

Sacramento Regional County Sanitation District's
**South Sacramento County Agriculture and
Habitat Lands Recycled Water Program**
Draft Environmental Impact Report
SCH#: 2015022067



JULY 2016

Prepared by:



Sacramento Regional County Sanitation District South Sacramento County Agriculture & Habitat Lands Recycled Water Program



Draft Environmental Impact Report
SCH#: 2015022067



July 2016

Sacramento Regional County Sanitation District South Sacramento County Agriculture & Habitat Lands Recycled Water Program Draft Environmental Impact Report

CEQA Lead Agency: Sacramento Regional County Sanitation District

The Sacramento Regional County Sanitation District (Regional San) has prepared this Environmental Impact Report (EIR) for the South County Agriculture & Habitat Lands Recycled Water Program (proposed Project). Regional San proposes to provide Title 22 disinfected tertiary treated recycled water for irrigation and groundwater recharge in the southern portion of Sacramento County (South County) and to the Stone Lakes National Wildlife Refuge (NWR) managed wetlands. The Draft EIR considers three action alternatives and the No Project Alternative:

- **Alternative 1, Medium Service Area Alternative** - Convey up to 50,000 acre-feet per year (AFY) of recycled water from the Sacramento Regional Wastewater Treatment Plan to 16,000 acres of irrigated lands in South County including water to farmers, 400 acres of managed wetlands within the South Stone Lake area of the NWR, and to a potential 560-acre irrigation and recharge area. Facilities would include a pump station, and up to 13.8 miles of transmission pipelines and distribution mains, and an undetermined length of service lateral connections.
- **Alternative 2, No Reclamation Funding Alternative** - Same as Alternative 1 (Medium Service Area Alternative), except Bureau of Reclamation would not provide any funding, this alternative is included to facilitate a possible future request for federal funding.
- **Alternative 3, Small Service Area Alternative** - Reduced version of Alternative 1 (Medium Service Area Alternative), with a smaller service area. The managed wetlands at Stone Lakes NWR would continue to be served, and the potential recharge area would be included in order to benefit the Central Sacramento Groundwater Basin.
- **Alternative 4, No Project Alternative** - Assumes that the proposed Project would not be constructed and that recycled water would not be supplied to South County, Stone Lakes NWR, or a potential recharge area.

This EIR assesses potential environmental effects of the South Sacramento County Agriculture & Habitat Lands Recycled Water Program alternatives and a No Project Alternative on resources including: aesthetics, air quality, agriculture, biological resources, cultural resources, energy, geology and soils, greenhouse gas emissions, hazards and hazardous materials, hydrology and water quality, land use and planning, noise, population and housing, public services and utilities, recreation, transportation, socioeconomics, and environmental justice.

For further information regarding this Draft EIR, contact:

Jose Ramirez, Project Manager
Sacramento Regional County Sanitation District
10060 Goethe Road
Sacramento, CA 95827
(916) 876-6059
ramirezj@sacsewer.com

Table of Contents

Executive Summary	ES-1
ES-1 Introduction	ES-1
ES-2 Summary of Project and Alternatives	ES-1
ES-2 Background	ES-4
ES-3 Purpose and Need	ES-5
ES-4 CEQA Objectives	ES-6
ES-5 Project vs. Program Level of Analysis.....	ES-6
ES-6 Summary of Impacts	ES-7
Chapter 1 Introduction	1-1
1.0 Background	1-1
1.0.1 Regional San	1-1
1.0.2 Sacramento Regional Wastewater Treatment Plant	1-2
1.0.3 Stone Lakes National Wildlife Refuge	1-2
1.0.4 Cosumnes River Preserve.....	1-3
1.1 Purpose and Need	1-3
1.1.1 Water Forum.....	1-4
1.1.2 Water Recycling Opportunities Study.....	1-5
1.1.3 South Sacramento County Agriculture and Habitat Lands Recycled Water Feasibility Study	1-6
1.1.4 Existing and Future Recycling Program with SCWA	1-7
1.1.5 Other Recycling Projects	1-7
1.1.6 Regional San's Water Asset Management Vision	1-7
1.1.7 SWRCB Recycled Water Policy	1-8
1.1.8 Central Sacramento Groundwater Basin.....	1-8
1.1.9 The Cosumnes River.....	1-8
1.1.10 Influence of Recycled Water on Water Supply	1-9
1.2 CEQA Objectives	1-9
1.3 Compliance with CEQA.....	1-10
1.3.1 CEQA Lead Agency	1-10
1.3.2 CEQA Process	1-11
1.4 Project vs. Program Level of Analysis.....	1-13
1.4.1 Project-Level Analysis	1-15
1.5 Organization of the EIR.....	1-15
1.6 Areas of Controversy and Issues to be Resolved and/or Evaluated	1-16
1.7 References.....	1-17
Chapter 2 Alternatives and Proposed Project	2-1
2.0 Project Location	2-1
2.1 Existing Facilities.....	2-1
2.2 Proposed Project Alternatives and Components	2-3
2.2.1 Alternative Development Process	2-3
2.2.2 Alternatives Evaluated in EIR.....	2-4
2.2.3 Alternative 1 (Medium Service Area Alternative).....	2-7
2.2.4 Alternative 2 (No Reclamation Funding Alternative).....	2-13
2.2.5 Alternative 3 (Small Service Area Alternative).....	2-13
2.2.6 Alternative 4 (No Project Alternative)	2-15

EIR	Draft
2.3	Operation and Maintenance Requirements2-16
2.3.1	Operations.....2-16
2.3.2	Maintenance2-20
2.3.3	Monitoring.....2-20
2.4	Construction Considerations2-21
2.4.1	Construction Timing.....2-21
2.4.2	Staging Areas2-22
2.4.3	Pipeline Construction.....2-22
2.4.4	Pump Station Construction.....2-27
2.4.5	Construction Equipment, Crew, Spoil and Trip Generation2-28
2.4.6	Construction-Related Water Requirements2-29
2.4.7	Surface Restoration.....2-29
2.4.8	Environmental Commitments2-29
2.5	Alternatives Considered but Rejected2-30
2.5.1	Large Program Alternative.....2-30
2.5.2	Medium Program Alternative2-30
2.6	References.....2-31
Chapter 3 Environmental Setting, Impacts and Mitigation Measures3.0-1	
3.0	Introduction to Environmental Analysis3.0-1
3.0.1	Organization of Chapter 33.0-1
3.0.2	Organization of Discussion of Environmental Issue Areas3.0-1
3.0.3	Approach to Analysis of Cumulative Impacts3.0-3
3.1	Aesthetics.....3.1-1
3.1.1	Environmental Setting3.1-1
3.1.2	Regulatory Framework3.1-4
3.1.3	Impact Analysis3.1-6
3.1.4	References3.1-11
3.2	Land Use and Agriculture.....3.2-1
3.2.1	Environmental Setting3.2-1
3.2.2	Regulatory Framework3.2-9
3.2.3	Impact Analysis3.2-16
3.2.4	References3.2-23
3.3	Recreation.....3.3-1
3.3.1	Environmental Setting3.3-1
3.3.2	Regulatory Framework3.3-2
3.3.3	Impact Analysis3.3-4
3.3.4	References3.3-7
3.4	Air Quality and Greenhouse Gas Emissions.....3.4-1
3.4.1	Air Quality Environmental Setting.....3.4-1
3.4.2	Air Quality Regulatory Framework.....3.4-6
3.4.3	Air Quality Impact Analysis.....3.4-16
3.4.4	Greenhouse Gas Regulatory Framework.....3.4-26
3.4.5	Greenhouse Gas Environmental Setting.....3.4-30
3.4.6	Greenhouse Gas Emissions Impact Analysis.....3.4-35

EIR	Draft
3.4.7	References3.4-39
3.5	Biological Resources.....3.5-1
3.5.1	Environmental Setting3.5-2
3.5.2	Regulatory Framework3.5-4
3.5.3	Special-Status Resources3.5-11
3.5.4	Impact Analysis3.5-29
3.5.5	References3.5-57
3.6	Cultural Resources.....3.6-1
3.6.1	Area of Potential Effects3.6-1
3.6.2	Environmental Setting3.6-2
3.6.3	Regulatory Framework3.6-12
3.6.4	Impact Analysis3.6-16
3.6.5	References3.6-21
3.7	Energy Resources.....3.7-1
3.7.1	Environmental Setting3.7-1
3.7.2	Regulatory Framework3.7-3
3.7.3	Impact Analysis3.7-4
3.7.4	References3.7-7
3.8	Geology and Soils3.8-1
3.8.1	Environmental Setting3.8-1
3.8.2	Regulatory Framework3.8-3
3.8.3	Impact Analysis3.8-6
3.8.4	References3.8-9
3.9	Hazards and Hazardous Materials3.9-1
3.9.1	Environmental Setting3.9-1
3.9.2	Regulatory Framework3.9-4
3.9.3	Impact Analysis3.9-10
3.9.4	References3.9-17
3.10	Hydrology and Water Quality3.10-1
3.10.1	Environmental Setting3.10-1
3.10.2	Regulatory Framework3.10-13
3.10.3	Impact Analysis3.10-24
3.10.4	References3.10-48
3.11	Indian Trust Assets3.11-1
3.11.1	Environmental Setting3.11-1
3.11.2	Regulatory Framework3.11-1
3.11.3	Impact Analysis3.11-1
3.11.4	References3.11-2
3.12	Noise3.12-1
3.12.1	Environmental Setting3.12-1
3.12.2	Regulatory Framework3.12-5

EIR	Draft
3.12.3 Impact Analysis	3.12-9
3.12.4 References	3.12-16
3.13 Public Services and Utilities	3.13-1
3.13.1 Environmental Setting	3.13-1
3.13.2 Regulatory Framework	3.13-3
3.13.3 Impact Analysis	3.13-6
3.13.4 References	3.13-10
3.14 Traffic and Transportation	3.14-1
3.14.1 Environmental Setting	3.14-1
3.14.2 Regulatory Framework	3.14-10
3.14.3 Impact Analysis	3.14-12
3.14.4 Methodology for Analysis	3.14-12
3.14.5 References	3.14-22
3.15 Environmental Justice	3.15-1
3.15.1 Environmental Setting	3.15-1
3.15.2 Regulatory Framework	3.15-3
3.15.3 Impact Analysis	3.15-3
3.15.4 References	3.15-5
3.16 Socioeconomics	3.16-1
3.16.1 Environmental Setting	3.16-1
3.16.2 Regulatory Framework	3.16-3
3.16.3 Impact Analysis	3.16-4
3.16.4 References	3.16-5
3.17 Population and Housing	3.17-1
3.17.1 Environmental Setting	3.17-1
3.17.2 Regulatory Framework	3.17-2
3.17.3 Impact Analysis	3.17-3
3.17.4 References	3.17-4
Chapter 4 Other CEQA Considerations	4-1
4.0 Significant and Unavoidable Impacts	4-1
4.1 Irreversible Commitments of Resources	4-1
4.2 Growth Inducing Impacts	4-2
4.3 Environmentally Superior Alternative	4-3
4.4 References	4-5
Chapter 5 Consultation, Coordination, and Compliance	5-1
5.0 Scoping	5-1
5.1 EIR Distribution	5-1
5.2 Future Public Involvement.....	5-2
5.3 Compliance with Federal Statutes and Regulations	5-2
5.3.1 Federal Endangered Species Act.....	5-2
5.3.2 National Historic Preservation Act, Section 106	5-3
5.3.3 Clean Air Act.....	5-3

EIR	Draft
5.3.4 Coastal Zone Management Act	5-3
5.3.5 Farmland Protection Policy Act	5-4
5.3.6 Executive Order 11988 – Floodplain Management	5-4
5.3.7 Federal Migratory Bird Treaty Act, Bald and Golden Eagle Protection Act, Executive Order 13168.....	5-4
5.3.8 Executive Order 13112: Invasive Species.....	5-4
5.3.9 Executive Order 11990 – Protection of Wetlands.....	5-5
5.3.10 Wild and Scenic Rivers Act	5-5
5.3.11 Safe Drinking Water Act – Source Water Protection	5-5
5.3.12 Executive Order on Trails for American in the 21st Century	5-5
5.3.13 Executive Order 13007 – Indian Sacred Sites.....	5-6
5.3.14 Executive Order 12898 – Environmental Justice.....	5-6
5.4 References.....	5-6
Chapter 6 EIR/EIS Preparers.....	6-1
6.0 Regional San (CEQA Lead Agency)	6-1
6.2 EIR/EIS Preparation Team.....	6-1

List of Tables

Table ES-1: Regional San's South Sacramento County Agriculture & Habitat Lands Recycled Water Program EIR Impact Summary	ES-8
Table 1-1: Written Comments Received During Scoping	1-11
Table 1-2: Responsible and Trustee Agencies and Coordination.....	1-14
Table 2-1: Estimated Recycled Water Use Included in Alternative 1 (Medium Service Area Alternative)	2-6
Table 2-2: Proposed Components of Alternative 1 (Medium Service Area Alternative)	2-8
Table 2-3: Alternative 1 (Medium Service Area Alternative) Transmission Pipeline Segments	2-10
Table 2-4: Estimated Recycled Water Use for Alternative 3 (Small Service Area Alternative).....	2-15
Table 2-5: Recycled Water Deliveries under the Action Alternatives.....	2-17
Table 2-6: Spoil Generated by Pipeline Construction for the Project-Level Components of the Proposed Project	2-28
Table 3.0-1: List of Cumulative Projects	3.0-6
Table 3.2-1: Summary of Agricultural Production in 2013	3.2-3
Table 3.2-2: Land Conversions in Sacramento County, 2004-2014	3.2-3
Table 3.2-3: Williamson Act Lands in Sacramento County, 2002-2012 (acres).....	3.2-5
Table 3.4-1: Sacramento County Attainment.....	3.4-5
Table 3.4-2: Summary of Sacramento County Ambient Air Quality Data (2010 – 2014)	3.4-6
Table 3.4-3: State and Federal Ambient Air Quality Standards	3.4-7
Table 3.4-4: General Conformity De Minimis Levels	3.4-11
Table 3.4-5: SMAQMD CEQA Significance Thresholds	3.4-17
Table 3.4-6: Maximum Daily Construction Emissions (lbs/day) of Criteria Air Pollutants and Precursors	3.4-19

