwy	Jefferson Boulevard to Marshall Road	58	61	No	Yes	Yes	3	Yes	R	<b>Yes</b>
West Capitol Ave	Garden Street to 3rd Street	58	64	No	No <sup>a</sup>	No <sup>a</sup>	6	Yes	H	No <sup>a</sup>
3rd St	B St to Tower Bridge Gateway	55	64	No	No <sup>a</sup>	No <sup>a</sup>	9	Yes	R	No <sup>a</sup>
15th St	Jefferson Blvd to South River Rd	59	61	No	Yes	Yes	2	No	C/I	No
<b>Increase of 3 dB or more for segments where existing traffic noise exceeds 60 L<sub>dn</sub></b>										
C St	5th St to 3rd St	61	65	Yes	Yes	No <sup>b</sup>	4	Yes	R	<b>Yes</b>
Enterprise Blvd	Industrial Blvd to Seaport Blvd	66	70	Yes	Yes	No	4	Yes	I	No
Enterprise Blvd	Seaport Blvd to Channel Dr	61	68	Yes	Yes	No	7	Yes	I	No
Jefferson Blvd	Davis Road to Southport Pkwy	66	69	Yes	Yes	No	3	Yes	R	<b>Yes</b>
North Harbor Blvd	City Limits to Riverbank Rd	61	64	Yes	Yes	No	3	Yes	R	<b>Yes</b>
Sacramento Avenue	Sunset Avenue to Kagle Dr	67	70	Yes	Yes	No	3	Yes	R	<b>Yes</b>
Sacramento Avenue	Kagle Dr to 6th St	63	66	Yes	Yes	No	3	Yes	R	<b>Yes</b>
South River Road	US 50 EB ramp to 15th St	63	69	Yes	Yes	No	6	Yes	C/I	No
Southport Pkwy	Promenade St to Ramco St	68	71	Yes	Yes	No	3	Yes	C/I	No
Southport Pkwy	Marshall Rd to Promenade St	64	67	Yes	Yes	No	3	Yes	R	<b>Yes</b>
West Capitol Avenue	Jefferson Blvd to Garden St	61	66	Yes	Yes	No	5	Yes	H	<b>Yes</b>
5th Street	A St to West Capitol Ave	63	67	Yes	Yes	No	4	Yes	R	<b>Yes</b>
Tower Bridge Gateway	Garden St to Jefferson Blvd off-ramp	63	66	Yes	Yes	No	3	Yes	R	<b>Yes</b>
South River Rd	Bridge St to US 50 EB ramp	63	68	No <sup>a</sup>	No <sup>a</sup>	No <sup>a</sup>	5	Yes	R	No <sup>a</sup>

Notes: Reference modeling distance of 50 feet to roadway centerline was used for all segments. A conservative threshold of 60 L<sub>dn</sub>, which is the transportation noise threshold for most sensitive land uses (residential, transient lodging, hospitals, nursing homes, churches, and meeting halls), was used for this analysis.

<sup>a</sup> Exterior noise level of 70 dB L<sub>dn</sub>/CNEL are allowed in the Bridge District and the Washington specific plan area.

<sup>b</sup> Exceedance of 60 (or 70 in Bridge District and Washington specific plan area) L<sub>dn</sub> under year 2035 conditions where existing conditions were less than 60 (or 70 in Bridge District and Washington specific plan area) L<sub>dn</sub>.

<sup>c</sup> Greater than 3 dB increase between existing and 2035 conditions.

<sup>d</sup> Adjacent Land use types: R = Residential, C = Commercial, I = Industrial.



The following noise and vibration policies from the proposed General Plan update involve quantitative standards (referenced tables are included below the policy list).

**S-7.1 Exterior Noise Standards.** The City shall require new development of noise-sensitive land uses to mitigate noise impacts where the projected exterior environmental noise levels exceed those shown in Table S-7.1 (Noise Compatibility Standards).

**S-7.2 Exterior Incremental Noise Standards.** The City shall require new development to mitigate noise impacts on noise-sensitive uses where the projected increases in exterior noise levels exceed those shown in Table S-7.2 (Exterior Incremental Noise Impact Standards).

**S-7.3 Interior Noise Standards.** The City shall require new development to mitigate noise impacts to ensure acceptable interior noise levels appropriate to the land use type as shown in Table S-7.1 (Noise Compatibility Standards).

**S-7.4 New Stationary Noise-Producing Uses.** The City shall require new stationary uses that are likely to produce noise levels exceeding the noise standards of Table S-7.3 (Noise Level Standards from Stationary Sources) to mitigate noise impacts.

**S-7.6 Vibration Standards.** The City shall require construction projects and new development anticipated to generate a significant amount of vibration to ensure acceptable interior vibration levels at nearby noise-sensitive uses based on Federal Transit Administration criteria as shown in Table S-7.4 (Groundborne Vibration Impact Criteria for General Assessment).

**S-7.7 Design Mitigation Measures.** The City shall require new development to use site planning and project design to mitigate noise impacts to achieve the standards of Tables S-7.1 and S-7.3. The use of noise barriers shall be used to achieve the noise standards only after all other practical design-related noise mitigation measures have been integrated into the project.

**S-7.10 Acoustical Study** [see *Construction* above for text].

With implementation of the General Plan update, the noise policies and standards in the existing General Plan would be replaced. Table 3.12-14 shows the proposed updated City of West Sacramento Noise Compatibility Standards (Table S-7.1 from the General Plan update). Table 3.12-15 describes the proposed Exterior Incremental Environmental Noise Impact Standards for Noise-Sensitive Uses (Table S-7.2 from proposed General Plan update). Table 3.12-16 shows the Noise Level Standards from Stationary Sources (Table S-7.3 from the proposed General Plan update). Finally, Table 3.12-17 shows the proposed Groundborne Vibration Impact Criteria for General Assessment (Table S-7.4 from the proposed General Plan update).

In some cases, the exterior noise standards for certain land uses would become less stringent with these new policies. For example, the City's existing performance standards for noise and General Plan allow transportation-related noise levels of up to 60  $L_{dn}$  at Transient Lodging (Motels/Hotels). The proposed General Plan update, however, increases the allowable noise level for this land use to 65  $L_{dn}$ .

For some other land uses, there are no exterior noise level standards in the existing General Plan. For example, for theaters, auditoriums, and music halls, only interior noise standards are established in the existing General Plan. The standards in the General Plan update would establish a compatibility standard of 70  $L_{dn}$  for exterior areas associated with these land uses.

**Table 3.12-14. Proposed Noise Compatibility Standards**

Land Use	Exterior Noise Level Standard for Outdoor Activity Areas <sup>a</sup>	Interior Noise Level Standard	
	L <sub>dn</sub> /CNEL, dB	L <sub>dn</sub> /CNEL, dB	L <sub>eq</sub> , dB <sup>b</sup>
Residential (Low Density Residential, Duplex, Mobile Homes)	60 <sup>c</sup>	45	N/A
Residential (Multi Family)	65 <sup>d</sup>	45	N/A
Transient Lodging (Motels/Hotels)	65 <sup>d</sup>	45	N/A
Mixed-Use Developments	70	45	N/A
Schools, Libraries, Churches, Hospitals, Nursing Homes, Museums	70	45	N/A
Theaters, Auditoriums	70	N/A	35
Playgrounds, Neighborhood Parks	70	N/A	N/A
Golf Courses, Riding Stables, Water Recreation, Cemeteries	75	N/A	N/A
Office Buildings, Business commercial and Professional	70	N/A	45
Industrial, Manufacturing, Utilities and Agriculture	75	N/A	45

Note: Where a proposed use is not specifically listed on this table, the use shall comply with the noise exposure standards for the nearest similar use as determined by the Community Development Department.

<sup>a</sup> Outdoor activity areas for residential developments are considered to be the back yard patios or decks of single-family residential units, and the patios or common areas where people generally congregate for multifamily development. Outdoor activity areas for nonresidential developments are considered to be those common areas where people generally congregate, including outdoor seating areas.

Where the location of outdoor activity areas is unknown, the exterior noise standard shall be applied to the property line of the receiving land use.

<sup>b</sup> As determined for a typical worst-case hour during periods of use.

<sup>c</sup> Where it is not possible to reduce noise in outdoor activity areas to 60 dB, L<sub>dn</sub>/CNEL or less using a practical application of the best-available noise reduction measures, an exterior level of up to 65 dB, L<sub>dn</sub>/CNEL may be allowed provided that available exterior noise level reduction measures have been implemented and interior noise levels are in compliance with this table.

<sup>d</sup> Where it is not possible to reduce noise in outdoor activity areas to 65 dB, L<sub>dn</sub>/CNEL or less using a practical application of the best-available noise reduction measures, an exterior level of up to 70 dB, L<sub>dn</sub>/CNEL may be allowed provided that available exterior noise level reduction measures have been implemented and interior noise levels are in compliance with this table.

N/A = not applicable

**Table 3.12-15. Proposed Exterior Incremental Environmental Noise Impact Standards for Noise-Sensitive Uses (dBA)**

Residences and Buildings Where People Normally Sleep <sup>a</sup>		Institutional Land Uses with Primarily Daytime and Evening Uses <sup>b</sup>	
Existing L <sub>dn</sub>	Allowable Noise Increment	Existing Peak Hour L <sub>eq</sub>	Allowable Noise Increment
45	8	45	12
50	5	50	9
55	3	55	6
60	2	60	5
65	1	65	3
70	1	70	3
75	0	75	1
80	0	80	0

Note: Noise levels are measured at the property line of the noise-sensitive use.

<sup>a</sup> This category includes homes, hospitals, and hotels where a nighttime sensitivity to noise is assumed to be of utmost importance.

<sup>b</sup> This category includes schools, libraries, theaters, and churches where it is important to avoid interference with such activities as speech, meditation, and concentration on reading material.

**Table 3.12-16. Proposed Noise Level Standards from Stationary Sources**

Noise Level Descriptor	Daytime (7:00 a.m. to 10:00 p.m.)	Night-time (10:00 p.m. to 7:00 a.m.)
Hourly Leq, dB	55	45
Maximum level, dB	70	65

Noise levels are measured at the property line of the noise-sensitive use.

**Table 3.12-17. Proposed Groundborne Vibration Impact Criteria for General Assessment**

Land Use Category	Groundborne Vibration Impact Level (VdB)		
	Frequent Events <sup>a</sup>	Occasional Events <sup>b</sup>	Infrequent Events <sup>c</sup>
Category 1: Buildings where vibration would interfere with interior operations	65 <sup>d</sup>	65 <sup>d</sup>	65 <sup>d</sup>
Category 2: Residences and buildings where people normally sleep	72	75	80
Category 3: Institutional land uses with primarily daytime uses	75	78	83

<sup>a</sup> *Frequent Events* is defined as more than 70 vibration events of the same source per day. Most rapid transit projects fall into this category.

<sup>b</sup> *Occasional Events* is defined as between 30 and 70 vibration events of the same source per day. Most commuter trunk lines have this number of operations.

<sup>c</sup> *Infrequent Events* is defined as fewer than 30 vibration events of the same kind per day. This category includes most commuter rail branch lines.

<sup>d</sup> This criterion limit is based on levels that are acceptable for most moderately sensitive equipment, such as optical microscopes. Vibration-sensitive manufacturing or research will require detailed evaluation to define the acceptable vibration levels. Ensuring lower vibration levels in a building often requires special design of the heating, ventilation, and air-conditioning systems and stiffened floors.

A new exterior incremental noise standard is also proposed as a part of the General Plan update. Presently, there is no specific allowable increase noise standard, but a 3 dB increase from existing to build-out or future conditions is commonly used to assess impacts in areas where noise already exceeds thresholds. The new noise compatibility standards combined with this new set of allowable increase standards would be more stringent than existing noise standards overall, and would offer more protection for noise-sensitive land uses against increased noise levels within the city. Note that the current performance standards in the Municipal Code match the existing General Plan standards, and it is assumed that the performance standards would be updated following approval of the updated General Plan.

Table 3.12-13 shows that 13 segments are predicted to be exposed to traffic noise impacts at a distance of 50 feet from the roadway centerline with implementation of the General Plan update. The policies outlined in the General Plan update would reduce the level of significance of the impact related to traffic noise because the more stringent policies would help reduce traffic noise levels resulting from future projects.

Although policies outlined in the General Plan update would help to reduce the potential impacts of noise on noise-sensitive land uses, mitigation of potential future noise impacts to less-than-significant levels may not be feasible in all situations. Therefore, traffic noise impacts from the General Plan update would be significant and unavoidable.

### **Safety Element Update**

As discussed above, the proposed General Plan update includes an update to the noise and vibration policies in the Safety Element. These goals and policies have not yet been adopted, but would be applicable within the City if the proposed Project is approved. These policies include:

**S-7.1 Exterior Noise Standards** [see *Traffic Noise* above for text].

**S-7.2 Exterior Incremental Noise Standards** [see *Traffic Noise* above for text].

**S-7.3 Interior Noise Standards** [see *Traffic Noise* above for text].

**S-7.4 New Stationary Noise-Producing Uses** [see *Traffic Noise* above for text].

**S-7.5 Frequent, High Noise Events.** The City shall require development of noise-sensitive uses subject to a discretionary permit and proposed in areas subject to frequent, high-noise events (such as aircraft over flights or train and truck pass-bys) to adequately evaluate and mitigate the potential for noise-related impacts to ensure that noise-related annoyance, sleep disruption, speech interference, and other similar effects are minimized using metrics and methodologies appropriate to the effects to be assessed and avoided.

**S-7.6 Vibration Standards** [see *Traffic Noise* above for text].

**S-7.7 Design Mitigation Measures** [see *Traffic Noise* above for text].

**S-7.8 Train Noise Minimization.** The City shall work with railroad operators to minimize the impact of train noise on adjacent sensitive land uses.

**S-7.9 Truck Traffic Noise Minimization.** The City shall seek to minimize noise and other impacts of truck traffic, deliveries, and staging in and adjacent to residential and mixed-use neighborhoods.

**S-7.10 Acoustical Study** [see *Construction* above for text].

**LU-3.5 Incompatible Uses.** The City shall protect existing residential neighborhoods from the encroachment of incompatible activities and land uses (e.g., traffic, noise) and environmental hazards (e.g., flood).

**LU-6.4 Compatible Land Use.** The City shall ensure an adequate separation and buffers between sensitive land uses (e.g., residential, educational, healthcare) and industrial land uses to minimize land use incompatibility and associated noise, odors, and air pollutant emissions from industrial uses.

**PFS-1.6 Neighborhood Compatibility.** The City shall ensure that public facilities, such as utility substations, water storage and treatment plants, and pumping stations are located, designed, and maintained so that noise, light, glare, or odors associated with these facilities will not adversely affect nearby land uses. The City shall require these facilities to use building and landscaping materials that are compatible with or screen them from neighboring properties.

Additionally, updated Noise Compatibility Standards (Table 3.12-14, Table S-7.1 from General Plan update), new Exterior Incremental Environmental Noise Impact Standards for Noise-Sensitive Uses (Table 3.12-15, Table S-7.2 from General Plan update), new Noise Level Standards from Stationary Sources (Table 3.12-16, Table S-7.3 from General Plan update) and specific Groundborne Vibration Impact Criteria (Table 3.12-17, Table S-7.4 from General Plan update) are included in the General Plan update. These new or updated standards would be more stringent than existing noise regulations overall, and would offer more protection for noise-sensitive land uses against increased noise levels within the city.

### **Train Noise**

As discussed above in *Existing Noise Sources*, there are two major railroad lines in the city, the UPRR and the SERA. Additionally, Amtrak operates three regional and national passenger rail routes that pass through West Sacramento, with the nearest stations in downtown Sacramento and Davis. Amtrak's Capitol Corridor Rail Service operates 15 roundtrips on weekdays and 11 roundtrips on weekends on the UPRR tracks between Sacramento and Oakland. In addition, Sacramento Regional Transit (RT) operates a light rail system with two lines radiating from downtown Sacramento.

Implementation of the General Plan update is not expected to directly result in an increase of train operations in the city. However, new development that could occur with implementation of the General Plan update could result in land uses being exposed to train noise that exceeds applicable land use compatibility standards.

Policies described in the General Plan update would reduce potential noise effects from train operations.

**S-7.5 Frequent, High Noise Events** [see *Safety Element Update* above for text].

**S-7.8 Train Noise Minimization** [see *Safety Element Update* above for text].

Policy S-7.5 would ensure that new noise-sensitive land uses would not be developed in areas where they would be exposed to train noise in excess of the applicable noise standard and Policy S-7.8 would reduce the potential for noise impacts from trains by encouraging the establishment of quiet zones at eligible crossings. Accordingly, noise impacts from trains on future noise-sensitive land uses would be less than significant.

### **Stationary Source Noise**

Development under the General Plan update would have the potential to result in increased operational noise levels from the development of new stationary noise sources near noise-sensitive land uses, or from the development of new noise-sensitive land uses close to existing noise-

generating land uses. Although the development may occur in areas that are already zoned for the applicable type of development (e.g., industrial), noise levels at sensitive receptors may increase from existing conditions, resulting in potential stationary-source operational noise impacts.

The proposed General Plan update includes policies that would help reduce potential noise effects from stationary sources. General Plan Policies S-7.1, S-7.2, S-7.3, and S-7.4 (which specifically addresses noise-producing land uses) require the mitigation of exterior and interior noise levels to levels below the applicable standards for all future projects in the city. General Plan Policy S-7.10 requires the preparation of an acoustical study for any new development with the potential to generate excessive noise. Additionally, Policy LU-3.5 and Policy LU-6.4 state that the City shall protect against the encroachment of incompatible activities and land uses in residential neighborhoods, and shall require adequate separation buffers between sensitive land uses and industrial land uses.

**S-7.1 Exterior Noise Standards** [see *Traffic Noise* above for text].

**S-7.2 Exterior Incremental Noise Standards** [see *Traffic Noise* above for text].

**S-7.3 Interior Noise Standards** [see *Traffic Noise* above for text].

**S-7.4 New Stationary Noise-Producing Uses** [see *Traffic Noise* above for text].

**S-7.7 Design Mitigation Measures** [see *Traffic Noise* above for text].

**S-7.10 Acoustical Study** [see *Construction* above for text].

**LU-3.5 Incompatible Uses** [see *Safety Element Update* above for text].

**LU-6.4 Compatible Land Use** [see *Safety Element Update* above for text].

These policies require that all new development, including noise-generating land uses, ensure noise levels associated with the development are below the applicable standards, meaning that no new noise-generating development would expose existing noise-sensitive uses to excessive noise levels. Additionally, these policies require that new development of noise-sensitive land uses (e.g., residences) be compatible with nearby land uses, and that project proponents ensure that noise levels at the new development be below the applicable standards. Impacts from existing and future noise-generating land uses on existing and future residential land uses would therefore be less than significant.

## **Impact NOI-2: Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels (significant and unavoidable)**

### **Stationary Source Vibration**

As development occurs, there is generally a potential for more operational vibration sources to be developed. However, implementation of the General Plan update would not directly result in an increase of operational sources of vibration in the city. Additionally, should mechanical equipment be installed or new sources of vibration be constructed, the vibration effects would be localized. Stationary source vibration impacts associated with the proposed General Plan update would be less than significant.

### **Construction Vibration**

Implementation of the General Plan update would result in construction activities that could generate temporary groundborne vibration. Typical vibration levels are shown in Table 3.12-3

(California Department of Transportation 2013b). Construction activities associated with new development would be temporary and related vibration impacts would be short-term. Construction activity can result in varying degrees of vibration, depending on the type of machinery used.

Heavy duty equipment associated with some construction activities can produce vibration that may be felt by adjacent uses. The main concern associated with this type of vibration is annoyance; however, vibration-sensitive instruments and operations can be disrupted at much lower levels than would typically affect other uses. In extreme cases, vibration can cause damage to buildings, particularly those that are old or otherwise fragile. Activities such as pile-driving, blasting, drilling, and excavation have the highest potential for creating groundborne vibration impacts. The potential construction-related vibration impacts depend on the proximity of construction activities to sensitive receptors, the presence of intervening barriers, the number and types of construction equipment, and duration of construction equipment use. Perceptible groundborne vibration is generally limited to areas within a few hundred feet of construction activities.

Section 17.32 of the West Sacramento Municipal Code addresses vibration in the city. Construction and operation of projects within the city may not produce noticeable vibration beyond the property line. However, vibration associated with the transport of materials by truck or rail are excluded. Where vibration dampeners are proposed, the application requires an engineered study establishing the effectiveness of the dampeners based on actual site conditions.

In situations where construction of future projects complies with the City Municipal Code, impacts from construction vibration would be less than significant. However, it may not be feasible in all cases to mitigate vibration to less-than-significant levels.

Policy from GP S-7.6 from the proposed General Plan update relates to vibration standards, and states that the City shall require construction projects and new development anticipated to generate a significant amount of vibration to ensure acceptable interior vibration levels at nearby noise-sensitive uses based on FTA criteria as shown in Table 3.12-7 (Federal Transit Administration 2006) and Table 3.12-17, from the proposed General Plan update. Policy GP S-7.6 of the General Plan update and the requirement that vibration levels not exceed those shown in Table 3.12-17 would help to reduce potential vibration impacts associated with the proposed General Plan update.

However, because it may not be feasible in all cases to mitigate or reduce construction vibration to levels below the applicable thresholds, this impact would be significant and unavoidable.

### **Traffic Vibration**

Groundborne vibration generated by traffic traveling on roadways is usually below the threshold of perception at adjacent land uses, unless there are severe discontinuities in the roadway surface. This analysis assumes that roadways in the General Plan area are or will be reasonably maintained, with no severe discontinuities. Therefore, no analysis of vibration generated by operational traffic is provided.

### **Train Vibration**

Typical locomotive-powered passenger or freight trains traveling at 50 mph will produce a vibration level of about 85 VdB at a distance of 50 feet. The vibration level at 50 feet produced by a light rail train traveling at the same speed is about 73 VdB. (Federal Transit Administration 2006: Figure 10-1). This indicates that development of new noise- and vibration-sensitive land uses located adjacent or close to railroad tracks could be exposed to vibration levels in excess of FTA vibration standards

shown in Table 3.12-7 (which corresponds to Table 3.12-17, from General Plan update). This impact is therefore considered to be significant. Implementation of mitigation measure MM-NOI-2, however, would reduce this impact to a less-than-significant level.

### **Mitigation Measure NOI-2: Add Vibration Standards Policy to the General Plan**

**S-7.11 Vibration Standards.** The City shall require new development of vibration-sensitive land uses to mitigate vibration impacts where the projected vibration levels exceed those shown in Table S-7.4 in the General Plan update.

### **Impact NOI-3: Potential to result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project (significant and unavoidable)**

Development under the General Plan update could result in a substantial permanent increase in ambient noise levels in the planning area above levels that would exist without the General Plan update, as described for Impact NOI-1. Traffic noise levels throughout the city would increase with buildout under the General Plan update, and noise levels along some roadways would be expected to increase. Compared to existing conditions, impacts from the General Plan update related to a substantial permanent increase in ambient noise would be significant.

As described in the discussion of Impact NOI-1, Policies S-7.1 through S-7.5, S-7.7 through S-7.10, LU-3.5, LU-6.4, and PFS-1.6 from the proposed General Plan update would help to reduce the level of the potential noise impacts on noise-sensitive land uses in the city. However, mitigation of potential future noise impacts to a less-than-significant level may not be feasible in all situations. Consequently, impacts related to a substantial permanent increase in ambient noise would be significant and unavoidable.

### **Impact NOI-4: Potential to result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project (significant and unavoidable)**

Although construction activities associated with new development would be temporary, and the related noise impacts would be short-term, development of the General Plan would result in exposure of noise-sensitive land uses to temporary noise levels from construction activities associated with development of the city (as described for Impact NOI-1). This could result in a substantial temporary or periodic increase in ambient noise levels, and this impact would be potentially significant.

If the construction of future projects under the General Plan update complies with the City's performance standards for noise and with Policy S-7.10 (Acoustical Study) from the General Plan update (requiring the new development with the potential to generate excessive noise prepare an acoustical study and reduce potential noise impacts to less than significant levels), temporary impacts from construction noise would be reduced.

However, it may not be feasible in all cases to mitigate construction noise of individual projects to less-than-significant levels. Because temporary construction associated with development under the proposed General Plan update may expose people to noise levels in excess of thresholds, and because it may not be feasible in all cases to mitigate this noise to levels below the applicable noise standards, this impact would be significant and unavoidable.



**Impact NOI-5: Location within an airport land use plan area, or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport and exposure of people residing or working in the project area to excessive noise levels (no impact)**

The Sacramento International Airport is approximately 6 miles northwest of the city. According to the *Sacramento International Airport Land Use Compatibility Plan*, the city of West Sacramento is not within the 60 CNEL contour for this airport (Sacramento Area Council of Governments 2013). The Sacramento Executive Airport is approximately 1.5 miles from West Sacramento, and the city is outside of the 65 CNEL contour for this airport (which does not extend beyond the airport footprint) (Sacramento Area Council of Governments 1998). Additionally, no other public or private airfields are within 2 miles of the planning area, and the planning area is not included in any airport land use plan. Residents and employees within the planning area would not be exposed to adverse levels of noise from aircraft overflight. Accordingly, no impact would occur, and no mitigation would be necessary.

**Impact NOI-6: Location in the vicinity of a private airstrip and exposure of people residing or working in the project area to excessive noise levels (no impact)**

No private airfields are located in the planning area. Residents and employees within the planning area would not be exposed to adverse levels of noise from aircraft overflight related to private airfields. Accordingly, no impact would occur, and no mitigation would be necessary.

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## 3.13 Population and Housing

### 3.13.1 Existing Conditions

#### Regulatory Setting

##### Federal

There are no federal laws or regulations that apply.

##### State

##### Housing Element Law

California Planning Law requires each county (and city) to adopt a housing element as part of its general plan (Government Code Sections 65580–65590). As Government Code Section 65583 explains:

The housing element shall consist of an identification and analysis of existing and projected housing needs and a statement of goals, policies, quantified objectives, financial resources, and scheduled programs for the preservation, improvement, and development of housing. The housing element shall identify adequate sites for housing, including rental housing, factory-built housing, mobile homes, and emergency shelters, and shall make adequate provision for the existing and projected needs of all economic segments of the community.

The California Department of Housing and Community Development (HCD) is responsible for assigning quantified regional housing shares to the various councils of government for allocation to the individual cities and counties within their region. HCD is also responsible for reviewing and certifying the adequacy of the housing elements adopted by the cities and counties. The Sacramento Area Council of Governments (SACOG) is responsible for determining the regional housing needs of the individual cities in Yolo County through the Regional Housing Needs Allocation (RHNA) process. Unlike other elements of a general plan, the housing element must be updated on a regular schedule. In September 2012, SACOG approved the *2013–2021 Regional Housing Needs Plan* (Sacramento Area Council of Governments 2015).

##### Senate Bill 375

Senate Bill (SB) 375, enacted in 2008, links regional transportation plans (RTPs) to policies for reducing greenhouse gas (GHG) emissions and providing housing within the region. RTPs are adopted for purposes of identifying and prioritizing funding for regional transportation improvements. SB 375 requires Metropolitan Planning Organizations (MPOs) such as SACOG to include a “sustainable communities strategy” (SCS) in their RTPs and provides details regarding the contents of that strategy. The purpose of the SCS is to establish policies and transportation funding to reduce GHG emissions from automobiles and light trucks in each MPO’s region.

Under SB 375, SACOG is responsible for linking the quantified housing objectives to the land use strategy of the RTP/SCS through the RHNA process. These numbers were the underlying focus of the City’s 2013 update of the General Plan Housing Element.

## Disadvantaged Unincorporated Communities

SB 244 of 2011 requires local jurisdictions to assess the infrastructure needs of disadvantaged unincorporated communities in city and county general plans. Local Agency Formation Commissions (LAFCOs) must consider the needs of disadvantaged unincorporated communities in Municipal Service Reviews (MSRs) and annexation decisions. The requirements of what constitutes a *disadvantaged community* are listed below.

- Ten or more dwelling units near one another.
- Within a city sphere of influence or an island within a city boundary or geographically isolated but has existed for more than 50 years.
- A median income that is 80% or less than the statewide median income (City of West Sacramento 2013a).

Under Government Code Section 65302.10, on or before the due date for the next adoption of its Housing Element, pursuant to Section 65588, the city is to review and update the Land Use Element of its general plan to include all of the following.

- An identification of each legacy community within the boundaries of the county but not any area within the sphere of influence of any city. This identification must include a description of the community and a map designating its location.
- For each identified community, an analysis of water, wastewater, stormwater drainage, and structural fire protection needs or deficiencies.
- An analysis, based on then-existing available data, of benefit assessment districts or other financing alternatives that could make the extension of services to identified communities financially feasible.

If a local jurisdiction completes the SB 244 analysis and does not identify any unincorporated disadvantaged communities, it can prepare a memorandum documenting these findings and present the findings in a public hearing before decision makers so that the information is included in the public record. This process would satisfy the intent of SB 244 and therefore not require that the local jurisdiction update its general plan land use element. West Sacramento has fulfilled the requirements of SB 244 in 2013 (City of West Sacramento 2013a).

## Regional

### Metropolitan Transportation Plan/Sustainable Communities Strategy

SACOG prepared its Metropolitan Transportation Plan (MTP)/SCS, for the greater Sacramento region and adopted it in April 2012. The MTP/SCS (satisfying the RTP/SCS requirement articulated in SB 375) represents an approach to transportation planning that considers the link between land use and transportation planning and contains strategies to optimize transportation performance and investments to accommodate expected population and housing growth, reduce vehicle travel, reduce impacts on valuable habitat and productive farmland, increase resource use efficiency, and promote a prosperous regional economy (Sacramento Area Council of Governments 2012a).

The MTP/SCS addresses SB 375 and federal mandates under MAP-21. As noted above, SB 375 calls for reductions in GHG emissions from automobiles and light trucks. MAP-21 emphasizes a performance-based planning approach. The MTP/SCS matches transportation investment priorities

with desired land use. The MTP/SCS itself does not control land use within West Sacramento or exert power over city land use decisions but, rather, is a steering document for SACOG's vision: smart land use, environmental quality and sustainability, financial stewardship, economic vitality, access and mobility, and equity and choice (Sacramento Area Council of Governments 2012a).

SACOG is required to update and adopt the next MTP/SCS by February 2016. That update will be considered separately from the General Plan update.

### **RHNA and the Housing Element**

HCD assigned a numerical share of the projected statewide housing needs to SACOG, which SACOG then divided among the cities and counties. As shown in Table 3.13-1, the allocation for West Sacramento's 2013–2021 Housing Element is 5,977 dwelling units (Sacramento Area Council of Governments 2012b). The city's current 2013–2021 Housing Element has adequate sites (sites for 13,082 dwelling units) to accommodate the housing development in excess of the RHNA of 5,977 dwelling units (City of West Sacramento 2013b). As shown below, West Sacramento's greatest housing need is in the above-moderate income category.

**Table 3.13-1. SACOG Regional Housing Need Allocation for 2013–2021**

Income Level <sup>a</sup>	West Sacramento Need	Percentage
Very Low	1,316	22
Low	923	15
Moderate	1,111	19
Subtotal of Affordable Units	3,350	56
Above Moderate	2,627	44
Total	5,977	100

Source: Sacramento Area Council of Governments 2012b.

<sup>a</sup> Very low income = less than 50% of median family income (MFI).

Low income = 50 to 80% of MFI.

Moderate income = 80 to 120% of MFI.

Above moderate income = above 120% of MFI.

## **Local**

### **City 2013–2021 Housing Element**

West Sacramento adopted its current Housing Element in September 2013. It was duly certified as being adequate by HCD in October 2013 (California Department of Housing and Community Development 2015). The 2013–2021 Housing Element contains the goals and policies for adequate land for a balanced range of housing; maintenance, improvement, and rehabilitation of housing; energy efficiency; balance of employment and housing; adequate services for residential development; and equal housing opportunity.

### **Southport Framework Plan**

The Southport Framework Plan, adopted in May 1995, covers the southern half of West Sacramento. The plan established a foundation for a village-oriented, mixed-use development pattern and contained a series of villages that would have a distinctive core, including schools, commercial

services, neighborhood parks, and higher-density residential development (City of West Sacramento 2009).