EIR	Draft
Table 3.4-7: Overall Annual Construction Emissions (tons/year) of Criteria Air Pollutants and Precursors.....	3.4-19
Table 3.4-8: Maximum Daily Operation Emissions (lbs/day) of Criteria Air Pollutants and Precursors	3.4-22
Table 3.4-9: Overall Annual Operation Emissions (tons/year) of Criteria Air Pollutants and Precursors	3.4-22
Table 3.4-10: Greenhouse Gas Overview and Global Warming Potential.....	3.4-32
Table 3.4-11: Greenhouse Gas Emissions Associated with the Project (Tons of CO2e/year)	3.4-37
Table 3.5-1: Potential for Occurrence of Sensitive Natural Community Types and Sensitive Species in Project Area and Vicinity	3.5-22
Table 3.5-2: Monthly Reduction in Discharges from SRWTP under Alternative 1 (Medium Service Area Alternative) and Alternative 2 (No Reclamation Funding Alternative) at full Project Buildout, including Wintertime Irrigation.....	3.5-50
Table 3.5-3: Monthly Reduction in Discharges from SRWTP under Alternative 1 (Medium Service Area Alternative) and Alternative 2 (No Reclamation Funding Alternative) without Wintertime Irrigation	3.5-51
Table 3.5-4: Groundwater-Induced Increases in Streamflows with Implementation of Wintertime Irrigation	3.5-51
Table 3.5-5: Groundwater-Induced Increases in Streamflows without Wintertime Irrigation	3.5-52
Table 3.6-1: Previously Recorded Cultural Sites within the APE	3.6-7
Table 3.6-2: Cultural Resources Newly Recorded during the Proposed Project Cultural Resources Survey	3.6-8
Table 3.8-1: Soils in the Project Area	3.8-3
Table 3.9-1: Contamination Sites Identified by EnviroStor within and Surrounding the Project Area (within 1,000 feet of Project Components).....	3.9-2
Table 3.9-2: Contamination Sites Identified by GeoTracker within and Surrounding the Project Area (within 1,000 feet of Project Components)	3.9-2
Table 3.10-1: Sacramento River Average Monthly Flow at Freeport by Water Year Type ...	3.10-4
Table 3.10-2: Projected Recycled Water Quality	3.10-8
Table 3.10-3: Groundwater Quality	3.10-13
Table 3.10-4: CECs to be included in Baseline Monitoring for Groundwater Recharge Project Including Surface Application of Recycled Water (Not for Irrigation)	3.10-19
Table 3.10-5: Sacramento/San Joaquin River Delta Monthly Outflow by Water Year Type with Implementation of Project Elements	3.10-39
Table 3.10-6: Sacramento/San Joaquin River Delta Monthly Outflow by Water Year Type with Implementation of Program Elements.....	3.10-44
Table 3.12-1: Typical A-Weighted Sound Levels.....	3.12-2
Table 3.12-2: Existing Noise Levels.....	3.12-5
Table 3.12-3: Noise Level Performance Standards for New Projects Affected by or Including Non-Transportation Noise Sources	3.12-8
Table 3.12-4: Exterior Noise Level Standards	3.12-8

EIR	Draft
Table 3.12-5: Typical Noise Levels for Construction Equipment	3.12-11
Table 3.12-6: Vibration Levels for Construction Equipment.....	3.12-15
Table 3.14-1: Level of Service Criteria for Multi-lane Highway and Local Roadway Segments.....	3.14-4
Table 3.14-2: Existing Roadway Operations.....	3.14-5
Table 3.14-3: Existing Roadway Operations for Highway 99 south of the City of Elk Grove	3.14-8
Table 3.14-4: Project-Level Construction Trip Generation by Alternative	3.14-12
Table 3.16-1: Sacramento County Population and Employment by Industry Sector	3.16-1
Table 3.16-2: Unemployment Rates in Sacramento County.....	3.16-2
Table 3.17-1: Unincorporated Sacramento County and City of Elk Grove Populations.....	3.17-2

List of Figures

Figure ES-1: Project Vicinity	ES-3
Figure 2-1: Overview of Project Location	2-2
Figure 2-2: Alternative 1 (Medium Service Area Alternative) and Alternative 2 (No Reclamation Funding Alternative).....	2-5
Figure 2-3: Proposed Pump Station Site	2-9
Figure 2-4: Alternative 3 (Small Service Area Alternative).....	2-14
Figure 2-5: Monthly Demand for Water.....	2-17
Figure 2-6: Cosumnes River Profile	2-19
Figure 2-7: Diagram of Horizontal Directional Drilling (HDD) Process.....	2-25
Figure 2-8: Diagram of Bore and Jack Process	2-26
Figure 2-9: Microtunneling Construction	2-27
Figure 3.1-1: Visual Features in Stone Lakes National Wildlife Refuge.....	3.1-2
Figure 3.1-2: Existing Facilities at SRWTP	3.1-3
Figure 3.1-3: Urban Visual Features in Project Area (from Franklin Boulevard).....	3.1-4
Figure 3.1-4: Agricultural Visual Features in Project Area	3.1-4
Figure 3.2-1: Land Uses in Project Area	3.2-2
Figure 3.2-2: Prime Farmland in the Project Area	3.2-4
Figure 3.2-3: Williamson Act Lands in the Project Area.....	3.2-6
Figure 3.2-4: Cosumnes River Preserve Lands in Relation to Project Area	3.2-7
Figure 3.5-1: Aerial Photograph of Project Area	3.5-3
Figure 3.10-1: Regional Hydrology Within and Surrounding the Project Area	3.10-2
Figure 3.10-2: Groundwater Basins in Sacramento County	3.10-10
Figure 3.10-3: Spring 2012 Groundwater Contour Elevation Map.....	3.10-11
Figure 3.10-4: Fall 2012 Groundwater Elevation Contour Map	3.10-12
Figure 3.10-5: Increase in Groundwater Storage with Project and Program Implementation	3.10-33

Figure 3.10-6: Changes in Groundwater Elevation due to Project Implementation, as Compared to Baseline without Project.....3.10-34

Figure 3.10-7: SacIWRM Simulated Reduction in Groundwater Pumping and Associated Benefits to Groundwater and Surface Water3.10-38

Figure 3.15-1: Minority Populations, Low-Income Populations and DACs in the Project Area3.15-2

List of Appendices

Appendix A – Distribution List

Appendix B – Scoping Report

Acronyms and Abbreviations

$\mu\text{g}/\text{m}^3$	microgram per cubic meter
AADT	Annual Average Daily Traffic
AB	Assembly Bill
ACS	American Community Survey
ADR	Ahart's dwarf rush
ADT	Average Daily Traffic
ADWF	average dry weather flow
AF	acre-feet
AFY	acre-feet per year
ALUC	Airport Land Use Commission
APE	Area of Potential Effect
AQAP	Air Quality Attainment Plans
ARB	Air Resources Board
ASCE	American Society of Civil Engineers
ATCM	Airborne Toxic Control Measure
BACT	Best Available Control Technology
BMPs	Best Management Practices
BNR	biological nutrient removal
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CAFÉ	Corporate Average Fuel Economy
CAL FIRE	California Department of Forestry and Fire Protection
CalEEMod	California Emissions Estimator Model
CalEPA	California Environmental Protection Agency
California MUTCD	California Manual of Uniform Traffic Control Devices
Cal/OSHA	California Division of Occupational Safety and Health
CalRecycle	California Department of Resources Recycling and Recovery
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CASGEM	California Statewide Groundwater Elevation Monitoring
CBC	California Building Code

EIR		Draft
CCAA	California Clean Air Act	
CCIC	Central California Information Center	
CCP	Comprehensive Conservation Plan	
CCR	California Code of Regulations	
CDFW	California Department of Fish and Wildlife	
CDOC	California Department of Conservation	
CDPH	California Department of Public Health	
CEC	California Energy Commission	
CECs	Constituents of Emerging Concern	
CEQ	Council on Environmental Quality	
CEQA	California Environmental Quality Act	
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act	
CESA	California Endangered Species Act	
CFR	Code of Federal Regulations	
cfs	cubic feet per second	
CGS	California Geological Survey	
CH ₄	methane	
CHP	California Highway Patrol	
CHRIS/CCIC	California Historical Resources Information System-Central California Information Center	
CIWMB	California Integrated Waste Management Board	
CNDDB	California Natural Diversity Data Base	
CNEL	Community Noise Equivalent Level	
CNPS	California Native Plant Society	
CO	Carbon monoxide	
CO ₂	carbon dioxide	
CO _{2e}	carbon dioxide equivalent	
CPP	Cosumnes Power Plant	
CPUC	California Public Utilities Commission	
CRHR	California Register of Historical Resources	
CRPR	California Rare Plant Bank	
CSC	California Species of Special Concern	
CSD	Community Services District	
CTS	California tiger salamander	

EIR **Draft**

CV-SALTS	Central Valley Salinity Alternatives for Long-Term Sustainability
CVFMP	Central Valley Flood Management Planning
CVFWM	Coastal and valley freshwater marsh
CVP	Central Valley Project
CVRWQCB	Central Valley Regional Water Quality Control Board
CVSC	Central Valley salinity Coalition
CWA	Clean Water Act
CY	cubic yards
CZMA	Coastal Zone Management Act
DAC	disadvantaged communities
dB	decibels
dBA	A-weighted decibel
DBH	diameter at breast height
Delta	Sacramento-San Joaquin Delta
DPM	diesel particulate matter
DPR	Department of Pesticide Regulation
DTSC	(California) Department of Toxic Substances Control
DWP	(California) Drinking Water Program
DWR	Department of Water Resources
EBMUD	East Bay Municipal Utility District
EDD	(California) Employment Development Department
EGCSD	Elk Grove Community Services District
EIR	Environmental Impact Report
EIS	Environmental Impact Statement
EO	Executive Order
EPA	(United States) Environmental Protection Agency
EPCRA	Emergency Planning and Community Right-to-Know Act
FAA	Federal Aviation Administration
FEMA	Federal Emergency Management Agency
FESA	Federal Endangered Species Act
FHSZ	Sacramento County Fire Hazard Severity Zone
FHWA	Federal Highway Administration
FIRM	Flood Insurance Rate Map

EIR

Draft

FMMP	Farmland Mapping and Monitoring Program
FPPA	Farmland Protection Policy Act
ft	feet
FTA	Federal Transit Administration
GGG	giant garter snake
GHG	greenhouse gas
GMP	Central Sacramento Groundwater Management Plan
gpm	gallons per minute
GSP	Groundwater Sustainability Plan
GWh	gigawatt hours
GWP	global warming potential
H ₂ O	water
H ₂ S	hydrogen sulfide
HCP	Habitat Conservation Plan
HDD	Horizontal Directional Drilling
HFCs	hydrofluorocarbons
HMBP	Hazardous Materials Business Plan
HMPC	Hazard Mitigation Planning Committee
hp	horsepower
HUD	California Department of Housing and Urban Development
HVAC	heating, ventilating, and air conditioning
Hz	hertz
I-5	Interstate 5
IPCC	Intergovernmental Panel on Climate Change
IS/MND	Initial Study/Mitigated Negative Declaration
ITA	Indian Trust Assets
ITP	Incidental Take Permits
JPA	Joint Powers Authority
LAFCO	Local Agency Formation Commission
LCFS	Low Carbon Fuel Standard
L _{dn}	day-night noise level
LEA	Local Enforcement Agencies
L _{eq}	equivalent noise level

EIR		Draft
LF	Linear Feet	
L _{max}	maximum noise level	
L _{min}	minimum noise level	
LLAD	Landscaping and Lighting Assessment District	
LOS	Level of Service	
LUST	leaking underground storage tank	
L _x	statistical descriptor	
MBTA	Migratory Bird Treaty Act	
mg	milligrams	
MG	million gallons	
mg/L	milligrams per liter	
mgd	million gallons per day	
MHI	median household income	
MLD	Most Likely Descendant	
MND	mitigated negative declaration	
MMRP	Mitigation Monitoring and Reporting Program	
MSDS	Material Safety Data Sheet	
MT	million ton	
MW	megawatts	
MWh	megawatt hour	
N ₂ O	nitrous oxide	
NAAQS	National Ambient Air Quality Standards	
NADB	National Archaeological Database	
NAHC	Native American Heritage Commission	
NCIC	North Central Information Center	
ND	negative declaration	
NEPA	National Environmental Policy Act	
NFIP	National Flood Insurance Program	
NHPA	National Historic Preservation Act	
NHRP	National Register of Historic Places	
NHTSA	National Highway Traffic Safety Administration	
NIMS	National Incident Management System	
NMFS	National Marine Fisheries Service	

EIR		Draft
NO ₂	nitrogen dioxide	
NOAA	National Oceanic and Atmospheric Administration	
NOC	Notice of Completion	
NOD	Notice of Determination	
NOI	Notice of Intent	
NOP	Notice of Preparation	
NO _x	nitrogen oxides	
NPDES	National Pollutant Discharge Elimination System	
NPL	National Priority List	
NRCS	Natural Resources Conservation Service	
NWR	National Wildlife Refuge	
O ₃	Ozone	
OEHHA	Office of Environmental Health Hazard Assessment	
OSHA	Occupational Safety and Health Administration	
PCA	Primary Conservation Areas	
PFCs	perflourocarbons	
PG&E	Pacific Gas & Electric Company	
PM	particulate matter	
PM ₁₀	particulate Matter ≤ 10 microns	
PM _{2.5}	particulate Matter ≤ 2.5 microns	
ppm	parts per million	
PPV	peak particle velocity	
PRC	Public Resources Code	
RCCC	Rio Cosumnes Correctional Center	
RCRA	Resource Conservation and Recovery Act	
Reclamation	U.S. Department of the Interior Bureau of Reclamation	
Regional San	Sacramento Regional County Sanitation District	
RMS	root mean square	
RO	reverse osmosis	
ROD	Record of Decision	
ROG	reactive organic gases	
ROW	right-of-way	
RPF	Renewables Portfolio Standard	

EIR **Draft**

RSL	Regional Screening Level
RTC	Response to Comments
RWQCB	Regional Water Quality Control Board
SACOG	Sacramento Area Council of Governments
SAOG	Sacramento Orcutt grass
SARA	Superfund Amendments and Reauthorization Act
SB	Senate Bill
SCGA	Sacramento Central Groundwater Authority
SCS	U.S. Soil Conservation Service
SCT	South County Transit
SCWA	Sacramento County Water Agency
SCWMR	Sacramento County Waste Management and Recycling
SDC	Seismic Design Category
SDWA	Federal Safe Drinking Water Act
SEL	single-event [impulsive] noise level
SEMS	(California) Standardized Emergency Management System
SF ₆	sulfur hexafluoride
SGMA	Sustainable Groundwater Management Act
SIP	State Implementation Plan
SLOG	slender Orcutt grass
SMAQMD	Sacramento Metropolitan Air Quality Management District
SMUD	Sacramento Municipal Utility District
SNMP	Salt/Nutrient Management Plan
SO ₂	sulfur dioxide
SO _x	sulfur oxides
SOI	Sphere of Influence
SPA	Sacramento Power Authority
SPCC	Spill Prevention, Control, and Countermeasure Plan
SPFC	State Plan Flood Control
SR	State Route
SRA	State Responsibility Area
SRF	State Revolving Fund
SRCSD	Sacramento Regional County Sanitation District

EIR		Draft
SSC	Species of Special Concern	
SSHCP	South Sacramento Habitat Conservation Plan	
SSALTS	Strategic Salt Accumulation Land and Transport Study	
SVAB	Sacramento Valley Air Basin	
SWHA	Swainson's Hawk	
SWIS	Solid Waste Information System	
SWP	State Water Project	
SWPPP	Stormwater Pollution Prevention Plan	
SWRCB	State Water Resources Control Board	
SRWTP	Sacramento Regional Wastewater Treatment Plant	
Stone Lakes NWR	Stone Lakes National Wildlife Refuge	
TAC	toxic air contaminant	
TCBB	tricolored blackbird	
TDS	total dissolved solids	
TMDL	Total Maximum Daily Load	
TMP	Traffic Management Plan	
TNC	The Nature Conservancy	
TTC	Temporary Traffic Control	
U.S.	United States	
USC	United States Code	
UCR	Uniform Crime Reporting Program	
UPRR	Union Pacific Railroad	
UDA	urban development area	
USACE	US Army Corps of Engineers	
USC	United States Code	
USDA	United States Department of Agriculture	
USDOT	U.S. Department of Transportation	
USEPA	U.S. Environmental Protection Agency	
USFWS	US Fish and Wildlife Service	
USGS	United States Geological Survey	
UWMP	Urban Water Management Plan	
V/C	volume to capacity	
VdB	vibration velocity in decibels	

EIR

Draft

VELB	valley elderberry longhorn beetle
VOC	volatile organic compounds
VPSF	vernal pool fairy shrimp
VPTS	vernal pool tadpole shrimp
WA	Williamson Act
WDR	Waste Discharge Requirements
WHKI	White-tailed Kite
WPCF	Water Pollution Control Facility
WPT	Western pond turtle
WQCP	Water Quality Control Plan
WRF	Water Recycling Facility
WROS	Water Recycling Opportunities Study
WST	Western spadefoot toad
WWTP	wastewater treatment plant

This page intentionally left blank

Executive Summary

ES-1 Introduction

The Sacramento Regional County Sanitation District (Regional San), as the California Environmental Quality Act (CEQA) lead agency, has prepared this Draft Environmental Impact Report (Draft EIR). Regional San is proposing the South Sacramento County Agriculture & Habitat Lands Recycled Water Program (proposed Project¹), which would provide Title 22 disinfected tertiary treated recycled water for irrigation, groundwater recharge and habitat enhancement in the southern portion of Sacramento County. In developing the proposed Project Regional San prepared a Feasibility Study. Regional San relied on the Feasibility Study to develop the proposed Project, which would provide recycled water from the Sacramento Regional Wastewater Treatment Plant (SRWTP) for irrigation and recharge and to wetlands at the Stone Lakes National Wildlife Refuge (Stone Lakes NWR). Regional San intends to pursue Clean Water State Revolving Fund (CWSRF financing) for this Project and has thus prepared this Draft EIR to meet State Water Resources Control Board "CEQA-Plus" requirements.

Figure ES-1 shows the Project vicinity. This EIR has been developed to provide the public and responsible and trustee agencies reviewing the proposed Project an analysis of the potential effects on the local and regional environment associated with construction and operation of the proposed Project.

ES-2 Summary of Project and Alternatives

This EIR considers the effects of the proposed Project along with two action alternatives and a No Project alternative. The proposed Project is:

- **Alternative 1 (Medium Service Area Alternative)**, would convey up to 50,000 acre-feet per year (AFY) of recycled water from the SRWTP to up to 16,000 acres of irrigated lands in South County and 400 acres of managed wetlands within the South Stone Lake area of the NWR. The proposed Project would initially deliver up to about 33,000 AFY of recycled water for summertime irrigation, and at full implementation of all project and

¹ Regional San intends to apply for federal funding from the U.S. Department of the Interior, Bureau of Reclamation, for the South County Agriculture & Habitat Lands Recycled Program; provision of funding by Reclamation would be considered a federal "action" under the National Environmental Policy Act (NEPA). Approval of the project by Regional San would be a discretionary "project" as defined by CEQA. This document addresses the discretionary project being considered for approval by Regional San and can be used by Reclamation in the future to address effects of providing federal funds for the project. This EIR thus includes some information that addresses future requirements for environmental documentation under the NEPA.

program elements could also provide an additional 17,000 AFY for groundwater recharge and wintertime irrigation. Facilities would include a pump station, and up to 13.8 miles of transmission pipelines and distribution mains, and an undetermined length of service lateral connections.

The alternatives considered are:

- **Alternative 2 (No Reclamation Funding Alternative)**, would be the same as Alternative 1 (Medium Service Area Alternative), except Reclamation would not provide any funding.
- **Alternative 3 (Small Service Area Alternative)**, would be a reduced version of Alternative 1 (Medium Service Area Alternative), in which the service area would consist of a smaller portion of South County. This alternative would convey up to 26,700 AFY or recycled water from the SRWTP to up to 7,550 acres of irrigated lands in South County, 400 acres of managed wetlands within the Stone Lakes NWR, and to a potential 560-acre recharge and irrigation area. Facilities would include a pump station, but fewer miles of transmission pipelines and distribution mains, and an undetermined length of service lateral connections.
- **Alternative 4 (No Project Alternative)**, assumes that the proposed Project would not be constructed and that recycled water would not be supplied to South County, Stone Lakes NWR, or a potential recharge area.

Because the proposed Project and Alternative 2 are identical except for the funding aspect, their impacts are evaluated concurrently in the individual impact sections of the EIR. CEQA requires that an EIR identify an environmentally superior alternative (Guidelines Section 15126.2). The selection of the preferred alternative is independent of the identification of the environmentally preferable/superior alternative, although the identification of both is based on the information presented in this EIR. Pursuant to CEQA, Alternative 1 (Medium Service Alternative) was determined to be the environmentally superior alternative because it would maximize restoration of groundwater levels in the South County and the restoration of flows in the Cosumnes River between Highway 99 and the Cosumnes River Preserve.

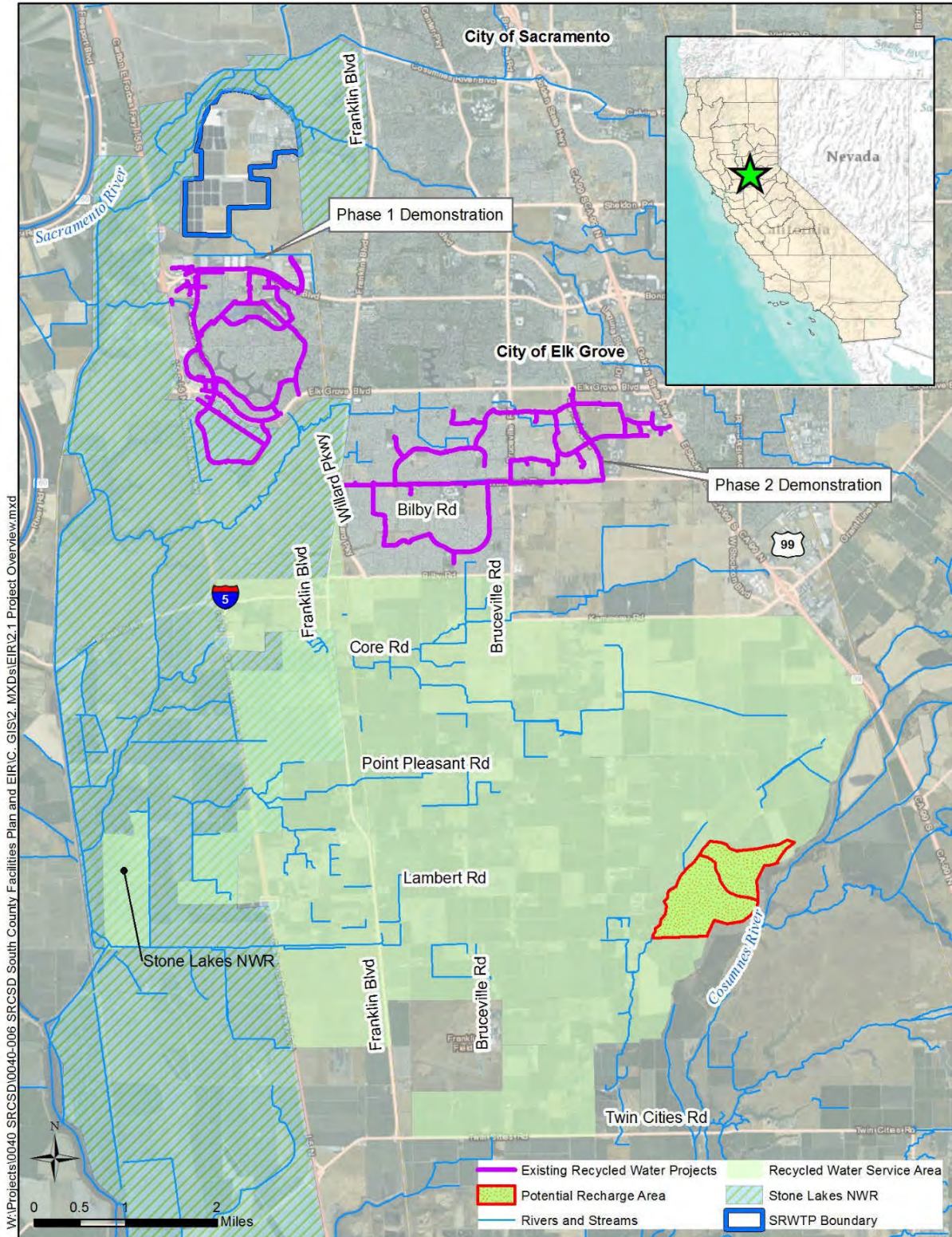


Figure ES-1: Project Vicinity

ES-2 Background

Regional San, established in 1973, is an independent special district created under the California Health and Safety Code to provide regional wastewater conveyance and treatment service throughout the cities of Citrus Heights, Elk Grove, Folsom, Rancho Cordova, Sacramento, and West Sacramento; the communities of Courtland and Walnut Grove; and unincorporated Sacramento County in California. It also has the authority to distribute recycled water in Sacramento County. Regional San serves approximately 1.4 million people within its service area. It owns and operates the SRWTP located at 8521 Laguna Station Road in Elk Grove, treating wastewater and discharging the treated effluent to Sacramento River near the town of Freeport. On December 9, 2010, the Central Valley Regional Water Quality Control Board adopted a new National Pollutant Discharge Elimination System (NPDES) permit for the SRWTP which requires treatment equivalent to disinfected tertiary treated recycled water to be produced for discharge to the Sacramento River by 2020. The NPDES permit (which also constitutes waste discharge requirements [WDRs] under state law), spells out the limitations on daily treatment and flows, as well as the allowable concentrations or total loads of various constituents of concern found in treated effluent. Effluent treatment facilities must be constructed and operated to meet the WDRs. If the Title 22 disinfected tertiary recycled water quality effluent is not used for recycled water projects, it will continue to be discharged to the Sacramento River. As a result of new permit requirements, Regional San is proposing to construct and operate new facilities to improve treated effluent water quality. These improvements are part of the EchoWater Project. Regional San published the Draft EIR for the EchoWater Project on March 4, 2014 and certified it on September 24, 2014.

Since the mid 1990s, Regional San has evaluated the feasibility of implementing a large-scale Water Recycling Program. In 2007, it completed the Water Recycling Opportunities Study (WROS) with the purpose of:

- Identifying potential water recycling opportunities;
- Engaging potential water recycling partners and stakeholders
- Developing, assessing, and prioritizing potential water recycling projects; and
- Providing a strategy to further develop and implement the projects initially selected to move forward in achieving the stated goals of the large-scale Water Recycling Program.

One of the most promising projects that resulted from the WROS was the South County Program. To further explore the effects and benefits of the Program, Regional San prepared a Feasibility Study (RMC 2015) to evaluate the recycled water market; existing water supplies; river intake alternatives; the viability of groundwater storage; the need for seasonal storage; conveyance facilities; environmental, regulatory, legal and institutional requirements; and recycled water program alternatives.

The study area evaluated in the Feasibility Study encompasses approximately 15,000 acres in South Sacramento County, 18,000 acres in the Stone Lakes NWR, and 9,000 acres within the

City of Elk Grove's former sphere of influence (SOI)² area. Three alternatives were developed based on the results of the recycled water market assessment. The alternatives vary in the size of the study area covered and the demand met by the Program, but have in common in that they would provide Title 22 disinfected tertiary treated recycled water produced at the SRWTP to farmland and wetlands at the Stone Lakes NWR in South County. All of the alternatives would include pipelines, pumping plants, customer turnouts, and an optional recharge area. The alternatives included the Large Program Alternative, Medium Program Alternative, and Small Program Alternative.

The Feasibility Study recommended implementation of the Medium Program Alternative. The benefits of this alternative include optimized cost of delivered water and increases in groundwater levels along the most critical stretch of the Cosumnes River during all water years.

ES-3 Purpose and Need

Regional San's purpose in proposing the Project is to:

- Meet Regional San's goal of recycling 30 to 40 million gallons per day of its treated wastewater by 2025;
- Support California's recycling goal of 2 million acre-feet per year by 2030;
- Restore depleted groundwater levels in the South Sacramento County area through in lieu recharge/use of recycled water for irrigation as a replacement for and supplement to groundwater;
- Improve regional water supply reliability through the restoration of groundwater levels in the Central Groundwater Basin; and
- Improve flows in the Cosumnes River and improve the riparian corridor along the Cosumnes River through restoration of groundwater levels along the corridor from Highway 99 to the Cosumnes River Preserve I-5.

Groundwater use in the Central Sacramento Ground Water Basin has resulted in development of a cone of depression. Groundwater pumping has also been determined to be primarily responsible for a decline in flows in the Cosumnes River and dewatering of the riparian corridor. Regional planning efforts, such as the American River Basin Integrated Regional Water Management Plan, have identified the need to use recycled water as an element of regional water supply.

² Since completion of the Feasibility Study, the Local Agency Formation Commission (LAFCO) did not approve the City of Elk Grove's request for extension of its SOI.