## Environmental Setting

West Sacramento is located in eastern Yolo County across the Sacramento River from Sacramento. The cities of Woodland and Davis are nearby to the west, Sacramento is located across the River from West Sacramento on the north and east, and Clarksburg is a short distance south. The city encompasses 21.4 square miles and has approximately 51,272 residents (California Department of Finance 2015a). Two major highways—Interstate (I-) 80 and U.S. Highway (US) 50/Capital City Freeway—traverse the city. I-80 crosses the northwestern part of the city and US 50/Capital City Freeway bisects the city east–west through the center of town.

As described in the Background Reports prepared for the General Plan update, prior to incorporation in January 1987, the area had a long and colorful urban history dating back to the mid-nineteenth century. Three distinct communities—Broderick, Bryte, and West Sacramento—played key roles in this history. The Southport area in the southern part of the present city took shape much later, with the first major residential development breaking ground in the 1960s. West Sacramento's emergence as a distribution and manufacturing hub for the greater Sacramento region powered very rapid growth and development in the decades immediately following World War II. Between 1940 and 1960, the population of the portion of eastern Yolo County now known as West Sacramento increased from around 5,000 to more than 25,000. The completion of the Port of Sacramento in 1963 was perhaps the signal event capping this period of rapid growth. A significant industrial land base in West Sacramento is a legacy of this boom period.

Another population boom began about 2000. The city's population grew by nearly 50% from 30,000 to 44,000 in just 6 years—an annual rate of nearly 7%. The new boom brought significant land use changes, including major new residential development to the formerly mostly rural Southport area and redevelopment within existing built-up areas. The new boom's economic basis—primarily regional population and economic growth—spurred rapid housing growth around West Sacramento's industrial core. Unprecedented population growth throughout the 2000s increased pressure to convert productive agricultural lands to nonagricultural uses and redevelop vacant lands that once housed industrial uses such as warehousing and manufacturing. Currently, the city's population is spread across the city in established neighborhoods in the northeast and newer residential areas in the south.

Since 1990, West Sacramento's population has increased by 68%. According to 2000 and 2010 census data, West Sacramento's population increased by 54% between 2000 and 2010; however, between 2010 and 2015, this trend slowed to 5.2% citywide and was only 4.3% in the county. (California Department of Finance 1990, 2012, 2015a). Table 3.13-1 shows the population growth in West Sacramento from 1990 to 2015.

Although likely to be slower than the population boom of the 1990s and 2000s, continued development and population growth are anticipated. SACOG projects the population of West Sacramento will reach 81,480 by 2035, an increase of approximately 30,208 residents or 59% from the current 2015 population, compared to 26% for the county as a whole over the same period (City of West Sacramento 2013b; California Department of Finance 2015a).

**Table 3.13-2. West Sacramento Population Growth 1990–2015**

Year	Citywide Population	Percent Change	
		Incremental	Cumulative
1990	28,898	–	–
2000	31,615	9	9
2010	48,744	54	63
2015	51,272	5	68

Source: California Department of Finance 1990, 2012, 2015a.

## Housing

Citywide, the California Department of Finance estimates indicate that there were 18,048 occupied housing units in 2015, and a vacancy rate of 6.3%. In 2015, there were a total of 19,268 housing units, of which 12,144 were single-family detached units, 1,015 were single-family attached units, 1,257 were multifamily structures with two to four units, 3,344 were multifamily structures with five or more units, and 1,508 were mobile homes (California Department of Finance 2015b).

Average household size is determined by dividing the total number of occupied housing units by the population. The California Department of Finance indicates that in 2015, the average household size countywide was approximately 2.82 people. According to SACOG projections, the average household size in West Sacramento is expected to decrease to 2.57 by 2035 (City of West Sacramento 2013b).

## 3.13.2 Environmental Impacts

### Methods for Analysis

The analysis of the proposed project's impacts on population and housing was conducted using a review of the most current population and housing statistics and projections available for West Sacramento. These statistics include SACOG's 2013–2020 RHNP projections, SACOG's 2035 population projections, West Sacramento's 2013–2021 Housing Element data, West Sacramento's General Plan background data, and California Department of Finance estimates and projections. The analysis assumes that the population increase resulting from the proposed General Plan update would align with SACOG's 2035 population projections used in the development of the current 2013–2021 Housing Element.

### Thresholds of Significance

In accordance with Appendix G of the State CEQA Guidelines, the proposed project would be considered to have a significant effect if it would result in any of the conditions listed below.

- Inducement of substantial population growth in an area, either directly (e.g., by proposing new homes and businesses) or indirectly (e.g., through extension of roads or other infrastructure).
- Displacement of a substantial number of existing housing units, necessitating the construction of replacement housing elsewhere.
- Displacement of a substantial number of people, necessitating the construction of replacement housing elsewhere.

## Impacts and Mitigation Measures

### **Impact POP-1: Potential to induce substantial population growth in an area, either directly (e.g., by proposing new homes and businesses) or indirectly (e.g., through extension of roads or other infrastructure) (significant and unavoidable)**

In 2015, West Sacramento had an estimated population of 51,272 and contained 19,268 housing units. As noted above, West Sacramento's population is anticipated to increase by 30,568 to 81,840 by 2035. These population projections were used in the development of the current adopted 2013–2021 Housing Element.

Alternative 1 would entail changes to land use designations as part of the General Plan update. No direct impacts would occur as a result of the project because the project does not propose new homes and businesses.

The General Plan update would entail the following changes that have the potential to induce growth.

- Increased development densities for some residential land use designations.
- New residential land use designations and densities.
- New commercial land use designations and densities.
- Removal of general commercial and office land use designations.
- Revisions to residential densities in commercial and mixed use designations.

These updates would not directly result in new homes or businesses that would substantially increase population growth in the planning area, but they would indirectly result in population growth through individual developments and the extension of roads and other infrastructure improvements as the City becomes more completely developed. However, individual developments would be required to be consistent with the updated General Plan and adopted Housing Element, and any infrastructure would be sized to facilitate development in West Sacramento.

Accordingly, implementation of Alternative 1 would result in significant population growth in the planning area. In accordance with the California Government Code 65300 et seq., the purpose of the General Plan update is to accommodate future population growth and development by responding to regional growth forecasts. No mitigation is available to reduce this impact to a less-than-significant level.

### **Impact POP-2: Displacement of a substantial number of existing housing units, necessitating the construction of replacement housing elsewhere (less than significant)**

Alternative 1 includes land use and zoning changes as part of the General Plan update, but does not propose specific development that would result in the displacement of existing housing units, necessitating the construction of replacement housing elsewhere. Therefore, there would be no impact on existing housing units. No mitigation is required.



### **Impact POP-3: Displacement of a substantial number of people, necessitating the construction of replacement housing elsewhere (less than significant)**

Alternative 1 proposes land use and zoning changes as part of the General Plan update, but it does not entail specific development that would result in the displacement of existing residents, necessitating the construction of replacement housing elsewhere. Consequently, any impact on existing housing units would be less than significant, and no mitigation is required.

### **3.13.3 References Cited**

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## 3.14 Public Services

### 3.14.1 Existing Conditions

#### Regulatory Setting

This section describes the state and local regulations related to public services that would apply to the General Plan update. There are no applicable federal regulations.

#### State

##### Senate Bill 50

Senate Bill (SB) 50 (also known as Proposition 1A, codified in California Government Code Section 65995 et seq.) was enacted in 1998 to address how schools are financed and how development projects may be assessed for associated school impacts. SB 50 sets forth the “exclusive methods of considering and mitigating impacts on school facilities” resulting from any state or local planning and/or development project, regardless of whether its character is legislative, adjudicative, or both (Government Code Section 65996[a]). Section 65995 provides that “[t]he payment or satisfaction of a fee, charge, or other requirement levied or imposed pursuant to Section 17620 of the Education Code in the amount specified in Section 65995...is hereby deemed to be full and complete mitigation of the impacts of any legislative or adjudicative act, or both, involving, but not limited to, the planning, use, or development of real property, or any change in governmental organization...on the provision of adequate school facilities” (Government Code Section 65995[h]). The reference in Section 65995(h) to fees “imposed pursuant to Section 17620 of the Education Code in the amount specified in Section 65995” is a reference to per-square-foot school fees that can be imposed by school districts on new residential or commercial/industrial construction at three levels. Education Code Section 17620 provides the basic authority for school districts to levy fees against construction for purposes of funding construction or reconstruction of school facilities, subject to limits set forth in Government Code Section 65995.

##### California Building Code

Part 2 of Title 24 of the California Code of Regulations (CCR) refers to the California Building Code, which contains complete regulations and general construction building standards of state adopting agencies, including administrative, fire and life safety, and field inspection provisions. Part 2 was updated in 2008 to reflect changes in the base document from the Uniform Building Code to the International Building Code. Part 9 refers to the California Fire Code, which contains fire safety-related building standards referenced in other parts of Title 24.

##### California Health and Safety Code

State fire regulations are set forth in Section 13000 et seq. of the California Health and Safety Code. These regulations address building standards (as also set forth in the CBC), fire protection and notification systems, fire protection devices such as extinguishers and smoke alarms, high-rise building and child care facility standards, and fire suppression training.

## Regional

### Metropolitan Transportation Plan/Sustainable Communities Strategy

The Sacramento Area Council of Governments (SACOG) adopted its Metropolitan Transportation Plan/Sustainable Communities Strategy (MTP/SCS) for the greater Sacramento region in April 2012. The MTP/SCS represents an approach to transportation planning that considers the link between land use and transportation planning and contains strategies to optimize transportation performance and investments to accommodate expected population and housing growth, reduce vehicle travel, reduce impacts on valuable habitat and productive farmland, increase resource use efficiency, and promote a prosperous regional economy (Sacramento Area Council of Governments 2012).

The MTP/SCS does not itself control land use within the City or exert power over City land use decisions, but rather is a steering document for SACOG's vision of smart land use, environmental quality and sustainability, financial stewardship, economic vitality, access and mobility, and equity and choice (Sacramento Area Council of Governments 2012).

SACOG updated and adopted the MTP/SCS on February 18, 2016. That update is considered separately from the General Plan update.

## Local

### West Sacramento General Plan

The following goals in the Public Facilities and Services Element of the current General Plan pertain to public services.

#### *Land Use*

**Goal A:** To provide for orderly, well-planned, and balanced growth consistent with the limits imposed by the city's infrastructure and the city's ability to assimilate new growth.

3. The City shall link the rate of growth in West Sacramento to the provision of adequate services and infrastructure, including schools. The City shall, through specific plans and planned development plans for major projects, ensure that growth occurs in an orderly fashion and in pace with the expansion of public facilities and services.

7. Land use designations and development in the Southport area shall be guided by the following principles:

- Limit total population in Southport to 40,000 residents by the year 2010.
- Concentrate community commercial, high-density residential and public facilities uses in nodes along major and minor arterials.
- Allow the development of water-dependent recreational and commercial uses along the waterways in Southport.
- Emphasize a mixture of residential types and densities, while concentrating on homeownership as a general goal.
- Ensure that ample buffers are established between incompatible land uses.
- Consider the use of Transfer of Development Rights (TDR) provisions to provide for an equitable distribution of the economic returns from future development for all property owners in the Southport area.

- Provide for an orderly sequence of development based on the extension of public facilities and services.

**Goal B:** To designate adequate land in a range of residential densities to meet the housing needs of all income groups expected to reside in West Sacramento.

5. The City shall ensure that new residential development pays its fair share in financing public facilities and services.

**Goal C:** To designate adequate land and provide support for the development of commercial uses providing goods and services to West Sacramento residents and West Sacramento's market area.

11. The City shall ensure that new commercial development pays its fair share in financing public facilities and services.

**Goal D:** To designate adequate land and provide support for the development of office uses serving both West Sacramento and the region.

5. The City shall ensure that new office development pays its fair share in financing public facilities and services.

**Goal F:** To designate adequate land for development of public and quasi-public uses to support existing and new residential, commercial, and industrial land uses.

3. The City shall pursue the development of public safety facilities, including a new fire station and police station.

### ***Housing***

**Goal HE-5:** To Ensure the provision of adequate services to support existing and future residential development.

**HE-5-3.** The City shall ensure that residential developments pay their proportional share of the cost of public facilities and services needed by those developments.

**HE-5-4.** The City shall ensure that public facilities and services (e.g., water, sewer, and emergency services) shall be available prior to occupancy of residential projects.

**HE-5-5.** The City shall promote infill residential and mixed-use development where adequate public facilities and services are already in place or proposed as part of the development.

### ***Public Facilities and Services***

**Goal B:** To maintain an adequate level of service in the City's sewage collection and disposal system to meet the needs of existing and future development.

2. The City shall ensure the provision of adequate sewer service to all new development in the city and support the extension of sewer service to existing developed areas where this service is lacking.

3. The City shall expand and develop new wastewater treatment and disposal facilities to accommodate the needs of existing and planned development.

4. The City shall, through a combination of sewer development fees and other funding mechanisms, ensure that new development pays its fair share of the costs of sewer system improvements.

**Goal C:** To maintain an adequate level of service in the City's storm drainage system to accommodate runoff from existing and future development and to prevent property damage due to flooding.

2. The City shall continue to expand and develop storm drainage facilities to accommodate the needs of existing and planned development.

4. The City shall, through a combination of drainage improvement fees and other funding mechanisms, ensure that new development pays its fair share of the costs of drainage system improvements.

**Goal D:** To provide for the collection and disposal of solid waste while minimizing the generation of waste.

3. The City shall monitor the operations of garbage collection contractors to ensure that service levels are adequate.

4. The City shall maintain close contact with the Yolo County Public Works Department concerning the City's continuing use of the Yolo County Central Landfill and its capacity projections.

**Goal E:** To ensure that an adequate level of police service is maintained as new development occurs.

1. The City shall, through adequate staffing and patrol arrangements, endeavor to maintain the minimum feasible response times for police calls. The goal for average response time for Priority 1 (emergency) calls shall be five minutes.

**Goal F:** To ensure that an adequate level of fire service is maintained as new development occurs.

1. The City shall endeavor to achieve and maintain a fire insurance (ISO) rating of 3 or better in the developed portion of the City. The goal for average response time for Priority 1 (emergency) calls shall be five minutes for 95 percent of the calls.

2. Fire stations shall be strategically located to ensure optimal response time. The existence of physical barriers shall be an important siting consideration.

3. The City shall attempt to offset the need for new fire department staff and equipment and to improve fire safety by requiring installation of built-in fire suppression equipment in all new development of buildings exceeding 4,000 SF.

6. The City shall ensure that fire equipment access is integrated into the design of new facilities.

**Goal G:** To provide for the educational needs of West Sacramento residents.

2. Standards established by the School District shall be used in determining the number and location of new school sites. These standards are based on the assumed average number of students per household for each grade level (varies for different types of housing) and the average size of an elementary school, junior high school, or high school.

3. New elementary schools should be located on collector streets within residential areas. Elementary schools should be sited to avoid barriers such as railroad tracks and arterial streets that would separate them from the surrounding residential areas.

4. The City shall cooperate with the Washington Unified School District in an effort to ensure adequate financing for new school facilities. To this end, the City shall cooperate with the School District in the collection of school facility development fees from new residential and non-residential development. The City shall also work with the Washington Unified School District to identify, establish, and implement additional measures that may be necessary to adequately finance school facilities in the city.

9. The City shall support the efforts of the Yolo County Public Library in providing services to the citizens of West Sacramento.

**Goal H:** To provide for the health care needs of West Sacramento residents.

3. While the Fire Department will continue to provide first-response medical emergency services, the City shall encourage the expansion of private paramedic and ambulance service within the city.

### ***Recreational and Cultural Resources***

**Goal A:** To establish and maintain a public park system and recreation facilities suited to the needs of West Sacramento residents and visitors.

2. The City shall establish a standard of five acres of parkland, three acres of community park and two acres of neighborhood parks, per 1,000 people, or its equivalent in the context of a park dedication ordinance to be established and periodically updated by the City.

3. New development shall be required to assist in meeting the City's park acreage standard as established in an adopted parkland dedication ordinance. To this end, the City shall require of all new development the dedication of land, dedication of improvements, payment of in-lieu fees, or any combination of these determined acceptable by the City, to the maximum extent authorized by law.

4. The City shall pursue all available and appropriate county, state, and federal funding for the acquisition of parkland and the development of park facilities.

18. The City shall pursue the development of a citywide network of pedestrian and bicycle pathways.

**Goal B:** To promote the provision of private recreational facilities and opportunities.

1. The City shall promote the provision of private open space and recreation facilities in large-scale residential developments in order to meet a portion of the open space and recreation needs that will be generated by the development.

### **West Sacramento Municipal Code**

Chapter 12.30 of the City's Municipal Code imposes a park development fee as a condition of issuance of all building permits in the city. The City may, at its sole discretion, accept an offer to dedicate land for use as a city park from an applicant in lieu of all or any portion of a parks facilities development fee, when the land is substantially equal in value, as determined by the City, to the fee or portion of the fee imposed upon the applicant. Fees collected pursuant to Chapter 12.30 are used to finance the acquisition, development, renovation, improvement, and replacement of parks and recreational facilities, including recreational equipment.

Chapter 12.40 of the City's Municipal Code establishes a police facilities development fee to be imposed as a condition of the issuance of all building permits in the city. The City Council is responsible for establishing the specific amount of the fee and identifying the specific improvements to be financed.

Chapter 12.42 of the City's Municipal Code imposes a fire facilities development fee as a condition of the issuance of all building permits in the city. The City Council is responsible for setting the specific amount of the fee and identifying the specific improvements to be financed.

Chapter 15.12 of the City's Municipal Code contains regulations for all new construction, including the installation of fire protection equipment. The City has amended the Uniform Building Code to require that an approved automatic fire-extinguishing system be installed in every building in which the total floor area of all floors exceeds 4,000 square feet, any building that exceeds 25 feet in height from grade, or any building that is three or more stories regardless of height.

Chapter 15.14 of the City's Municipal Code adopts the California Fire Code with such deletions, amendments, and additions thereof as set forth in the chapter. The California Fire Code is enforced by the Bureau of Fire Prevention in the West Sacramento Fire Department and is operated under the supervision of the Fire Department Chief.

## West Sacramento Parks Master Plan

The City adopted the Parks Master Plan in September 2003. The Plan describes existing parks within the city, develops an action plan for developing more parks in the city, and provides an implementation plan. The Plan also details goals and objectives for the physical distribution, location, and amount of park and recreation facilities that make up the master plan. The Parks Master Plan establishes a standard of 2 acres of neighborhood park and 3 acres of community park per each 1,000 residents.

## Environmental Setting

### Fire Protection and Emergency Services

This section focuses on urban fire prevention; wildland fire hazards are discussed in Section 3.8 *Hazards and Hazardous Materials*, of this document.

The West Sacramento Fire Department (WSFD) offers fire protection services within the City. WSFD also serves the planning area south of the city limits to Babel Slough Road and west to Jefferson Boulevard. The WSFD has Automatic Aid agreements with several Yolo County Fire Departments and with the City of Sacramento Fire Department. Areas north of the city limits are served by the Elkhorn Fire Protection District (EFPD).

WSFD is divided into three major units that provide a wide range of services for the community: Fire Administration, Emergency Operations, and Fire Prevention/Hazardous Materials.

Fire Administration is staffed by a fire chief, one division chief, three battalion chiefs, one financial specialist, and one secretary. In addition to emergency scene management and daily supervision of fire suppression units, division chiefs oversee and manage all the daily operations of the department. The administration offices are located at 2040 Lake Washington Boulevard (West Sacramento Fire Department 2015a).

The Emergency Operations Division has 57 full-time personnel that work 48-hour shifts. These 57 firefighters are divided into three shifts of 19. This division is responsible for extinguishing fires, fire investigation, emergency rescue, hazardous materials response, emergency medical response, and other public services. They assist the Prevention Division with public education in the schools and conduct annual business license inspections, hydrant maintenance, and fire safety and code enforcement inspections (West Sacramento Fire Department 2015b).

The Fire Prevention Bureau is overseen by the fire marshal. The fire marshal is responsible for coordinating and conducting the Fire Prevention and Fire Investigation programs. These programs include the weed abatement program, residential inspection program, business license inspections, annual inspection of businesses for fire safety, investigations of both accidental and incendiary fires, and public awareness education in fire safety.

The Fire Prevention Bureau leads the Hazardous Materials Program with one hazmat manager and one part-time administrative assistant. The hazmat manager provides emergency service personnel with hazardous materials/first responder training and OSHA Hazard Communication Standard training.

The five fire stations in the city operate 24 hours a day, 7 days a week with a combined staffing of 17 personnel on duty, including a battalion chief to respond to all structure fires and other major

emergencies providing incident command and scene management. According to total department incident statistics, the WSFD responded to 8,242 incidents in 2014 (Ramirez pers. comm.).

**Table 3.14-1. West Sacramento Fire Departments**

Facility Name	Address
Fire Station #41	132 15th Street
Fire Station #42	3585 Jefferson Boulevard
Fire Station #43	1561 Harbor Boulevard
Fire Station #44	905 Fremont Boulevard
Fire Station #45	2040 Lake Washington Boulevard

Source: West Sacramento Fire Department 2015c

The Public Protection Classification Program is the countrywide classification system used by the Insurance Services Office (ISO) to reflect a community's local level of fire protection for property insurance rating purposes. The public fire protection of a city, town, or area is graded using ISO's Fire Suppression Rating Schedule to develop the community's classification.

ISO classifies communities from 1 (best) to 10 (worst) based on how well they score on the ISO Fire Suppression Rating Schedule. West Sacramento has an ISO rating of 2 (City of West Sacramento Utility and City Services. n.d.) and is ranked among the top 650 communities in a field of more than 47,000 cities and towns in the U.S. and among the top 6.6% of California's 960 rated communities. The ISO evaluation is primarily based on the following considerations.

- The City's water supply system, including proximity to local fire hydrants.
- WSFD's daily staffing levels, condition and maintenance of apparatus and equipment, and level of personnel emergency response training and location of local fire stations.
- Yolo County's emergency dispatch system, which is the WSFD's dispatch center where 911 calls are received and processed (City of West Sacramento Utility and City Services. n.d.).

Goal F in the Public Services and Facilities element ensures that an adequate level of fire service is maintained as new development occurs—specifically, that the City maintain a fire ISO rating of 3 or better in the developed portion of the City and that average response times to emergency calls (Priority 1) be 5 minutes for 95% of the calls. The average response time for the WSFD overall is 4:42 minutes from time of dispatch to arrival on scene (Ramirez pers. comm.).

## Police Protection

The West Sacramento Police Department (WSPD) is responsible for enforcing the laws of the State of California and local ordinances, while providing a variety of public services to the community. WSPD is responsible for patrolling city neighborhoods, responding to calls for service, investigating crime and arresting offenders, and working closely with the community to identify and solve problems of crime and neighborhood disorder.

WSPD comprises three main divisions: Administration, Support Services, and Field Operations. Police Administration is responsible for developing policy for WSPD's overall mission. It has primary responsibility for setting the vision, organizational tone, and fiscal management for the organization. Police Administration is headed by the Chief of Police and is staffed with the Deputy



Chief of Police, an administrative analyst, and the department secretary. Police Administration oversees and manages daily operations, including personnel, internal affairs, training, purchasing, fiscal management, social media, community outreach, research, data collection and audits, and administrative support (West Sacramento Police 2016).

Support Services is led by the police lieutenant, who has the responsibility for General Investigations, including Crime Scene Investigations and Property and Evidence. The Records Section is also assigned to Support Services (West Sacramento Police 2016).

Field Operations is under the command of two watch commanders and eight police sergeants. The police sergeants provide direct supervision to 65 sworn officers and 4 community services officers assigned to 5 patrol shifts and 2 specialty units. Other specialized units include the Yolo County Law Enforcement Team (ALERT), Yolo County Narcotic Enforcement Team, and the Yolo County Bomb Squad (West Sacramento Police 2016). The WSPD measures its response times using five dispatch categories: 0 (life-threatening emergencies, crimes in progress) to 5 (non-emergency). The higher the priority of the call, the faster police officers aim to arrive. Average response times for 2015 shown in Table 3.14-2.

**Table 3.14-2. Average Response Times in 2015 by Call Priority**

Priority	Total Number of Calls	Minutes
0	2	0.02
1	1,565	4.78
2	18,409	5.96
3	926	15.83
4	7,700	11.81
5	8,320	7.60

Note: reflects calls received January 1–December 7, 2015

## Yolo County Sheriff's Department

The Yolo County Sheriff's Department (YCSD) provides services to residents outside the city of West Sacramento both north and south of the city limits, as well as to all unincorporated areas of Yolo County. The entire department employs more than 260 employees.

YCSD is divided into three divisions: Administrative, Detention Services, and Field Operations. The Administrative Division is the central coordinating point for the Sheriff-Coroner, Undersheriff, and the office's management staff. The Field Operations Division is the uniformed patrol force of the department. This Division also maintains the Civil Section, which works in conjunction with the Courts. The Detention Division, under the direction of the Yolo County Sheriff, is charged with the responsibility of maintaining a jail for the county (Yolo County Sheriff 2015).

## California Highway Patrol

The California Highway Patrol (CHP) is responsible for enforcing traffic laws on county and state highways. CHP's primary mission is the management and regulation of traffic to achieve safe, lawful, and efficient use of the highway transportation system. As a major statewide law enforcement agency, CHP's secondary mission is to assist in emergencies exceeding local capabilities. CHP also

provides disaster and lifesaving assistance. Additional responsibilities include truck and bus inspections, air operations (both airplanes and helicopters), and vehicle theft investigation and prevention. The 1995 merger with the California State Police increased the areas of responsibility to include protection of state property and employees, the Governor, and other dignitaries. In addition to its enforcement responsibilities, CHP also provides a variety of programs to educate the public on driver safety issues. CHP operates an office in Woodland that patrols the entire planning area. This office is located at 13739 Andrew Stevens Drive (California Highway Patrol 2015). The CHP Academy is located on a 457-acre site in the northwestern portion of West Sacramento at 3500 Reed Avenue.

## Schools

The City is served by the Washington Unified School District (WUSD), which provides primary, secondary, and high school education services to residents. WUSD offers education to all school-age residents within the city. It is governed by a Board of Education comprising five locally elected officials responsible for policies, curricula, budget, and overseeing facilities issues (Washington Unified School District n.d.). Currently there are 7,421 enrolled students, with a staff of 400 certificated employees and 350 classified employees (Washington Unified School District 2014). Table 3.14-3 lists schools in the planning area and their capacity and projected enrollment totals.

**Table 3.14-3. Washington Unified School District Capacity and Projected Enrollment**

School	Grades	Address	Current/Projected Enrollment <sup>a</sup>	Capacity
Bridgeway Island Elementary	K-8	3255 Half Moon Bay Cir.	966/1,008	1,052
Elkhorn Village Elementary	K-8	750 Cummins Wy	568/569	830
Riverbank Elementary	K-8	1100 Carrie St	836/804	1,085
Southport Elementary	K-8	2747 Linden Rd	842/881	999
Stonegate Elementary	K-8	2500 La Jolla St	794/906	992
Westfield Village Elementary	K-5	508 Poplar Ave	416/379	615
Westmore Oaks Elementary	K-8	1100 Clarendon St	833/994	1,297
Evergreen Middle	4-10		25/28	215
River City High School	9-12	1 Raider Ln	2,070/2,263	2,706
Washington Adult School		919 Westacre Rd		
Yolo Education Center (Continuation HS)		919 Westacre Rd	130/139	575
West Sacramento Early College Prep Charter	6-8	1504 Fallbrook St	<a href="http://www.westsacprep.org/">http://www.westsacprep.org/</a>	
Lighthouse Charter School	K-2	1500 Park Blvd 1511 Delaware Ave	Opened fall 2015. Currently serving K-2 with plans to add a grade per year until K-8.	NA
Sacramento Valley Charter School	K-8	2399 Sellers Wy		NA
Heritage Peak Charter School	K-12	840 Jefferson Blvd		NA

Source: Washington Unified School District 2014.

<sup>a</sup> Current enrollment is based on 2014-2015; projected enrollment is based on year 2019/2020.

Projected growth for the district was estimated to be 1.02% (or 76 students) for the 2014/15 school year. WUSD is projected to continue growing over the next 10 years, with a projected enrollment of 8,434 students in the 2023/24 school year. This is a total growth of 990 students, or an increase of 13.3%. These projections estimate 36 new students each year or 643 students in the next 6 years. WUSD has a total capacity of 10,393 students and a current enrollment of 7,444, giving the district a current utilization factor of 71.6%. The projected utilization factor in 6 years will be 77.0%. This projection assumes that loading standards remain constant and no additional facilities are built or removed (Washington Unified School District 2014:6).

## Parks

West Sacramento Parks and Recreation consists of three separate functions: a parks division, a recreation division, and a tree program. The parks division oversees the maintenance of 145+ acres of developed city parks. There are currently 33 parks, plazas, and playfields within the city, totaling 152.6 acres (see Section 3.15, *Recreation*). The 2003 Parks Master Plan sets a standard of 5 acres of parks per 1000 residents—2 acres in neighborhood parks and 3 acres in community parks (City of West Sacramento 2003). Based on the existing population of 51,272, a total of 256.4 acres of parklands is required to meet the 5:1,000 standard. Currently (2015), there are approximately 152.6 acres of developed parkland, a deficiency of 103.8 acres. With a projected population in 2035 of 81,480 residents, 407.4 acres of parks would be required to meet the City's standard of 5 acres of parks per 1,000 residents—254.8 acres more than currently exist.

The Recreation Division provides community members with a wide variety of recreation opportunities: aquatics, children's programs, teen programs, youth sports, adult sports, Active Aging Programs, leisure interest classes, recreation programs for individuals with special needs, and special events. The Recreation Division also handles rentals of facilities such as the Bridgeway Lakes Boathouse, the Civic Center Galleria, the Community Center, and the Recreation Center.

## Other Public Facilities

The Yolo County Library offers library service to the entire planning area and provides access to books, informational technology, and other media. The library system is made up of the administrative and technical services departments and seven branch libraries, one of which is located in West Sacramento. The County Library operates under the general supervision of the Yolo County Board of Supervisors, which appoints the County Librarian and the County Library Advisory Board. The Library is funded by property taxes, state funds, library fines and fees, and donations.

Located at 1212 Merkley Avenue, the Arthur F. Turner Community Library is an 18,000-square-foot facility that provides all city residents with access to books and other materials including dvds, cds, magazines, and newspapers. A new community meeting room can accommodate 180 people and offers a computer projector, microphones, sound controls, and two smaller group study rooms as well as a dedicated space for teens (City of West Sacramento Public Works n.d.).

Guidelines for determining minimum library space requirements are maintained by the American Planning Association (APA). An evaluation of building size and condition is necessary to determine whether each structure can provide the necessary services. The standards for building size are generally expressed in terms of square feet per capita. The Experience Formulas for Library Size and Costs used by APA suggest minimum sizes that range from 0.3 square feet per capita for libraries that serve 50,000 people or more to 0.6 or 0.65 for those that serve 10,000–35,000 people

(American Planning Association 1968). To the extent that funding is available, these formulas will guide the provision of new library service as the county population grows.

## 3.14.2 Environmental Impacts

### Methods for Analysis

The project was evaluated to determine if fire, police, school, park, and library facilities are staffed and located so as to continue to adequately serve the City's residents West Sacramento and if additional facilities may be needed. Potential impacts from the additional facilities were assessed by comparison with the significance criteria established in the State CEQA Guidelines. For purposes of this analysis, the future population growth described in SACOG's 2035 MTP forecasts for West Sacramento is assumed to accurately characterize future population growth in West Sacramento.

### Thresholds of Significance

In accordance with Appendix G of the State CEQA Guidelines, the proposed project would be considered to have a significant effect if it would result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities or a need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the following public services:

- Fire protection
- Police protection
- Schools
- Parks
- Other public facilities

### Impacts and Mitigation Measures

**Impact PS-1: Potential to result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities (less than significant with mitigation)**

#### *Fire Protection and Emergency Services*

The General Plan update integrates population projections adopted by SACOG that extend the planning horizon to 2035. SACOG's regional growth forecast predicts a population for the city of 81,480 by 2035, an increase of approximately 30,208 residents from the current 2015 population (City of West Sacramento 2013; California Department of Finance 2015). Consequently, it is a reasonable expectation that population and housing within the planning area would increase the demands on fire protection and emergency services.