ES-4 CEQA Objectives

The overall objective of the proposed Project is to provide a reliable source of non-potable water in the County. Specifically, the objectives of the Project are as follows:

- Maximize use of recycled water.
- Reduce groundwater pumping in the Central Basin and contribute to long term basin sustainability by supplying recycled water to agricultural customers.
- Minimize conveyance costs (pipeline and pumping) while maximizing demand served
- Improve environmental resources in the area by:
 - Enhancing the riparian corridor along the Cosumnes River by raising groundwater levels
 - Reducing streamflow losses in the Cosumnes River during critical fall periods by raising groundwater levels
 - Providing drought-resistant water supplies to agricultural users to encourage long-term agricultural uses in the Cosumnes River area
 - Providing a reliable water supply to managed wetlands
- Assist in long term fulfillment of the Water Forum Agreement for conjunctive use of surface and groundwater supplies in the County.
- Work within the context of Sacramento Central Groundwater Authority (SCGA)'s developing Groundwater Accounting Program and with environmental organizations to balance potential recovery of groundwater with regional groundwater needs.
- Support the SCGA and environmental organizations in developing a Groundwater Accounting Program that will balance the increase in groundwater supply with regional water reliability and environmental benefits.

ES-5 Project vs. Program Level of Analysis

The Draft EIR evaluates the proposed Project at both the project- and program-level of detail. A project EIR is defined as one which “examines the environmental impacts of a specific development project.” (CEQA Guidelines Section 15161). A project EIR provides a site-specific review of all phases of the project, including planning, construction, and operation.

A program EIR is defined as one which “may be prepared on a series of actions that can be characterized as one large project and are related.” (CEQA Guidelines Section 15168). A program EIR assesses and documents the broad environmental impacts of a program with the understanding that a more detailed site-specific review may be required to assess future projects implemented under the program.

Because detailed plans of the distribution mains, service connections laterals, and customer turnouts of the proposed Project are not known at this time, and they are contingent on the completion of the project-level components, this Draft EIR provides program-level analysis of these project components. The project-level analysis of the proposed Project is for the proposed pump station at SRWTP and the transmission pipeline from the proposed pump station to Twin

Cities Road, which are expected to move forward once environmental review has been completed.

ES-6 Summary of Impacts

Table ES-1 provides a summary of potential impacts by topic area, in compliance with CEQA Guidelines Section 15123. The table does not include impacts or criteria that were deemed not applicable to construction or operation of the proposed Project. The proposed Project would not result in any significant and unavoidable impacts for any action alternative. Alternative 4 (No Project Alternative) has the potential to result in significant and unavoidable impacts associated with lowering groundwater levels, loss of agricultural and economic viability and a resultant conversion of agricultural land to non-agricultural land uses resulting from a diminishing of reliable water supply and a further degradation of the Cosumnes River corridor.

Table ES-1: Regional San's South Sacramento County Agriculture & Habitat Lands Recycled Water Program EIR Impact Summary

Impact Statement	Level of Significance Before Mitigation				Mitigation Measure	Level of Significance After Mitigation			
	1-Medium Service Area	2-No Reclamation Funding	3-Small Service Area	No Project		1-Medium Service Area	2-No Reclamation Funding	3-Small Service Area	No Project
Aesthetics									
AES-1: Substantially Alter Existing Viewsheds or Degrade the Existing Visual Character or Quality of the Site and its Surroundings	LTS	LTS	LTS	SU	No mitigation necessary. (Alternatives 1, 2, 3) No mitigation possible for No Project.	LTS	LTS	LTS	SU
AES-2: Create a New Source of Substantial Light, Glare, or Shadow	PS	PS	PS	NI	AES-2: Nighttime Construction Lighting (Alternatives 1, 2, 3)	LTSM	LTSM	LTSM	NI
Land Use & Agriculture									
LUA-1: 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	LTS/B	LTS/B	LTS/B	SU	No mitigation necessary. No mitigation possible for No Project.	LTS/B	LTS/B	LTS/B	SU
LUA-2: Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance or Area Containing Prime Soils to Uses Not Conducive to Agricultural Production, Conflict with Any Existing Williamson Act Contract, or Introduce Incompatible Uses in the Vicinity of Existing Agricultural Uses	PS	PS	PS	SU	LUA-2: Stockpile Soil (Alternatives 1, 2, 3) No mitigation possible for No Project	LTSM	LTSM	LTSM	SU
Recreation									
REC-1: Result in Direct Alteration of an Existing Recreational Facility or Disruption of Recreational Use	PS	PS	PS	NI	TR-1: Traffic Management Plan (Alternatives 1, 2, 3) NOI-1: Noise Reduction Measures (Alternatives 1, 2, 3)	LTSM	LTSM	LTSM	NI-
Air Quality and Greenhouse Gas Emissions									
AQ-1: Construction emissions of criteria pollutants and precursors	LTS	LTS	LTS	NI	No mitigation necessary.	LTS	LTS	LTS	NI
AQ-2: Expose sensitive receptors to substantial pollutant concentrations	LTS	LTS	LTS	NI	No mitigation necessary.	LTS	LTS	LTS	NI
AQ-3: Direct operational emissions of criteria pollutants	LTS	LTS	LTS	NI	No mitigation necessary.	LTS	LTS	LTS	NI
AQ-4: Create objectionable odors	LTS	LTS	LTS	NI	No mitigation necessary.	LTS	LTS	LTS	NI
AQ-5: Cumulative impact on air quality	LTS	LTS	LTS	NI	No mitigation necessary.	LTS	LTS	LTS	NI
GHG-1: Construction emissions of GHGs	LTS	LTS	LTS	NI	No mitigation necessary.	LTS	LTS	LTS	NI
GHG-2: Operational emissions of GHGs	LTS	LTS	LTS	NI	No mitigation necessary.	LTS	LTS	LTS	NI
GHG-3: Consistency with applicable GHG reduction plans	NI	NI	NI	NI	No mitigation necessary.	NI	NI	NI	NI
Biological Resources									
BIO-1: Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service.	PS	PS	PS	NI	BIO-1a: Avoid Impacts (Both Permanent and Temporary) to the Extent Feasible to Habitats and Land Cover Types Used by HCP-Covered and Non-HCP-covered Sensitive Species (Alternatives 1, 2, 3) BIO-1b: Mitigate Impacts to Habitats and Land Cover Types Used by HCP-Covered and Non-HCP-Covered Sensitive Species (Alternatives 1, 2, 3) BIO-1c: Mitigate Impacts to HCP-Covered Species (Alternatives 1, 2, 3) BIO-1d: Mitigate Impacts to Sensitive Non-HCP-Covered Species (Alternatives 1, 2, 3)	LTSM	LTSM	LTSM	NI
BIO-2: Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service	PS	PS	PS	NI	BIO-2: Secure Regulatory Permits to Impact Riparian Habitat and Other Sensitive Natural Communities (Alternatives 1, 2, 3)	LTSM	LTSM	LTSM	NI

Notes: NI= No Impact, LTS=Less than Significant, PS=Potentially Significant, LTSM=Less than Significant with Mitigation, SU=Significant and Unavoidable, B=Beneficial

Impact Statement	Level of Significance Before Mitigation				Mitigation Measure	Level of Significance After Mitigation			
	1-Medium Service Area	2-No Reclamation Funding	3-Small Service Area	No Project		1-Medium Service Area	2-No Reclamation Funding	3-Small Service Area	No Project
BIO-3: Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means	PS	PS	PS	NI	BIO-1a: Avoid Impacts (Both Permanent and Temporary) to the Extent Feasible to Habitats and Land Cover Types Used by HCP-Covered and Non-HCP-covered Sensitive Species (Alternatives 1, 2, 3) BIO-1b: Mitigate Impacts to Habitats and Land Cover Types Used by HCP-Covered and Non-HCP-Covered Sensitive Species (Alternatives 1, 2, 3) BIO-2: Secure Regulatory Permits to Impact Riparian Habitat and Other Sensitive Natural Communities (Alternatives 1, 2, 3) BIO-3: Secure Clean Water Act Permits/Approvals (Alternatives 1, 2, 3)	LTSM	LTSM	LTSM	NI
BIO-4a: Impact movement of native resident species in drainage corridors of the project area.	LTS	LTS	LTS	NI	No mitigation necessary.	LTS	LTS	LTS	NI
BIO-4b: Impact movement or reproduction of sensitive or important fish species in the Sacramento River or Delta region (excess operational conditions)	LTS	LTS	LTS	NI	No mitigation necessary.	LTS	LTS	LTS	NI
BIO-4b: Impact movement or reproduction of sensitive or important fish species in the Sacramento River or Delta region (balanced operational conditions)	PS	PS	PS	NI	HYD-4: Coordinate Operations with Relevant Resources Agencies (Alternatives 1, 2, 3)	LTSM	LTSM	LTSM	NI
BIO-5: Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance	PS	PS	PS	NI	BIO-5: Comply with Sacramento County Tree Preservation Ordinance (Alternatives 1, 2, 3)	LTSM	LTSM	LTSM	NI
BIO-6: Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan	NI	NI	NI	NI	No mitigation necessary.	NI	NI	NI	NI
Cultural Resources									
CR-1: Potential to result in a substantial adverse change in the significance of a historical, archaeological or paleontological resource.	PS	PS	PS	NI	CR-1a: Discovery of Previously Unknown Archaeological Resources During Construction (Alternatives 1, 2, 3) CR-1b: Note on Construction Plans (Alternatives 1, 2, 3) CR-1c: Discovery of Paleontological Resources During Construction (Alternatives 1, 2, 3)	LTSM	LTSM	LTSM	NI
CR-2: Development of the project and the off-site infrastructure has the potential to disturb human remains, including those interred outside of formal cemeteries.	PS	PS	PS	NI	CR-2: Discovery of Human Remains (Alternatives 1, 2, 3)	LTSM	LTSM	LTSM	NI
Energy Resources									
ENE-1: Inefficient, wasteful, or unnecessary use of energy resources	LTS	LTS	LTS	NI	No mitigation necessary.	LTS	LTS	LTS	NI
Geology and Soils									
GEO-1: Result in Substantial Soil Erosion, Siltation or Loss of Topsoil	LTS	LTS	LTS	NI	No mitigation necessary.	LTS	LTS	LTS	NI
GEO-2: Be Located on a Geologic Unit or Soil that is Unstable, or that Would Become Unstable as a Result of the Project, and Potentially Result in On- or Off-site Landslide, Lateral Spreading, Subsidence, Soil Expansion, Liquefaction or Collapse	PS	PS	PS	NI	GEO-2: Perform Design-Level Geotechnical Evaluation for Unstable Soils and Incorporate Recommendations (Alternatives 1, 2, 3)	LTSM	LTSM	LTSM	NI
Hazards and Hazardous Materials									
HAZ-1: Expose the Public or Environment to a Substantial Hazard through Reasonably Foreseeable Upset Conditions Involving the Release of Hazardous Materials into the Environment.	PS	PS	PS	NI	HAZ-1: Conduct Phase I Study along Transmission Pipeline	LTSM	LTSM	LTSM	NI
HAZ-2: Result in a Safety Hazard for People Residing or Working in the Project Area within Two miles of a Public Use Airport	LTS	LTS	LTS	NI	No mitigation necessary	LTS	LTS	LTS	NI

Notes: NI= No Impact, LTS=Less than Significant, PS=Potentially Significant, LTSM=Less than Significant with Mitigation, SU=Significant and Unavoidable, B=Beneficial

Impact Statement	Level of Significance Before Mitigation				Mitigation Measure	Level of Significance After Mitigation			
	1-Medium Service Area	2-No Reclamation Funding	3-Small Service Area	No Project		1-Medium Service Area	2-No Reclamation Funding	3-Small Service Area	No Project
HAZ-3: Impair Implementation of or Physically Interfere with an Adopted Emergency Response Plan or Emergency Evacuation Plan	PS	PS	PS	NI	TR-1: Traffic Management Plan (Alternatives 1, 2, 3)	LTSM	LTSM	LTSM	NI
Hydrology and Water Quality									
HYD-1: Violate Water Quality Standards or Waste Discharge Requirements, Create Substantial Sources of Polluted Runoff or Otherwise Substantially Degrade Water Quality	PS	PS	PS	NI	HYD-1a: Comply with the Construction General Permit (Alternatives 1, 2, 3) HYD-1b: Implement BMPs to Control Erosion and Sediment During Construction (Alternatives 1, 2, 3) HYD-1c: Comply with the General Order for Dewatering or Other Appropriate NPDES Permit (Alternatives 1, 2, 3) HYD-1d: Ensure Adequate Water Quality for Stone Lakes NWR (Alternatives 1, 2, 3) HYD-1e: Perform Detailed Analysis of Groundwater Impacts from Recharge Area and Diluent Wells (Alternatives 1, 2, 3)	LTSM	LTSM	LTSM	NI
HYD-2: Substantially Deplete Groundwater Supplies or Substantially Interfere with Groundwater Recharge	B	B	B	PS	No mitigation necessary.	B	B	B	PS
HYD-3: Substantially Alter the Existing Drainage Pattern of the Project Area and/or Increase the Rate or Amount of Surface Runoff in a Manner which would Result in Flooding On- or Off-site	LTS	LTS	LTS	NI	No mitigation necessary.	LTS	LTS	LTS	NI
HYD-4: Interfere with or Require Changes to CVP or SWP Operations	PS	PS	PS	NI	HYD-4: Coordinate Operations with Relevant Resource Agencies (Alternatives 1, 2, 3)	LTSM	LTSM	LTSM	NI
HYD-CUM: Cumulative Effects on Hydrology/Water Quality	PS	PS	PS	NI	HYD-4: Coordinate Operations with Relevant Resource Agencies (Alternatives 1, 2, 3)	LTSM	LTSM	LTSM	PS
Noise									
NOI-1: Result in Exposure of Persons to, or Generation of, Noise Levels in Excess of Standards Established by the Local General Plan, Noise Ordinance or Applicable Standards of Other Agencies and Result in a Substantial Temporary Increase in Ambient Noise Levels in the Project Vicinity (Construction)	PS	PS	PS	NI	NOI-1: Noise Reduction Measures (Alternatives 1, 2, 3)	LTSM	LTSM	LTSM	NI
NOI-2: Result in Exposure of Persons to, or Generation of, Noise Levels in Excess of Standards Established by the Local General Plan, Noise Ordinance or Applicable Standards of Other Agencies (Operation)	LTS	LTS	LTS	NI	No mitigation necessary.	LTS	LTS	LTS	NI
NOI-3: Expose People to Generation of Excessive Groundborne Vibration or Groundborne Noise Levels	LTS	LTS	LTS	NI	No mitigation necessary.	LTS	LTS	LTS	NI
Public Services and Utilities									
PUB-1: Impacts Associated with the Construction of New Water or Wastewater Treatment and Disposal Facilities or Expansion of Existing Facilities.	NI	NI	NI	LTS	No mitigation necessary.	NI	NI	NI	LTS
PUB-2: Impacts Associated with the Provision of Stormwater Drainage Facilities.	LTS	LTS	LTS	NI	No mitigation necessary.	LTS	LTS	LTS	NI
PUB-3: Impacts Associated with the Provision of Electric or Natural Gas Service, Emergency Services, Public School Services, or Park and Recreation Services.	LTS	LTS	LTS	NI	No mitigation necessary.	LTS	LTS	LTS	NI
PUB-4: Served by a Landfill without Sufficient Permitted Capacity to Accommodate the Project's Solid Waste Disposal Needs.	LTS	LTS	LTS	NI	No mitigation necessary.	LTS	LTS	LTS	NI
Traffic & Transportation									

Notes: NI= No Impact, LTS=Less than Significant, PS=Potentially Significant, LTSM=Less than Significant with Mitigation, SU=Significant and Unavoidable, B=Beneficial

Impact Statement	Level of Significance Before Mitigation				Mitigation Measure	Level of Significance After Mitigation			
	1-Medium Service Area	2-No Reclamation Funding	3-Small Service Area	No Project		1-Medium Service Area	2-No Reclamation Funding	3-Small Service Area	No Project
TR-1: Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit.	PS	PS	PS	NI	TR-1: Traffic Management Plan (Alternatives 1, 2, 3)	LTSM	LTSM	LTSM	NI
TR-2: Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways.	PS	PS	PS	NI	TR-1: Traffic Management Plan (Alternatives 1, 2, 3)	LTSM	LTSM	LTSM	NI
TR-3: Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).	PS	PS	PS	NI	TR-1: Traffic Management Plan (Alternatives 1, 2, 3)	LTSM	LTSM	LTSM	NI
TR-4: Result in inadequate emergency access.	PS	PS	PS	NI	TR-1: Traffic Management Plan (Alternatives 1, 2, 3)	LTSM	LTSM	LTSM	NI
TR-5: Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.	PS	PS	PS	NI	TR-1: Traffic Management Plan (Alternatives 1, 2, 3)	LTSM	LTSM	LTSM	NI
Population & Housing									
None	NI	NI	NI	NI	No mitigation necessary.	NI	NI	NI	NI

Notes: NI= No Impact, LTS=Less than Significant, PS=Potentially Significant, LTSM=Less than Significant with Mitigation, SU=Significant and Unavoidable, B=Beneficial

This page intentionally left blank

Chapter 1 Introduction

The Sacramento Regional County Sanitation District (Regional San), as CEQA lead agency, has prepared this Draft Environmental Impact Report (Draft EIR). Regional San is proposing the South Sacramento County Agriculture & Habitat Lands Recycled Water Program (proposed Project¹), which would provide Title 22 disinfected tertiary treated recycled water for irrigation, groundwater recharge and habitat enhancement in the southern portion of Sacramento County. In developing the project Regional San prepared a Feasibility Study, which identified and evaluated the feasibility of providing recycled water for irrigation purposes to offset existing groundwater supplies and offset existing surface water supplies for wetlands within U.S. Fish and Wildlife Service's (USFWS) Stone Lakes National Wildlife Refuge (NWR or Refuge). Regional San intends to pursue Clean Water State Revolving Fund (CWSRF financing) for this Project and has thus prepared this Draft EIR to meet State Water Resources Control Board "CEQA-Plus" requirements.

This EIR has been developed to provide the public and responsible and trustee agencies reviewing the proposed Project an analysis of the potential effects on the local and regional environment associated with construction and operation of the proposed Project. The proposed Project would deliver up to approximately 33,000 acre-feet per year of Title 22 disinfected tertiary treated recycled water to about 16,000 acres of irrigated lands in southern Sacramento County for agricultural and urban landscape uses² and to the Stone Lakes NWR. At full implementation of all project and program elements, the proposed Project could also provide an additional 17,000 acre-feet per year of recycled water for groundwater recharge and for wintertime irrigation, for a total recycled water delivery of up to 50,000 acre-feet per year, which equates to an annualized average of almost 45 million gallons per day (mgd), with seasonal deliveries varying from 24 to 70 mgd. **Figure ES-1** shows the project vicinity.

1.0 Background

1.0.1 Regional San

Regional San, established in 1973, is an independent special district created under the California Health and Safety Code to provide regional wastewater conveyance and treatment service throughout the cities of Citrus Heights, Elk Grove, Folsom, Rancho Cordova, Sacramento, and

¹ Regional San intends to apply for federal funding from the U.S. Department of the Interior, Bureau of Reclamation, for the South County Agriculture & Habitat Lands Recycled Program; provision of funding by Reclamation would be considered a federal "action" under the National Environmental Policy Act (NEPA). Approval of the project by Regional San would be a discretionary "project" as defined by CEQA. This document addresses the discretionary project being considered for approval by Regional San and can be used by Reclamation in the future to address effects of providing federal funds for the project. This EIR thus includes some information that addresses future requirements for environmental documentation under the NEPA.

² Urban irrigation uses in Elk Grove are already approved and were addressed in the EIR for the 2002 Zone 40 Water Supply Master Plan, SCH# 202122068.

West Sacramento; the communities of Courtland and Walnut Grove; and unincorporated Sacramento County. Regional San serves approximately 1.4 million people within its service area.

1.0.2 Sacramento Regional Wastewater Treatment Plant

The Sacramento Regional Wastewater Treatment Plant (SRWTP) is located at 8521 Laguna Station Road in Elk Grove on an approximately 3,200-acre site that is owned and operated by Regional San in unincorporated Sacramento County. The existing SRWTP treatment facilities occupy approximately 900 acres, and the remaining 2,300 acres of land is open space that provides a buffer zone (formally known as the Bufferlands) between the existing SRWTP facilities and surrounding land uses (Ascent 2014).

The SRWTP treats wastewater and then discharges the treated effluent into the Sacramento River near the community of Freeport. The SRWTP is permitted to discharge up to 181 mgd of Average Dry Weather Flow. On December 9, 2010, the Central Valley Regional Water Quality Control Board (CVRWQCB) adopted a new National Pollutant Discharge Elimination System (NPDES) permit for the SRWTP which required treatment equivalent to disinfected tertiary treated recycled water to be produced for discharge to the Sacramento River by 2020. The NPDES permit (which also constitutes waste discharge requirements [WDRs] under state law), spells out the limitations on daily treatment and flows, as well as the allowable concentrations or total loads of various constituents of concern found in treated effluent. The permit has been amended several times, and on August 8, 2014, the CVRWQCB modified the permit to specify that tertiary filtration of all flows is only required from May through October. From November through April filtration is required for up to 217 mgd of effluent. The current NPDES permit authorizing discharge is Order No. R5-2016-0020, which was adopted on April 21, 2016.)

Effluent treatment facilities must be constructed and operated to meet the WDRs; the new facilities that would be required are part of the EchoWater Project. Regional San is designing and constructing and will be operating new facilities for the EchoWater Project, which will treat wastewater to Title 22 requirements for disinfected tertiary treated water or equivalent effluent (except during certain peak wet weather flows), which allows for recycled water use for food crops (including all edible crops where the recycled water comes into contact with the edible portion of the crop), as well as recycled use for parks and playgrounds, school yards, residential landscaping, and golf courses. In adopting the permit, the CVRWQCB cited as justification for the requirement to implement tertiary treatment the need to develop and use recycled water, including Basin Plan policy requiring that dischargers evaluate how reuse or land disposal of wastewater can be optimized. If the Title 22 effluent is not used for recycled water projects, it will continue to be discharged to the Sacramento River.

1.0.3 Stone Lakes National Wildlife Refuge

The Stone Lakes NWR was established in 1994. The Refuge is located in southwestern Sacramento County, west of the City of Elk Grove and south of the (see **Figure ES-1** in the *Executive Summary*). It lies within the Morrison Creek, Cosumnes River and Mokelumne River watersheds as well as the Sacramento-San Joaquin Delta (Delta). The Stone Lakes Refuge

consists of multiple lakes and wetland areas, and contains a variety of biological resources (USFWS, 2007).

Water sources available for maintenance and management of Refuge fish and wildlife habitats and irrigation include: runoff from local sources such as the Morrison Creek drainage and shallow groundwater and surface flows from Snodgrass Slough. Surface water withdrawals are made subject to a water right, which is subject to curtailment in dry years. The Refuge is thus in need of a long-term reliable water supply.

Interception of shallow groundwater is used to sustain habitats and agricultural lands within the Refuge and the Beach-Stone Lakes Basin. Due to irrigation withdrawals, there is a groundwater depression in the water table south and east of the Refuge area. This groundwater depression creates a gradient away from the Sacramento River and locally induces flow from the river across the Refuge area toward the center of the depression (USFWS 2007).

In response to the daily tidal cycle, water levels in Snodgrass Slough are influenced by operation of a slide gate and flap gates on the Lambert Road Bridge flood control structure, by diversion of water by various upstream users, including the Refuge, and by operation of the Delta Cross Channel by the California Department of Water Resources for the State Water Project. South to north flows of surface water occur through Lambert Road Bridge flood control structure and these reverse flows play a substantial role in sustaining the water supply in the Beach-Stone Lakes Basin (USFWS, 2007).

1.0.4 Cosumnes River Preserve

The Cosumnes River Preserve includes approximately 46,000 acres of wildlife habitat and agricultural lands along the Cosumnes River. The land is owned by seven partners: The Nature Conservancy, the Bureau of Land Management, the California Department of Fish and Wildlife, Sacramento County, the Department of Water Resources, Ducks Unlimited, and the California State Lands Commission. The Preserve provides social, economic, recreational, and environmental benefits. The Nature Conservancy is collaborating with Regional San in the development of the proposed Project in order to bring water management benefits to the preserve.

1.1 Purpose and Need

Regional San's purpose in proposing the project is to:

- Meet Regional San's goal of recycling 30 to 40 million gallons per day of its treated wastewater by 2025;
- Support California's recycling goal of 2 million acre-feet per year by 2030;
- Restore depleted groundwater levels in the South Sacramento County area through in lieu use and recharge of recycled water for irrigation as a replacement for and supplement to groundwater;

- Improve regional water supply reliability through the restoration of groundwater levels in the Central Groundwater Basin; and
- Improve flows in the Cosumnes River and improve the riparian corridor along the Cosumnes River through restoration of groundwater levels along the corridor from Highway 99 to I-5.

Groundwater use in the Central Sacramento Ground Water Basin has resulted in development of a cone of depression. Groundwater pumping has also been determined to be primarily responsible for a decline in flows in the Cosumnes River and dewatering of the riparian corridor. Regional planning efforts have identified the need to use recycled water as an element of regional water supply.

The proposed Project would deliver recycled water to irrigated lands in southern Sacramento County for agricultural and existing approved urban landscape uses and to the Stone Lakes NWR, and could also provide recycled water for groundwater recharge. The project benefits or helps accomplish the following:

- Increases regional self-reliance and integrated water management across all levels of government – This project has been ranked as a high priority project in the American River Basin IRWM;
- Helps achieve the Delta Reform Act and Delta Plan's co-equal goals of water supply reliability and ecosystem protection;
- Addresses the Governor's Drought Proclamation and Water Action Plan with a long-term solution to provide additional water supplies for future drought conditions. The project helps the region manage and prepare for dry periods;
- Helps protect and restore the Delta by providing benefits to endangered species in the Delta ecosystem and its tributaries, including the Cosumnes River, Sacramento River and Mokelumne River;
- Expands water storage capacity and improves groundwater management; and
- Helps achieve the State Water Board's statewide goal and Basin Plan policy for water recycling by providing up to 50,000 AFY of recycled water.

The various state, regional, local and Regional San policies and planning efforts that have contributed to development of the purpose and need for the project are discussed below.

1.1.1 Water Forum

The project area overlies a portion of the Central Sacramento groundwater basin, which currently supplies water for several agencies within the Sacramento region. Groundwater levels in the basin have declined mainly as a result of pumping to meet agricultural and municipal water demands. Proactive water supply management activities over the past two decades have resulted in more stable conditions in the groundwater basin. Specifically, in the 1990s, various parties in the Sacramento area identified the need to collaborate on the long term usage and management of water supplies. The Water Forum was created with a diverse group of participants to find solutions to the water dilemmas. The resulting Water Forum Agreement focuses on two

objectives and seven elements and continues to guide water management activities in the Sacramento region. The two primary and coequal objectives of the Water Forum Agreement are:

1. Provide a reliable and safe water supply for the region's economic health and planned development to the year 2030; and
2. Preserve the fishery, wildlife, recreational, and aesthetic values of the Lower American River.

The seven elements of the Water Forum Agreement represent categories of complementary actions that are necessary for a water solution to work recognizing that the solution must be an integrated package of actions. The seven elements include the following:

1. Increased surface water diversions.
2. Actions to meet customers' needs while reducing diversion impacts in drier years.
3. An improved pattern of fishery flow releases from Folsom Reservoir.
4. Lower American River Habitat Management Element, which also addresses Recreation in the Lower American River.
5. Water Conservation Element.
6. Groundwater Management Element.
7. Water Forum Successor Element.

Forty stakeholder organizations signed the agreement in 2000. Since then, changes to maintain a long-term sustainable yield from the Central groundwater basin have been implemented, including construction of the Freeport Regional Water Project, which diverts surface water from the Sacramento River.

1.1.2 Water Recycling Opportunities Study

Regional San³ initiated the Water Recycling Opportunities Study (WROS) in 2004 to evaluate the feasibility of implementing a large-scale Water Recycling Program. The purpose of the WROS was to achieve the following:

- Identify potential water recycling opportunities.
- Engage potential water recycling partners and stakeholders.
- Develop, assess, and prioritize potential water recycling projects.
- Provide a strategy to further develop and implement the projects initially selected to move forward in achieving the stated goals of the large-scale Water Recycling Program.

Specifically, the goals were as follows:

- Increase water recycling throughout the Sacramento region on the scale of 30 to 40 mgd over the next 20 years.
- Increase utilization of recycled water to expand Regional San's effluent management options beyond continued discharge to the Sacramento River.

³ At the time this report was prepared, Regional San was referred to as SRCSD.

- Increase utilization of recycled water to meet growing non-potable demands, allowing Sacramento area water purveyors to reduce demands on their existing high quality water supplies and reduce the need for additional water supplies in the future.

Regional San prepared the WROS report in 2007. A three-step approach was used to define potential projects, including developing the target area, identifying water recycling opportunities, and developing potential water recycled water projects. One of the most promising projects that resulted from this study was the South County Agriculture & Habitat Lands Recycled Water Program.