To maintain or achieve acceptable staffing and response-time objectives for fire protection, it is reasonably foreseeable that new or expanded fire stations will be needed. These would have the potential to result in adverse environmental impacts. Under Chapter 12.42 of the City's Municipal

Code, fire facilities development fees would finance new facilities associated with the demands of new development.

The current General Plan sets forth goals and polices to ensure adequate levels of service and funding for fire protection services as development occurs. In the Land Use Element, policies under Goals A, B, C, and D would ensure that the rate of growth in the city is linked to the provision of adequate services and infrastructure, and provide that new residential, commercial, and office development pay their fair share in financing public facilities and services, including fire protection. Policies 3, 4, and 5 of Goal E in the Housing Element require that development share in the financing of public facilities, and that necessary public facilities and services are available before the occupancy of residential projects. Finally, Policies 1 and 2 under Goal F in the Public Facilities and Services Element would ensure that an adequate level of fire service is maintained as new development occurs.

Updated General Plan policies would continue to support adequate infrastructure and services as outlined in Section 2.4.5, *Public Facilities and Services Element*, in Chapter 2, *Project Description*, by expanding fire safety and emergency services and facilities.

The number, locations, physical sizes, equipment assignments, and designs of both future fire stations and the expansion of existing stations would be developed in association with future development projects and would not be directly authorized under the General Plan. Consequently, the potential environmental impacts of these future developments and expansions cannot be evaluated at this time.

Typical operational impacts of fire stations include intermittent noise from the sirens on fire trucks leaving the station on calls as well as temporary traffic interruptions as vehicles are leaving the station. Construction of fire stations seldom result in significant effects requiring preparation of an EIR (e.g., the State Clearinghouse, which receives CEQA documents from all public agencies in California, has received only one EIR for a fire station since December 2009), and any impacts can be mitigated to a less-than-significant level. Mitigation, if necessary, would be site- and project-specific. Because site- and project-specific information is not available for future fire stations, mitigation measures cannot be developed at this time.

Typical environmental impacts associated with construction of new fire stations include construction noise and potential temporary disruption of access, as well as potential impacts related to site-specific conditions, such as biological or cultural resources, depending on the site location. Such impacts can generally be mitigated to a less-than-significant level. Mitigation measures for impacts of implementation of the General Plan as updated are presented in the relevant resource sections of this EIR. These measures would ensure that impacts of construction and operation of new fire stations would be less than significant.

### ***Police Protection***

As previously discussed, SACOG's growth forecast numbers present a reasonable expectation that population and housing in the City will increase. The construction of housing (i.e., single- and multi-family residences) and nonresidential uses (commercial, retail, office, business park uses, and schools) would increase the demand for police protection services in the planning area. WSPD would provide general law enforcement for this area. Without additional staffing and facilities, the projected increase in population would decrease WSPD's existing level of service.

The number, locations, physical sizes, equipment assignments, and designs of future police facilities as well as the expansion of existing facilities are unknown. Consequently, the potential environmental impacts of increased facilities or stations cannot be evaluated at this time. Typical operational impacts of police stations include minor traffic generation during shift changes when police vehicles enter or leave the station grounds and short bursts of noise if police test their patrol car sirens prior to leaving on patrol. Construction of police stations does not typically result in significant effects requiring preparation of an EIR (e.g., the State Clearinghouse, which receives CEQA documents from all public agencies in California, has received no EIRs for a sheriff's/police station since December 2009), and any impacts can be avoided by project design and operating protocols limiting the use of sirens. Mitigation, if necessary, will be site- and project-specific. Because site- and project-specific information is not available for future police stations, mitigation measures cannot be developed at this time.

Typical environmental impacts associated with construction or expansion of future police facilities include construction noise and potential temporary disruption of access, as well as potential impacts related to site-specific conditions, such as biological or cultural resources, depending on the site location. Such impacts can generally be mitigated to a less-than-significant level. Mitigation measures for impacts of implementation of the General Plan as updated are presented in the relevant resource sections of this EIR. These measures would ensure that impacts of construction or expansion of future police facilities would be less than significant.

The current General Plan sets forth goals and polices to ensure adequate levels of service and funding for police protection services as development occurs. In the Land Use Element, policies under Goals A, B, C, and D ensure that the rate of growth in the city is linked to the provision of adequate services and infrastructure, and provide that new residential, commercial, and office development pay their fair share in financing public facilities and services. Policy 1 of Goal E in the Housing Element require that development share in the financing of public facilities, and that necessary public facilities and services are available before the occupancy of residential projects. Finally, Policy 1 under Goal E in the Public Facilities and Services Element ensures that an adequate level of police protection is maintained as new development occurs, specifically to maintain minimum response calls with a goal of 5 minutes emergency response time average through adequate staffing.

Updated General Plan policies (Goal PFS-8) would continue to support adequate infrastructure and services as outlined in Section 2.4.5, *Public Facilities and Services Element*, in Chapter 2, *Project Description*, by expanding law enforcement services and facilities. Accordingly, this impact is expected to be less than significant, and no mitigation is proposed.

### **Schools**

SACOG's regional growth forecast, adopted in the General Plan update, creates a reasonable expectation that population and housing within the planning area will increase, resulting in increased school enrollment. The current General Plan sets forth goals and polices to ensure adequate levels of service and funding for schools as development occurs. Policies in the Land Use Element ensure that the rate of growth in the city is linked to the provision of adequate services and infrastructure, including schools, and that new residential, commercial, and office development pay their fair share in financing public facilities and service. Goal G in the Public Facilities and Services Element further guides siting and funding of schools.

The types, number, locations, physical sizes, and designs of future public schools as well as the expansion of existing schools to accommodate future growth are unknown. Consequently, the potential environmental impacts of future schools and school expansions cannot be evaluated at this time. The typical environmental impacts of new or expanded schools include aesthetic impacts (particularly if there will be lighted athletic fields), loss of agricultural land (where the school is located on agricultural land), increased noise, and increased traffic. Construction of schools often result in significant effects that require preparation of an EIR, depending on the size and location. EIRs are typically required for new high schools because of significant impacts—for example, those related to aesthetics, noise, and traffic. Future new or expanded public schools will be subject to CEQA analysis by the school district. Potential impacts will be disclosed, and site- and project-specific mitigation measures, if necessary, will be developed during the CEQA review process. Because new schools often require an EIR, implying the potential for significant impacts, this impact is foreseeably significant. However, because public school approval is outside the authority of the County, construction of public schools is not a component of the General Plan update. Accordingly, this impact is expected to be less than significant, and no mitigation is proposed.

### ***Parks***

As discussed above, the parkland standard of 5 acres per 1,000 residents has not been met and West Sacramento is deficient in parks. As previously discussed, SACOG's growth forecast numbers (estimated population of 81,480 by 2035) present a reasonable expectation that population and housing in the City will increase. The construction of housing (i.e., single- and multi-family residences) would increase the demand for parks in the city. To maintain or achieve acceptable acre-to-resident ratios, the provision of new or physically altered park facilities will be required, potentially resulting in adverse environmental impacts.

The Parks Master Plan identifies a number of new and renovated facilities that would be built in the future to support increased demand for parks and recreational facilities, if financially feasible. Depending on location and final site design, large park and recreational facilities typically result in significant effects on aesthetics (if lighted athletic fields are included), biological resources (when established in sensitive habitats), cultural resources (when located along watercourses where sensitivity tends to be highest), noise (if athletic fields are included), and traffic. Future parks will be subject to CEQA review and related mitigation for significant impacts. However, absent information on the location and site design for future parks, it is not possible at this time to establish mitigation measures for future park construction and operation. Typically, a regional park with lighted athletic fields can have significant and unavoidable impacts related to aesthetics, noise, and traffic, although these impacts would occur in the context of an urban area where such impacts are not unusual in the regular course of existence. Further, the General Plan update does not propose amendments to the Parks Master Plan, nor does it implement that plan. The General Plan update is distinct from the Parks Master Plan and future impacts under that plan. Accordingly, the General Plan update would have a less-than-significant impact.

### ***Other Public Facilities***

The Arthur F. Turner Library is funded through a dedicated portion of property taxes, state funds, library fines and fees, and donations. SACOG's regional growth forecasts, adopted in the General Plan update, create a reasonable expectation that population and housing within the planning area will increase, potentially resulting in an increase in library system use. To maintain or achieve acceptable ratios pertaining to square footage per capita, it is reasonably foreseeable that the

provision of new or physically altered library facilities could be required, with the potential to result in adverse environmental impacts. The number, locations, and designs of future libraries and library expansions are unknown. Consequently, the potential environmental impacts of future libraries, if any, cannot be evaluated at this time.

Typical library impacts include a reduction in the parking supply on adjoining streets if off-street parking is insufficient. Mitigation, if necessary, would be site- and project-specific. Because site- and project-specific information is not available about future libraries, mitigation measures cannot be developed at this time.

Typical environmental impacts associated with construction or expansion of libraries include construction noise and potential temporary disruption of access, as well as potential impacts related to site-specific conditions, such as biological or cultural resources, depending on the site location. Such impacts can generally be mitigated to a less-than-significant level. Mitigation measures for impacts of implementation of the General Plan as updated are presented in the relevant resource sections of this EIR. These measures would ensure that impacts of construction or expansion of future police facilities would be less than significant.

The following measures will ensure that impacts related to construction and operation of the new public facilities discussed in this impact would be less than significant.

**Mitigation Measure CUL-2: Require appropriate treatment for inadvertent discovery of archaeological resources**

**Mitigation Measure CUL-3: Implement appropriate treatment for discovery of human remains**

**Mitigation Measure WQ-3: Implement a Hydromodification Management Plan (HMP) in accordance with the City's Stormwater Permit**

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## 3.15 Recreation

### 3.15.1 Existing Conditions

#### Regulatory Setting

This section describes the state and local regulations and policies that are applicable to the General Plan update. There are no federal regulations that apply to recreational resources.

#### State

##### State Public Park Preservation Act

The State Public Park Preservation Act is the primary instrument for protecting and preserving parkland. Under the Public Resources Code, cities and counties may not acquire any real property that is in use as a public park for any non-park use unless compensation or land or both is provided to replace the parkland acquired. This act ensures no net loss of parkland and facilities.

##### Subdivision Map Act

The Subdivision Map Act (California Government Code 66410 et seq.) sets forth the conditions for approval of a subdivision map and requires enactment of subdivision ordinances by which local governments have direct control over the types of subdivision projects to be undertaken and the physical improvements to be installed. The act requires a subdivision's design to coordinate with community plans and ensures that subdividers will properly complete areas dedicated for public purposes.

##### Quimby Act

The Quimby Act (California Government Code 66477), enacted in 1966, is a state law, applied at the local level, that specifies the parkland dedication requirements for new residential subdivisions. The Quimby Act authorizes local jurisdictions to require developers of new residential subdivisions to dedicate up to 3 acres of park area per 1,000 persons or, if the amount of existing neighborhood and community park area exceeds that limit, the jurisdiction can require that existing ratio, not to exceed 5 acres of land per 1,000 persons, or to pay in-lieu fees for park or recreational purposes. The local jurisdiction must adopt Quimby Act provisions as part of its subdivision ordinance in order to impose the exactions allowed by the act. Alternatively, if the local jurisdiction has Quimby Act standards in its general plan, it can impose park and recreation exactions on subdivisions through the requirement that the subdivision be consistent with the general plan (California Government Code 66474[a]). Although the Quimby Act authorizes the dedication of new parkland, it does not address the development, operation, or maintenance of new park facilities. Therefore, the Quimby Act provides open space needed to develop park and recreational facilities, but does not ensure the development of the land or the provision of a park.

##### Streets and Highways Code

The state Streets and Highways Code assists in providing equestrian and hiking trails within the right-of-way of county roads, streets, and highways.

## Local

### City of West Sacramento Municipal Code

#### ***Park Facility Development Fees***

Chapter 12.30 of the City's Municipal Code imposes a park development fee as a condition of issuance of all building permits in the city. The City may, at its sole discretion, accept an offer to dedicate land for use as a city park from an applicant in lieu of all or any portion of a parks facilities development fee, when the land is substantially equal in value, as determined by the City, to the fee or portion of the fee imposed upon the applicant. Fees collected pursuant to Chapter 12.30 are used to finance the acquisition, development, renovation, improvement, and replacement of parks and recreational facilities and their development, including equipment for recreational purposes.

#### ***Parks and Community Service Facilities***

Chapter 12.12 of the City's Municipal Code includes regulations associated with the use of building and park use, fundraising activities, permit procedures, and other provisions related to parks. Park use regulations include a list of activities that require permits for organized activities that involve groups of 50 or more people in a park or 10 or more people in a building for longer than 20 minutes, amplified sound, commercial activities, and fundraising activities. This code also includes a list of prohibited uses within parks, such as unleashed pets, firearms of any type, drinking alcoholic beverages, or contaminating park water features in any way. Activities such as golfing and swimming are only permitted within the appropriate designated areas.

#### ***Skateboard Parks and Their Use***

Chapter 12.15 of the City's Municipal Code sets forth regulations for use of the city's skateboard parks, including hours of operation and requirements that users wear helmets, elbow pads, and knee pads. Various activities are prohibited in the skateboard parks, including possession of drugs or alcohol or using skateboard parks for activities other than skating or skateboarding.

### City of West Sacramento General Plan

Section V, *Recreational and Cultural Resources*, of the existing General Plan lists goals and policies relevant to recreational resources.

**Goal A:** To establish and maintain a public park system and recreation facilities suited to the needs of West Sacramento residents and visitors.

**Policies:**

1. The City shall prepare and adopt a Parks Master Plan which includes the following components:
  - Locational standards
  - Preferred sites
  - Improvement standards
  - Equipment standards
  - Identification of existing parkland deficiencies
  - Development priorities
  - Financing mechanisms

- Acquisition and development of new park sites
  - Plans for community and regional parks
  - Development of community activity centers (Potential locations are shown in the City's adopted Parks Master Plan.)
2. The City shall establish a standard of five acres of parkland, three acres of community park and two acres of neighborhood parks, per 1,000 people, or its equivalent in the context of a park dedication ordinance to be established and periodically updated by the City.
  3. New development shall be required to assist in meeting the City's park acreage standard as established in an adopted parkland dedication ordinance. To this end, the City shall require of all new development the dedication of land, dedication of improvements, payment of in-lieu fees, or any combination of these determined acceptable by the City, to the maximum extent authorized by law.
  4. The City shall pursue all available and appropriate county, state, and federal funding for the acquisition of parkland and the development of park facilities.
  5. Park facilities shall be located within convenient walking-distance of all residents.
  6. Neighborhood parks shall be integrated into, and become focal points of, new residential neighborhoods. Non-automobile access shall be facilitated.
  7. The City shall promote the development of one or more large-scale park complexes in West Sacramento. The City shall pursue state and regional funding for such a park complex.
  8. The City shall optimize, especially for after-school activities, joint-use of school facilities as a high priority for the development of new park and recreational facilities and shall support significant improvement of existing cafeterias and auditoriums.
  9. Parks shall be located, oriented, and designed in such a way as to facilitate security, policing, and maintenance.
  10. New park and recreation facilities shall provide shade and wind protection to facilitate year-round use.
  11. New high-activity-level parks and parks intended for night use shall be designed to buffer existing and planned surrounding residential uses from excessive noise, light, and other potential nuisances.
  12. The City shall identify appropriate open spaces, including areas within the Central Business District and along the Sacramento River, for development of safe community activity areas.
  14. The City shall assign high priority to the improvement and rehabilitation of parks in existing neighborhoods.
  15. The City shall encourage the use of golf courses and other recreational uses as buffers between incompatible land uses.
  16. The City shall consider the use of public funds to develop a municipal golf course.

**Goal B:** To promote the provision of private recreational facilities and opportunities.

**Policies:**

1. The City shall promote the provision of private open space and recreation facilities in large-scale residential developments in order to meet a portion of the open space and recreation needs that will be generated by the development.
2. The City shall promote the inclusion of private outdoor and indoor recreation facilities in large commercial/industrial projects as a benefit for employees and as a means of reducing demand on public facilities.

3. The City shall encourage the development of golf courses in conjunction with major new development projects.
4. The City shall encourage development of new marinas in appropriate locations on the Sacramento River and along the Barge Canal.
5. The City shall promote the development of commercial recreational facilities that meet community needs and complement public parks, facilities, and programs.
6. The City supports the use of the barge canal for aquatic recreational activities, such as sailing, rowing, kayaking, and canoeing, and supports the establishment of a multi-use aquatic facility along the barge canal. Aquatic parks, boat houses, docks, and other support facilities for boating shall be deemed compatible uses along the Deep Water Ship Channel and the barge canal within all land use designations.

**Goal C:** To establish recreation programs suited to the broad needs and interests of all West Sacramento residents.

**Policies:**

6. The City shall establish cooperative agreements with the Washington Unified School District for the use of school facilities for City-sponsored recreation programs.

**Goal D:** To provide and encourage, to the fullest extent possible, public access to the Sacramento River and Deep Water Ship Channel for recreation purposes.

**Policies:**

1. The City shall ensure continuous public access to the Sacramento River for its full length within West Sacramento.
2. The City shall seek to ensure continuous public access to the Deep Water Ship Channel, within the limits imposed by safety considerations.
3. Linear access to the Sacramento River and Deep Water Ship Channel shall be linked to the city's overall system of parks, recreational pathways, and open space. To this end, the City shall require the dedication of public access easements through new developments along the Sacramento River and Deep Water Ship Channel.
4. The City shall encourage the development of public and private marinas in appropriate locations on the Sacramento River and along the Deep Water Ship Channel. Siting and development of marinas shall avoid, as much as possible, areas of significant existing riparian vegetation.
5. The City shall support and encourage the development of public and private water-oriented park and recreational facilities along the Sacramento River and the Deep Water Ship Channel.

**Goal E:** To provide a network of pedestrian and bicycle pathways connecting parks and open space areas with other destination points within and beyond the city of West Sacramento.

**Policies:**

1. The City shall develop a system of pedestrian and bicycle pathways linking City parks, neighborhood shopping areas, and major open space areas with one another and with nearby residential areas.
2. The City shall implement a Riverfront Park Master Plan that provides for a system of continuous pedestrian and bicycle pathways along the Sacramento River.
3. The City shall develop and implement a Bicycle Route Master Plan to link parks, scenic areas, the riverfront, schools, the Central Business District, public facilities, and neighborhoods. (Figure II-1 shows a conceptual system of recreational pathways.)
4. The City shall coordinate the development of the riverfront as envisioned in the 1997 Sacramento Greenway Plan.

5. The City shall coordinate with SACOG and surrounding jurisdictions to ensure that bicycle pathways within the city connect with existing and planned facilities outside the city.

### **Implementation Programs**

1. The City shall prepare and adopt a Park Master Plan that establishes goals, policies, and standards for the location, size, and level of development of all existing and proposed parks. The master plan shall cover at least the succeeding 10-year period, with greater detail devoted to improvements planned for the first five-year period. The following definitions shall be used in the classification of parks:
  - Responsibility: City Council, Parks and Community Services Department
  - Classification:
    - Mini-Park: 1/2 to 3 Acres
    - Neighborhood Park: 3 to 10 Acres
    - Community Park: 10 to 50 Acres
    - Regional Park: 50 or more Acres
  - Time Frame: The 1993 plan shall be updated and refined as needed.
2. The City shall regularly monitor county, state, and federal programs for funding of parkland acquisition, development, and rehabilitation. The City shall actively pursue funding for which it is qualified.
  - Responsibility: Community Development Department, Parks and Community Services Department
  - Time Frame: Ongoing
3. The City shall periodically review projected park development needs and plans, update cost estimates for park acquisition and development, and remaining development potential based on the General Plan. Based on this review, the City shall adjust the park development fee schedule as necessary.
  - Responsibility: City Council, Parks and Community Services Department, Finance Department
  - Time Frame: Ongoing
4. The City shall prepare, adopt, and periodically update a long-term Major Projects Financing Plan (MPFP), including parks, which identifies:
  - Service standards
  - Specific project descriptions, including cost estimates
  - Schedule of improvements
  - Financing Responsibility, including techniques to be employed
  - Responsibility: City Council, City Manager, Parks and Community Services Department, Community Development Department, Finance Department
  - Time Frame: As needed
5. The City shall continue to support a joint-use agreement with the Washington Unified School District which provides for use of school facilities for certain City-sponsored recreation programs.
  - Responsibility: City Manager, Parks and Community Services Department,
  - Time Frame: Ongoing

### **Southport Framework Plan**

The Southport Framework Plan was adopted in 1998 to guide the development of Southport. Under the plan, Southport is anticipated to house a population of 42,344 at buildout and proposes providing 293 acres of parkland. The plan provides for neighborhood and community parks, an aquatic center along the Barge Canal, recreation opportunities along the canal system, a community center within the commercial node and recreation/open space opportunities along the Sacramento River.

### **West Sacramento Parks Master Plan**

The City adopted the Parks Master Plan in September 2003. The plan describes existing parks within the city, develops an action plan for developing more parks, and provides an implementation plan. The plan also details goals and objectives for the physical distribution, location, and amount of park and recreation facilities established in the master plan. The Parks Master Plan establishes a standard of 2 acres of neighborhood park and 3 acres of community park per each 1,000 residents.

### **Sacramento Riverfront Master Plan**

Together the Cities of Sacramento and West Sacramento prepared the Sacramento Riverfront Master Plan. West Sacramento accepted the plan in July 2003. The plan sets forth a vision for the Sacramento River from Discovery Park on the north to Stone Lock Bluff Park on the south. The plan focuses on four central guiding principles: creating riverfront neighborhoods and districts, establishing a web of connectivity, strengthening the green backbone of the community, and creating places for celebration. The master plan is a study plan, not a regulatory plan. The plan is intended as a blueprint for possible future actions that may be considered discretely as opportunities and resources arise.

### **Yolo County Integrated Regional Water Management Plan**

Each local agency responsible for water resource stewardship, conveyance, or delivery ratified the countywide management plan, which was prepared through inter-agency collaboration with the Yolo County Water Resources Association. The plan establishes the framework for multi-purpose, multi-benefit capital investments and management activities associated with water resources in Yolo County. The management plan chapter on the water resources and water issues of the Sacramento River and the Deep Water Ship Channel includes actions that integrate flood management and protection of water supply and water quality with public recreation and habitat conservation.

## **Environmental Setting**

### **Recreational Facilities**

The City categorizes parks and recreational facilities as neighborhood parks, mini parks, community parks, central parks, or regional parks. Neighborhood parks, generally 1–10 acres, are oriented toward the recreational needs of families and may include sports facilities and picnic areas. Community parks, usually at least 10 acres, are intended to provide recreational opportunities to the entire community. They may include natural areas that can be used for passive recreation, such as nature trails for walking, viewing, and picnicking. Community park facilities can also support active recreation at playfields, skate centers, bicycle and pedestrian trails, and other specialized

features. Mini parks generally provide limited sitting and play areas, and provide smaller neighborhoods with passive recreation activities. Mini park acreage is counted with neighborhood parks for the purposes of the Parks Master Plan. Because of maintenance costs and the lack of recreational activities, the city considers mini-parks inefficient, and, when possible, prefers to develop neighborhood parks to fulfill the recreational needs of neighborhoods. There are at present no regional or central parks in the city.

There are currently 33 parks, plazas, and playfields in the city: 77.1 acres of community parks and 75.6 neighborhood parks and mini parks, totaling 152.7 acres (Table 3.15-1). Based on an estimated 2015 population of 51,272 (California Department of Finance 2015), approximately 256.4 acres of parks are required to meet the 2003 Parks Master Plan standard of 5 acres of parks per 1,000 residents, with 2 acres dedicated to neighborhood parks, and 3 acres dedicated to community parks, meaning that the city currently needs an additional 26.9 acres of neighborhood parks, and an additional 76.7 acres of community parks.

**Table 3.15-1. Existing Local Parks and Recreational Facilities**

Park/Facility Name	Location	Acreage
<b>Community Parks</b>		
Alyce Norman-Bryte Playfields	725 Todhunter Avenue	17.0
Bridgeway Lakes Community Park	3650 Southport Parkway	12.0
Broderick Boat Ramp	103 4th Street	4.0
Bryte Park	425 Todhunter Avenue	34.4
River Walk Park	651 2nd Street	9.7
Total Community Parks		77.1
<b>Neighborhood Parks</b>		
Barge Canal Recreational Access	2100 Jefferson Boulevard	1.65
Bridgeway Island Park	3345 Golden Gate Drive	4.0
Delta Gardens Park	1310 Cold Springs Road	3.3
Elkhorn Park	750 Cummins Way	5.2
Emile "Whitey" Boisclair Park	1728 Lake Washington Boulevard	2.7
Linden Park	2601 Summerfield Drive	4.0
Meadowdale Park	3625 West Capitol Avenue	4.0
Memorial Park	401 Regent Street	4.0
Patwin Park	3080 Catalina Island Road	4.5
Sam Combs Park	205 Stone Boulevard	4.5
Southport Gateway Park	1650 Gateway Drive	2.5
Summerfield Park	2950 Linden Road	9.0
Sunset Vista Park	3501 Oakland Bay Drive	6.1
Touchstone Park	2598 Independence Avenue	4.0
Westacre Park	1755 Evergreen Avenue	5.0
Westfield Playground	504 Poplar Avenue	4.0
Total Neighborhood Parks		68.45



Park/Facility Name	Location	Acreage
<b>Mini Parks</b>		
Circle Park	1509 Circle Street	0.3
Classics Mini Park	3732 Oakland Bay Drive	0.3
Eagle Point Park	3620 Lewiston Road	1.5
Fred and Leila Holmes Park	1650 Pennsylvania Avenue	0.5
Garden Park	564 Garden Street	0.5
Jerome D. Barry	809 Ballpark Drive	1.25
Lake View Park	3728 Henshaw Road	1.0
Pheasant Hollow Park	2583 Meadowlark Circle	0.5
Poquito Park	2875 Summerfield Drive	0.2
Redwood Park	3097 Redwood Avenue	0.5
Roland Hensley Bike Park	4940 West Capitol Avenue	0.5
Rotary Centennial Minipark	580 Jefferson Boulevard	0.1
	Total Mini Parks	7.15
	Total Parks	152.7

Source: <http://www.cityofwestsacramento.org/city/depts/pcs/parks/parks/default.asp>.

## 3.15.2 Environmental Impacts

### Methods for Analysis

The analysis of the General Plan update's impacts on recreational resources was conducted using a review of the City of West Sacramento's 2003 Parks Master Plan, the City's 2009 General Plan Update Background Report (including SACOG's 2035 Population Estimates), and the City's Parks and Recreation Department website. Because the existing population would change under buildout of the updated General Plan, this analysis is based on a comparison of existing city park and recreation land with the amount of park and recreation land necessary to serve the population under the General Plan update. Accordingly, this analysis considers the prospective impacts of future recreational facilities and the expansion of existing facilities that would be allowed under the updated General Plan to meet the adopted area standards related to parks and recreation.

### Thresholds of Significance

In accordance with Appendix G of the State CEQA Guidelines, the updated General Plan would be considered to have a significant effect if it would result in any of the conditions listed below.

- Potential to increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated.
- Construction or expansion of recreational facilities that might have an adverse physical effect on the environment.

## Impacts and Mitigation Measures

### **Impact REC-1: Potential to increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated (less than significant)**

The General Plan update integrates population projections adopted by SACOG that extend the planning horizon to 2035. SACOG's MTP 2035 Population, Housing, and Employment Projections predict a population of 87,402 for the City of West Sacramento—an increase of approximately 70% from the population of 51,272 residents in 2015 (California Department of Finance 2015). The population and housing increase projected under the General Plan update would increase the demands on the city's parks and recreational facilities.

**Table 3.15-2. Shortages in Neighborhood Parks (acres)**

	Existing	Acres Needed to Meet 2015 Population	Acres Needed to Meet 2035 Population
Neighborhood parks <sup>a</sup>	75.6	102.5	174.8
Shortage		26.9	99.2

Source: West Sacramento Parks & Recreation 2015.

<sup>a</sup> Mini parks are counted toward the requirement for neighborhood parks in the Parks Master Plan.

**Table 3.15-3. Shortages in Community Parks (acres)**

	Existing	Acres Needed to Meet 2015 Population	Acres Needed to Meet 2035 Population
Community Parks	77.1	153.8	262.2
Shortage		76.7	185.1

Source: West Sacramento Parks & Recreation 2015

The 2003 Parks Master Plan requires the City to provide at least 2 acres of neighborhood parks and 3 acres of community parks for every 1,000 residents. To meet the needs of the estimated 2015 population of 51,272 (California Department of Finance 2015), the City should provide 102.5 acres of neighborhood parks and 153.8 acres of community parks. The City as of 2015 provides only 75.6 acres and 77.1 acres of neighborhood and community parks, respectively. Based on the SACOG's MTP 2035 population projections, the City should provide 174.8 acres of neighborhood parks and 262.2 acres of community parks by 2035 to support the growth projected under the General Plan update, an increase of 99.2 acres of neighborhood parks and 185.1 acres of community parks. To meet these future recreation needs, the updated Parks and Recreation Element requires future developments to pay a park facility development fee or, in some cases, to dedicate land for park facility development in lieu of a fee (PR-1.2). Policy PR-1.4 requires the City to pursue all available and appropriate county, state, and federal funding for the acquisition of parkland and development of park facilities. The General Plan update would also include policies that promote the provision of private open space, private recreation facilities, commercial recreation facilities, and private golf courses with new residential, commercial, and industrial development (Policies PR-5.1, PR-5.2, PR-5.3, and PR-5.4).

The City's projected shortfall in community-oriented parks acreage would be addressed by proposed policies that require the City to establish recreational corridors and encourage recreation along the Sacramento River, Deep Water Ship Channel, and barge canal (Policies PR-2.1, PR-3.1, PR-3.2, PR-3.3, PR-3.4, PR-3.5, PR-3.6, and PR-3.7.), and Policy PR-1.8, which requires the City to promote the development of at least one large-scale park complex.

These policies will allow the City to prevent future population growth from increasing the current park acreage shortfall. Accordingly, impacts parks and other recreational facilities would be less than significant, and no mitigation is required.

**Impact REC-2: Construction or expansion of recreational facilities that might have an adverse physical effect on the environment (less than significant with mitigation)**

As disclosed in the discussion of Impact REC-1, the City currently has a deficit of neighborhood and community park acreage. If new parks are not constructed, projected population growth will increase this shortfall. Under the proposed General Plan update, the City will address this shortfall by constructing and encouraging the construction of new parks and recreation facilities. Policy PR-1.8 would require the City to promote the development of at least one large-scale park complex. Policy PR-1.17 would require the city to improve existing parks; Policies PR-3.4, PR-3.6, and PR-3.7 would encourage construction of recreational facilities on the Sacramento River, Deep Water Ship Channel, and the barge canal; PR-5.1, PR-5.2, and PR-5.4 would encourage development of private and private commercial recreation spaces and facilities; and PR-1.19 and PR-5.3 would encourage construction of public municipal and private golf courses. Under Policy PR-1.10, the City would prioritize joint use of school facilities over the development of new park and recreational facilities. This policy will enable the City to meet the requirements of the Parks Master Plan with less new park and recreation facility construction.

Typical environmental impacts associated with expansion of existing neighborhood parks or construction of new parks include construction noise and temporary disruption of access. When in use, neighborhood parks may result in noise, lighting (e.g., lighted ball courts), and minor traffic impacts on their surrounding neighborhoods. They may result in impacts related to site-specific conditions, such as biological or cultural resources, depending on their location. Such impacts can generally be mitigated to a less-than-significant level. Mitigation measures for impacts of implementation of the General Plan as updated are presented in the relevant resource sections of this EIR.