1.1.3 South Sacramento County Agriculture and Habitat Lands Recycled Water Feasibility Study

Regional San prepared a Feasibility Study to further explore the effects and benefits of the South County Program (RMC 2015). The Feasibility Study evaluated a variety of topics as specified below:

- Recycled water market
- Existing water supplies
- River intake alternatives
- The viability of groundwater recharge
- The need for seasonal storage
- Conveyance facilities
- Environmental, regulatory, legal and institutional requirements
- Recycled water program alternatives

The study area evaluated in the Feasibility Study encompasses approximately 15,000 acres in South Sacramento County, 18,000 acres in the Stone Lakes NWR, and 9,000 acres within the City of Elk Grove's formerly proposed sphere of influence (SOI)⁴. Three alternatives were developed based on the results of the recycled water market assessment. The alternatives vary in the size of the study area covered and the demand met by the Program, but all would provide Title 22 disinfected tertiary treated recycled water produced at the SRWTP to farmland and wetlands at the Stone Lakes NWR in South County. The study evaluated Large, Medium, and Small Program Alternatives. All of the alternatives would provide 2/3 of the maximum month demand during peak irrigation periods, and the balance of the peak demands are assumed to be met by existing groundwater supply used by growers. All of the alternatives would include pipelines, pumping plants, customer turnouts, and an optional groundwater recharge area. Groundwater recharge facilities would comply with California regulations, which require that recycled water used for recharge be blended with non-recycled water, or "diluent" water and require a six-month underground retention time (i.e., the time from point of application to the withdrawal of water at the nearest municipal or domestic water supply well). The parcels considered for siting of recharge facilities are currently irrigated and would be included in the service area under all action alternatives. It is expected that parcels used for recharge would

⁴ Since completion of the Feasibility Study, the Local Agency Formation Commission did not approve the City of Elk Grove's request for extension of its SOI.

continue in agricultural production during the growing season, and would be used seasonally for recharge.

The Feasibility Study recommended implementation of the Medium Program Alternative. The benefits of this alternative include reduced cost, increases in groundwater levels along the Cosumnes River, increased Cosumnes River flows, and larger wetted riparian corridor. After completion of the Feasibility Study the former Elk Grove SOI area was added to the Medium Program Alternative to comprise the proposed Project evaluated in this EIR. Regional San received a Feasibility Determination from Reclamation for the Project on February 8, 2016.

1.1.4 Existing and Future Recycling Program with SCWA

Regional San and Sacramento County Water Agency (SCWA) have a joint water recycling program that produces and distributes up to 3.5 mgd of recycled water service to the Laguna West, Lakeside, and Stone Lakes communities in the City of Elk Grove (SCWA Phase 1 Demonstration Project). Recycled water is used to irrigate street medians, commercial landscaping, parks and school sites. This program would continue with implementation of the proposed Project. Most of the existing tertiary treatment facilities, known as the Water Recycling Facility (WRF), would likely be decommissioned once the EchoWater project is completed. Regional San will continue to work with SCWA to provide recycled water. Under a future phase, recycled water would be provided to the SCWA Phase 2 Demonstration Project, which includes the communities of East Franklin and Laguna Ridge in the City of Elk Grove.

1.1.5 Other Recycling Projects

Regional San, in collaboration with Sacramento Municipal Utility District (SMUD) and the City of Sacramento, prepared an EIR to evaluate the potential to send approximately 2,723 AFY of recycled water from the WRF and the future advanced wastewater treatment plant to Sacramento Power Authority's (SPA's) Cogeneration Plant and other potential customers in south Sacramento. The use of recycled water by these customers would offset the use of potable water for cooling tower and urban irrigation purposes. The SPA Cogen Project EIR was certified and the project was approved by the Regional San Board of Directors in November 2014. The project is planned for design and construction in 2016. Future phases of this project could include construction of laterals extending from the main pipeline to the cogeneration plant to serve additional users such as the Bartley Cavanaugh Golf Course, Bill Conlin Youth Sports Complex, and parks within Delta Shores. Future phases would also require construction of additional pumping capacity.

1.1.6 Regional San's Water Asset Management Vision

Regional San has adopted a Water Asset Management Vision, which states "Regional San (formerly SRCSD) will manage its water assets to sustain regional water supplies, benefit current and future ratepayers of the region, and safeguard and enhance the environment." Consistent with this vision, Regional San is interested in maximizing the beneficial use of its treated wastewater.

1.1.7 SWRCB Recycled Water Policy

The State Water Resources Control Board (SWRCB) adopted the Recycled Water Policy on February 3, 2009 (Resolution No. 2009-0011) and revised it on January 22, 2013 (Resolution 2013-003). The purpose of the Policy is to increase the use of recycled water from municipal wastewater sources. The Policy has four goals, of which two relate to recycled water, as shown below:

- Increase the use of recycled water over 2002 levels by at least one million AFY by 2020 and by at least two million AFY by 2030; and
- Included in these goals is the substitution of as much recycled water for potable water as possible by 2030.

1.1.8 Central Sacramento Groundwater Basin

The Sacramento groundwater basin consists of three sub-basins – North, Central and South. The proposed Project overlies a portion of the Central Sacramento groundwater basin, which is under the jurisdiction of the Sacramento Central Groundwater Authority (SCGA). The area is mainly outside the areas currently served by municipal water suppliers, but encompasses a small portion of Sacramento County Water Agency's (SCWA's) Zone 40. Thus, the primary water supply in the proposed Project area is groundwater pumped from private wells⁵.

As described in the Central Sacramento Groundwater Management Plan (GMP), intensive use of groundwater over the past 60 years has resulted in a general lowering of groundwater elevations. Over time, isolated groundwater depressions have grown and coalesced into a single cone of depression that is centered in the southwestern portion of the Central Basin (Water Forum and SCWA 2006).

The GMP identifies five Basin Management Objectives that would be implemented to manage and monitor the Central Sacramento Groundwater Basin to benefit all groundwater users in the basin. Objectives include maintaining a long-term average groundwater extraction rate, maintaining specific groundwater elevations within all areas of the basin consistent with the Water Forum "solution," protecting against any potential inelastic land surface subsidence, protecting against any adverse impacts to surface water flows, and developing water quality objectives for constituents of concern. The provision of recycled water to South County customers for in-lieu recharge of the groundwater basin would contribute to maintenance of groundwater elevations in the Central Sacramento Groundwater Basin.

1.1.9 The Cosumnes River

The Cosumnes River, which runs along the southeastern edge of the proposed Project area, is the only river in the western Sierra with no major dams and relies on groundwater to provide base flows for fish and wildlife. Studies using monitoring data and computer models have established a relationship between groundwater usage and Cosumnes River flows, leading to the conclusion that groundwater pumping is primarily responsible for the decline in river flows in the fall. Reduced flows in the Cosumnes River contribute to the degradation of fishery, wildlife,

⁵ In addition, some growers divert surface water from creeks, canals, and the Sacramento River for irrigation use.

recreational, and aesthetic resources of the lower Cosumnes River. Water temperature also is an issue associated with flow impairment and poses a threat to the salmon fishery (Water Forum and SCWA, 2006). Also, lower groundwater levels affect the viability of the riparian corridor. The drying of the Cosumnes River due to the lowered groundwater table is of concern to many stakeholders in the region, including The Nature Conservancy (TNC), who is one of the partners that manages the Cosumnes River Preserve.

Historically, lower fall streamflows result in less recharge from the river (i.e water moving from the river into groundwater) and lower groundwater levels. In contrast, higher spring streamflows result in more recharge from the river and higher groundwater levels. In the fall, the Cosumnes River is dry at Twin Cities Road for almost 60 percent of the time and 75 percent of the time streamflow is zero to less than 10 cfs. Low fall streamflows affect the fall salmon run in the Cosumnes River. Importing recycled water to the proposed Project area for in-lieu groundwater recharge would result in substantially higher groundwater levels and increased Cosumnes River flows (RMC, 2015).

1.1.10 Influence of Recycled Water on Water Supply

Future urban water demand in the SCWA service area was projected to increase by 30 percent between 2020 and 2030 (SCWA 2016). The Central Sacramento County GMP identifies available water supplies to meet the total water demands of users within the basin, including the unmetered and unmonitored use of private groundwater wells for agricultural irrigation. Included in the GMP is 4,400 AFY of recycled water provided by Regional San identified to serve recycled water projects in Elk Grove. Because the proposed Project includes a higher level of recycled water use, it could positively influence the water supply outlook in this part of the County. Providing a greater level of recycled water use than the GMP anticipated would mean greater increases in groundwater levels (beyond the improvements projected to be seen from the Freeport Regional Water Project). The implementation of the South County Program and the resulting in-lieu recharge in the Central groundwater basin could provide sustainable long-term water supply benefits to the region.

1.2 CEQA Objectives

The overall objective of the proposed Project is to provide a reliable source of non-potable water in the County. Specifically, the objectives of the Project are as follows:

- Maximize use of recycled water
- Reduce groundwater pumping in the Central Basin and contribute to long term basin sustainability by supplying recycled water to agricultural customers
- Minimize conveyance costs (pipeline and pumping) while maximizing demand served
- Improve environmental resources in the area by:
 - Enhancing the riparian corridor along the Cosumnes River by raising groundwater levels
 - Reducing streamflow losses in the Cosumnes River during critical fall periods by raising groundwater levels

- Providing drought-resistant water supplies to agricultural users to encourage long-term agricultural uses in the Cosumnes River area
 - Providing a reliable water supply to managed wetlands
- Assist in long term fulfillment of the Water Forum Agreement for conjunctive use of surface and groundwater supplies in the County
- Work within the context of SCGA's developing Groundwater Accounting Program and with environmental organizations to balance potential recovery of groundwater with regional groundwater needs.
- Support the Sacramento Central Groundwater Authority and environmental organizations in developing a Groundwater Accounting Program that will balance the increase in groundwater supply with regional water reliability and environmental benefits.

1.3 Compliance with CEQA

This document has been prepared to satisfy the requirements of CEQA because the proposed Project is a discretionary action under CEQA. In addition, Regional San intends to pursue federal funding under Title XVI, which is administered by the U.S. Department of the Interior, Bureau of Reclamation (Reclamation), which would require future NEPA documentation. This environmental document was prepared pursuant to CEQA Public Resources Code, Division 13, Environmental Protection; the CEQA Guidelines; and is also structured to enable future NEPA documentation subject to the Council on Environmental Quality (CEQ) Regulations for Implementing the National Environmental Policy Act (Parts 1500 to 1508). Regional San intends to pursue Clean Water State Revolving Fund (CWSRF financing) for this Project and has thus prepared this Draft EIR to meet State Water Resources Control Board "CEQA-Plus" requirements. The purpose of the EIR is to publicly disclose the potential direct, indirect, and cumulative impacts of the proposed Project and its alternatives on the environment, including the no project/no action alternative, and to identify feasible mitigation or alternatives capable of reducing or avoiding any of the Project's significant environmental impacts, for the benefit of decision makers, the general public, and responsible and trustee agencies.⁶

After the Final EIR is published, Regional San will prepare and adopt a Notice of Determination (NOD), to implement the proposed Project.

1.3.1 CEQA Lead Agency

In conformance with CEQA (California Public Resources Code, Section 21000 et seq.), CEQA Guidelines (California Code of Regulations Title 14 Section 15000 et seq.), Regional San is the Lead Agency for compliance with the CEQA environmental review process for the proposed Project. Regional San has conducted the CEQA process, including the preparation and circulation of this EIR, to provide to the public and responsible and trustee Agencies reviewing

⁶ A responsible agency is an agency other than the lead agency that has a legal responsibility for also carrying out or approving a project; a responsible agency must actively participate in the lead agency's environmental process, review the lead agency's environmental document, and use that document when making a decision on the project. Trustee agencies have jurisdiction over certain resources held in trust for the people of California but do not have a legal authority over approving or carrying out a project.

this project, information about the Project's potential effects, both beneficial and adverse, on the local and regional environment.

1.3.2 CEQA Process

Notice of Preparation

In accordance with Section 15082 of the CEQA Guidelines, a Notice of Preparation (NOP) was submitted to the State Clearinghouse (State Clearinghouse # 2014042068) and circulated to local, state and federal agencies on February 19, 2015. The NOP was available online on the South County Ag Program website⁷ and was distributed to responsible and trustee agencies, organizations, and interested parties (including growers and The Nature Conservancy). The NOP was initially sent to the public on January 30, 2015 and included an invitation to the public to attend an Information Meeting (see Section 1.7.3 below). A list of those who received the NOP is included in **Appendix A**. The NOP provided a description of the proposed Project, a map and description of where the proposed Project would be constructed, and a brief description of construction methods.

Public Scoping Meeting and Public Comments

A public scoping meeting for the proposed Project was held on February 18, 2015. The purpose of the meeting was to describe the proposed Project to interested parties and to solicit their input about issues and concerns that are germane to the scope and content of this EIR. The scoping meeting was held in an open house format, and comment cards were provided for those attending the meeting to facilitate submittal of written comments. At the information meeting, the proposed Project was presented to the public through use of videos and graphic displays showing maps, pipeline alignments, and CEQA process and schedule. No formal verbal or written comments were submitted at the scoping meeting.

Table 1-1 lists the written comments received during scoping from one organization, and federal, state, and regional/local agencies. The issues and concerns raised during the scoping period are included in the scoping report (**Appendix B**).

Table 1-1: Written Comments Received During Scoping

Number	Comment Author, Title and Affiliation	Comment Letter Date
1	Tina Bartlett California Department of Fish and Wildlife	March 9, 2015
2	Trevor Cleak, Central Valley Regional Water Quality Control Board	March 13, 2015
3	Darren Wilson, City of Elk Grove	March 20, 2015
4	Eric Fredericks, California State Transportation Agency (Caltrans)	March 23, 2015
5	Chris Hunley, Sacramento County Environmental Management Department	March 23, 2015
6	Sacramento County Water Agency	March 23, 2015
7	Jesse Roseman, The Nature Conservancy	March 23, 2015
8	Jean Prijatel, U.S. Environmental Protection Agency	November 30, 2015

⁷ The NOP was available electronically at the following location: http://www.regionalsan.com/sites/main/files/file-attachments/notice_of_preparation_final.pdf

Draft EIR

This document constitutes the Draft EIR. It contains a description of the Project, description of the environmental setting, identification of Project impacts, mitigation measures for impacts found to be significant, and an analysis of Project alternatives. This document complies with CEQA Plus requirements, allowing Regional San to apply for a State Revolving Fund (SRF)⁸ grant. CEQA-Plus documentation requires additional “NEPA-like” analysis including evaluation of compliance with the Federal Endangered Species Act, Federal National Historic Preservation Act, and the General Conformity Rule for the Clean Air Act. In addition, it requires evaluation of compliance with the Migratory Bird Treaty Act, policies for protection of wetlands, environmental justice, Coastal Zone Management Act, flood plain management, Farmland Protection Policy Act, and the Wild and Scenic Rivers Act. To facilitate future NEPA documentation, Indian Trust Assets have also been evaluated.