Because they are generally larger than neighborhood parks, construction of new and expansion of existing community parks can be expected to have greater impacts than neighborhood parks. Construction of new community parks on undeveloped sites would have similar impacts to other construction projects on undeveloped land. While community parks often have many of the same types of facilities and amenities as neighborhood parks, community parks often support these facilities and amenities in greater numbers and concentrations. Traffic, noise, and lighting impacts can thus be expected to be greater than at neighborhood parks.

Future construction and operation of aquatic recreation facilities could result in impacts on water quality from operation of construction equipment near waterways and from operation of recreational watercraft. In addition, future construction of marinas and boat docks could potentially lead to the introduction of invasive aquatic plant species into uninfested areas. Without mitigation, this impact would be significant; however, implementation of Mitigation Measure BIO-1 would reduce this impact to a less-than-significant level.

**Mitigation Measure BIO-6: Amend NCR-2.13 (Fisheries) to include in-water construction and maintenance activities**

**Mitigation Measure CUL-2: Require appropriate treatment for inadvertent discovery of archaeological resources**

**Mitigation Measure CUL-3: Implement appropriate treatment for discovery of human remains**

**Mitigation Measure WQ-3: Implement a Hydromodification Management Plan (HMP) in accordance with the City's Stormwater Permit**

### 3.15.3 References Cited

California Department of Finance. 2015. Demographic Research Unit, Population Estimates for Cities, Counties, and the State, January 1, 2014 and 2015. Available:  
<http://www.dof.ca.gov/research/demographic/reports/estimates/e-1/view.php>

West Sacramento Parks & Recreation. 2015. *Parks*. Available:  
<http://www.cityofwestsacramento.org/city/depts/pcs/parks/parks/default.asp>. Accessed: 9/8/2015.

## 3.16 Transportation/Traffic

### 3.16.1 Existing Conditions

#### Regulatory Setting

##### Streets and Roadways

The transportation system in West Sacramento is regulated by a number of agencies at the federal, state, and local levels. In addition to the City of West Sacramento, which is responsible for constructing and maintaining non-state and non-federal transportation facilities in the city, major federal and state regulatory bodies pertinent to the city's transportation system are described below.

##### Federal

The Federal Highway Administration (FHWA) is the agency of the U.S. Department of Transportation (DOT) responsible for the federally funded roadway system, including the interstate highway network and portions of the primary state highway network. FHWA funding is provided through the Moving Ahead for Progress in the 21st Century Act (MAP-21). MAP-21 can be used to fund local transportation improvement projects, such as projects to improve the efficiency of existing roadways, traffic signal coordination, bikeways, and transit system upgrades.

##### State

The California Department of Transportation (Caltrans) is responsible for planning, designing, constructing, and maintaining all state highways. The jurisdictional interest of Caltrans extends to improvements to roadways at the interchange ramps serving area freeways. Any federally funded transportation improvements would be subject to review by Caltrans staff and the California Transportation Commission.

The standards for Caltrans' facilities in the vicinity of West Sacramento are detailed in the *Transportation Concept Report and Corridor System Management Plan—United States Route [US] 50* (California Department of Transportation 2014) and the *Interstate [I-] 80 and Capital City Freeway Corridor System Management Plan* (California Department of Transportation 2009) (CSMPs). Typical Concept level of service (LOS) standards in Caltrans District 3 are LOS D in rural areas and LOS E in urban areas. However, Caltrans recognizes that, because of environmental, right-of-way, financial, and other constraints, attaining these standards may not be feasible. Nevertheless, the CSMPs assert that operation and management strategies can improve performance.

##### Regional

The Sacramento Area Council of Governments (SACOG) is responsible for development of the state- and federally required Metropolitan Transportation Plan (MTP) every 4 years in coordination with 22 cities and six counties in the greater Sacramento area. The MTP also incorporates the long-range plans of El Dorado and Placer Counties. Local transportation projects must be included in the MTP to obtain state and federal transportation funding. The MTP 2035 links land use, air quality, and transportation needs with the objective of reducing greenhouse gas emissions from autos and light

trucks. Development of the MTP 2035 included an 18-month process of setting public priorities to identify a list of transportation improvement projects to best meet the needs of the region as a whole.

As the designated metropolitan planning organization, SACOG is also responsible for maintaining a federal Metropolitan Transportation Improvement Program (MTIP). Projects included in the MTIP are consistent with those in the MTP.

SACOG's 2006 MTP identifies transportation demand management strategies to reduce single-occupant drivers and address regional traffic issues. The region has continued to experience declines in carpool and transit use and increases in single occupancy auto use. To counter this trend and to encourage alternative mode choice, the 2006 MTP includes funding for transportation demand management, including a rideshare program. This program would provide ride-matching services for the Sacramento metropolitan area.

## City of West Sacramento

### *Level of Service*

LOS describes the operating conditions experienced by motorists. LOS is a qualitative measure of the combinative effect of speed and travel time, traffic interruptions, freedom to maneuver, driving comfort, and convenience. LOS designations A through F (from best to worst) are determined using the criteria shown in Tables 3.16-1 and 3.16-2.

**Table 3.16-1. Level of Service Criteria—Intersections**

Level of Service (LOS)	Total Delay Per Vehicle (seconds)	
	Signalized Intersections	Unsignalized Intersections
A	≤ 10	≤ 10
B	> 10 and ≤ 20	> 10 and ≤ 15
C	> 20 and ≤ 35	> 15 and ≤ 25
D	> 35 and ≤ 55	> 25 and ≤ 35
E	> 55 and ≤ 80	> 35 and ≤ 50
F	> 80	> 50

Source: HCM 2010 Highway Capacity Manual, Transportation Research Board, Washington, D.C., 2010.

**Table 3.16-2. Level of Service Criteria—Freeway Facilities**

Level of Service (LOS)	Maximum Density (Passenger Cars Per Mile Per Lane)		
	Mainline	Ramp Junctions	Weaving Segments
A	≤ 11	≤ 10	≤ 10
B	> 11 and ≤ 18	> 10 and ≤ 20	> 10 and ≤ 20
C	> 18 and ≤ 26	> 20 and ≤ 28	> 20 and ≤ 28
D	> 26 and ≤ 35	> 28 and ≤ 35	> 28 and ≤ 35
E	> 35 and ≤ 45	> 35	> 35
F	> 45	Demand Exceeds Capacity	Demand Exceeds Capacity

Source: Transportation Research Board 2010. HCM 2010 Highway Capacity Manual, Washington, D.C., 2010.

The 2000 General Plan's traffic LOS policy is as follows:

To maintain LOS "C" on all streets within the city except at intersections and on roadway segments within one-quarter mile of a freeway interchange or bridge crossing of the Deep Water Ship Channel, barge canal, or Sacramento River, where LOS "D" shall be deemed acceptable.

As part of the project, the City proposes to modify its LOS policy for the General Plan Update.

#### ***Residential Traffic Calming Program***

The City Council adopted the Residential Traffic Calming Program (RTCP) in July 1998 and revised the program in January 2005. The RTCP established procedures and techniques to address resident concerns about traffic issues in residential neighborhoods, particularly speeding and cut-through traffic. Through this program, residents can work with City staff to create and implement the best solutions for their neighborhoods.

#### ***Traffic Impact Fee Program***

The City updated the Traffic Impact Fee (TIF) program in 2005. The TIF program assesses fees on new development to support roadway improvements that would address traffic impacts caused by the new development. The city is divided into six districts, with fees per dwelling unit equivalent (DUE) ranging from \$4,992 in the Riverfront district to \$11,873 in the Southport district.

#### ***Transportation Demand Management***

The City of West Sacramento has adopted the Transportation System Management (TSM) ordinance to promote alternative commute modes and reduce the total number of vehicle trips.

Prior to the issuance of a building permit, the City's TSM ordinance requires all major employers and developers to submit a Transportation Management Plan (TMP) and obtain an approved Transportation Management Certificate. A TMP must demonstrate compliance with the requirement of the TSM ordinance. Recent development projects that have been required to submit a TMP include the Raley's Landing project.

## Bicycle Transportation

The City is responsible for constructing and maintaining the bicycle transportation system in West Sacramento. However, regional and state agencies, such as SACOG and Caltrans, influence implementation, particularly through funding resources.

### State

State bicycle funding is available to cities with a bicycle master plan that meets Caltrans requirements.

### Regional

SACOG prepares the Regional Bicycle, Pedestrian, and Trails Master Plan, which includes facilities in West Sacramento and sets priorities for funding.

### City of West Sacramento

The importance of alternative modes of transportation continues to increase as air pollution, fuel costs, and traffic congestion increase. West Sacramento's relatively level terrain, mild climate, and proximity to key employment centers afford opportunities for bicycle travel. The 2013 update to the *West Sacramento Bicycle, Pedestrian, and Trails Master Plan* added the following goals to the City's policy framework.

1. A bicycle mode share of at least five percent and a walking mode share of at least ten percent by 2030.
2. A continuous and interconnected system of bikeways and walkways that provide safe and convenient travel to key destinations.
3. A continuous network of low-stress bikeways between residential areas and key destinations.
4. A transportation system that is safe for bicycling and walking such that bicyclist- and pedestrian-vehicle collision rates decrease from 2013 levels.
5. Secure and convenient bike parking at all major bicycle trip generators and attractors.
6. A bicycle system that is well integrated with other forms of transportation, including public transit.
7. New development shall provide bicycle- and pedestrian-friendly on-site circulation and access.
8. Educational opportunities aimed at all levels of bicyclists, pedestrians, motorists, and law enforcement personnel.

## Pedestrian Circulation

All public agencies must adhere to the Americans with Disabilities Act (ADA), which sets design standards and guidelines for pedestrian facilities, such as sidewalks and curb ramps, to provide access for all users.

The City is responsible for constructing and maintaining the pedestrian facilities in West Sacramento.

As described above, the 2013 update to the *West Sacramento Bicycle, Pedestrian, and Trails Master Plan* sets forth additional goals to support the City's existing policies to encourage walk and bicycle trips.



## Public Transit

Sacramento Regional Transit District (RT) operates one transit route within West Sacramento.

Yolo County Transportation District (YCTD), as the operator of Yolobus, is the public transit provider in West Sacramento. It is responsible for countywide coordination of transit system planning, programming, and prioritization of significant projects as well as for plan development for funding transit projects within the District. YCTD also acts as the congestion management agency (CMA) for Yolo County.

## Air Transportation

The Sacramento County Airport System is a department of the County of Sacramento responsible for the planning and management of four airports in the region: Sacramento International, Executive Airport, Mather Field, and Franklin Field. Sacramento International is pertinent to the City.

## Goods Movement

The California Public Utility Commission (CPUC) regulates railroad, rail transit, and passenger transportation companies in California.

The Sacramento-Yolo Port District is responsible for the management and operation of the Port of West Sacramento. The District includes representatives from the City of West Sacramento and Yolo County. The City Council appoints four commissioners, and the Yolo County Board of Supervisors appoints one commissioner.

## Environmental Setting

### Street and Road System

Roadways and highways are typically organized hierarchically as summarized below.

**Local roads** are intended to serve adjacent properties. They carry minimal through traffic and generally carry very low traffic volumes. Many of West Sacramento's local roads are arranged in a grid, making through travel possible but not desirable. Speed limits on local roads normally do not exceed 25 miles per hour (mph).

**Collector roads** are intended to convey traffic from local roads and to larger roads (e.g., arterials). Collector roads also serve adjacent properties. They generally carry light to moderate traffic volumes and speed limits are typically maintained in the 25–35 mph range. Currently, few roads in West Sacramento would be classified as collectors because many local streets feed directly to arterials. Examples of collector roads in West Sacramento include F Street, Evergreen Avenue, Bryte Avenue, and Merkley Avenue.

**Minor arterial roads** are fed by local and collector roads, provide intra-city circulation and connection to regional roads, and often carry heavy traffic volumes. Although their primary purpose is to move heavy volumes of traffic, arterials often serve adjacent properties, especially in commercial areas. Speed limits on arterial roads are often in the 35–45 mph range. Examples of minor arterials in West Sacramento are the western end of West Capitol Avenue and the southern end of Jefferson Boulevard.

**Major arterial roads** are fed by local, collector, and minor arterial roads; provide for major cross-town and regional travel; and carry heavy volumes of traffic. They are divided roads of four or six lanes with a large median area that accommodates auxiliary lanes at intersections. Direct access to adjacent properties should be limited to right turn-in and right turn-out movement only. Speed limits on major arterials are typically at least 40 mph. Examples of major arterials in West Sacramento are Harbor Boulevard, Sacramento Avenue, and Jefferson Boulevard.

**Freeways/expressways** are intended to serve both intra- and inter-city travel. They provide no service to adjacent properties, but rather are fed traffic from collector or arterial roads through the use of access ramps. Freeways provide connections to other regional highways and are capable of carrying heavy traffic volumes. Speed limits on freeways are usually the highest allowed by law. Business 80/US 50 and I-80 are the two freeways within West Sacramento.

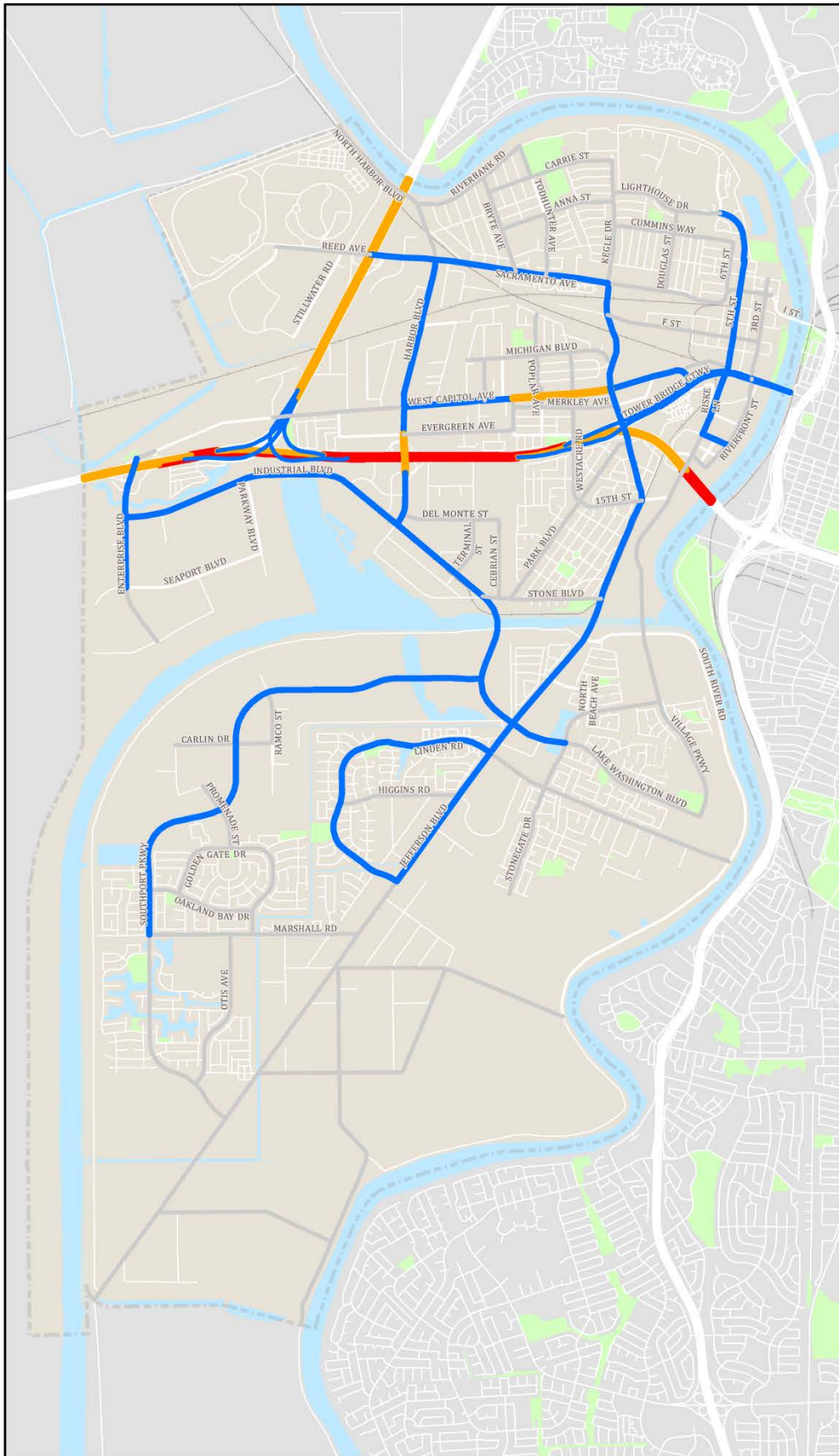
Figure 3.16-1 shows the city’s existing street and highway system according to the functional classifications as described above. The designation is based on the functional character of the streets within the overall street system, even if these functions differ from official designations. The specific roads are described in detail in Section 2.1 of Appendix D.

Table 3.16-3 lists the arterial and collector roads in West Sacramento.

**Table 3.16-3. Arterial and Collector Roadways**

Direction	Major Arterials	Minor Arterials	Collectors
East-west	Sacramento Avenue/Reed Avenue West Capitol Avenue Tower Bridge Gateway Southport Parkway Lake Washington Boulevard	Industrial Boulevard “C” Street Linden Road Village Parkway	Anna Street
			Cummins Way
			Evergreen Avenue
			Park Boulevard
			Fifteenth Street
			Michigan Boulevard
			Merkley Avenue
			Higgins Road
			Del Monte Street
			Lighthouse Drive
North-south	Harbor Boulevard Jefferson Boulevard Village Parkway	Enterprise Boulevard North Harbor Boulevard	5th Street
			Westacre Road
			South River Road
			3rd Street
			Kegle Drive
			Bryte Avenue

The City has established guidelines for the maximum desirable volume on individual roadway segments based on the number of travel lanes and the segment’s type and location. For an arterial or



**Legend**

Existing Arterial/Collector Lanes (Both Directions)

- 2
- 4
- 6

Existing Freeway Lanes (Per Direction)

- 2
- 4
- 6
- 4+



Not to Scale

Source: DKS, 2016.

**Figure 3.16-1**  
**Existing Street and Highway System**

nonresidential collector roadway segment that exceeds the “maximum desirable daily volume,” a detailed analysis is required to determine if that segment should be widened to accommodate additional travel lanes; the analysis includes intersection LOS analysis and determining the logical segment that should be widened. These volumes are listed in Table 3.16-4.

**Table 3.16-4. Maximum Desirable Daily Volume—Roadway Segments**

Facility Type	Number of Lanes	Maximum Desirable Daily Volume <sup>a</sup>	
		Urbanizing Areas	Other <sup>b</sup>
Local residential	2	4,500	2,000
Residential collector with access	2	8,000	4,800
Residential collector without access	2	10,000	8,000
Arterial, low access control	2	15,000	12,000
(4+ stops/mile, many driveways, 25–35 mph)	4	30,000	24,000
	6	45,000	36,000
Arterial, moderate access control	2	18,000	14,400
(2-4 stops/mile, few driveways, 35–45 mph)	4	36,000	28,800
	6	54,000	43,200
Arterial, high access control	2	20,000	16,000
(1–2 stops/mile, no driveways, 45–55 mph)	4	40,000	32,000
	6	60,000	48,000
Rural, 2-lane highway	2	22,900	7,900
Rural, 2-lane road, 24–36’ paved, shoulder	2	20,000	7,100
Rural, 2-lane road 24–36’ paved, no shoulder	2	17,000	5,900

Source: DKS Associates based on City of West Sacramento Traffic Impact Analysis Guidelines, 2006.

<sup>a</sup> For roadway segments that exceed the maximum desirable daily volume, detailed analysis is required to determine if segment should be widened to accommodate additional travel lanes; this analysis should consider intersection LOS and determining the logical segment to be widened.

<sup>b</sup> The volume threshold for determining where studies are required to determine if additional travel lanes are needed is higher in the urbanizing areas than other areas of the city.

## Traffic Conditions

### Traffic Volumes

Traffic counts were performed by the City’s traffic consultant as described in Section 2.1 of Appendix D to identify existing levels of traffic congestion.

### Traffic Operating Conditions

As described in Appendix D, levels of service were calculated for each of the freeway mainline segments, freeway ramp junctions and weaving segments, major roadway segments, and intersections. These determinations were based on the LOS criteria shown in Tables 3.16-1 and 3.16-2. Table 3.16-5 lists the features that operate at an unacceptable LOS. Complete LOS results of the traffic analysis are presented in Appendix D. Figure 3.16-2 depicts LOS at key intersections and road segments that exceed maximum desirable daily volumes.

**Table 3.16-5. Road Segments and Intersections Operating at Unacceptable Levels of Service**

Facility	Description	A.M. LOS	P.M. LOS
I-80	Westbound mainline: US 50–West Capitol Ave	F	
	Eastbound weave: Enterprise Blvd–US 50 ramps		F
US 50	Eastbound mainline: I-80–Harbor Blvd		F
	Eastbound weave: South River Rd–I-5 ramps	F	F
	Westbound weave: I-5 ramps–South River Rd/Jefferson Blvd	F	F
Jefferson Blvd*	Linden Rd (South)–Davis Rd	–	–
Kegle Dr**	Anna St–Sacramento Ave	–	–
Harbor Blvd*	US 50 Eastbound ramps–Industrial Blvd	–	–
Intersections	Jefferson Blvd & Sacramento Ave		D
	Jefferson Blvd & Park Blvd/US 50 Westbound ramps	E	
	Jefferson Blvd & Devon Ave/Gateway Dr		E
	Jefferson Blvd & Lake Washington Blvd	E	E
	Jefferson Blvd & Linden Rd (North)	F	D
	Jefferson Blvd & Marshall Rd	F	
	Harbor Blvd & Industrial Blvd	E	D
	Tower Bridge Gateway & 5th St		D

\* These road segments exceed maximum desirable daily volumes as shown in Table 3.16-4.

\*\* Unlike arterial and non-residential collector roadways, the maximum desirable daily volume on a residential street (see Table 2) is defined based on livability, not acceptable traffic operations. Table 3.16-4 includes the City's residential collector streets.

## Bicycle and Pedestrian System

West Sacramento streets serve as the connection for bicycle traffic between the cities of Sacramento and Davis. West Capitol Avenue provides the direct connection from the bicycle path across the Yolo Causeway to the Tower Bridge.

Existing bicycle facilities in West Sacramento are described in Section 2.2 of Appendix D and illustrated in Figure 3.16-3.

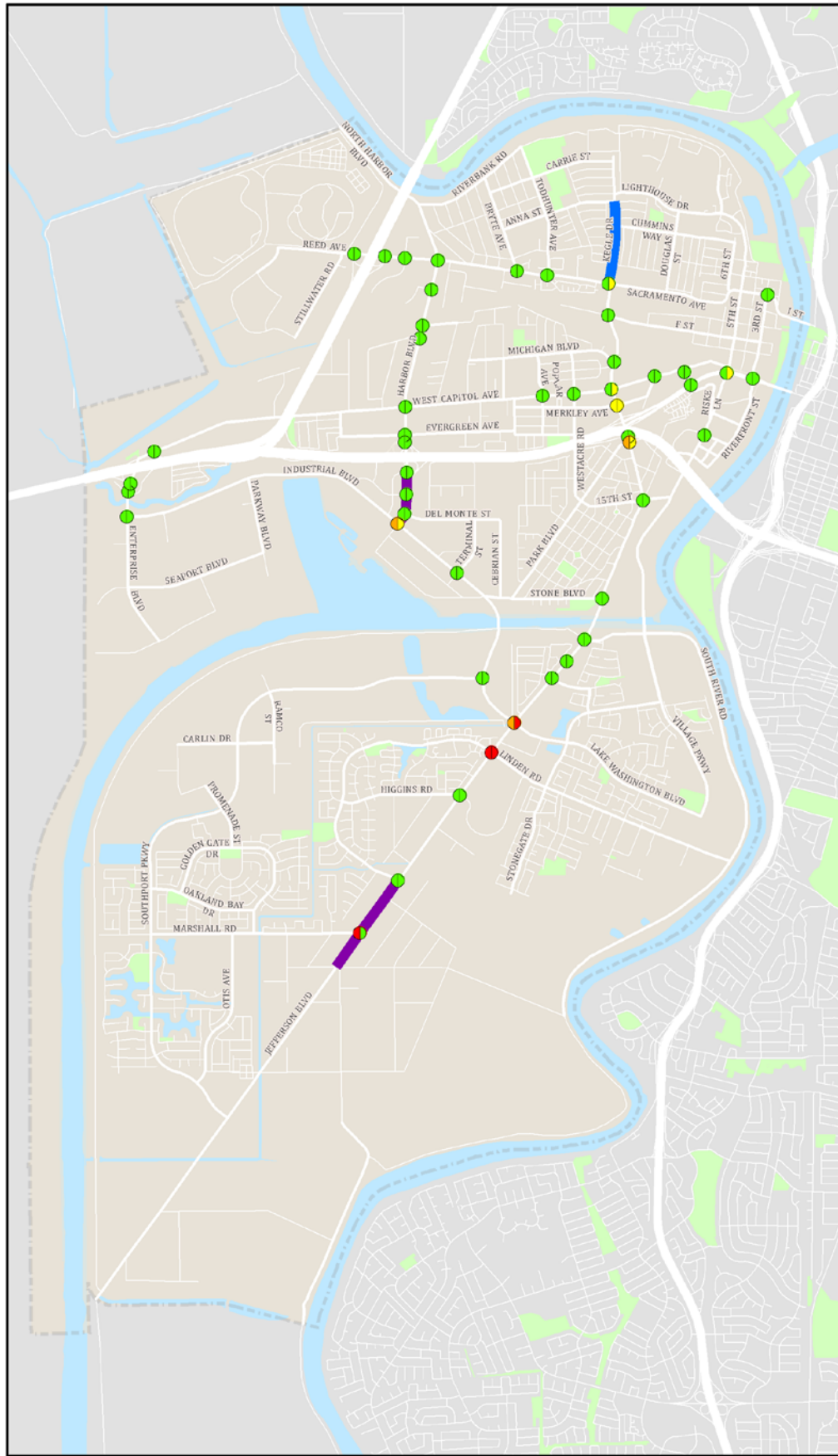
Existing pedestrian facilities in the city are described in Section 2.4 of Appendix D.

## Public Transit Service

West Sacramento is served by a combination of local and regional bus, rail, and air transportation.

- YOLOBUS
- Sacramento Regional Transit bus and light rail
- Amtrak
- Sacramento International Airport

Each of the transit services is described in Section 2.4 of Appendix D.



**Legend**

AM Peak Hour Intersection LOS

- A, B, & C
- D
- E
- F

PM Peak Hour Intersection LOS

- A, B, & C
- D
- E
- F

**Exceeds Desirable Daily Volume**

- Residential Collector
- Other Collector or Arterial

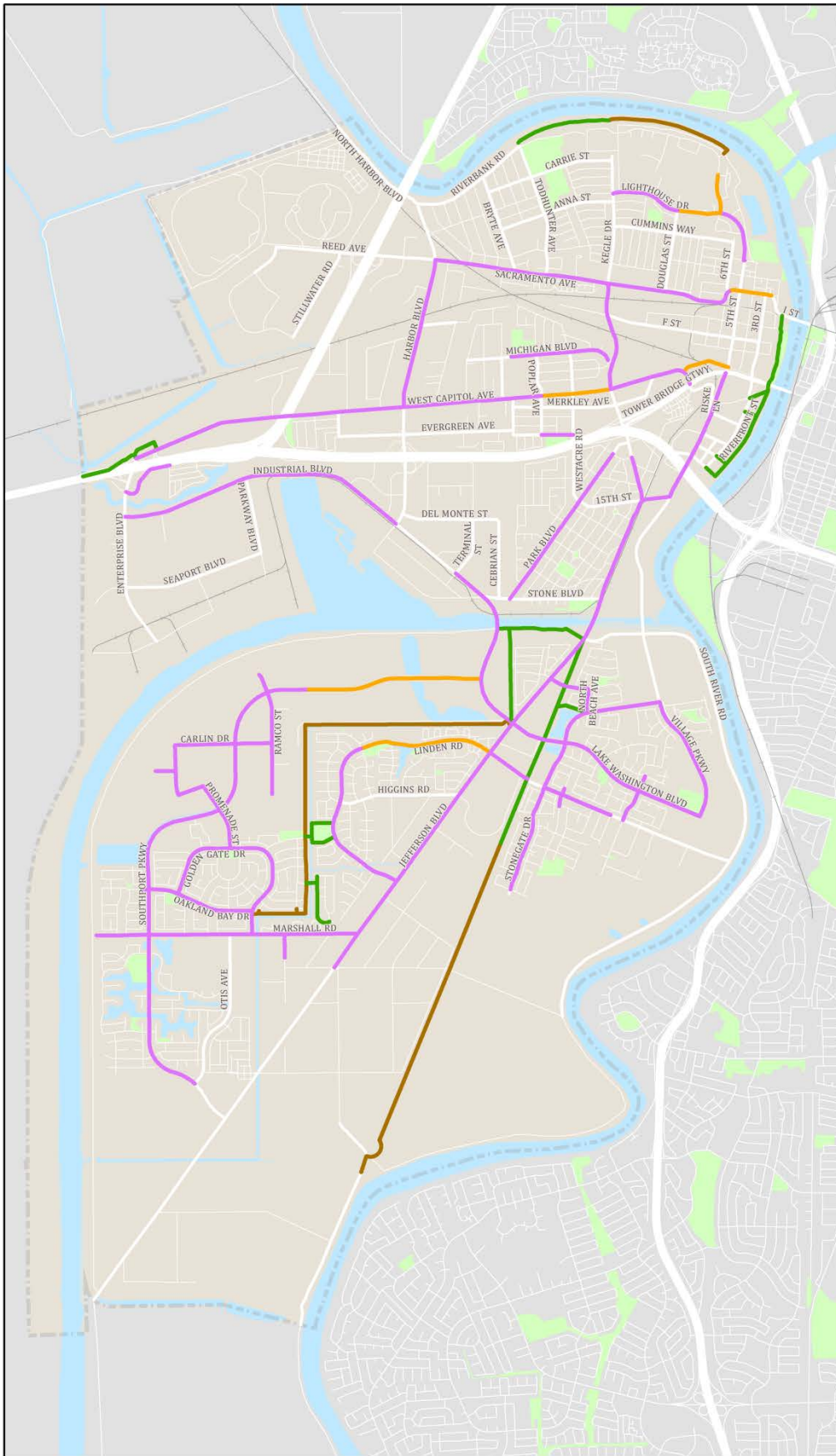


Not to Scale

Source: DKS, 2016.

**Figure 3.16-2**  
**Existing Levels of Service (LOS)**





**Legend**

Bicycle

- Class I Bike Path
- Class II Bike Lane
- Class III Bike Route
- Unpaved Bike Path



Source: DKS, 2016.

**Figure 3.16-3**  
**Existing Bicycle Facilities**

The existing YOLOBUS fixed-route service serving West Sacramento is detailed in Table 11 of Appendix D and illustrated in Figure 3.16-4.

### **Park and Ride**

Currently, there are two park-and-ride lots in West Sacramento near Enterprise Boulevard and I-80. They are served by YOLOBUS Route 42. The YCTD Short Range Transit Plan (SRTP) recommends development of a park-and-ride facility near the Southport Town Center, which would be served by Route 39 and provide a meeting point for vanpooling. Vanpools also operate from the Westbridge shopping center at Lake Washington Boulevard and Southport Parkway.

## **3.16.2 Environmental Impacts**

This section summarizes the findings of the *Transportation Impact Analysis* presented in Appendix D.

### **Methods for Analysis**

The *Transportation Impact Analysis* evaluated the changes in traffic that would result from growth projected to occur under the General Plan update. The two horizons (2020 and 2035) described in Chapter 2, *Project Description*, were used to project future growth, and specific growth projections as described in Appendix D formed the basis for traffic projections.