All of the impacts are analyzed in Chapter 3 of this Draft EIR, and summarized in **Table ES-1** in the Executive Summary of this document.

Public Review of the Draft EIR

This Draft EIR is being circulated to local, state and federal agencies and to interested organizations and individuals who may wish to review and provide comment for a period of 45 days. Regional San filed a Notice of Completion (NOC) with the State Office of Planning and Research to begin the 45-day public review period (Public Resources Code, Section 21161). Concurrent with the NOC, Notices of Availability of this Draft EIR have been distributed to responsible and trustee agencies, other affected agencies, surrounding cities, and interested parties, as well as individuals who have expressed interest in being included on the project mailing list for review and provide comments.

During the public review period, the Draft EIR is available for review at the Regional San's office, located at the address provided below, or online at <http://www.regionalsan.com/>. Agencies, organizations, and interested parties, including those not previously contacted, or who did not respond to the NOP, currently have the opportunity to comment on the Draft EIR during the public review period.

During this 45-day review period, Regional San will conduct a public meeting to receive oral comments on the Draft EIR. During the public review period, written comments on this Draft EIR should be addressed to:

Sacramento Regional County Sanitation District
10060 Goethe Road
Sacramento, CA 95827
Attn: Jose Ramirez, Project Manager
Phone: (916) 876-6059
Email: ramirezj@sacsewer.com

⁸ SWRCB would be a responsible agency that will review and consider the information in the environmental document prior to approving the Project.

Final EIR

Comments received during the public review period will be addressed in a Response to Comments (RTC) document, which together with the Draft EIR, will constitute the Final EIR. Comments received and the responses to comments will be included as part of the record for consideration by the Regional San Board of Directors.

Actions on the Project and Intended Uses of the EIR

The Final EIR will be made available for review at least 10 days prior to the public hearing before the Regional San Board of Directors on the proposed Project. As the CEQA Lead Agency, Regional San will consider certifying the EIR as complete under CEQA Guidelines Section 15090. Project approvals would require that Regional San make written findings with respect to any significant effects relevant to implementation of the project identified in the EIR. In making its decision about the Project, the Regional San Board of Directors will consider the environmental impacts and required mitigation in the form of "Findings." Upon EIR certification, the Board of Directors will consider whether to adopt a resolution approving the Project as described.

The information in the EIR would also be used to support the acquisition of regulatory permits or approvals. **Table 1-2** summarizes the potential permits and/or approvals from other agencies that may be required prior to construction of the proposed Project.

1.4 Project vs. Program Level of Analysis

This Draft EIR evaluates the proposed Project at both a project- and program-level of detail. A project EIR is defined as one which "examines the environmental impacts of a specific development project." (CEQA Guidelines Section 15161). A project EIR provides a site-specific review of all phases of the project, including planning, construction, and operation.

A program EIR is defined as one that "may be prepared on a series of actions that can be characterized as one large project and are related." (CEQA Guidelines Section 15168). A program EIR assesses and documents the broad environmental impacts of a program with the understanding that a more detailed site-specific review may be required to assess future projects implemented under the program. Because detailed plans of the distribution mains, service connection laterals, and customer turnouts of the proposed Project are not known at this time, and they are contingent on the completion of the project-level components, this Draft EIR provides program-level analysis of these project components.

Table 1-2: Responsible and Trustee Agencies and Coordination

Agency	Type of Approval
FEDERAL	
Reclamation	Possible funding through Public Law 102-575, Title XVI
U.S. Army Corps of Engineers	Clean Water Act, Section 404 Permit for any fill of wetlands or waters of the US
U.S. Fish and Wildlife (USFWS) & National Oceanic and Atmospheric Administration (NOAA) National Marine Fisheries Service	Section 7 Consultation/Biological Opinions (for effects on Federally-listed species) ¹
USFWS	Agreement (for provision of water to Stone Lakes NWR)
STATE	
SWRCB	Wastewater Change Petition for a change in the point of discharge, place of use, or purpose of use of treated water
SWRCB	Coverage under the General Waste Discharge Requirements for Recycled Water Use (Statewide Recycled Water Permit, Order WQ 2014-0090-DWQ) (for operation of the recycled water system)
SWRCB	Potential funding through Proposition 1 Water Recycling Funding Program or the Clean Water State Revolving Fund loan.
Central Valley Regional Water Quality Control Board (CVRWQCB)	401 Water Quality Certification (required for 404 Permit)
CVRWQCB	Notice of Intent (NOI) for coverage under the Statewide Construction Stormwater Permit (for construction greater than 1 acre in size)
CVRWQCB	NOI for coverage under General Permit for discharges with Low-Threat to Water Quality (for pipeline discharges for testing and startup)
California Division of Drinking Water	Title 22 Engineer’s Report (production, distribution and use of recycled water)
California Department of Fish and Wildlife (CDFW)	Incidental Take Permit from California Department of Fish and Game (for effects on State-listed species) ¹
CDFW	Incidental Take Permit for California Endangered Species Act (CESA)
CDFW	Streambed Alteration Agreement (for pipeline crossings of creeks)
Cal/OSHA – Tunnel and Mining Unit	Construction Permit / Underground Classification for tunnels
California Office of Historic Preservation	Section 106 Consultation
California Department of Transportation (Caltrans)	Encroachment Permit (for crossing Interstate 5 [I-5])
LOCAL	
City of Elk Grove	Encroachment Permits (for work within City rights-of-ways [ROW])
Sacramento County	Encroachment Permits (for working within County ROWs) and Well Permits (for diluent wells)
Sacramento County Air Quality Management District	Authority to Construct (for building and operating equipment that will meet air quality standards)
Local Agency Formation Commission (LAFCO)	Regional San annexation of Service Area for recycled water, with service limited to recycled water supply
Union Pacific Railroad	Easement to construct within right-of-way
Property Owners	Lease/purchase agreements with current landowners(s) to acquire property for development of recharge area

Note:

1. If the South County Habitat Conservation Plan (SSHCP) is adopted, effects on terrestrial biota would be covered under the Plan.

The program-level analysis is conducted to streamline the review process of the proposed Project by allowing for consideration of environmental impacts and mitigation measures for future components on a program-wide scale. Subsequent components would later be examined in the light of the program EIR to determine whether an additional environmental document must be prepared (CEQA Guidelines Section 15168). A subsequent environmental document may be “tiered” from the program EIR, pursuant to CEQA Guidelines (Sections 15152 and 15168). “Tiering” refers to the use of analysis from a broader EIR, with later EIRs and negative declarations (NDs) and/or mitigated negative declarations (MNDs) prepared for subsequent projects, concentrating on issues specific to the future projects. Future facilities that are evaluated at a program level include connections to users, potential groundwater recharge areas and associated diluent wells, and provision of water to Stone Lakes NWR. Future actions include provision of recycled water for wintertime irrigation and recharge on farmland without dilution from diluent wells.

1.4.1 Project-Level Analysis

A project EIR is defined as one that “examines the environmental impacts of a specific development project.” (CEQA Guidelines Section 15161) A project EIR provides a site-specific review of all phases of the project, including planning, construction, and operation. In addition to the program-level analysis described above, this Draft EIR also includes a detailed project-level analysis of the proposed pump station at the SRWTP and the transmission pipeline from the proposed pump station to Twin Cities Road, which are expected to move forward once environmental and regulatory review have been completed.

1.5 Organization of the EIR

This Draft EIR is organized into the following Chapters:

Executive Summary. This chapter includes a summary of the proposed Project and the alternatives evaluated in this EIR. It includes a table that summarizes the impacts, mitigation measures, and levels of significance after mitigation measures are incorporated.

Chapter 1: Introduction. This chapter provides an introduction, background, and overview describing the purpose and need, project objectives, purpose and scope of the Draft EIR, intended uses of the EIR, including a list of responsible agencies and approvals, brief explanation of areas of controversy and issues to be resolved, and a summary of the CEQA review process.

Chapter 2: Alternatives Description of the Proposed Project. This chapter presents a detailed description of the proposed Project (Alternative 1, Medium Service Area Alternative), along with impacts associated with two action alternatives and one no action alternative. It provides a description of proposed facilities and construction and operational considerations. Chapter 2 also clarifies the components that will be evaluated at a project and program level of detail in this EIR.

Chapter 3: Environmental Setting, Environmental Impacts and Mitigation Measures. This chapter analyzes the environmental consequences and impacts of the proposed Project, along with impacts associated with the two action alternatives and the no action alternative. Each topic includes a description of the affected environment/environmental setting, regulatory setting, methodology, thresholds of significance, impacts (both project-specific, program-specific and cumulative), mitigation measures, and significance after mitigation. Chapter 3 includes subsections addressing each environmental resource. Cumulative impacts are also evaluated under each subsection.

Chapter 4: Other CEQA Considerations. This chapter identifies any direct or indirect impacts, significant and unavoidable impacts, the Project's irreversible and irretrievable commitment of resources, and growth-inducing impacts. The impacts of alternatives are summarized so as to allow identification of the environmentally preferable/superior alternative.

Chapter 5: Consultation, Coordination and Compliance. This chapter addresses compliance with federal statutes and regulations, summarizes the scoping process, and identifies the distribution of the EIR, and opportunities for future public involvement.

Chapter 6: Report Preparation. This chapter lists the authors of the EIR.

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

1.6 Areas of Controversy and Issues to be Resolved and/or Evaluated

Comments received in response to circulation of the NOP are listed in **Table 1-1** above. A summary of the comments is presented in **Appendix B**, along with the disposition of each comment.

Areas of controversy/issues to be evaluated include the following:

- Whether additional alternatives should be evaluated as part of this EIR to include a larger service area, preferentially distribute recycled water to farmers, who own parcels located outside of the feasibility study area and east of Highway 99, whose lands could provide more ecological benefits, including to the Cosumnes River.
- The precise framework for a groundwater banking program, which is not included within the scope of this EIR. If Regional San implements a future groundwater banking program, additional project-specific CEQA environmental review would be conducted to assess the impacts of that program.
- The effects of the seasonal reduction of wastewater discharge on hydrologic and biological resources in the Sacramento River.

1.7 References

Ascent Environmental. 2014. *Final Environmental Impact Report for the Sacramento Regional County Sanitation District EchoWater Project*. SCH#2012052017. September 12.

RMC Water and Environment (RMC). 2015. *Sacramento Regional County Sanitation District South County Recycled Water Feasibility Study*. January 2015.

Sacramento County Water Agency (SCWA) 2016. *Draft 2015 Urban Water Management Plan*. prepared by Brown and Caldwell. May 2016.

Sacramento County, City of Elk Grove, City of Galt, City of Rancho Cordova, Sacramento Regional County Sanitation District, Sacramento Area Sewer District, Sacramento County Water Agency, Southeastern Connector. 2010. *South Sacramento Habitat Conservation Plan*. July.

USFWS. 2007. *Stone Lakes National Wildlife Refuge Comprehensive Conservation Plan*. January.

Water Forum and SCWA. 2006. *Central Sacramento County Groundwater Management Plan*. February.

This page intentionally left blank

Chapter 2 Alternatives and Proposed Project

This document assesses the environmental effects of three action alternatives and a No Project alternative.

2.0 Project Location

The proposed Project is located within Sacramento County, and includes portions of the City of Elk Grove, unincorporated Sacramento County, and portions of the Stone Lakes National Wildlife Refuge. The proposed recycled water service area is shown in **Figure 2-1**.

Proposed facilities include a pump station, pipelines and distribution mains, a recharge area, diluent¹ wells, service connection laterals, and appurtenant facilities. The proposed pump station would be located within the Sacramento Regional Wastewater Treatment Plant (SRWTP) site. Transmission pipelines and distribution mains would be located on County and city streets and rural roads, primarily within public road rights-of-way (ROW), although distribution mains may also occur on private lands. The potential recharge area, diluent wells, and service connection laterals would generally be located on private agricultural lands or dirt roads. Recycled water would be delivered to farms, wetlands, and, potentially, a recharge area all of which are currently outside Regional San's service area.

2.1 Existing Facilities

The SRWTP is located at 8521 Laguna Station Road in Elk Grove on an approximately 3,200-acre site that is owned and operated by Regional San, as shown in **Figure 2-1**. The entire SRWTP site is located north of Laguna Boulevard in the unincorporated area of Sacramento County, between Franklin Boulevard and Interstate 5 (I-5). The site's northern boundary is predominantly south of the Cosumnes River Boulevard. Currently, SRWTP treats to a secondary level and discharges the treated effluent into the Sacramento River near the town of Freeport (Ascent 2014). At the SRWTP, Regional San operates a Water Recycling Facility (WRF) that produces up to 3.5 million-gallons-per-day (mgd) of tertiary effluent for urban landscape irrigation for the SCWA.

On December 9, 2010, the Central Valley Regional Water Quality Control Board (CVRWQCB) issued new Waste Discharge Requirements (WDRs) for the SRWTP (Order No. R5-2010-114). The WDRS have since been amended several times. The WDRs require treatment upgrades to be operational by December 2023. The NPDES permit was renewed in April 2016 (Order No. R5-2016-0020).

¹ Regulations for groundwater recharge with recycled water require that the recycled water be diluted with non-recycled water. A diluent well supplies water used to dilute the recycled water.