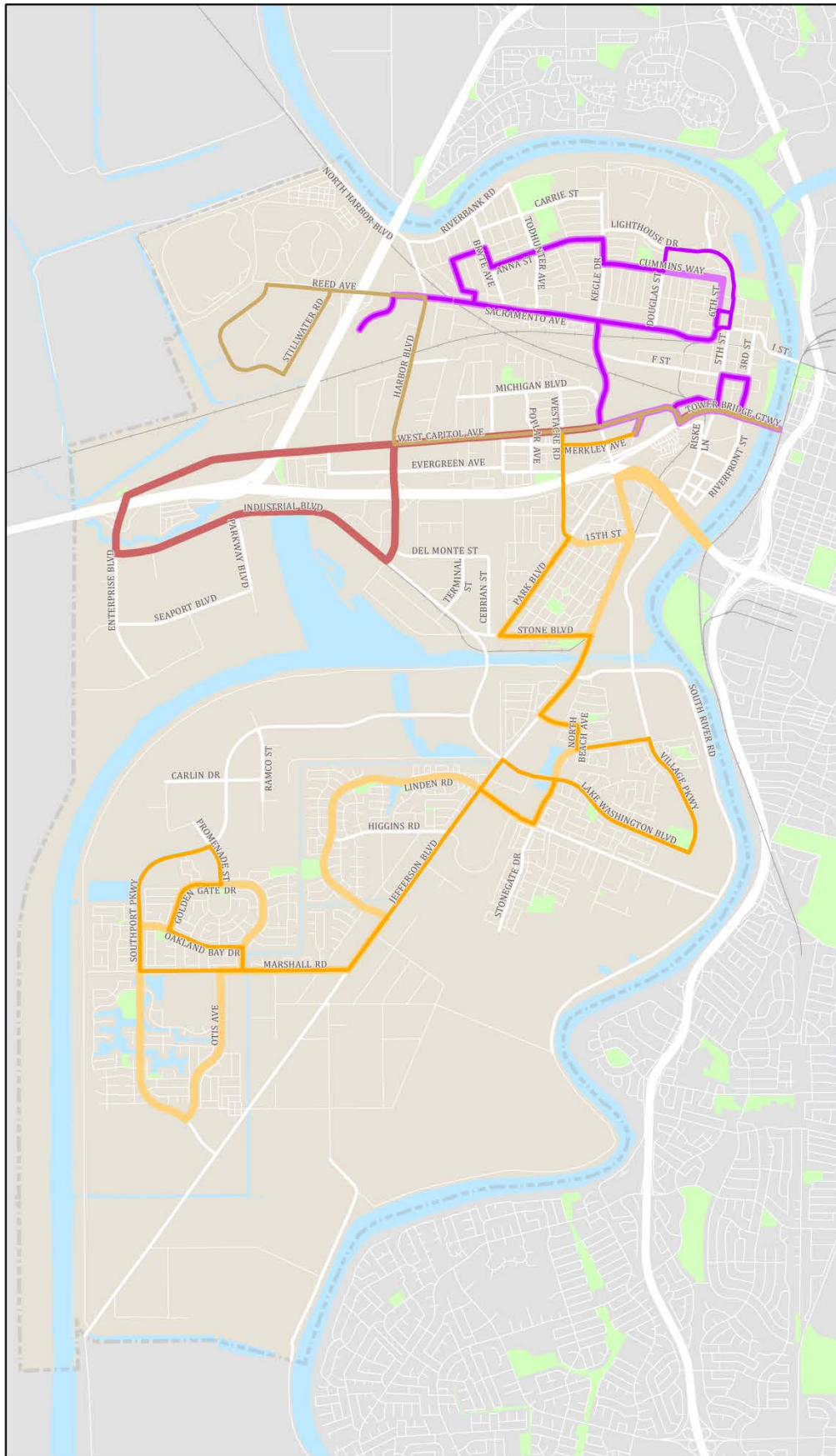
### **Thresholds of Significance**

In accordance with CEQA, the effects of a project are evaluated to determine if they would result in a significant adverse impact on the environment. The standards of significance in this analysis are based on current practice of the appropriate regulatory agencies. The following thresholds were used to determine if an impact would be significant or if mitigation would be required.

- **Signalized Intersections**
  - A signalized intersection deteriorates from an acceptable LOS to an unacceptable LOS.
  - The average delay increases by more than 5 seconds at a signalized intersection operating at an unacceptable LOS without the project.
- **Unsignalized Intersections**
  - An unsignalized intersection deteriorates from an acceptable LOS to an unacceptable LOS, based on average conditions across all movements, causing the intersection to meet traffic signal warrants.
  - At an unsignalized intersection that meets signal warrants, the average delay increases by more than 5 seconds for an intersection operating at an unacceptable LOS without the project.
- **Freeway Ramps**
  - A freeway ramp deteriorates from an acceptable LOS to an unacceptable LOS based on thresholds defined by Caltrans.
  - Any increase in volume on a freeway ramp operating at an unacceptable LOS, even though the CSMP may allow a concept LOS F.



- **Freeway Segments**
  - A freeway segment deteriorates from an acceptable LOS to an unacceptable LOS as defined in the Caltrans Route Concept Report for that facility.
  - Any increase in volume on a freeway segment operating at an unacceptable LOS, even though the CSMP may allow a concept LOS F.
- **Arterial and Collector Roads**
  - The daily traffic volume on an arterial or collector roadway segment increases from an acceptable level to a level greater than the maximum desirable daily volume.
- **Residential Streets**
  - The volume on a residential street increases from an acceptable level to a level greater than the maximum desirable volume.
  - For Residential Collector Streets, the ADT changes in any of the following ways.
    - If ADT is greater than 9,000 (90% of capacity), and project-related traffic results in a net increase of 50 trips or more.
    - If ADT is between 5,000 (50% of capacity) and 9,000, and the project-related traffic increases the ADT by at least 12.5% or exceeds 9,000.
    - If ADT is less than 5,000, and project-related traffic increases the ADT by 25%.
  - For Local Residential Streets, the ADT changes in any of the following ways.
    - If ADT is greater than 1,350 (90% of capacity), and project-related traffic results in a net increase of 25 trips or more.
    - If ADT is between 750 (50% of capacity) and 1,350, and project-related traffic increases the ADT by at least 12.5% or exceeds 1,350.
    - If ADT is less than 750, and project-related traffic increases the ADT by 25%.
- **Bicycle and Pedestrian Facilities**
  - An existing bikeway or pedestrian facility is adversely affected such that access and/or usage of the facility is discouraged or conflicts are created.
  - Aspects defined in the City's Bicycle and Pedestrian Path Master Plan are affected.
- **Transit**
  - The project adversely affects public transit operations.
  - The project fails to adequately provide access to transit.
- **Air Transportation**
  - The project results in a change in air traffic patterns, including either an increase in traffic levels or a change in location, that results in substantial safety risks.



**Legend**

- Route 35
- Route 39
- Route 40
- Route 41
- Route 240
- Route 241



Source: DKS, 2016.

**Figure 3.16-4**  
**Existing Bus Routes**

## Impacts and Mitigation Measures

### Impact TRA-1: Deterioration of intersection level of service (significant and unavoidable)

The project traffic study in Appendix D presents the results of the LOS analysis. A summary is presented here.

An LOS analysis was completed for each of the future year scenarios to determine project impacts in accordance with both the current General Plan and the proposed new General Plan LOS policy. LOS analysis for the 2020 horizon is summarized in Table 25 of Appendix D. The results are presented in Table 26 of Appendix D. The LOS analysis for the 2035 horizon is summarized in Table 27 of Appendix D. The impacts are summarized in Table 28 of Appendix D. The intersections that would function below the LOS standards are shown in Table 3.16-6. Where the intersection would exceed both the existing and the proposed LOS standard, the LOS level is highlighted in **bold**.

**Table 3.16-6. Intersections Projected to Function Below LOS Standards**

Intersection	Intersection LOS Policy		2020 LOS Exceedance		2035 LOS Exceedance	
	Existing GP	Proposed GP	A.M. Peak	P.M. Peak	A.M. Peak	P.M. Peak
Jefferson Blvd & Sacramento Ave	C	C	-	<b>D</b>	<b>D</b>	<b>D</b>
Jefferson Blvd & Triangle Court/F St	C	C	-	-	<b>D</b>	<b>E</b>
Jefferson Blvd & Park Blvd/ US 50 Westbound Ramp	D	D	-	-	<b>F</b>	<b>E</b>
Jefferson Blvd & Lake Washington Blvd	C	C	<b>D</b>	<b>D</b>	<b>D</b>	<b>E</b>
Jefferson Blvd & Linden Rd North	C	C	<b>D</b>	<b>D</b>	<b>D</b>	-
Jefferson Blvd & Higgins Rd	C	C	-	-	<b>D</b>	-
Jefferson Blvd & Marshall Road	C	C	<b>D</b>	-	-	-
Harbor Blvd & Industrial Blvd			<b>D</b>	<b>D</b>	-	-
Lake Washington Blvd & Southport Pkwy	C	C	-	-	-	<b>D</b>
Riverfront Street/3rd St & Tower Bridge Gateway	D	E	-	-	<b>F</b>	<b>F</b>
I-80 Eastbound Ramps & Reed Ave	D	D	-	-	<b>E</b>	-
3rd Street & C Street	D	E	-	-	<b>F</b>	<b>F</b>

As detailed in Table 3.16-7, impacts on three of the five affected intersections in the 2020 year horizon could be mitigated with improvements assumed to be in place for the 2035 horizon year. For the remaining two intersections, the 2035 assumed improvements would lessen the severity of the impact, but full mitigation would not be feasible by the 2020 horizon year. Therefore, the LOS impacts at these two intersections would be significant and unavoidable.

**Table 3.16-7. Level of Mitigation Required at Intersections with LOS Impacts in 2020**

Intersection	2020 LOS (peak hour)		Level of Mitigation Required
	AM	PM	
<b>Mitigated by improvements assumed in the 2035 horizon year</b>			
Jefferson Blvd & Kagle Drive/ Sacramento Ave		D	Second northbound left turn lane, second eastbound through lane, and second westbound left turn lane
Jefferson Blvd & Marshall Rd	D		Second northbound and southbound through lanes and second eastbound left turn lane
Harbor Blvd & Industrial Blvd	D	D	Westbound left turn pocket and additional westbound through lane
<b>Improvements assumed in 2035 horizon year would lessen severity of impact</b>			
Jefferson Blvd & Lake Washington Blvd	D	D	Second eastbound through lane
Jefferson Blvd & Linden Rd North	D		Second southbound left turn lane
Source: DKS Associates 2015.			

The mitigation measures listed in Table 3.16-8 would be necessary to reduce the impacts to a less-than-significant level for the intersections listed in Table 3.16-6 that would exceed LOS standards in 2035. However, for the reasons described below, none of the mitigation measures are feasible.

At most locations, a high level of at-grade improvements (i.e., additional through lanes or turn lanes) could provide an acceptable LOS. However, existing development presents structural impediments to these improvements. Because of constrained right-of-way at these intersections, the high level of at-grade improvements outlined in Table 3.16-7 would have an unacceptable impact on adjacent uses. At some locations the at-grade improvements would require a roadway width or traffic control that is not acceptable because of its impact on pedestrians and bicyclists. At two intersections, grade separating two or more of the “critical movement” traffic flows at an intersection would be needed to provide an acceptable LOS. However, grade separations (e.g., an overpass or underpass) require significant right-of-way and would consequently affect adjacent uses. Grade separations would also affect access to adjacent uses, as well as access for pedestrian and bicyclist traffic.

Accordingly, the mitigation actions outlined in Table 3.16-8 would not be feasible. The LOS impacts at these intersections would be significant and unavoidable.

**Table 3.16-8. Level of Mitigation Required at Intersections with LOS Impacts in 2035**

Intersection	2035 LOS (peak hour)		Level of Mitigation Required
	AM	PM	
Jefferson Blvd & Kagle Drive/Sacramento Ave	D	D	Additional southbound through lanes and right turn pockets where there are shared movement lanes
Jefferson Blvd & Triangle Court/ F St	D	E	Eastbound and westbound left turn pockets
Jefferson Blvd & Park Blvd/US 50 Ramp	F	E	Dual northbound right turn lanes, dual westbound right turn lanes, eastbound right turn pocket, rework of signal control
Jefferson Blvd & Lake Washington Blvd	D	E	Grade separate critical movements
Jefferson Blvd & Linden Rd North	D		Additional through lanes on Jefferson Blvd and additional westbound right turn lane with protect + overlap phasing
Jefferson Blvd & Higgins Rd	D		Rework school site access
Lake Washington Blvd & Southport Pkwy		D	Additional northbound left turn lane and additional eastbound left turn lane
Riverfront Street/3rd St & Tower Bridge Gateway	F	F	Grade separate critical movements
I-80 Eastbound ramps & Reed Ave	E		Additional eastbound through lane and additional northbound right turn lane
3rd Street & C Street	F	F	Exact mitigations dependent on final design of new bridge crossing

Source: DKS Associates 2015.

### **Impact TRA-2: Deterioration of level of service for freeway ramps and segments (less than significant)**

Freeway mainline and ramp LOS was analyzed utilizing methodologies from the 2010 Highway Capacity Manual. Table 3.16-9 summarizes the results of the analysis. Freeway segments projected to operate at an unacceptable LOS are also shown in Table 3.16-9.

The analysis indicates that portions of the mainline and ramps along I-80 and US 50 currently operate at unacceptable LOS, and levels of congestion on the freeway will increase by 2035. While development in West Sacramento will contribute to the increase in congestion levels on I-80 and US 50, a significant amount of the growth in congestion will be due to trips that have neither their origin nor destination within the planning area and would consequently occur regardless of activity in West Sacramento.

**Table 3.16-9. Freeway Mainline Segments and Ramps Projected to Function below LOS Standards (peak hour)**

Intersection	2020 LOS Exceedance	2035 LOS Exceedance
<b>Mainline Segments</b>		
I-80 westbound: US 50–West Capitol Ave	A.M.	A.M.
US 50 eastbound: I-80 Junction	P.M.	P.M.
I-80 eastbound: Mace Blvd–Enterprise Blvd	–	A.M.
US 50 eastbound: I-80–Harbor Blvd	–	P.M.
US 50 eastbound: between Jefferson Blvd Ramps	–	P.M.
US 50 eastbound: South River Road–I-5	–	P.M.
<b>Ramps</b>		
I-80 eastbound entrance from Enterprise Blvd	P.M.	P.M.
I-80 eastbound–eastbound US 50	P.M.	P.M.
I-80 westbound entrance from I-80 westbound	P.M.	P.M.
I-80 westbound exit to West Capitol Ave	P.M.	P.M.
I-80 westbound entrance from eastbound West Capitol Ave	P.M.	P.M.
I-80 westbound entrance from westbound West Capitol Ave	P.M.	P.M.
US 50 eastbound entrance from South River Rd	A.M./P.M.	A.M./P.M.
US 50 westbound exit to South River Rd & Jefferson Blvd	A.M./P.M.	A.M./P.M.
I-80 westbound entrance from eastbound West Capitol Ave	–	A.M.
I-80 westbound entrance from westbound West Capitol Ave	–	A.M.

West Sacramento is currently participating in the I-5 Subregional Corridor Mitigation Program (SCMP), a multi-jurisdictional fee program to fund transportation improvements that will help reduce congestion (delay) on the State Highway System. When adopted, this program would dedicate traffic impact fees collected from new development projects to specific traffic improvement projects. Some of those improvements are not on the freeway mainlines, but on parallel roadway or transit facilities that serve to reduce the number of vehicles traveling on the mainline. Improvements funded by the SCMP Fee Program could include the streetcar project between Downtown Sacramento and West Sacramento and new Sacramento River crossings.

Caltrans agrees that payment of the SCMP fee under this program would adequately mitigate a development project's impact on the State Highway System under CEQA. This conclusion includes impacts that would be identified by freeway mainline LOS analysis and "merge and diverge" analysis where freeway ramps meet the freeway mainline. Accordingly, the City's participation in this program and compliance with Policy M-1.11 of the updated General Plan Mobility Element would ensure that this impact would be less than significant.

#### **M-1.11 Transportation Impact Studies**

The City shall require Transportation Impact Studies for all new development that identify, evaluate, and address impacts on all modes of travel. (*RDR/PSR*)

A development project applicant would still be required to evaluate and mitigate significant impacts on intersections where freeway ramps meet local roadways. Each development project would still be required to comply with CEQA and the applicable policies of the jurisdiction in which the

development is located, including preparation of appropriate traffic studies and identification of impacts and mitigation measures on the local street system.

**Impact TRA-3: Increase in daily traffic volumes on arterial or nonresidential collector road segments to from an acceptable level to a level greater than the maximum desirable daily volume (significant and unavoidable)**

As described in detail in Appendix D, the proposed modifications to the LOS policy focus on intersection operations rather than relying on roadway segment LOS. Nevertheless, segment analysis remains a valuable tool to identify roadway segments that may need widening. The City has established guidelines for the maximum desirable volume on roadway segments based on the number of travel lanes, type, and location (Table 3.16-4). Where a roadway segment exceeds the maximum desirable daily volume, a detailed analysis is required to determine if that segment should be widened to accommodate additional travel lanes; this analysis includes intersection LOS analysis and determination of the logical segment that should be widened.

As part of the General Plan update, the City is modifying its LOS policy, including allowing LOS E conditions in its urbanizing areas. Consequently, the threshold of traffic volume that triggers studies to determine the need for additional travel lanes will be higher in these areas than in the rest of the planning area. The City is also proposing a policy to allow exceptions to the LOS policy when other transportation goals are met and/or if non-vehicular modes are compromised.

Tables 33 and 34 in Appendix D compares daily volumes under the 2020 and 2035 scenarios, respectively with existing conditions and identifies those project volumes that exceed the maximum desirable daily volumes shown in Table 3.16-4. Roadway segments projected to operate at an unacceptable LOS are shown in Table 3.16-10.

**Table 3.16-10. Roadway Segments Projected to Exceed Maximum Desirable Daily Volume**

Segment	Exceeds LOS in 2020	Exceeds LOS in 2035
Jefferson Blvd: US 50 EB Ramps–15th St	Yes	No
Jefferson Blvd: Stone Blvd–Washington Blvd	Yes	No
Jefferson Blvd: Linden Rd (South)–Davis Rd	Yes	No
Harbor Blvd: US 50 eastbound Ramps–Industrial Blvd	Yes	No
C St: 5th St–3rd St	No	Yes
Enterprise Blvd: Industrial Blvd–Channel Drive	No	Yes
Harbor Blvd: Rice Ave–West Capitol Ave	No	Yes
Jefferson Blvd: US 50 eastbound Ramps–Lake Washington Blvd	No	Yes
Sacramento Ave: Jefferson Blvd/Kegle Dr–6th St	No	Yes
15th St: Jefferson Blvd–South River Road	No	Yes
Enterprise Blvd: I-80 eastbound ramps–Industrial Blvd	No	Yes

**2020 Conditions**

Projected development through 2020 would result in some roadway segments exceeding their maximum desirable daily volume.

The roadway segments listed below would have volumes that exceed the maximum desirable volume; however, the intersections along these segments are projected to operate within acceptable standards. Accordingly, it is assumed that the segments would operate acceptably.

- Jefferson Boulevard from US 50 eastbound ramps to 15th Street.
- Harbor Boulevard from US 50 eastbound ramps to Industrial Boulevard.

The roadway segments listed below would have volumes that exceed maximum desirable volume, and LOS at intersections along these roadway segments are projected to exceed acceptable standards. As discussed in Impact TRA-1, the physical constraints on widening created by existing development make mitigation infeasible. Accordingly, conditions on the following roadway segments cannot be feasibly mitigated.

- Jefferson Boulevard from Stone Boulevard to Lake Washington Boulevard.
- Jefferson Boulevard from Linden Road (South) to Davis Road.

### ***2035 Conditions***

2035 conditions take into account programmed street improvements that are expected to be in place by 2035. Projected development through 2035 would result in some roadway segments exceeding their maximum desirable daily volume.

The roadway segments listed below would have volumes that exceed the maximum desirable volume; however, the intersections along these segments are projected to operate within acceptable standards. Accordingly, it is assumed that the segments would operate acceptably.

- Enterprise Boulevard from Industrial Boulevard to Channel Drive.
- Harbor Boulevard from Rice Avenue to West Capitol Avenue.
- Enterprise Boulevard from I-80 eastbound ramps to Industrial Boulevard.

The roadway segments listed below would have volumes that exceed the maximum desirable volume, and intersections along these roadway segments are projected to exceed acceptable standards. Accordingly, conditions on the following roadway segments cannot be feasibly mitigated.

- Jefferson Boulevard from US 50 eastbound ramps to Lake Washington Boulevard.
- C Street from 5th street to 3rd Street.
- Sacramento Avenue from Jefferson Boulevard/Kegle Drive to 6th Street.
- 3rd Street from B Street to Tower Bridge Gateway.

As discussed in Impact TRA-1, the physical constraints on widening created by existing development make mitigation infeasible. Because some of these roadway segments exceed maximum desirable volume thresholds and include intersections that do not meet LOS standards, and cannot be feasibly mitigated, impacts at these roadway segments would be significant and unavoidable.

### **Residential Streets**

Although construction of additional lanes may be considered for arterials and major collectors to provide adequate capacity when these facilities exceed their maximum desirable daily traffic volume, such an approach is not appropriate for residential collectors and residential local streets. Most of the impacts on residential streets in the 2035 horizon would be a consequence of the City's



thresholds for growth in traffic volumes, rather than exceedance of the maximum desirable daily traffic volume. When the total traffic volume or growth in traffic volume on a residential street exceeds its threshold, the mitigation should focus on reducing that volume, not widening to accommodate that volume.

Methods to reduce impacts on streets with residential frontage can include improvements to parallel arterials, neighborhood traffic management, and traffic calming measures. While these types of mitigation measures would lessen the severity of the impacts, it is unknown if they would reduce the traffic volumes on any of the affected residential streets to the level required to fully mitigate the impact. Accordingly, the impacts at these residential streets would be significant and unavoidable.

**Impact TRA-4: Increase in daily traffic volumes on residential streets from an acceptable level to an unacceptable level (significant and unavoidable)**

As described in Section 4.1 of Appendix D, the City specifically considers growth on residential streets (local and collector streets) when determining traffic impacts. As shown in Appendix D, the following residential collector roadway is affected under 2020 conditions because it would exceed the maximum desirable daily volume for residential streets.

- Kagle Drive from Anna Street to Sacramento Avenue.

No residential streets exceed maximum daily volume thresholds for the 2020 scenario; however, the residential collector road segments listed below are projected to exceed maximum daily volume under 2035 conditions (Table 34 of Appendix D).

- Carlin Drive from Oates Drive to Ramco Street.
- Davis Road from Jefferson Boulevard to South River Road.
- F Street from Jefferson Boulevard to 2nd Street.
- Golden Gate Drive from Oakland Bay Drive to Marshall Road.
- Kagle Drive from Anna Street to Sacramento Avenue.
- Michigan Boulevard from Portsmouth Avenue to Jefferson Boulevard.
- Park Boulevard from Jefferson Boulevard to Stone Boulevard.
- Promenade Way from Ramos Drive to Golden Gate Drive.
- Riverbank Boulevard from North Harbor Road to Bryte Avenue.
- Stone Boulevard from Industrial Boulevard to Jefferson Parkway.
- Sunset Avenue from North Harbor Boulevard to Sacramento Avenue.
- Todhunter Avenue from Anna Street to Sacramento Avenue.
- 3rd Street from B Street to Tower Bridge Gateway.
- 6th Street from Cummins Way to C Street.

Constructing additional lanes may be considered to provide adequate capacity when arterials and major collectors exceed their maximum desirable volume; however, such mitigation is not appropriate for residential collectors and residential local streets because it may result in traffic speeds that are unsuitable for residential areas and could require unacceptable encroachments into residential properties. When the traffic volume on a residential street exceeds its desirable volume,

the mitigation should focus instead on reducing that volume. Methods to reduce impacts on streets with residential frontage can include improvements to parallel arterials, neighborhood traffic management, and traffic calming measures.

Policies M-3.9 and M-3.10, and Mobility Implementation Program 16 of the updated General Plan express the City's policy supporting such improvements.

#### **M-3.9 Local Neighborhood Streets**

The City shall require local streets that primarily serve residential neighborhoods be designed to discourage through-traffic and unsafe traffic speeds. *(RDR)*

#### **M-3.10 Traffic Calming**

The City shall support the installation of traffic calming features on streets with high pedestrian traffic and along neighborhood streets. *(RDR/MPSP)*

#### **Mobility Implementation Program 16**

The City shall continue its efforts to manage neighborhood traffic by incorporating traffic control measures and other improvements into existing and new residential and mixed-use neighborhoods. *(MPSP/SO)*

On some residential streets, compliance with these policies would not reduce volumes to less than the maximum daily volume. Accordingly, the impacts at these locations would be significant and unavoidable, and no additional mitigation is available.

#### **Impact TRA-5: Potential to conflict with adopted policies, plans, or programs regarding bicycle or pedestrian facilities, or otherwise decrease the performance or safety of such facilities (less than significant)**

The proposed Mobility Element of the General Plan update focuses on promoting, improving, and facilitating non-auto transportation. The Mobility Element contains policies supporting the expansion and maintenance of facilities and services related to bicycle and pedestrian modes. In addition, the Land Use and Mobility Elements of the General Plan update have been designed to complement one another to create compact and mixed-use development areas that support walking, bicycling, and transit service.

Policies in the General Plan update require new development to construct bicycle and pedestrian improvements, and by 2035 a significant portion of the facilities defined in the City's Bicycle and Pedestrian Path Master Plan will be implemented.

A review of the proposed Mobility Element of the General Plan update conducted as part of the *Transportation Impact Analysis* (Appendix D) did not reveal potential inconsistencies with other policies, plans, or programs supporting the provision of bicycle or pedestrian facilities or services.

It is not anticipated that the General Plan update would cause any existing or planned bikeway or pedestrian facility to be adversely affected such that access to or use of the facility is discouraged or conflicts are created. Consequently, the impacts of the General Plan update on bicycle and pedestrian circulation would be less than significant, and no mitigation is required.

**Impact TRA-6: Potential to adversely affect public transit operations, or fail to adequately provide access to transit (less than significant)**

Transit service within West Sacramento is primarily provided by Yolobus. The analysis of the General Plan update in the *Transportation Impact Analysis* (Appendix D) assumes that the transit service improvements projected in SACOG's MTP/SCS would be in place by 2035. These improvements include construction of a streetcar line and a substantial increase in bus service.

It is not anticipated that the General Plan update would adversely affect public transit operations or access to public transit services. Accordingly, the impacts of the General Plan update on public transportation would be less than significant, and no mitigation is required.

**Impact TRA-7: Potential to result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks (less than significant)**

The closest public airport is Sacramento Executive Airport, approximately 1.60 miles west of the southern portion of the city. The planning area is not within the safety zone of Sacramento Executive Airport (Airport Land Use Commission 1998:Figure 11) or the Sacramento International Airport (Airport Land Use Commission 2013:Map 3); however, it is within the airport influence area of Sacramento International Airport (Airport Land Use Commission 2013:Map 5). No change in air traffic patterns would directly result from implementation of the General Plan update.

Additionally, because West Sacramento is outside the safety zone of both airports, implementation of the General Plan update would not represent a constraint to operations of the airports in a way that would affect traffic levels. Hazards related to air traffic are discussed in Impact HAZ-5.

### 3.16.3 References Cited

- Airport Land Use Commission. 1998. *Sacramento Executive Airport Comprehensive Land Use Plan*. Sacramento, CA.
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- California Department of Transportation. 2009. *Interstate 80 and Capital City Freeway Corridor System Management Plan*. May. Caltrans District 3. Available: [http://www.dot.ca.gov/dist3/departments/planning/csmp/2009%20CSMPs/180\\_final\\_csmp\\_FINAL,7-21-9.pdf](http://www.dot.ca.gov/dist3/departments/planning/csmp/2009%20CSMPs/180_final_csmp_FINAL,7-21-9.pdf). Accessed: December 1, 2015.
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## 3.17 Utilities and Service Systems

### 3.17.1 Existing Conditions

#### Regulatory Setting

This section describes the federal, state, and local regulations related to utilities and service systems that would apply to the project.

#### Federal

##### Clean Water Act

The Clean Water Act (CWA) governs surface water quality protection by employing a variety of regulatory and non-regulatory tools to reduce direct pollutant discharges into waterways, finance municipal wastewater treatment facilities, and manage polluted runoff. Section 402 of the CWA establishes the National Pollutant Discharge Elimination System (NPDES) program to prohibit discharge without a permit. The U.S. Environmental Protection Agency (EPA) has established application requirements for stormwater permits that include providing quantitative analytical data identifying the types of pollutants present in a facility's effluent. The Phase II regulations amended in 1999 include small municipal separate storm sewer systems (MS4s).

#### State

##### California Environmental Quality Act

CEQA requires an EIR to discuss whether a project's projected demands are anticipated to exceed the capacity of existing and planned utility systems, such as water, wastewater treatment, and solid waste disposal. Under CEQA, an EIR must adequately address the reasonably foreseeable impacts of providing utility and service systems to the project. The EIR must also disclose if current utility and service systems are inadequate with respect to serving the projected level of development as well as the expected impacts of upgrading such systems.

##### California Water Plan

The California Water Plan, prepared by the California Department of Water Resources (DWR), was most recently updated in 2009. The plan provides a framework that water managers, legislators, and the public can use when considering options and making decisions regarding California's water future. The plan, which is updated every 5 years, presents basic data and information regarding California's water resources, including water supply evaluations and assessments of agricultural, urban, and environmental water uses, to quantify the gap between water supplies and uses. The plan also identifies and evaluates existing and proposed statewide demand management and water supply augmentation programs and projects to address the state's water needs. The plan provides resource management strategies and recommendations for strengthening integrated regional water management. A resource management strategy is a project, program, or policy that helps local agencies and governments manage their water and related resources. The resource management strategies help regions meet future demands and sustain the environment, resources, and economy;

involve communities in decision making; and meet various goals. These strategies can reduce water demand, improve operational efficiency, increase water supply, improve water quality, and improve flood management. They can also improve resource stewardship practices.

### **California Integrated Waste Management Act**

The California Integrated Waste Management Act of 1989 (Assembly Bill [AB] 939) requires each city and county in California and regional solid waste management agencies to enact plans and implement programs to divert 25% of their waste stream by 1995 and 50% by 2000.

The law also requires each city to prepare, adopt, and submit Source Reduction and Recycling Elements (SRREs) to the county that include the following: waste characterization, source reduction, recycling, composting, solid waste facility capacity, education and public information, funding, special waste (e.g., asbestos, sewage sludge), and household hazardous waste.

### **AB 75 and AB 341**

AB 75 (Public Resources Code Sections 42920–42977) required all state agencies and large state facilities to divert at least 25% of all solid waste from landfills by January 1, 2002, and 50% by January 1, 2004. The law also requires each agency to submit an annual report to CalRecycle that summarizes its yearly progress with respect to implementing waste diversion programs.

AB 341 of 2011 expanded the recycling requirements for commercial businesses and multifamily residences. Any business that generates 4 cubic yards or more of waste per week and multifamily residences with five or more units are now required to have recycling service. AB 341 established a state policy goal requiring that “not less than 75 percent of solid waste generated be source reduced, recycled, or composted by the year 2020, and annually thereafter.” Unlike AB 75, which focuses on local diversion, AB 341 requires the state, primarily through CalRecycle, to take a statewide approach to decreasing California’s reliance on landfills. CalRecycle is developing strategies to implement this goal, such as diverting organic waste from landfills, continuing to reform the Beverage Container Recycling Program to improve the level of recycling, expanding recycling/manufacturing infrastructure through permitting/compliance assistance and financing, exploring new models for state and local funding of materials management programs, promoting state procurement of postconsumer recycled-content products, and promoting extended producer responsibility (California Department of Resources Recycling and Recovery 2014).

### **Title 27 of California Code of Regulations, Division 2**

In accordance with California Code of Regulations (CCR) Title 27, Sections 21600–21900, solid and hazardous waste transfer and disposal facilities in West Sacramento are regulated jointly by the California Regional Water Quality Control Board, Central Valley Region (Central Valley Water Board) and CalRecycle. Both the Central Valley Water Board and CalRecycle regulate facilities individually through permits.

### **Sanitary Sewer Overflow Program**

The Sanitary Sewer Overflow Program addresses any overflow, spill, release, discharge, or diversion of untreated or partially treated wastewater from a sanitary sewer system. The Statewide General Waste Discharge Requirements for Sanitary Sewer Systems, Water Quality Order (WQO) No. 2006-0003, requires public agencies that own or operate sanitary sewer systems to develop and implement sewer system management plans (State Water Resources Control Board 2015).

## Local

### **Sacramento Regional County Sanitation District**

The Sacramento Regional County Sanitation District (SRCS D) is responsible for wastewater treatment in the greater Sacramento area. SRCS D owns and operates the Sacramento Regional Wastewater Treatment Plant (SRWTP), located near Elk Grove, and the regional wastewater conveyance system that carries wastewater to the plant.

SRCS D provides wastewater conveyance and treatment services to residential, industrial, and commercial customers in unincorporated Sacramento County; the cities of Citrus Heights, Elk Grove, Folsom, Rancho Cordova, Sacramento, and West Sacramento; and the communities of Courtland and Walnut Grove.

The SRWTP's permitted capacity is 181 million gallons per day (mgd) (Dobson pers. comm.).

SRCS D does not anticipate the need to increase the capacity of the SRWTP before 2035. This projection is based on both anticipated changes in population, as determined by the Sacramento Area Council of Governments (SACOG), and water consumption behavior in the SRCS D service area (Dobson pers. comm.).

### **City of West Sacramento**

#### ***2005 Water Master Plan***

The City prepares a water master plan "to evaluate the existing system, define required improvements, and propose new infrastructure to support the City's projected growth in the future." The plan describes how the City will improve its water system to meet future demand, including capital improvements needed to meet the reliability requirements of supplying potable water for future demand, storage, and conveyance (City of West Sacramento 2005).

#### ***2010 Urban Water Management Plan***

As required by the California Water Code, urban water suppliers in California must prepare and adopt an Urban Water Management Plan (UWMP) every 5 years. The purpose of the UWMP is to support long-term resource planning and ensure that adequate water supplies are available to meet existing and future water demands. The UWMP is submitted to DWR, who determines whether the plan satisfies the requirements of the Urban Water Management Planning Act of 1983, its amendments, and other applicable regulations. *Urban water suppliers* are defined as suppliers who service more than 3,000 connections or supply more than 3,000 acre-feet (af) of water annually. The City meets both these criteria, and its most recent UWMP was adopted in 2010.

#### ***2003 Wastewater Master Plan***

The City prepared a Wastewater Master Plan to assess existing conditions of the system north of the Barge Canal, project future growth, and describe modifications required to connect to the Lower Northwest Interceptor (LNWI). This plan describes how the City will maintain and improve its wastewater collection system to meet future regulations and demand, including a phased capital improvement plan for the modifications needed in order to be incorporated into the SRCS D system (City of West Sacramento 2003a).

**2003 Southport Sanitary Sewer Master Plan**

The City prepared a sanitary sewer master plan to guide development of the wastewater collection system in the Southport area of the City. This plan describes improvements and new infrastructure to meet future demands, including interim service facilities in preparation for integration into the SRCSD system (City of West Sacramento 2003b).

**2007 Sewer System Management Plan**

As required by WQO No. 2006-0003, public agencies that own or operate sanitary sewer systems must prepare and adopt a Sewer System Management Plan (SSMP) and update it every 5 years. The purpose of the SSMP is “to provide proper and efficient management, operation, and maintenance of the sanitary sewer system, while taking into consideration risk management and cost-benefit analysis.” A sanitary sewer system is defined as more than 1 mile of pipes or sewer lines that convey wastewater to a publicly owned treatment facility. The City meets this criterion, and its most recent SSMP was adopted in 2007 and updated in 2009 (City of West Sacramento 2007).

**2001 Southport Drainage Master Plan**

The City prepared a drainage master plan to evaluate and update the 1995 Southport Drainage Master Plan. This plan describes the drainage facilities required to accommodate development in the Southport area, including probable improvement costs and revised drainage impact fees (City of West Sacramento 2001). The plan has been incrementally updated as new development projects have been approved (with the exception of the Yarbrough and River Park projects).

**2003 Stormwater Management Program**

The City prepared a stormwater management program (SWMP) “to address stormwater quality within the City’s jurisdiction” in compliance with the Phase II NPDES permit for MS4s. This program addresses a wide variety of activities and measures to control and manage stormwater runoff. The SWMP includes stormwater control measures regarding construction activities, permanent stormwater controls for new development and major redevelopment, and municipal operations (City of West Sacramento 2003c).

**General Plan**

The following goals and policies in the Public Facilities and Services element of the current General Plan relate to utilities and service systems.

**Goal A:** To maintain an adequate level of service in the City’s water system to meet the needs of existing and future development.

**Policies:**

1. The City shall continue to use treated surface water from the Sacramento River as the principal source of domestic water for the city, relying on treated groundwater only to supply the port pressure zone and as an emergency backup to the surface water source. The City shall pursue as expeditiously as possible, acquisition of additional surface water rights necessary to accommodate projected water demand.
2. The City shall continue to expand and develop water treatment, distribution, and storage facilities to accommodate the needs of existing and planned development.

3. To minimize the need for the development of new water sources and facilities and to minimize sewer flows, the City shall promote water conservation both in City operations and in private development.
4. The City shall replace or repair old, leaking water lines as financially feasible.
5. The City shall ensure the provision of adequate fire-flow rates in all new development.
6. The City shall maintain fire hydrants.
7. The City shall, through a combination of water development fees and other funding mechanisms ensure that new development pays its fair share of the costs of water system improvements.

**Goal B:** To maintain an adequate level of service in the City's sewage collection and disposal system to meet the needs of existing and future development.

**Policies:**

1. The City shall selectively repair or replace sanitary sewers serving the existing community to remove excessive infiltration/inflow.
2. The City shall ensure the provision of adequate sewer service to all new development in the city and support the extension of sewer service to existing developed areas where this service is lacking.
3. The City shall expand and develop new wastewater treatment and disposal facilities to accommodate the needs of existing and planned development.
4. The City shall, through a combination of sewer development fees and other funding mechanisms, ensure that new development pays its fair share of the costs of sewer system improvements.
5. The City shall actively promote and enforce appropriate industrial pre-treatment standards and source control for toxic materials entering the sewer system. Realistic goals and implementation programs shall be prepared with the business community to ensure compliance with all EPA discharge requirements.

**Goal C:** To maintain an adequate level of service in the City's storm drainage system to accommodate runoff from existing and future development and to prevent property damage due to flooding.

**Policies:**

1. Where practical and economical, the City shall upgrade existing drainage facilities as necessary to correct localized flooding problems.
2. The City shall continue to expand and develop storm drainage facilities to accommodate the needs of existing and planned development.
3. The City shall form storm drainage districts as needed to ensure that needed storm drainage facilities are properly constructed, operated, and maintained.
4. The City shall, through a combination of drainage improvement fees and other funding mechanisms, ensure that new development pays its fair share of the costs of drainage system improvements.
5. The City shall cooperate with other responsible agencies in ensuring that levees protecting the City are maintained and improved to provide either i) a minimum 200-year flood protection level; or ii) the minimum level of flood protection for urban areas, as defined by an appropriate state or federal agency, whichever level is higher. Priority shall be given to the levees protecting the people and property within the existing City limits.



6. The City shall investigate the possibility of consolidating existing reclamation districts as a means of providing better levee maintenance and flood protection.
7. The City shall pursue available funding in order to achieve and maintain either i) a minimum 200-year flood protection level; or ii) the minimum level of flood protection for urban areas, as defined by an appropriate state or federal agency, whichever level is higher.
8. The City shall be proactive in educating and informing its residents and businesses of the risks and responsibilities of living within a levee system

**Goal D:** To provide for the collection and disposal of solid waste while minimizing the generation of waste.

**Policies:**

1. The city shall study and actively pursue methods of solid waste recycling and reuse, including source separation, with the goal of reducing its solid waste generation by 50 percent by the year 2000. Recycling methods that involve the production of energy shall be considered.
2. The City shall continue to require mandatory garbage collection throughout the City.
3. The City shall monitor the operations of garbage collection contractors to ensure that service levels are adequate.
4. The City shall maintain close contact with the Yolo County Public Works Department concerning the City's continuing use of the Yolo County Central Landfill and its capacity projections.

## **City of West Sacramento**

### ***Public Works Operations***

Public Works Operations is the largest division in the City's Public Works Department and is responsible for operating and maintaining the City's infrastructure. Public Works Operations is responsible for water treatment, utility maintenance, and environmental services.

### ***Water Treatment Division***

The Water Treatment Division operates the George Kristoff Water Treatment Plant for the City's drinking water supply.

### ***Utility Maintenance Division***

The Utility Maintenance Division consists of five sections: Street Maintenance, Water Distribution, Sewer Collection, Backflow Prevention, and Equipment and Vehicle Maintenance. This division is responsible for maintaining and repairing the City's underground utilities (such as water lines, sewers, and storm drains); maintaining and sweeping roads and surface streets; and installing and repairing street signs.

### ***Environmental Services Division***

The Environmental Services Division manages the City's solid waste. Its responsibilities include administering environmental programs and regulatory permits related to public health and environmental issues and providing staff for the City's water quality laboratory at the George Kristoff Water Treatment Plant (GKWTP), (formerly the Bryte Bend Water Treatment Plant).

## West Sacramento Stormwater Management Program

The City's blueprint for permit compliance with the CWA and California's NPDES permit process is its state-approved *City of West Sacramento Stormwater Management Program (SWMP) Planning Document*, which includes measures to help reduce the potential for pollutants to enter the storm drain system (City of West Sacramento 2003c). Each year, the City must submit annual reports to the Regional Water Board on its progress in implementing these measures. The City must implement BMPs that reduce pollutants in stormwater to the "maximum extent practicable" (MEP). MEP is the technology-based standard established in CWA Section 402(p)(3)(B)(iii). Technology-based standards establish the level of pollutant reductions that dischargers must achieve. MEP is generally a result of emphasizing pollution prevention and source control BMPs as the first lines of defense in combination with treatment methods, where appropriate. The MEP approach is an ever-evolving, flexible, and advancing concept that considers technical and economic feasibility. The way in which MEP is met may vary among communities (City of West Sacramento 2003c).

The MEP standard applies to municipalities regulated by the Small MS4 General Permit. Consistent with EPA guidance, the Small MS4 General Permit requires the City to develop and implement six "minimum control measures" (referred to as "program elements" for the SWMP). These six program elements are as follows.

- Public Education and Outreach.
- Public Involvement and Participation.
- Illicit Discharge.
- Construction Activities.
- New Development and Redevelopment.
- Municipal Operations.

In addition, the City may choose to include other program elements applicable to the community environment. In West Sacramento an additional program element is being considered to address the industrial facilities within the city. In choosing control measures and their associated BMPs for these program elements, the City considers technical feasibility, effectiveness, cost, and public acceptance (City of West Sacramento 2003c).

## Environmental Setting

### Water Supply

#### Sources

The Sacramento River is the City's main water source. The intake structure is located upstream of the confluence of the Sacramento and American Rivers at Bryte Bend. The water drawn from the Sacramento River is treated at the GWTP. This plant is administered by the City's Water Treatment Division and is operated 24 hours a day. To address population growth, the plant was expanded in 2004, increasing maximum capacity from 24 mgd to 58 mgd (City of West Sacramento 2015a). In 2006, the City produced a daily average of 14.5 mgd (City of West Sacramento 2009).

Prior to construction of the GWTP, potable water was supplied from numerous groundwater wells. Since the plant's construction, the City relies solely on surface water but has elected to maintain two

groundwater wells as an emergency supply (City of West Sacramento 2011). One well currently exists and is operational to supply groundwater as a backup supply. A second well is planned to be constructed as supplemental backup to replace a well that has recently collapsed (Mount pers. comm.). The City intends to provide groundwater as a backup supply with sufficient capacity to meet the demands of the northern portion West Sacramento outside the North Delta Water Agency's (NDWA's) boundary. The existing well produces a volume of 2.3 mgd; the supplemental well would increase the total volume to at least 2.9 mgd.

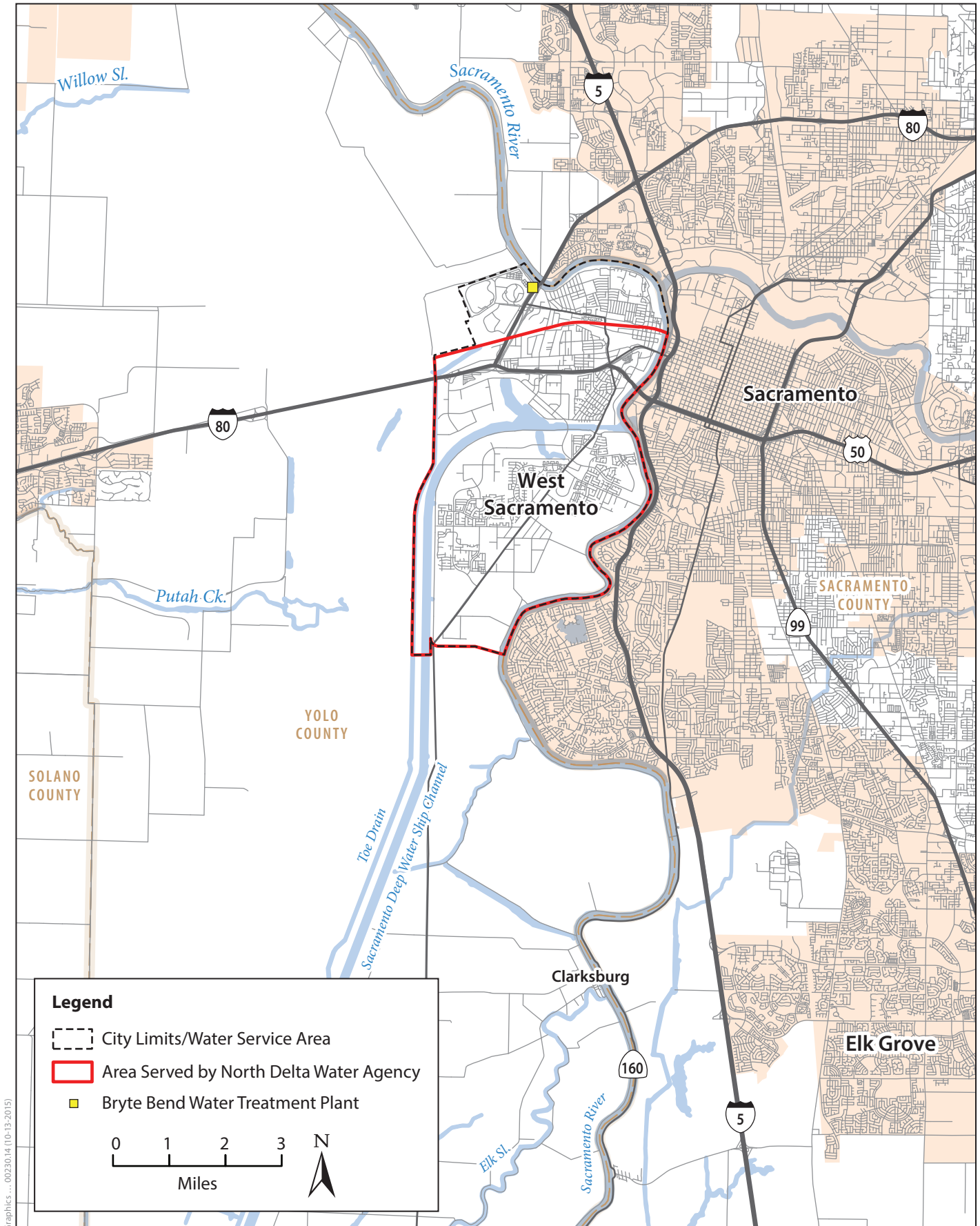
### **Availability**

The planning area is served by diversions from the Sacramento River in accordance with the City's appropriative right with the state as well as water available under contract with the U.S. Bureau of Reclamation (Reclamation). The combined maximum available water supply from these sources is 23,600 af per year (AFY) in an average year (City of West Sacramento 2011). During a Single Dry Year the combined maximum available from these sources is estimated to be 5,900 AFY. Factors that could affect water supply from the City's appropriative right include supply reductions, drought conditions, water quality objectives in the Delta, and diversions by more senior appropriative rights holders. Although the appropriative right supply is considered consistent for most of the year, it is unavailable during the high demand period of July through August and is typically reduced by varying amounts during June. Priority of surface water use goes to appropriative water, when available, as this supply is free of charge, then to Reclamation water as the secondary source of water when appropriative water is reduced or not available from June to September (City of West Sacramento 2011). Drought conditions are the primary factor that could affect water supply under the Reclamation contract. Contract water reductions in 1992 reduced allocations to 25% of normal; however, the City had adequate water through execution of its NDWA rights. The contract with Reclamation, made on July 1, 1980, with a 40-year term, requires renewal of the terms and conditions no later than 1 year prior to the expiration date—i.e., prior to July 1, 2019. The City anticipates that contract terms will be renewed on or before July 1, 2019, such that the water supply available under the Reclamation contract will remain substantially the same as now or will increase through the negotiations.

Most of the planning area is served by NDWA (Figure 3.17-1) and consequently, through both the State Water Project (SWP) and Central Valley Project (CVP), a generally dependable water supply of adequate quantity and quality has been available in all years. Historically, the City has not relied on the NDWA water as a base supply but instead as a backup supply. Factors that could affect supply include drastic reductions in Sacramento River water quality and increased salinity levels in the Delta, either of which may require water to be kept in the river rather than delivered to West Sacramento, or catastrophic interruptions to the source or water treatment plant. To address these and other scenarios that could interrupt the water supply, the City has developed a disaster/emergency response plan that includes the City's remaining groundwater well.

### **Demand**

Water demand projections in the 2010 UWMP were based on population projections from the 2009 SACOG projections. These projections also address Senate Bill x7-7, a water efficiency mandate to reduce urban per capita use by 20% by 2020. In response to the mandate, the UWMP established a baseline per capita water demand based on historical use and population, then applied use reductions in accordance with the mandate, resulting in interim and targeted per capita use of 275 and 244 gallons per capita daily (gpcd), respectively. Interim and targeted per capita uses multiplied



Graphics ... 0023014 (10-13-2015)



**Figure 3.17-1  
Water Service Areas**

by the 2009 SACOG population projections, including system losses, provide UWMP estimates for future demand projections.

The General Plan update utilizes the current 2035 SACOG population projection to estimate the city's 2035 population. Based on the current SACOG projection, the 2035 population is estimated to be 81,480, somewhat less than the population projection used in the 2010 UWMP. Based on the SACOG projection and the same per capita water demands, the revised 2035 demand is anticipated to be less than projected in the 2010 UWMP. Table 3.17-1 presents the demand projections to 2035 based on the 2010 UWMP.

**Table 3.17-1. Population and Demand Projections**

Year	2010	2015	2020	2025	2030	2035
2010 UWMP population	47,910	53,325	59,353	66,061	73,529	87,402
Demand (acre-feet per year)	13,107	16,418	16,243	18,079	20,123	23,920

Source: City of West Sacramento 2011.

Notes: Demand projections based on 275 gpcd in 2015, 244 gpcd 2020–2035. Projections include system losses.

### Water Quality Protection

The City participates in several source water protection programs to identify and minimize the sources of contamination: the Rice Pesticide Workgroup, the Keep-the-Waters-Clean Campaign, the Sanitary Survey of the Sacramento River Watershed, and the Drinking Water Source Assessment Program (City of West Sacramento 2015a).

### Distribution

The water utility meets the obligations of operating the water system, makes debt service payments, and constructs needed water system improvements by generating revenues primarily from water rates and water system impact fees. In this way, the water utility is generally self-sufficient financially. Sales tax revenues under the City's Measure K help to slightly lower water rates for all customers (City of West Sacramento 2005). Planned capital improvement projects will total approximately \$96.2 million (in 2005 dollars) over the 15-year period covered (2005–2020). Near-term improvements supported by water rates include water main replacements in advance of road improvements (Measure K projects), water meter installation on existing water services, and added water storage capacity. Many of these capital improvement projects will be financed by water rate revenues and water system impact fees. Most capital improvements needed for new construction will be constructed by developers (City of West Sacramento 2005).

The 2005 Water Master Plan (WMP) reviewed proposed development within the existing city limits and developed Average Daily Demand (ADD) estimates based on anticipated development and land use designations from the current General Plan. Maximum Day Demand (MDD) estimates were developed by multiplying the ADD by a peaking factor developed by reviewing historical production data and determining an appropriate factor. The WMP recommended a peaking factor of 2 for use in estimating the MDD. ADD and MDD for the then-existing and WMP projected 2020 conditions are presented in Table 3.17-2.

**Table 3.17-2. Existing and Projected Water Demand**

	ADD (mgd)	MDD (mgd)
2005 Development	13.1	26
2020 Buildout	26	52

Source: City of West Sacramento 2005.

The City is currently working on the 2015 Water Master Plan update and has projected the baseline hydraulic demand of the system to decrease due to reduced growth projections. In its current form, the 2015 Water Master Plan update provides for a range of ADD and MDD hydraulic demands dependent on a range of food hub scenarios. The plan estimates an ADD range of 26.6–29.1 mgd and an MDD range of 49.6–54.3 mgd (Carollo Engineers and City of West Sacramento 2015). These estimates are typically conservative to provide for a factor of safety, as evidenced by the higher per capita flowrates of 350 gpcd used in the analysis versus 244 gpcd used in the UWMP analysis. Should the city select to move forward with a higher demand scenario along with conservative per capita flowrates, distribution system improvements may be necessary to accommodate the increased peak demand.

The 2005 WMP identified numerous Capital Improvement Projects required to meet future demands, including upsizing of existing facilities and construction of new water utility infrastructure in response to anticipated growth. Specific improvements consist of a new pipeline intertie between the north and south portions of the City, transmission pipelines, new and upsized pump stations such as the inline booster pump station, and storage tanks.

The 2005 WMP projected a city buildout condition to occur by 2020, based on the 2000 General Plan. Since completion of the 2005 WMP, some agricultural lands have been rezoned to accommodate future residential and commercial development; the demands of these areas were not included in the WMP. Development has since slowed as a result of the 2008 recession, and the rezoned areas are not anticipated to develop within this updated General Plan horizon (Tilley pers. comm.). Additionally, the General Plan update planning horizon population is about 70% of theoretical citywide buildout; consequently, from a facilities planning perspective, the 2005 WMP plans for facilities improvements are consistent with meeting water demands under the current 2035 population projection of 81,480.

As of 2007, the distribution system included seven remote storage and pumping stations with a total storage of 14.4 million gallons. The booster pump stations have pumping capacities between 5 mgd to 12 mgd. The GKWTP also supports 8 million gallons of potable water storage and 40 mgd of pumping capacity. The City has recently (2009) completed and placed online the Southport Booster Pump Station, with a capacity of 42 mgd (City of West Sacramento 2009).

### Long-Term Supply and Demand

Appropriative/contractual water is available to the City annually in the amount of 23,600 AFY. Because of water available under the USBR contract, the supply is consistent year round, but is restricted during drought years or reduced to meet the State's water quality objectives. The 2010 UWMP identifies three supply reliability scenarios and their respective base year(s): Average Year (2005); Single-Dry Year (1992); and Multiple-Dry Years (1990–1992). Table 3.17-3 depicts the water supply scenarios based on the three historical conditions.

**Table 3.17-3. Supply Reliability—Historical Conditions (acre-feet per year)**

Average Water Year <sup>a</sup>	Single Dry Year <sup>b</sup>	Multiple-Dry Years <sup>c</sup>		
		Year 1	Year 2	Year 3
23,600	5,900	11,800	10,856	11,328
% of Avg. Year	25	50	46	48

Source: Adapted from City of West Sacramento 2011:Table 39.

<sup>a</sup> Reclamation Contract and Appropriative Right Supply. Does not include supply from North Delta Water Agency.

<sup>b</sup> 1992 conditions when diversion was limited by the State due to drought conditions.

<sup>c</sup> Multiple-dry year percentages based on DWR WSIHIST Sacramento Valley runoff during 1990–1992 as compared to the average runoff year of 2005.

Under the average year scenario, the water supply is adequate to supply projected demands to 2030 but is deficient by 320 AFY in 2035 based on the 2010 UWMP population projections. Under this scenario, NDWA water must provide for the additional water to satisfy the need on an average annual basis. Table 3.17-4 depicts the average supply against projected demand.

**Table 3.17-4. Supply and Demand Comparison—Average Year (acre-feet per year)**

Year	2015	2020	2025	2030	2035
USBR/Permit 18150 <sup>a</sup>	23,600	23,600	23,600	23,600	23,600
NDWA <sup>b</sup>	0	5,000	5,000	5,000	5,000
Total Supply	23,600	28,600	28,600	28,600	28,600
<b>Demand<sup>c</sup></b>	<b>16,418</b>	<b>16,243</b>	<b>18,079</b>	<b>20,123</b>	<b>23,920</b>

<sup>a</sup> Reclamation/Permit 18150 water is limited to a total supply of 23,600 acre-feet/year.

<sup>b</sup> Estimated usage from 2010 UWMP.

<sup>c</sup> Citywide demand.

Under the Single and Multiple-Dry year scenarios, the City would rely on NDWA water to provide an adequate quantity and quality of water for the parts of the City within the NDWA boundary during these periods of need. The Single Dry Year represents the limiting case. During the drought years of 1990–1992, the City’s supply was curtailed by 75%, resulting in a Single Dry Year allocation of 5,900 af of water in 1992. During that period, the City relied on NDWA water to meet a portion of the demand within the NDWA boundary. That portion of the City outside the northern NDWA boundary will be supplied water by appropriative/contractual entitlements only, or groundwater when appropriative/contract water is not sufficient to meet demands. Table 3.17-5 summarizes the 2010 UWMP supply and demand comparison for the Single Dry Year scenario.

**Table 3.17-5. Supply and Demand Comparison—Single Dry Year (acre-feet per year)**

Year	2015	2020	2025	2030	2035
<b>Supply</b>					
Reclamation/Permit 18150 <sup>a</sup>	5,900	5,900	5,900	5,900	5,900
NDWA <sup>b</sup>	10,518	10,343	12,179	14,223	18,020
<b>Total Supply</b>	<b>5,900</b>	<b>5,900</b>	<b>5,900</b>	<b>5,900</b>	<b>5,900</b>
<b>Demand</b>					
Non-NDWA Area <sup>c</sup>	3,021	3,248	3,248	3,248	3,248
Area within NDWA <sup>d</sup>	13,397	12,995	14,831	16,875	20,672

<sup>a</sup> 75% curtailment of normal diversions in water year 1992.  
<sup>b</sup> Water demands in adequate supply from NDWA after Reclamation water is utilized.  
<sup>c</sup> Demand for northern portion of the city outside NDWA boundary subject to entitlement reductions.  
<sup>d</sup> Served through NDWA contract with DWR for an adequate quantity and quality source of water.

## Wastewater

The City is responsible for collection and conveyance of wastewater in the planning area, and SRCSD is responsible for its treatment and disposal.

### City of West Sacramento

The City's wastewater system consists of eight sewer pump stations, five lift stations, and the underlying sewer pipes throughout the city. These pipelines are composed primarily of vitrified clay (VCP) and polyvinyl chloride (PVC) (Wells pers. comm.). As of 2007, the City connected this collection system to the SRCSD and decommissioned the City's West Sacramento Wastewater Treatment Plant.

A comprehensive long-term rehabilitation program was developed for the wastewater collection and conveyance system as a result of the 2003 Wastewater Master Plan condition assessment analysis on both the collection system and the pump stations. This program consists of the following components.

- Sewer cleaning and closed circuit television inspection of the sewer lines.
- Follow-up rehabilitation projects consisting of trenchless pipe lining and manhole rehabilitation.
- Pump station improvements to connect to the LNWI and for general maintenance and upgrade to the stations.

The 2003 Wastewater Master Plan also included an interim service plan to convey wastewater in the Southport area prior to connection to the SRCSD, which was constructed when the involved pump stations were complete. The interim pipelines will be abandoned and the planned ultimate connections from the pump stations will be constructed (Collier pers. comm.).

Some areas, including rural portions of the Southport area, are not connected to the wastewater collection system (i.e., they have septic systems). As these areas develop, the City's wastewater system is expected to be extended to provide service. Properties served by wells or septic systems remain under the authority of Yolo County.



The average dry weather flow (ADWF) generated by the City was measured at 4.7 mgd (Jon Wells pers. comm). In 1997 a peak wet weather flow (PWWF) of 15.3 mgd was recorded during wet weather events. In subsequent years, winters have been relatively dry and the 2002 flow study showed that wastewater flows during peak conditions was typically far less than pipe capacity.

Projected flows in the 2003 Wastewater Master Plan for the northern area of the city are based on existing flows plus the projected flows derived from land use data in the current General Plan (City of West Sacramento 2003a). Projected flows in the 2003 Southport Sanitary Sewer Master Plan are based on buildout according to land use in the current General Plan (City of West Sacramento 2001). The projected wastewater flows are presented in Table 3.17-6 (Jon Wells pers. comm ).

**Table 3.17-6. Projected Wastewater Flows (million gallons per day)**

Area	Average Dry Weather Flow	Peak Wet Weather Flow
North of the Shipping Channel	7.0	20.19
Southport	4.56	15.01
Total	11.56	35.20

### **Sacramento Regional Wastewater Treatment Plant**

The connection of the City's wastewater collection system to the SRSCD system is via the 19-mile LNWI at the West Sacramento Transition Structure next to the Parlin Ranch subdivision in Southport. Wastewater is conveyed through a 120-inch-diameter gravity pipe to the South River Pump Station and then pumped under the Sacramento River in a force main to the SRWTP north of Elk Grove. The gravity interceptor has a design capacity of 262 mgd, and is sized based on conservative buildout projections exceeding the current 2035 population projection. The South River Pump Station serves the West Sacramento and Natomas areas, and is planned to be completed in three phases with an ultimate design capacity of 250 mgd (Sacramento Regional County Sanitation District 2000). The first phase has been completed, and the second and third phases are planned, but have yet to be constructed (Sacramento Regional County Sanitation District 2013). The SRWTP provides advanced secondary treatment of wastewater for the planning area and metropolitan Sacramento County before discharging it to the Sacramento River south of Freeport.

SRSCD is constructing the EchoWater Project facility to meet stringent new treatment requirements from the State of California. The new treatment approach will include nutrient removal, filtration, and additional disinfection, but will not increase capacity.

### **Stormwater**

Stormwater—rainfall that flows through gutters and into storm drains— is managed in West Sacramento primarily by Reclamation District Number 900 and the City and to a smaller extent by Reclamation District 537. Facilities to carry stormwater include buried pipelines, roadside ditches and gutters, large capacity channels and pipelines, stormwater detention basins, pump stations, and levees. These facilities have typically been constructed and paid for in association with new development and are generally in good condition. However, those areas that rely on street flow with bubble up intersection crossings have had maintenance problems and are subject to clogging by debris in the winter and to becoming septic in the summer. Problems have been recurrent in the Park Boulevard, Meadow Dale, and Poplar Avenue areas and have been addressed by regular winter

cleaning. Problems have also occurred at the Westacre and West Capitol Avenue underpasses (City of West Sacramento 2009).

The City's storm water system's discharge is permitted under a state-approved Stormwater Management Plan, which includes measures to control and reduce the potential for pollutants to enter the storm drain system. The plan also addresses stormwater from new development and redevelopment projects. The City submits an annual report to the state documenting its progress in implementing the best management practices (BMPs) listed in the management plan (City of West Sacramento 2003c).

For the purpose of addressing planned development in the Southport area, the Southport Drainage Master Plan was adopted in 1995. This document was updated in 2001 to address changes in the Southport Framework Land Use Plan and develop drainage impact fees on new development (City of West Sacramento 2001).

Currently, the City does not have a drainage master plan for the rest of the planning area.

## 3.17.2 Environmental Impacts

### Methods for Analysis

This qualitative analysis of utilities and service systems relies on the City's background report (City of West Sacramento 2009), City website (<https://www.cityofwestsacramento.org>), and available master plan documents as the primary sources of information regarding existing domestic water, sewer, solid waste, and stormwater service systems. The main sources for projected new housing numbers were data provided by SACOG and the California Department of Finance, as described in Section 3.13, *Population and Housing*.

The analysis in this EIR takes into consideration proposed general plan policies, described below, to reduce the impact of new development on domestic water, wastewater, stormwater, and solid waste disposal services.

### Thresholds of Significance

In accordance with Appendix G of the State CEQA Guidelines, the proposed General Plan update would be considered to have a significant effect if it would result in any of the conditions listed below.

- Exceedance of wastewater treatment requirements of the applicable Regional Water Quality Control Board.
- Construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.
- Construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.
- Potential to result in insufficient water supplies available to serve the project from existing entitlements and resources, or a need for new or expanded entitlements.

- A determination by the wastewater treatment provider that serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments.
- Insufficient permitted landfill capacity to accommodate the project's solid waste disposal needs.
- Failure to comply with federal, state, and local statutes and regulations related to solid waste.

## Impacts and Mitigation Measures

### **Impact UT-1: Exceedance of wastewater treatment requirements of the Central Valley Regional Water Quality Control Board (less than significant)**

As described in Section 3.13, *Population and Housing*, the population of West Sacramento underwent considerable growth in the 1990s and 2000s and is expected to continue to increase. Although the specific distribution and timing of projected development is not known, and the specific wastewater treatment requirements (e.g., size of plant, technology, treatment capacity) cannot be predicted, if the wastewater treatment infrastructure were not updated or expanded, the population increase would increase demand and could cause the city to exceed the wastewater treatment requirements of the Central Valley Water Board. This would be a significant impact. However, several measures are in place to address this impact. First, the City no longer maintains its own treatment plant; instead, the City's wastewater collection system is connected to the SCRSD via the LNWI and all wastewater is treated at the SCRSD facility in Elk Grove. Second, the updated General Plan includes the following polices to maintain, upgrade, and expand its wastewater collection system.

**Goal PFS-3:** To maintain an adequate level of service in the City's wastewater collection and disposal system to meet the needs of existing and future development.

**PFS-3.3 Service New and Existing Development.** The City shall ensure the provision of adequate wastewater service to all new development and support the extension of wastewater service to existing developed areas where this service is lacking.

**PFS-3.4 New Treatment Facilities.** The City shall work as a member of the Sacramento County Regional Sanitation District (SRCSD) to expand and develop new wastewater treatment and disposal facilities to accommodate the needs of existing and planned development.

**PFS-3.5 Development Fair Share.** The City shall, through a combination of wastewater development fees and other funding mechanisms, ensure that new development pays its fair share of the costs of wastewater system improvements.

Third, the City would establish an Enhanced Infrastructure Financing District (EIFD) under the General Plan update to provide financing for public capital facilities and other projects that provide significant benefits to the City.

In addition, the Central Valley Water Board would set the specific waste discharge requirements for any new or expanded wastewater treatment facility as part of its permit for that facility. Future wastewater treatment facilities would be required by law to operate in compliance with any and all requirements of the Central Valley Water Board permits.

This impact would be less than significant. No mitigation is required.

**Impact UT-2: Potential to require new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects (less than significant)****Water**

The GKWTP has an existing treatment capacity of 58 mgd. The City's existing WMP projected an increase in potable water demands based on buildout condition to 52 mgd; meeting minutes for the draft 2015 WMP update project a maximum demand of 54.3 mgd. The existing water treatment plant has adequate treatment capacity and would not require expansion.

As previously discussed, while it is difficult to predict the specific timing and distribution of new development, if the water infrastructure is not updated or expanded, the projected population increase associated increased demand could lead to a deficit in potable and fire service water supplies, potentially violating the Safe Drinking Water Act and Health a Safety Code requirements. This would be a significant impact. However, the 2005 WMP establishes the infrastructure necessary to provide the storage and transmission facilities to serve future residential development.

The 2015 WMP update includes a food hub hydraulic component that may require additional modifications beyond those already planned for in the 2005 WMP. The timing and location of these improvements are approximations, likely to change as specific development occurs. As specific development proposals are put forward, the potential impacts would be disclosed, and site- and project-specific mitigation would be developed. Accordingly, analysis of such specific impacts would at this time be speculative because the size, locations, and types of improvements have not been established.

The following goals and policies in the General Plan update would reduce this impact to a less-than-significant level.

**Goal PFS-2:** To maintain an adequate level of service in the City's water system to meet the needs of existing and future development while improving water system efficiency.

**PFS-2.3 Water Conservation.** To minimize the need for the development of new water sources and facilities and to minimize sewer flows, the City shall promote water conservation both in City operations and in private development.

**PFS-2.4 Water Master Plan.** The City shall maintain and implement the Water Master Plan.

**PFS-2.6 Rehabilitate Water Lines.** The City shall replace or repair old, leaking water lines as is financially feasible.

**PFS-2.8 Development Fair Share.** The City shall, through a combination of water development fees and other funding mechanisms, ensure that new development pays its fair share of the costs of water system improvements.

This impact would be less than significant. No mitigation is required.

**Wastewater**

As disclosed in the discussion of Impact UT-1, the projected population increase in the planning area would increase demand on the SRWTP, where all planning area wastewater is treated. If demand on the SRWTP increases such that the facility must be expanded, the expansion could result in significant impacts.

However, SRSCD does not anticipate a need to increase the capacity of the SRWTP before 2035, based on both population projections and water consumption behavior (Dobson pers. comm.). Due to the installation of water meters and adoption of water conservation mandates, SRSCD projects that per capita consumption will fall by approximately 25% over the next 20+ years, and that the existing capacity of the SRWTP will be sufficient for the next 40+ years (Sacramento Regional county Sanitation District 2014).

The South River Pump Station that serves the LNWI is phased to increase its flow capacity as development occurs. Phases II and III have been delayed due to the observed trends in wastewater generation, but future developments may trigger their construction (Sacramento Regional County Sanitation District 2013).

With the population increase, the demand on the City-owned conveyance system also increases. The expansion of wastewater collection and pumping facilities to serve new development may result in significant impacts.

The 2003 Wastewater Master Plan and 2003 Southport Sanitary Sewer Master Plan projections were based on a population exceeding the current 2035 population projection of 81,480; accordingly, existing and planned facilities are adequate. The two master plans provide planned facilities to address all projected redevelopment and new developments except the River Park and Yarborough areas. However, these two areas are not expected to develop within the 2035 planning horizon.

The new facilities and improvements identified in the master plans are listed below.

- Capacity increases for the Bridgeway Island and Southport Pump Stations, consisting of additional pumps.
- Two additional pump stations in the Southport area that currently exist as the Largo and Parlin Ranch Pump Stations.
- The construction of about 130,000 feet of new PVC and RCP pipeline ranging from 8 to 30 inches in diameter in the Southport area (City of West Sacramento 2003b).

As addressed in the master plans, the existing interim facilities that were installed to serve during the transition to SRCSD treatment will be decommissioned, and new pipelines connecting new developments in the Southport area to the LNWI will be constructed (Collier pers. comm.).

The General Plan update contains the goals and policies shown below that would help reduce the amount of wastewater generated and mitigate the impacts on existing service.

**Goal PFS-1:** To ensure the provision of adequate and efficient facilities and services that maintain service levels, are adequately funded, and strategically allocated.

**PFS-1.1 Maintain Existing Levels of Services.** The City shall give priority to providing services to existing urban areas in order to prevent the deterioration of existing levels-of-service.

**Goal PFS-3:** To maintain an adequate level of service in the City's wastewater collection and disposal system to meet the needs of existing and future development.

**PFS-3.1 Innovative and Efficient Operations.** The City shall strive to adopt innovative and efficient wastewater treatment technologies that are environmentally-sound.

**PFS-3.2 Reduce Infiltration/Inflow.** The City shall selectively repair or replace underperforming wastewater facilities serving the existing community to remove excessive infiltration/inflow.

This impact would be less than significant. No mitigation is required.

**Impact UT-3: Potential to require new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects (significant and unavoidable)**

New or expanded stormwater drainage facilities, which could cause significant environmental impacts, would be necessary under the General Plan update. Because the types, number, locations, physical sizes, and designs of future stormwater drainage facilities or potential expansion of existing facilities are unknown, the potential environmental impacts of such facilities cannot be evaluated at this time. However, the City would comply with the requirements of its state-approved SWMP and has included the following goal and policies in the updated general plan to maintain an adequate level of service.

**Goal PFS-4:** To maintain an adequate level of service in the City's storm drainage system to accommodate runoff from existing and future development, prevent property damage due to flooding, and improve environmental quality.

**PFS-4.1 Public Improvement Design.** The City shall design public improvements such as streets, parks, and plazas for retention and infiltration of stormwater by diverting urban runoff to bio-filtration systems such as greenscapes.

**PFS-4.2 Accommodate New and Existing Development.** The City shall continue to expand and develop stormwater drainage facilities to accommodate the needs of existing and planned development.

**PFS-4.3 Storm Drainage Districts.** The City shall form stormwater drainage districts as needed to ensure that stormwater drainage facilities are properly constructed, operated, and maintained.

**PFS-4.4 Development Fair Share.** The City shall, through a combination of drainage improvement fees and other funding mechanisms, ensure that new development pays its fair share of the costs of drainage system improvements.

**PFS-4.5 Drainage Plan.** The City shall require a comprehensive drainage plan for areas of the city with drainage issues that identifies the facilities that are currently in place and any new facilities that are necessary to provide adequate stormwater drainage for new and existing development.

**PFS-4.6 Enhance Recreation.** The City shall require new stormwater drainage facilities to be designed to enhance recreation and habitat and be integrated into existing parks and open space features.

**PFS-4.7 Fix Local Flooding.** The City shall continue to identify and correct problems of localized flooding within the city. Where practical and economical, the City shall upgrade existing drainage facilities as necessary to correct localized flooding problems.

**PFS-4.8 Rainwater Harvest.** The City shall encourage the use of rainwater harvesting facilities and improvements where appropriate, cost effective, safe, and environmentally sustainable.

**PFS-4.9 Grading Projects.** The City shall impose appropriate conditions on grading projects performed during the rainy season to ensure that silt is not conveyed to storm drainage systems.

**PFS-4.10 Diversion.** The City shall require new development to be designed to prevent the diversion of floodwaters onto neighboring parcels.

**PFS-4.11 Storm Drain Improvements.** The City shall require construction of storm drainage improvements, as appropriate, to prevent flooding during periods of heavy rainfall.

Flooding impacts related to stormwater are discussed in Section 3.9, *Hydrology and Water Quality*.

The City is subject to the Phase II Small MS4 permit requirements per WQO No.2013-0001-DWQ, General Permit No. CAS000004. In meeting the requirements of the permit, the City has developed Post-Construction Standards Plans that all significant redevelopments and new developments are required to meet. The Standards Plan includes volumetric and flow criteria that must be met by site design and hydromodification measures using the California Stormwater Quality Association (CASQA) guidelines (City of West Sacramento 2014). With these measures in place, new facilities that must be built to accommodate redevelopment and new development are not expected to significantly affect existing drainage facilities (Collier pers. comm.).

In addition, future stormwater drainage facilities would be subject to CEQA analysis. Potential impacts would be disclosed, and site- and project-specific mitigation measures would be developed as new projects are put forward. Stormwater drainage facilities typically consist of detention and retention ponds, sometimes with associated recreational facilities, as well as curbs/gutters, stormwater drains, pipelines, and pumping facilities. Impacts are typically related to excavation for basins and pipeline trenches and the installation of curbs/gutters. These impacts include traffic delays, noise, and dust, all of which can be mitigated through implementation of BMPs, such as traffic management plans and dust control practices pursuant to the Sacramento Metropolitan Air Quality Management District requirements, and through mitigation measures. However, because individual facilities have not been proposed, specific impacts such as damage to sensitive habitats cannot be evaluated, nor can the efficacy of mitigation measures that have not been developed. Accordingly, to allow for all contingencies, this impact is considered significant and unavoidable.

**Impact UT-4: Potential to result in insufficient water supplies to serve the project from existing entitlements and resources, or a need for new or expanded entitlements (significant and unavoidable)**

The City is supplied water through its appropriative and contractual sources in the amount 23,600 AFY and a supplemental source available through NDWA. The water demand in the planning area would increase as a result of population growth through implementation of the updated General Plan. The 2010 UWMP documents 2010 water demand at 13,107 AFY and estimates 2035 demand to increase to 23,920 AFY as shown Table 3.17-4.

Failure to meet this increased water demand would constitute a significant impact. For the large part of the planning area served by the NDWA, the City's contract ensures that "the State, through both the SWP and CVP, will maintain within the NDWA a dependable water supply of adequate quantity and quality for municipal, industrial, and agricultural purposes" (City of West Sacramento 2011:4-4-5). However, due to uncertainties about the reliability of the water supply from the NDWA under all conditions, it is possible that water supplies would not be sufficient to meet the increased demand. Accordingly, this impact is significant and unavoidable.

For the area outside the NDWA (i.e., that area served by the City's appropriative right and Reclamation), water demand is estimated to reach 2.9 mgd, or 3,248 AFY. Historic water supply in this area, even during the Single Dry Year, has been more than 5,900 AFY. Accordingly, the increased demand would not exceed the available water supply. In addition, even should the city experience 100% curtailment of contract water, the City's existing groundwater well and the planned new well in the Southport area would supply additional water in an emergency. Consequently, the water supply would be sufficient to meet the increased demand. This impact would be less than significant, and no mitigation is required.

**Impact UT-5: Potential to result in a determination that wastewater treatment facilities serving the planning area have adequate capacity to serve the area's projected demand in addition to the provider's existing commitments (less than significant)**

SCRSD, the wastewater treatment provider for the planning area since 2007, has annexed the planning area. As disclosed in the discussion of Impact UT-1, the projected population growth in the planning area and associated expansion needs are factored into the 2020 Master Plan for the Sacramento Regional Wastewater Treatment Plant (Sacramento Regional County Sanitation District 2008).

This impact would be less than significant. No mitigation is required.

**Impact UT-6: Insufficient permitted landfill capacity to accommodate the planning area's solid waste disposal needs (less than significant)**

Projected population growth in the planning area under the updated General Plan would lead to additional demands for solid waste disposal services. If the increased demand exceeds landfill capacity, this could constitute a significant impact. However, the Yolo County Central Landfill is expected to have adequate capacity until at least 2045 (Yolo County 2010). In addition, implementation of state laws and policy would reduce the future waste stream and extend the lifespan of the landfill. AB 341 requires the waste stream going to landfills to be reduced by 75% statewide. CalRecycle would implement strategies to meet this statutory goal through state-level measures and requirements. AB 341's broadening of recycling requirements to cover commercial and multi-family residential developments would also reduce the future waste stream going to the landfill. In addition, the General Plan update includes the following goal and policies to minimize the generation of waste, increase recycling, and provide for the collection and disposal of solid waste.

**Goal PFS-5:** To minimize the generation of waste, increase recycling, and provide for the collection and disposal of solid waste.

**PFS-5.3 Landfill Capacity.** The City shall continue to coordinate with the Yolo County Public Works Department concerning the City's continuing use of the Yolo County Central Landfill and its capacity projections.

**PFS-5.4 Solid Waste Diversion.** The City shall strive to divert 70 percent of solid waste generated by the year 2020 through increased solid waste recycling and reuse methods. The City shall consider recycling methods that involve the production of energy (e.g., methane recovery).

**PFS-5.5 Municipal Waste Reduction.** The City shall reduce municipal waste generation by increasing recycling, on-site composting, and mulching, where appropriate, at municipal facilities, as well as using resource efficient landscaping techniques in new or renovated medians and parks.

**PFS-5.6 Recycling Collection at City Facilities.** The City shall continue to provide recycling collection containers at, and services to, all City facilities, including parks.

**PFS-5.7 City Contracts.** The City shall require City contractors to use Best Management Practices to maximize diversion of waste from landfills.

**PFS-5.8 Construction and Demolition Waste Standard.** The City shall require major new development, demolition, and rehabilitation projects to recycle or salvage 70 percent of non-hazardous construction and demolition debris (excluding excavated soil and land-clearing debris).

**PFS-5.9 Residential Recycling.** The City shall encourage increased participation in residential curbside recycling programs, especially for multi-family properties.



**PFS-5.10 Commercial Recycling.** The City shall encourage increased participation in commercial recycling programs for paper, cardboard, and plastics.

**PFS-5.11 Mandatory Commercial and Industrial Recycling.** The City shall consider requiring mandatory recycling programs in commercial and industrial developments.

**PFS-5.12 Yard Waste Reduction.** The City shall encourage residents and businesses to reduce yard waste through methods such as backyard composting, grass recycling, and using resource efficient landscaping techniques.

**PFS-5.13 Food Composting.** The City shall encourage composting of food by residents and businesses, especially restaurants.

**PFS-5.14 E-Waste Disposal.** The City shall encourage local businesses to provide e-waste drop-off services and encourage residents and businesses to properly dispose of, or recycle, electronic waste (i.e., e-waste).

**PFS-5.15 Regional Coordination.** The City shall coordinate with and support other local agencies and jurisdictions in the region to develop and implement effective waste management strategies and waste-to-energy technologies.

In the future, as the landfill reaches capacity, the County Integrated Waste Management Division would apply for the necessary expansion to meet the county's projected demands.

This impact would be less than significant. No mitigation is required.

#### **Impact UT-7: Failure to comply with federal, state, and local statutes and regulations related to solid waste (less than significant)**

The County's Integrated Waste Management Division and the City's Environmental Services Division are responsible for implementation of all solid waste programs. The County operates the Yolo County Central Landfill and is required by the conditions of its permit from CalRecycle to operate in accordance with state laws and regulations. The City's municipal code also addresses sanitation facilities, as do updated General Plan policies PFS-5.4, which specifies 70% reduction of solid waste by 2020 through increased solid waste recycling and reuse methods reduction in waste generation, and PFS-5.15, which requires coordination with Yolo County Public Works Department concerning the City's continued use of the Yolo County Central Landfill and

This impact would be less than significant. No mitigation is required.

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## Personal Communications

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Dobson, Christoph. Director of Policy and Planning. Regional San Sacramento Area Sewer District, Sacramento, CA. October 22, 2015—email.

Mount, Dan. Water Services Superintendent. City of West Sacramento. December 22, 2015—meeting.

Tilley, David. Principal Planner. City of West Sacramento, West Sacramento, CA. December 10, 2015—meeting.

Wells, Jon. Senior Engineer West Yost Associates. December 10, 2015—email to David Tilley, City of West Sacramento.

CEQA requires that an EIR examine a reasonable range of feasible alternatives to a project or project location that could substantially reduce one or more of the project's significant environmental impacts while meeting most or all of its objectives. The EIR is required to analyze the potential environmental impacts of each alternative, though not at the same level of detail as the project. However, there must be sufficient detail to enable comparison of the merits of the respective alternatives.

The key provisions of State CEQA Guidelines Section 15126.6 that relate to alternatives analyses are summarized below.

- The discussion of alternatives shall focus on alternatives to the project or project location that are feasible, would meet most or all of the project objectives, and would substantially reduce one or more of its significant impacts.
- The range of alternatives must include the No Project Alternative. The no project analysis will discuss the existing conditions at the time the NOP was published, as well as conditions that would reasonably be expected to occur in the foreseeable future if the project were not approved, based on current plans and consistent with available infrastructure and community services. The No Project Alternative is not required to be feasible, meet any of the project objectives, or reduce the project's expected impacts to any degree.
- The range of alternatives required is governed by a "rule of reason." The EIR must evaluate only those alternatives necessary to permit a reasoned choice. An EIR is not required to analyze every conceivable alternative to a project.
- An EIR does not need to consider an alternative that would not achieve the basic project objectives, for which effects cannot be reasonably ascertained, or for which implementation is remote and speculative.

## 4.1 Objectives and Impacts

### 4.1.1 Project Objectives

The City's purpose in proposing the project is to comprehensively update the General Plan's goals, policies, and implementation measures to reflect the City's preferences for future development and to conform to current state law. The General Plan has the following fundamental objectives.

- Incorporate goals, policies, and implementation measures into the General Plan that are consistent with current state law, including changes to California Planning Law enacted since the last major update of the General Plan in 2000.
- Adopt goals, policies, and implementation measures that reflect the City's commitment to community sustainability. These include a vital central business district; compact, mixed-use developments near transit nodes; encouragement of urban infill where practical; revitalization

of areas such as Stone Lock, Pioneer Bluff, and Seaway; flood protection; and passive and active recreation opportunities along the Sacramento River.

- Reflect the land use pattern and intensity set out in the Sustainable Communities Strategy adopted by SACOG.
- Adopt a climate action plan (CAP) to reduce the city's emissions of greenhouse gases (GHGs) and conform to State CEQA Guidelines Section 15183.5 allowing the streamlining of CEQA analyses of projects that are consistent with the CAP.
- Establish one or more enhanced infrastructure financing districts (EIFDs) (Government Code Section 53398.50 et seq.) that may cover the entire city with the exception of the portion of the city subject to the Bridge District EIFD. The purpose of an EIFD would be to provide financing for public capital facilities described in the City's Water, Sewer, Drainage, and Traffic Master Plans; public flood control improvements; and other projects of communitywide significance that provide significant benefits to the EIFD or the City, all as described in the EIFD plan.
- Remove planned development text from several antiquated planned development areas around the city, leaving the underlying zoning and planned development designations in place.
- Provide the foundation for subsequent implementation steps, such as revisions to Title 17 (Zoning) of the City's municipal code.
- Allow for subsequent environmental documents to tier from the General Plan EIR to the extent permissible.

## 4.1.2 Significant Impacts

Alternatives are to provide a means of substantially reducing the level of one or more significant impacts that would otherwise result from implementation of the project. Absent mitigation, the project would result in significant impacts on the following resources.

- Aesthetics
- Agricultural resources
- Air quality
- Biological resources
- Cultural resources
- Greenhouse gas emissions
- Noise
- Transportation/traffic
- Utilities/service systems

## 4.2 Methodology and Screening Criteria

A range of potential alternatives was developed and subjected to the screening criteria. The EIR preparers considered several representative alternatives. There was no attempt to include every conceivable alternative. The following criteria were used to screen potential alternatives.

- Does the alternative meet most or all of the project objectives?
- Is the alternative potentially feasible?
- Would the alternative substantially reduce one or more of the significant impacts associated with the project?

According to State CEQA Guidelines Section 15364, *feasible* is defined as “capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors.” CEQA does not require that an EIR determine the ultimate feasibility of a selected alternative, but rather that an alternative be potentially feasible. Accordingly, no economic studies have been prepared regarding the economic feasibility of the selected alternatives.

The significant effects of the project may include those that are significant and unavoidable as well as those that are less than significant with mitigation. The alternative should provide a means of reducing the level of impact that would otherwise result from implementation of the project.

Those alternatives that meet the project objectives, that are potentially feasible, and that would reduce one or more project impacts are discussed in greater detail below.

### 4.3 Alternatives Considered but Rejected

**Alternative Locations.** State law requires the City to adopt a long-range, comprehensive general plan. The City is authorized to adopt specific plans that are consistent with the General Plan. The project consists of an update of the West Sacramento general plan. Consideration of an alternative location for the General Plan is not feasible because the General Plan must address the lands within the city limits and any adjoining land that is of planning interest to the City.

**Reduced Density Alternative.** The proposed project is designed to meet the City’s obligation to provide housing opportunities for all income levels pursuant to Housing Element law and the City’s regional housing share. The City’s share for the 2013–2021 period is nearly 6,000 dwelling units. Further, one of the project’s fundamental objectives is to advance the MTP/SCS, which provides for compact, mixed-use development in transit priority areas along West Sacramento’s existing and future transit corridors.

A substantial reduction in density would conflict with the principles of the MTP/SCS because it would limit the City’s ability to accommodate urban density development along the extensive areas of the planning area designated as “transit priority areas” by the MTP/SCS. A reduction may also complicate the City’s ability to accommodate future housing share allocations under Housing Element law because, consistent with SB 375, the City’s allocation is based on the population and housing need projections that are the foundation of the MTP/SCS.

## 4.4 Alternatives Analyzed in this EIR

### 4.4.1 Alternative 1—No Project Alternative

Like that of the proposed project, the analysis of the No Project Alternative compares the alternative to existing conditions in West Sacramento. The impacts of the No-Project Alternative are examined qualitatively to allow comparison with the proposed Project.

The No Project Alternative consists of retaining the current General Plan, including the 2013–2021 Housing Element and the various subsidiary plans (e.g., Southport Framework Plan, Bridge District Specific Plan) unchanged. Future development would be consistent with the population density and land use intensity set out in the current General Plan and its subsidiary land use plans.

#### Aesthetic Resources

The No Project Alternative would result in the conversion of existing open lands, particularly in Southport, to urban (i.e., residential, commercial, other) uses, adversely affecting the scenic vistas from those lands and the visual experience of viewers. The impact would be significant.

#### Air Quality

The Yolo-Solano air basin is out of compliance with federal and air quality standards for emissions of small particles (PM<sub>2.5</sub>) and ozone. The Yolo-Solano Air Quality Management District (AQMD) has enacted best management practice rules for the control of PM<sub>2.5</sub>. However, the Yolo-Solano AQMD's *2012 Triannual Assessment and Plan Update* reports that “[t]he ozone trend analysis indicates that even with the adoption of new control measures scheduled for adoption by the District through 2015, the District will still need to rely heavily on mobile source control measures implemented by the State to make significant further progress towards achieving the state ozone standard” (Yolo-Solano Air Quality Management District 2013). Development under the No Project Alternative would increase emissions of these criteria pollutants, thereby contributing to the region's failure to meet its ozone compliance targets. The impact would be significant.

#### Agricultural Resources

The No Project Alternative would result in the conversion of existing agricultural land to urban uses. In particular, future development would affect lands in the Southport area of the city that is currently in agricultural use. This would be a significant impact.

#### Biological Resources

The No Project Alternative would result in substantial new development pursuant to the General Plan. Natural Resources element Goal C (protection of sensitive native vegetation and wildlife communities and habitat) and its related policies requiring the consideration and conservation of biological resources would regulate the impacts of that development through federal and state laws (e.g., the federal Clean Water Act, the federal and California Endangered Species Acts). New development projects would be subject to project-specific CEQA review and mitigation, and would be required to obtain any necessary federal and state permits prior to proceeding. The impact would be less than significant.

## Cultural Resources

The No Project Alternative would result in substantial new development pursuant to the General Plan. Although new development would be subject to Goal F (protect West Sacramento's Native American heritage) of the Recreational and Cultural Resources Element, there are currently unknown tribal cultural resources within the planning area that would be adversely affected by that development. Tribal cultural resources include spiritual values that are not always amenable to standard mitigation measures. Accordingly, the impact would be significant.

## Geology and Soil

Development under the No Project Alternative would result in soil disturbance. However, all development would be undertaken in accordance with Title 24, California Building Code, and the City's Phase II Municipal Separate Storm Water Sewer System (MS4) Permit, which contain specific requirements that reduce geological risks to an acceptable level, avoid soil problems during construction, and minimize the potential for soil erosion during and following construction. Policies under Health and Safety Element Goal A include provisions for requiring geotechnical reports with new construction to minimize geologic risks from soil limitations. Any impacts would be less than significant.

## Greenhouse Gas

The No Project Alternative would contribute to GHG emissions as development occurs under the existing General Plan. This contribution would be considerable because it would not be limited by the proposed CAP, nor would it benefit from the reduction of automobile and light truck GHG emissions that would accrue from consistency with the MTP/SCS.

## Hazards and Hazardous Materials

West Sacramento supports a number of industrial operations that handle hazardous materials and, like most cities, a number of sites that are contaminated by hazardous materials. Development under the No Project Alternative has the potential to introduce new sensitive receptors, such as residences, into proximity with existing operations that handle hazardous materials or with sites containing them. However, this would constitute an impact of the environment on the project, and it therefore is not an environmental impact under CEQA (*California Building Industry Assoc. v. Bay Area Air Quality Management District* (2015) 62 Cal.4th 369).

In some cases, new development may exacerbate an existing environmental hazard—for example, where development is being undertaken on a contaminated site with the potential to release contamination into the environment. However, such an occurrence is unlikely given the existing regulatory scheme that requires preconstruction testing and remediation of hazardous conditions (see Chapter 3.8, *Hazards and Hazardous Materials* for a discussion of the regulatory environment). The impact would be less than significant.

## Hydrology and Water Quality

The No Project Alternative would result in new development in the planning area consistent with the General Plan. Although new development has the potential to adversely affect hydrology and water quality through the introduction of new impermeable surfaces that limit groundwater



recharge, increase stormwater flows, and provide a pathway for pollutants to enter surface waters, the existing General Plan policies and water quality regulations would avoid these impacts.

The following applicable existing City planning policies and development standards would avoid these impacts.

- Public Services and Facilities Element Goal C (accommodating future runoff in the city stormwater drainage system) and accompanying policies.
- MS4 Permit Stormwater Postconstruction Design Measures, which include Low Impact Development standards for maximizing onsite retention and recharge of stormwater.
- Title 24 CALGreen requirements for drainage control in residential development.

The impact would be less than significant.

## Land Use and Planning

The No Project Alternative would retain the existing General Plan and its policies, including the floodplain policies adopted in 2015 in compliance with Senate Bill (SB) 5. The General Plan is internally consistent, so retaining it would not result in inconsistent land uses.

The existing General Plan is not fully consistent with the MTP/SCS. Although not required by law, the City selects to maintain consistency between its General Plan and the MTP/SCS as a means of furthering the regional development objectives of compact growth and higher density within transit priority areas, and the GHG reduction benefits embodied in the MTP/SCS. This inconsistency with the MTP/SCS would be a significant impact.

## Mineral Resources

According to the mineral land classification study conducted for the Sacramento-Fairfield consumption-production region (Department of Mines and Geology 1988), no areas designated as MRZ-2 (likelihood of significant mineral deposits) are present in the planning area, most of which is designated as MRZ-1 (no significant mineral deposits), with a band of MRZ-3 (unknown) along the river. Accordingly, the potential impacts associated with the extraction of mineral resources would be less than significant.

## Noise

Development under the No Project Alternative has the potential to introduce new sensitive receptors, such as residences, into proximity with existing noise sources such as industrial operations, freeways and high-volume roadways, trains, and stadiums. However, this would constitute an impact of the environment on the project, and it therefore is not an environmental impact under CEQA (*California Building Industry Assoc. v. Bay Area Air Quality Management District* (2015) 62 Cal.4<sup>th</sup> 369).

Development under the existing General Plan would increase traffic levels along high-volume roadways. Installation of noise walls or the acquisition of noise buffer areas along these roadways would not be acceptable mitigation because noise walls would result in aesthetic impacts and buffers would not be acceptable to existing residents and businesses along those roadways whose land would be acquired. This would be a significant impact.

## Population and Housing

Development under the No Project Alternative would result in an increase in the city's population and its housing supply. No existing housing units are expected to be displaced. The No Project Alternative would be growth-inducing in that the General Plan's identification of areas to accommodate future housing and other development removes regulatory obstacles to future growth. This would be a significant impact.

## Public Services

The No Project Alternative would retain the existing General Plan and its provisions for meeting future public services demands, as specified in Goals A through F of the Public Facilities and Services Element. The impact would be less than significant.

## Recreation

The No Project Alternative would retain the existing General Plan and its provisions for meeting future recreation demand. No new recreational facilities are proposed to be built under the Parks Master Plan, so new impacts from the development of recreational facilities would generally be limited to parks and recreation facilities within future subdivisions.

Typical impacts of such facilities include short-term noise, air quality, and traffic impacts during construction; and noise, light (if night lighting is installed), and traffic during operations. Because construction of park and recreation facilities generally takes place prior to new residents moving into the subdivision, construction impacts would be less than significant. Operational impacts may be significant; however, typical neighborhood park design includes limited use during nighttime hours and provisions to confine lighting onsite through the selection and location of fixtures. Neighborhood parks do not typically generate substantial automobile trips and are served by the city's road network; traffic impacts are typically less than significant. The impact would be less than significant.

## Transportation/Traffic

The No-Project Alternative would retain the existing General Plan and its provisions. The City is committed to a future street car line that would provide convenient connections within West Sacramento and to Sacramento. Because the existing General Plan has no prohibitions against a future street car line, it is a reasonably foreseeable outcome of the No Project Alternative. The City also has a number of capital improvements either underway or proposed that will have a positive impact on traffic congestion or that will accommodate future development. These include the I Street Bridge, the Mike McGowan Bridge and Village Parkway extension, and smaller projects focused on signal and street improvements. As discussed in Section 3.16, *Transportation/Traffic*, a number of intersections are operating at substandard levels of service under existing conditions. Future road improvements will reduce the level of impacts at some of these intersections.

The No Project Alternative would accommodate a smaller population than the General Plan update, and at the same time would not incorporate the proposed project's higher residential densities and building intensities in selected areas. However, the higher residential density/building intensity projects, in light of future non-vehicle improvements such as the street car and good bicycle and pedestrian connections, are expected to generate less traffic than conventional development under the No Project Alternative. This expectation is based on empirical research, such as the Urban Land

Institute's *Growing Cooler: The Evidence on Urban Development and Climate Change*, which indicates that compact, high-density development has lower traffic generation rates (resulting in substantially fewer vehicle miles travelled) than conventional development densities (Ewing et al. 2008), translating to fewer daily automobile trips.

The No Project Alternative would have a significant and unavoidable impact on traffic, similar to that of the proposed project.

## Utilities and Service Systems

The No Project Alternative would retain the existing General Plan and its provisions for meeting future public services demands, as set forth in Goals A through F of the Public Facilities and Services Element. In addition, the capacity of the Regional San wastewater treatment plant is sufficient to accommodate future growth under the existing General Plan. The impact would be less than significant.

## 4.5 References Cited

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Ewing, R., K. Bartholomew, S. Winkleman, J. Walters, and D. Chen. 2008. *Growing Cooler: The Evidence on Urban Development and Climate Change*. Washington, DC: The Urban Land Institute.

Yolo-Solano Air Quality Management District. 2013. *2012 Triannual Assessment and Plan Update*. April. Davis, CA.

This chapter presents discussions of additional topics required by CEQA: cumulative impacts, growth-inducing impacts, significant and unavoidable impacts, and significant irreversible environmental changes.

## 5.1 Cumulative Impacts

Cumulative significant impacts result from individually minor but collectively significant impacts occurring over a period of time. In other words, a cumulative impact results from the collective effects on a resource by numerous activities over time. State CEQA Guidelines Section 15130 requires that an EIR include a discussion of the potential cumulative impacts of a proposed project. Cumulative impacts are defined as two or more individual effects that, when considered together, are significant. The cumulative impact is the change in the environment that results from the incremental impact of the development when added to the incremental impacts of other closely related past, present, and reasonably foreseeable probable future activities.

As defined in State CEQA Guidelines Section 15355

...a cumulative impact consists of an impact which is created as a result of the combination of the project evaluated in the EIR together with other projects causing related impacts. An EIR may determine that a project's contribution to a significant cumulative impact will be rendered less than cumulatively considerable and thus is not significant. A project's contribution is less than cumulatively considerable if the project is required to implement or fund its fair share of a mitigation measure or measures designed to alleviate the cumulative impact.

For purposes of this section, the term *significant cumulative impact* is synonymous with a cumulatively considerable contribution.

An adequate discussion of significant cumulative impacts is based on either of the following approaches.

- A list of past, present, and probable future projects producing related or cumulative impacts, including, if necessary, those projects outside the control of the lead agency.
- A summary of projections contained in an adopted general plan or related planning document, or in a prior environmental document, which has been adopted or certified, that described or evaluated regional or area-wide conditions contributing to the cumulative impact. Any such planning document must be referenced and made available to the public at a location specified by the lead agency.

The cumulative impact analysis in this EIR relies on the projections approach because the project has a long-term perspective. Unless so stated, the potential for cumulative contributions is projected to the General Plan horizon year of 2035.

The determination of a project's cumulative effects involves identifying the following criteria.

- Significant impacts that are the result of the cumulative contributions of past, present, and reasonably probable future activities. Cumulative effects that are less than significant are not required to be analyzed.
- Whether the project would contribute to any of those cumulative impacts. The EIR is not required to analyze a cumulative impact to which the project would not contribute.
- Whether, in the context of the cumulative impact, the project's contribution would be considerable. An impact that is less than significant when viewed as a project impact alone may nonetheless be a considerable contribution to a cumulative impact.

### 5.1.1 Aesthetic Resources

The cumulative context for aesthetics encompasses the cities of West Sacramento and Sacramento, eastern Yolo County, and western Sacramento County. The Sacramento River, Deep Water Ship Channel, Yolo Bypass, and Sacramento River Bypass all serve as features that physically limit the eastward, westward, and northern expansion of West Sacramento. The northern portion of West Sacramento and nearby areas of Sacramento and Sacramento County are built up to the degree that only infill development is likely to occur in these highly developed areas. New mixed-use development is in progress and likely to proceed in the future in rural areas eastern Yolo County, adjacent portions of Sacramento County, north of the Sacramento River Bypass, south of the southern West Sacramento city limits, and west of the Yolo Bypass.

Cumulative impacts for aesthetics would occur where a project, when combined with cumulative projects, would contribute to the substantial degradation or alteration of the existing visual character of the vicinity and regional context, associated scenic vista views, and views from scenic highways. Such views can be altered by extensive vegetation removal and landform alteration and by the introduction of incompatible constructed features, all which transform the visual landscape of the vicinity and the region as a whole. In addition, new sources of light can create light pollution and ambient glow that can affect nighttime views—for example, by reducing the amount of visible dark sky and stars and introducing nuisance light spill.

Development under the updated General Plan would result in the impacts on visual resources identified in Section 3.1, *Aesthetics*, and would contribute to cumulative visual impacts in the area. These impacts include temporary visual changes as a result of construction activities, changes to scenic resources from important public scenic viewpoints, changes to the visual character and quality of West Sacramento through development, and changes in light and glare in West Sacramento resulting from new lighting sources and built surfaces. The land use changes associated with the cumulative scenario, including those anticipated within the planning horizon of the General Plan update and other projects, have the potential to contribute similar impacts on aesthetic/visual resources.

Construction would occur near sensitive visual receptors, but the quality of available views would be affected for only a short time because construction activities are temporary; furthermore, projects would be located in a developed area already accustomed to construction activities. Accordingly, construction would not result in a considerable contribution to cumulative construction-related impacts. While construction activities are temporary, they would require the

removal of mature vegetation and the conversion of rural agricultural lands to accommodate development.

As described in Section 3.1, *Aesthetics*, the area is generally flat, with scenic rural views from ground-level vantages and scenic vistas from elevated levees. Development under the General Plan update would alter rural views to views of suburban development and would reduce the amount of open space that is physically and visually accessible. Updated General Plan policies would ensure that degraded existing visual conditions in the planning area are improved through renovation and blight reduction and that new development would be designed in a manner that is aesthetically pleasing and sensitive to adjacent land uses. However, implementation of these policies would not offset the effects of visual changes resulting from the conversion of rural lands to development characterized by a more urbanized appearance.

The General Plan update would facilitate the transition of West Sacramento from a city that currently retains a large rural visual component in its southern portion to one that is more suburban and metropolitan, substantially altering the existing visual quality and character of the viewshed, as well as views of scenic vistas from levees provide. These changes would result in a cumulatively considerable impact when factored with similar growth planned for other parts of the region.

While developed areas in the planning area are currently well-lighted, rural areas are less so. Light and glare resulting from development under the General Plan update would substantially increase the amount of glare and nighttime lighting, resulting in a considerable contribution to cumulative impacts of ambient light glow and light pollution when considered together with the same effects of other development that would occur nearby. Implementation of Mitigation Measures AES-3a and AES-3b would reduce the effects of light and glare, but not to a less-than-significant level. The project would have a significant cumulative impact.

### **5.1.2 Agricultural and Forestry Resources**

As stated in Impact AG-1, implementation of the General Plan update would result in a significant and unavoidable impact related to the conversion of important farmlands to urban uses. The Yolo County General Plan EIR states that implementation of the County General Plan would result in a significant and unavoidable impact related to the conversion of important farmlands to other uses. The combination of these impacts constitutes a cumulative impact, to which the West Sacramento General Plan would make a cumulatively considerable contribution.

### **5.1.3 Air Quality**

The planning area is currently a nonattainment area for particulate matter (PM), carbon monoxide (CO), and ozone. However, due to a lack of regionwide land use data, quantifying overall air quality emissions in the region is not feasible. As explained in the discussion of Impact AQ-2, vehicle miles traveled (VMT) data for the planning area were provided by the traffic engineers (DKS and Associates); VMT data for the six-county Sacramento Area Council of Governments (SACOG) area were also provided. Because regionwide VMT data were provided, quantification of the mobile source emissions for the region for informational purposes is possible.

Cumulative regionwide air quality emissions associated with motor vehicles operating on the roadway network in the six-county SACOG area were analyzed using the regional VMT data and Caltrans' CT-EMFAC (version 5.0) emissions model. Emission of reactive organic gases (ROG),

nitrogen oxides (NO<sub>x</sub>), CO, PM<sub>10</sub>, and PM<sub>2.5</sub> for Existing (year 2014), Year 2020, and Year 2035 were evaluated. Table 3.3-8 summarizes the modeled emissions by scenario. Refer to Appendix B for the full results of the six-county SACOG regional CT-EMFAC modeling.

As illustrated in Table 3.3-8, Year 2020 mobile-source emissions of all criteria pollutants in the region would initially decrease compared to Existing conditions, due in part to the anticipated lessening of vehicular emission rates as a result of continuing improvements in engine technology and the retirement of older, higher-emitting vehicles. Emissions of ROG, PM<sub>10</sub>, and PM<sub>2.5</sub> would increase between Year 2020 and Year 2035, and Year 2035 emissions levels would exceed Existing conditions, despite lower emissions factors. The increase is due to the increase in population and VMT associated with buildout to Year 2035. These emissions volumes are included for informational purposes only, because no impact assertion can be made based on the regional mobile emissions levels.

While the planning area is currently a nonattainment area for PM, CO, and ozone, the potential air quality effects of general plans should not be evaluated based on a comparison of emissions to project-level thresholds. As discussed for Impacts AQ-1 and AQ-2, impacts related to a general plan should be evaluated based on the plan's consistency with the most recently adopted air quality attainment plan (AQAP) or state implementation plan (SIP). Air quality plans that have been implemented in the planning area are intended to help the region achieve compliance with the regulations for these pollutants. These plans account for the effects of SACOG's Sacramento Region Blueprint, which implements smart growth principles and promotes infill development; and the SAGOG's Metropolitan Transportation Plan/Sustainable Communities Strategy (MTP/SCS), which is the long-range transportation plan for the six-county Sacramento region. The MTP/SCS succeeds the Blueprint and proactively links land use, air quality, and transportation needs. As also described in these previous impact discussions (Impacts AQ-1 and AQ-2), the goals, policies, and programs related to both the promotion of infill development and the reduction of potential adverse air quality effects included in the General Plan update are consistent with the strategies of the SIP and the applicable AQAP. As the General Plan update is considered to be consistent with the Sacramento Metropolitan Region's air quality attainment plans, the project would not result in a cumulatively considerable contribution to a cumulative operational impact.

## 5.1.4 Biological Resources

Development associated with implementation of the General Plan update would contribute to the ongoing loss of natural lands in the planning, with potential effects on special-status species, sensitive natural communities, federally protected wetlands, and wildlife and fish movement corridors.

Although impacts that result in the loss of natural lands would be minimized or mitigated through implementation of policies in the General Plan update, some important habitats for wildlife (e.g., annual grassland) would not be replaced. Accordingly, implementation of the General Plan update would result both in direct loss and in a cumulative contribution to the loss of these habitats. Additionally, impacts that result in the mortality of special-status animal species or loss of special-status plant species would contribute to the cumulative loss of populations of these species. The cumulative loss of habitat would contribute to a general decline for the region, resulting in the loss or displacement of wildlife that would have to compete for suitable habitats with existing adjacent populations. While the loss of habitat or special-status species as a result of development under the General Plan update would be less than significant, these losses when combined with other impacts

on habitat and special-status species from other past, present, and future projects would contribute to a significant cumulative impact.

Development associated with implementation of the General Plan update would contribute to increased entrainment of special-status fish from increased diversion of Sacramento River water to meet future water demand. While the incremental increase in entrainment losses of fish attributable to the General Plan update would have a less-than-significant impact on special-status fish, these additional entrainment losses, when considered in combination with other entrainment losses on the Sacramento River (e.g., at the screened Sacramento and Freeport water intake facilities and numerous unscreened agricultural diversions), would constitute a significant cumulative impact. Similarly, projected development under the General Plan update is expected to result in an increase in the amount of wastewater sent to the SRCSD plant for treatment and eventual discharge to the Sacramento River. While the incremental increase in treated effluent that is discharged to the Sacramento River as a result of development under the General Plan update would have a less-than-significant impact on special-status fish, the additional discharge of treated effluent, when considered in combination with the expected increase in discharge of treated effluent attributable to other municipalities, is considered a significant cumulative impact.

State- and federally protected wetlands and other waters would also be affected by development under the General Plan update. The proposed General Plan update policies would ensure no net loss of these resources, however, such that development would not have a considerable contribution to the significant cumulative impacts on wetlands and other waters.

Mitigation proposed in this EIR would augment policies related to protection of riparian habitat. However, riparian habitat along the Sacramento River levee that would be lost through current and future projects would not be replaced onsite because U.S. Army Corps of Engineers requirements do not allow replanting of woody vegetation on the levee prism. Such vegetation removal would result in the cumulative loss of riparian habitat. While the loss of riparian habitat as a result of development under the General Plan update would be less than significant, this loss combined with other impacts on riparian habitat from other past, present, and future projects would contribute to a significant cumulative impact.

Proposed land use changes and subsequent development under the General Plan update could interfere with the movement of native wildlife species, through either the reduction or elimination of pathways for movement. Such changes would contribute to cumulative effects on wildlife movement, as the loss or reduction of pathways would constrict or alter movement patterns or result in additional mortality from vehicle strikes. While the impacts on wildlife corridors resulting development under the General Plan update would be less than significant, these impacts when combined with other impacts on wildlife corridors from other past, present, and future projects in the area would contribute to a significant cumulative impact.

Construction activities resulting from the proposed land use changes under the General Plan update could introduce new invasive plants or contribute to their spread in the planning area, resulting in adverse impacts on native flora and natural communities. The spread of invasive plants is a cumulative impact of all development activities taking place throughout the region. Implementation of proposed mitigation to modify General Plan policies by requiring avoidance and minimization measures regarding the introduction and spread of invasive plants would reduce the impact to a less-than-significant level, but it would nevertheless constitute a significant cumulative impact.



Despite the General Plan update's extensive policies that would minimize effects of development on biological resources, implementation of the General Plan update would nonetheless contribute to cumulative effects on special-status species, riparian, and wildlife corridors. Therefore, the General Plan update would have a significant cumulative impact on biological resources.

### 5.1.5 Cultural Resources

Even with implementation of mitigation measures and compliance with existing policies and regulations, the proposed project and cumulative projects may contribute to significant cumulative effects on cultural resources.

Because the updated General Plan's goal, policies, and implementation measures emphasize historic preservation, no cumulative loss of historical resources would be anticipated. Although new development consistent with the General Plan update may result in the loss of individual historical resources, those would be isolated events and would not contribute to any cumulative regional loss of historic resources. State-mandated mitigations and policies to address and prevent impacts on historical and architectural resources would prevent any cumulative impacts if unknown resources are uncovered. No mitigation would be necessary.

The potential loss of tribal cultural resources may contribute to the cumulative loss of such resources that has occurred over time as the tribes' ancestral lands have been developed. *Tribal cultural resources* is a new concept at the time that this EIR is being prepared, and the extent to which such resources may exist within the planning area is not currently known. However, it is reasonable to assume that future consultations with California Native American tribes will reveal that individual projects consistent with the General Plan update could have a significant effect on tribal cultural resources. Such effects would constitute a significant cumulative impact. Policy NCR-9.13 may reduce the project's contribution to this impact, but not to a less-than-considerable level.

### 5.1.6 Geology, Soils, and Paleontological Resources

Construction in a seismically active region puts people and structures at risk from a range of earthquake-related effects. However, as discussed in Section 3.6, *Geology, Soils, and Paleontological Resources*, the policies of Goal S-3 are in place to reduce seismic-related risk. These policies include requirements that new structures be designed to withstand seismic activity and that a geotechnical report be prepared and its mitigation measures be incorporated into the design. These policies are implemented through the regulation and development review process, which requires that all construction comply with the California Building Code (CBC). In addition, policies are also in place to address seismic issues related to existing unreinforced masonry structures and safety of critical facilities, utilities, gas lines, and levees. The updated General Plan would not contribute considerably to the existing cumulative impact related to seismic hazards.

Soil stability is addressed through PFS-4.9 of Goal PFS-4, which imposes conditions on grading projects during the rainy season, and NCR-4.7 of Goal NCR-4, which requires compliance with the City's grading ordinance and National Pollutant Discharge Elimination System permit, ensuring preparation of a stormwater pollution prevention plan and issuance of a grading permit for all construction projects, as required by the Central Valley Water Board and the City's municipal code. These policies are implemented through the regulation and development review process, which requires that all construction comply with the CBC. Consequently, no significant cumulative effects related to soil stability are anticipated.

The geographic scope of potential cumulative effects with respect to paleontological resources is usually limited to areas within the physical footprint of a proposed project. With the implementation of the mitigation measure presented in this EIR, there would be no significant cumulative impact on paleontological resources.

### **5.1.7 Greenhouse Gas Emissions**

Cumulative impacts relating to greenhouse gas emissions are analyzed in Section 3.7, *Greenhouse Gas Emissions*.

### **5.1.8 Hazardous Materials**

Numerous businesses and industries throughout the city utilize or store hazardous materials. As a result of the regulatory scheme described in Chapter 3.8, *Hazards and Hazardous Materials*, there would be no cumulative significant effect from hazardous materials. The project's impact is less than significant, as discussed in Chapter 3.8, *Hazards and Hazardous Materials*, and its contribution would not create a new cumulative impact.

The risk of flood inundation constitutes a cumulative hazard. That risk will persist until the levee improvements now in progress are completed. New development under the General Plan update would result in a significant cumulative impact.

### **5.1.9 Land Use**

There is no significant cumulative impact associated with land use. West Sacramento is a cohesive community that has not been physically divided by development projects. Future development under the General Plan update would be required to maintain connections with surrounding neighborhoods (see, for example, Land Use Element Policies LU-6 and LU-7, and Urban Design Element Policy UD-1.9). As a result, the General Plan update would not contribute to any physical division resulting from development projects.

The planning area is divided by freeway infrastructure. U.S. Highway (US) 50 bisects the city from east to west, creating a physical division. The General Plan update does not propose parallel roads or other features that would expand this division. Therefore, it would not contribute to the existing division created by US 50.

The 2013–2021 Housing Element identifies 72 residential units, located within a single income-assisted development, as having a limited potential to be converted to market-rate units. However, if such conversion were to occur, it would be the result of market forces and not any action under the General Plan update. A potential for existing rental apartments to be converted to individually owned condominium units would similarly not be the result of the General Plan update. The proposed amendments to the General Plan would not make a contribution to any cumulative impact related to displacement.

### **5.1.10 Minerals**

There are no commercial deposits of minerals identified within the planning area. Capped natural gas wells, however, are present in the planning area. There is no known significant cumulative impact related to access to natural gas deposits within West Sacramento and Yolo County. In

addition, the General Plan update would have no impact on minerals, and there would be no contribution to a cumulative effect on minerals.

### 5.1.11 Noise and Vibration

Traffic noise in the planning area is a significant cumulative impact caused both by traffic in the city and by traffic passing through on Interstate 80 and US 50. As discussed in Chapter 3.12, *Noise*, the General Plan update would result in a significant and unavoidable increase in traffic noise. This would be a significant cumulative impact.

Development under the General Plan update would have the potential to contribute to operational noise levels through the development of new stationary noise sources near noise-sensitive land uses, or through the development of new noise-sensitive land uses close to existing noise-generating land uses. Although the development may occur in areas that are already zoned for the applicable type of development (e.g., industrial), noise levels at sensitive receptors may increase from existing conditions, resulting in potential stationary-source operational noise impacts.

The proposed General Plan update includes policies that would help reduce potential noise effects from stationary sources. General Plan Policies S-7.1 Exterior Noise Standards, S-7.2 Exterior Incremental Noise Standards, S-7.3 Interior Noise Standards, and S-7.4 New Stationary Noise-Producing Uses (which specifically addresses noise-producing land uses) require the mitigation of exterior and interior noise levels to levels below the applicable standards for all future projects in the planning area. General Plan Policy S-7.10 Acoustical Study requires the preparation of an acoustical study for any new development with the potential to generate excessive noise. Additionally, Policy LU-3.5 Incompatible Uses and Policy LU-6.4 Compatible Land Use state that the City shall protect against the encroachment of incompatible activities and land uses in residential neighborhoods, and shall require adequate separation buffers between sensitive land uses and industrial land uses.

These policies require that all new development, including noise-generating land uses, ensure that noise levels associated with the development are below the applicable standards, meaning that no new noise-generating development would expose existing noise-sensitive uses to excessive noise levels. Additionally, these policies require that new development of noise-sensitive land uses (e.g., residences) be compatible with nearby land uses, and that project proponents ensure that noise levels at the new development be below the applicable standards. Therefore, the General Plan update would avoid contributing to cumulative stationary noise impacts.

Vibration during future construction under the General Plan update would result in a significant and unavoidable impact where the project is large and sensitive receptors are located in close proximity. However, there is no significant cumulative impact from the vibration that results from individual development projects over time. Therefore, although the General Plan update would have an impact on its own, it would not contribute to a cumulative impact.

Passing trains create cumulative noise and vibration impacts on development along their tracks. The exposure of sensitive receptors to these levels of noise and vibration would be exacerbated<sup>1</sup> if new development were to occur under the General Plan update. This potential contribution would be

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<sup>1</sup> The California Supreme Court has held that impacts of the existing environment on a project are not to be considered impacts under CEQA unless the project exacerbates an existing environmental hazard (*California Building Industry Assoc. v. Bay Area Air Quality Management District* (2015) 62 Cal.4<sup>th</sup> 369).

avoided by proposed policies S-7.5 Frequent, High Noise Events and S-7.8 Train Noise Minimization, and implementation of Mitigation Measure NOI-2: Add vibration standards policy to the General Plan. The General Plan update would not make a considerable contribution to these noise and vibration cumulative impacts.

### **5.1.12 Population and Housing**

Development under the existing General Plan will result in a significant cumulative increase in the planning area's population and housing. For example, the 2013–2021 Regional Housing Needs Allocation estimates that West Sacramento will need 5,977 new dwelling units to support its increase in population over that period (Sacramento Area Council of Governments 2016).

The General Plan update would result in a further increase in the population and available housing stock within the planning area. Consequently, it will make a considerable contribution to cumulative impacts on population and housing.

The General Plan update is required by California Planning and Zoning Law to provide the means to accommodate future housing needs (Government Code Section 65583). Therefore, it is expected to result in a significant cumulative impact on population and housing over time.

### **5.1.13 Public Services**

The construction of facilities to provide public services is not a cumulative impact. Facilities are built within the urban fabric of West Sacramento as needed to support new development on an irregular basis, with no cumulative impact. The impacts of such construction, as described in Section 3.14, *Public Services*, are less than significant and their contribution would not create a new cumulative impact.

### **5.1.14 Recreation**

As discussed in Section 3.15, *Recreation*, West Sacramento does not meet its standard for parkland, based on the amount of existing parkland and the existing population. This is a cumulative impact on recreation. The General Plan update would establish the City's standard for new development to contribute new parks and recreation facilities to fully meet the needs of future residents. Consequently, although it would not make up for the shortage of parks, neither would the General Plan update contribute to that shortage. Therefore, the General Plan update would not contribute to the existing cumulative impact.

New parks can result in environmental impacts in the form of noise, lighting, and traffic impacts, depending on their design, function, and location. As described in Sections 3.14, *Public Utilities*, and 3.15, *Recreation*, various mitigation measures imposed in conjunction with approval of the General Plan update will reduce these impacts to a less-than-significant level. New parks would be built in an urban environment. In that context, where a certain level of noise, lighting, and traffic are expected to exist, the General Plan update would not have a significant cumulative impact.

### 5.1.15 Traffic

SACOG is responsible for preparing the MTP/SCS for the Sacramento region. The EIR prepared for the MTP/SCS adopted in 2016 anticipates that future development within the Sacramento region, of which West Sacramento is a part, will result in an increase in VMT. Overall VMT increases are anticipated to occur regionally, within Center and Corridor Communities, and in Established Communities, as disclosed in the MTP/SCS. West Sacramento is an Established Community; the nearby cities of Sacramento and Davis are identified as both Center and Corridor Communities and Established Communities. Per capita VMT is expected to decrease in these communities, but future population growth will nonetheless result in substantial increases in VMT.

Although the regional traffic analysis provided by the 2016 MTP/SCS EIR focuses on VMT, not traffic congestion, the substantial overall increase in regional VMT (from approximately 40.7 million miles in 2015 to approximately 52.3 million miles in 2036—a 28% increase) indicates that regional traffic congestion will also increase. This would be a cumulative impact on a regional scale.

The General Plan update would have a less-than-significant impact on freeway ramps and segments (Impact TRA-2). However, development under the General Plan update would contribute to additional traffic on the regional network as a result of increased population growth. This would be a significant cumulative impact in view of the substantial projected increase in overall regional VMT.

### 5.1.16 Utilities and Service Systems

The planning area has sufficient capacity in wastewater treatment and stormwater drainage facilities, including future facilities to be built in conjunction with future development. Consequently, there would be no cumulative impact for these resources. This impact, as described in Section 3.17, *Utilities and Service Systems*, is less than significant, it would not contribute considerably to an existing cumulative impact, and it would not create a new cumulative impact.

Similarly, as discussed in Section 3.17, *Utilities and Service Systems*, the planning area would have sufficient future solid waste disposal capacity when updated General Plan policies are taken into account. Although future development under the General Plan update would generate solid waste, there is no cumulative impact to which the such development would contribute.

The reliability of future water supplies from NDWA is unsure at this time. Accordingly, the analysis in Section 3.17, *Utilities and Service Systems*, has conservatively concluded that the General Plan update would have a significant effect on water supply. Taking a similarly conservative approach to cumulative impacts on water, if this source of supply cannot be relied upon when other sources are cut back, future development under the General Plan update would result in a cumulative impact on water supply. The General Plan update, by allowing additional development in the Planning Area, would have a significant cumulative impact.

Pursuant to California Planning and Zoning Law, the City is required to provide for future development within its planning area (Government Code Section 65302) and the means to accommodate its share of projected regional housing needs (Government Code Section 65583). As a result, the City cannot eliminate the potential for future growth and therefore has no feasible mitigation that would avoid this contribution.

## 5.2 Growth-Inducing Impacts

CEQA requires a discussion of the ways in which the project would be growth-inducing. State CEQA Guidelines Section 15126.2(d) identifies a project as growth-inducing if it fosters economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment. The General Plan update would not directly authorize new development and therefore would not directly induce growth. However, it could indirectly induce growth by removing barriers to growth, by creating a condition that attracts additional population or new economic activity, or by providing a catalyst for future growth in the area. While these proposals may have a potential to induce growth, they do not automatically result in growth. Growth can happen only through capital investment in new economic opportunities by the public or private sectors.

Typically, the growth-inducing potential of a project is considered significant if it fosters growth or a concentration of population in excess of the existing setting or baseline. Growth may be induced through the provision of infrastructure or service capacity that would accommodate new development.

By law, the City is required to adopt “a comprehensive, long-term general plan for the physical development of the county” (Government Code Section 65300). On a regular basis (now every 8 years), SACOG prepares the Regional Housing Needs Allocation and adopts the associated Regional Housing Needs Plan (RHNP) that establishes the share of projected future housing growth that each jurisdiction is expected to accommodate in its general plan. SACOG adopted the RHNP for the period of January 1, 2013, through October 31, 2021 in fall 2012. The City’s regional housing share under the RHNP is 5,977 dwelling units. The City’s current (2012) housing element is based on the prior assigned RHNP share and will be amended by the end of October 2013 to account for the new allocations.

Based on the definition of growth inducement, a general plan is inherently growth-inducing because it must, by law, accommodate at least projected housing demand. The General Plan update would provide the framework by which public officials will be guided in making decisions relative to future development in West Sacramento. This EIR, by evaluating the impacts of implementation of the General Plan, also discloses its growth-inducing impacts.

## 5.3 Significant and Unavoidable Impacts

Section 15126.2(a) (b) of the State CEQA Guidelines requires an EIR to identify and focus on the significant environmental effects of the proposed project, including effects that cannot be avoided if the proposed project were implemented. Each of the preceding impact sections has identified those significant impacts that cannot be reduced below a level of significance.

The reader is directed to the various impact sections in Chapter 3 of this EIR for a more detailed discussion of each of these significant and unavoidable impacts.

## 5.4 Significant Irreversible Environmental Changes That Cannot Be Avoided if the Project is Implemented

State CEQA Guidelines Section 15126.2 requires that the EIR for a general plan amendment must address any significant irreversible environmental change that would result from implementation of that amendment. Specifically, according to the Guidelines (Section 15126.2[c]), such an impact would occur if any of the following conditions would result.

- The project would indirectly involve a large commitment of nonrenewable resources.
- Irreversible damage could result from environmental accidents associated with the project.
- The proposed consumption of resources is not justified.

Approval and implementation of actions related to the project would be typical of land use planning and regulatory actions associated with development of a general plan amendment or update. Such activities would result in an irretrievable commitment of nonrenewable resources—such as fossil fuel-based energy supplies and construction-related materials—as a result of future development that would occur pursuant to the General Plan update. Energy resources would be used for construction, heating and cooling of buildings, transportation of people and goods, heating and refrigeration, lighting, and other associated energy needs.

Environmental changes would occur as the physical environment is altered through continued commitments of land and construction materials to urban and rural development. There would be an irretrievable commitment of labor, capital, and materials used in construction, and open space would be permanently lost over time. Nonrenewable resources would be committed—primarily in the form of fossil fuels (oil, natural gas, and gasoline) used to support the additional development associated with implementation of the updated General Plan.

The consumption of other nonrenewable or slowly renewable resources would result from the development associated with the General Plan update. These resources would include, but would not be limited to, lumber and other forest products, sand and gravel, asphalt, steel, copper, and water.

Future development in West Sacramento as envisioned in the General Plan update would result in the construction of structures, facilities, or infrastructure on lands that are currently undeveloped or developed at a lesser intensity. Development of lands generally would result in their future and permanent commitment to urban and suburban uses.

## 5.5 Future Use of This EIR

CEQA has a number of provisions for streamlining the environmental impact review of later projects that are consistent with the General Plan. The City will use this EIR as the basis for streamlining CEQA reviews of future residential, commercial, and office development that is consistent with the General Plan. As the lead agency for future development projects, the City will be responsible for determining which if any of CEQA's streamlining methods may apply to a given project. In any case, the City will determine whether the impacts of such projects were adequately analyzed in the

General Plan EIR and, if it finds any project was not, will prepare subsequent CEQA documents to disclose the project-specific impacts and identify feasible mitigation.

SACOG has prepared a guide for local governments to use when determining whether a project is consistent with the SCS. The City will use that guide, to the extent that it is applicable, as one consideration in determining consistency with the SCS. The City will also adopt an initial study checklist to simplify the process of using the General Plan EIR as the basis for environmental analyses of future projects that are consistent with the General Plan and SCS. This will assist the City to identify future projects that qualify for CEQA streamlining and to identify any new or more severe significant effects that would require the preparation of a subsequent EIR.

## 5.6 References Cited

### 5.6.1 Printed References

Sacramento Area Council of Governments. 2016. *Building a Sustainable System 2016*. Metropolitan Transportation Plan/Sustainability Communities Strategy. Adopted February 18, 2016. Available: <http://www.sacog.org/general-information/2016-mtpscs>. Accessed: May 18, 2016.



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