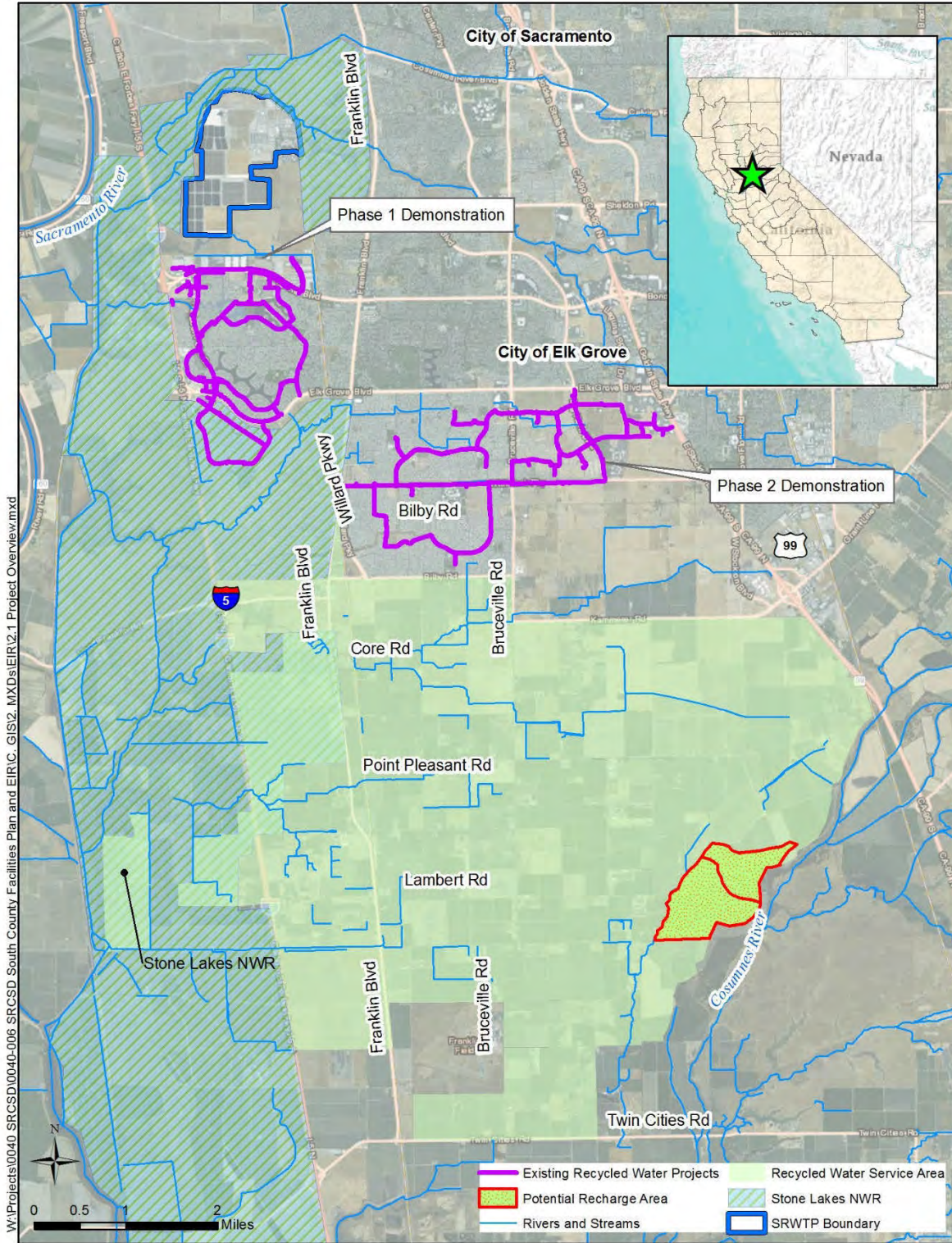


Figure 2-1: Overview of Project Location

WDRs have prompted Regional San to evaluate a multitude of technologies to produce up to 181 mgd average dry weather flow (ADWF) of Title 22 disinfected tertiary recycled water or 'equivalent' quality effluent. The collection of new treatment processes at the SRWTP to meet the new WDRs is called the EchoWater project. Following a pilot study of various technologies, Regional San selected Granular Media Filters, biological nutrient removal, and chlorine disinfection technology for complying with the WDR. Construction upgrades to the SRWTP began in 2015, with treatment upgrades to be operational by May 2023 (Ascent 2014). The SRWTP is permitted to discharge up to 181 mgd (ADWF) to the Sacramento River. Actual discharges vary seasonally and range from 120 to 205 mgd, with higher wet weather flows occurring in rainy periods (RMC 2015a). To maximize use of recycled water, Regional San proposes to beneficially reuse an annual average of up to 45 mgd of the treated effluent that would otherwise be discharged from the SRWTP to the Sacramento River. Deliveries would also vary seasonally, ranging from 24 to 70 mgd, with highest levels during the peak of the irrigation season.

2.2 Proposed Project Alternatives and Components

2.2.1 Alternative Development Process

Three alternatives were considered during the preparation of the Feasibility Study (RMC 2015a). They were developed based on the results of the recycled water market assessment and were developed to achieve the objectives similar to those specified in Section 2.1 above. The three alternatives include the following basic components:

- Pumping plants
- Pipelines
- Customer turnouts
- Potential recharge area (optional)

The three alternatives were developed assuming that peak demands would be met by existing groundwater supply used by growers. This supply is delivered to crops using grower-owned and operated groundwater wells, which would supply demands that exceed 2/3 of the maximum month demand during peak use periods. The base recycled water supply of up to 2/3 of the maximum month demand would be delivered from the SRWTP. They differ in the service area that each alternative would serve.

Each of the three alternatives was evaluated based on the potential benefits, costs, and risks. The Feasibility Study identified the Medium Program Alternative as the recommended project because it provided the highest potential benefit while limiting the potential institutional and political risks of including the former Elk Grove SOI area. These benefits relate to cost, increases in groundwater levels along the Cosumnes River during an average water year, and reduction in wastewater discharge. While the Feasibility Study recommended implementation of the Medium Program Alternative, a modification of that alternative is now being pursued as Alternative 1 (Medium Service Area Alternative).

2.2.2 Alternatives Evaluated in EIR

This EIR evaluates four alternatives. The four alternatives considered are:

- Alternative 1: Medium Service Area Alternative
- Alternative 2: No Reclamation Funding Alternative (this alternative has been included to facilitate future NEPA documentation)
- Alternative 3: Small Service Area Alternative
- Alternative 4: No Project Alternative

The alternatives consist of three action alternatives (Alternatives 1, 2, and 3) that would involve delivery of disinfected tertiary-treated water to potential customers in South County. Alternative 1 (Medium Service Area Alternative) consists of Regional San delivering up to 50,000 AFY of treated recycled water to 16,000 acres of irrigated lands, 400 acres of managed wetlands within the South Stone Lakes area of the NWR, and a potential recharge area, as shown in **Figure 2-2**. To maximize use of recycled water and augment groundwater recharge, the area proposed for summertime irrigation could also potentially be used for wintertime irrigation where agreements can be reached with willing landowners. Implementation of wintertime irrigation is a future programmatic element that would provide an alternative to direct recharge of recycled water and would avoid the need for diluent water. Wintertime irrigation would require regulatory approvals that are not yet in place. Initial implementation of the Project would focus on irrigation during the growing season, which would use an average of 32,500 AFY of recycled water and up to 37,000 AFY in higher demand (drier) years.

The proposed components of these alternatives include a pump station, and up to 13.8-miles of transmission pipelines; the Project would also include about 25 miles of distribution mains, and an (as yet) undetermined length of service lateral connections. The demands met by Alternative 1 (Medium Service Area Alternative) are shown in **Table 2-1**. Alternative 1 (Medium Service Area Alternative) and Alternative 2 (No Reclamation Funding Alternative) would be the same except under the latter alternative, Reclamation would not provide any funding.

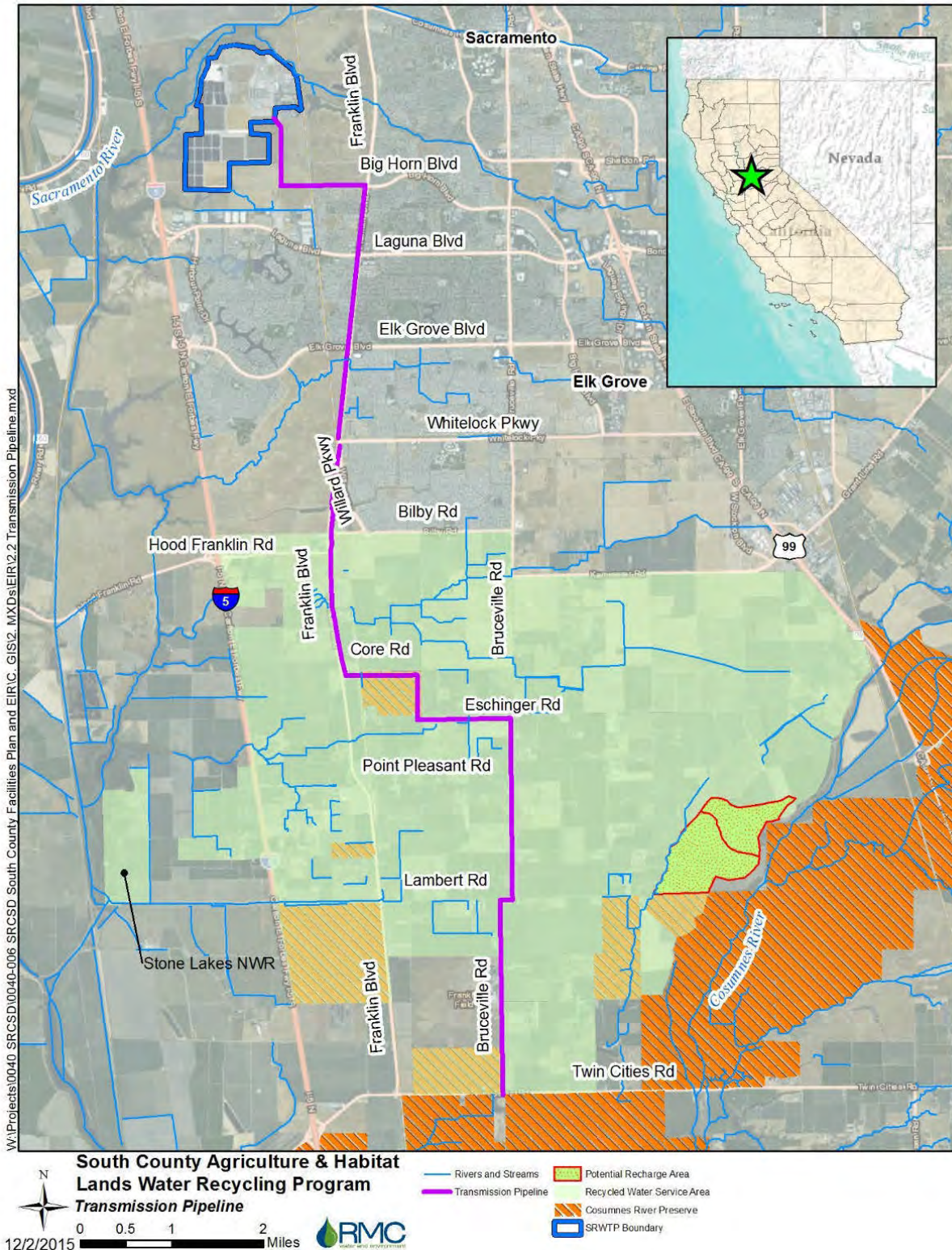


Figure 2-2: Alternative 1 (Medium Service Area Alternative) and Alternative 2 (No Reclamation Funding Alternative)

Table 2-1: Estimated Recycled Water Use Included in Alternative 1 (Medium Service Area Alternative)

Program Area	Area (acres)	Average Annual Recycled Water Use		Peak Month Recycled Water Demand (mgd)
		(AFY)	(mgd)	
Agriculture	16,000	32,500	29	70
Stone Lakes Wetlands	400	500	0.5	-
Recharge Area/ Wintertime Irrigation	16,000	17,000	15.2	-
Total	16,400	50,000	44.7	70

Note: The recharge area acreage is within the 16,000 acres of agriculture acreage and would reduce agriculture acreage total by a like amount when it is functioning as a recharge basin. Wintertime irrigation, which is a potential future program element, could occur in the same areas as the agricultural acreage identified for irrigation during the growing season. In dry years irrigation during the growing season could be up to about 37,000 AFY because additional irrigation could occur during dry spring and/or dry fall months (based upon historic hydrology).

The action alternatives would be designed to provide two-thirds of the maximum month demand because existing private wells currently used for irrigation supply would be sufficient to complement recycled water deliveries and still meet maximum month demand.

The South County is currently outside the Regional San's service area. It is anticipated that Regional San may annex the Project Area into its service area with a limited services agreement to provide recycled service only, not sewer service. Regional San would take responsibility for setting up user agreements and for ongoing recycled water metering and billing.

All of the action alternatives would require that Regional San obtain approval of a Petition for Change for Owners of Waste Water Treatment Plants (Petition for Change) from the State Water Resources Control Board (SWRCB), Division of Water Rights pursuant to Section 1211 of the Water Code before making a change in the point of discharge, place of use, or purpose of use of treated water.

Approval of the petition would establish a water right for the recycled water, and would enable a change in the point of discharge from the Sacramento River to new places of use – farmlands, wetlands, and/or potential recharge area. The Petition would also change the purpose of use of the treated water. In reviewing and approving Petitions for Change, the Division of Water Rights (Division) must be able to find that the proposed change would not injure other legal users of water, would not unreasonably harm instream uses, and would not be contrary to the public interest. All petitioners must send a copy of the petition to the California Department of Fish and Wildlife (CDFW). Additionally, if the action alternatives of the proposed Project have the potential to impair the water supply of other legal users of water or instream beneficial uses, the Division would require public notice of the petition. Protestants may raise concerns about protecting their water rights, or may raise public trust concerns. A protest sets forth the protestant's objections to approval of the petition. If the Division receives a protest, further review would be conducted to consider whether the reductions in flows at the existing discharge locations would adversely affect the environment or the rights of any downstream water users. The SWRCB would only issue an order approving the petition if the change of the discharge did not have adverse impacts on downstream habitat or legal users of water. Regional San would

maintain its existing discharge locations at the Sacramento River, and would continue to maintain an NPDES permit for river discharge, but the action alternatives of the proposed Project would reduce the volume of recycled water discharged to the Sacramento River with the new point of discharge being agricultural and urban irrigation customers, in addition to ongoing river discharge.

2.2.3 Alternative 1 (Medium Service Area Alternative)

This following sections provide detailed discussion of the physical components of the proposed alternatives, followed by descriptions of each alternative. This section describes Alternative 1 (Medium Service Area Alternative).

Proposed Facilities

Alternative 1 (Medium Service Area Alternative) includes expanding the recycled water system to serve the South County, and consists of pumping Title 22 tertiary-treated, disinfected recycled water from the SRWTP through new pipelines to potential customers. Alternative 1 (Medium Service Area Alternative) includes the construction of a pump station and new pipelines. **Table 2-2** shows the components of Alternative 1 (Medium Service Area Alternative), their characteristics, and the level of environmental analysis in this EIR.

Pump Station

To convey the recycled water from the SRWTP to customers, a pump station would be constructed at the SRWTP to pressurize the new recycled water system. The proposed pump station would be located on the eastern portion of a parcel between Reclamation Way and South Landfill Way, and west of Central Street, as shown in **Figure 2-3**. While the parcel is currently empty, the proposed pump station would be located adjacent to a disinfection contact basin that will be constructed as part of the tertiary treatment facilities included in the EchoWater project. The effluent channel from the disinfection contact basin would serve as a wet well for the proposed South County Ag Pump Station. In periods of the year when recycled water flows are low, the proposed South County Ag Pump Station may also receive tertiary treated water from the existing WRF. Regional San has not yet completed final layouts for the tertiary treatment facilities, and if changes are required to meet the needs of the EchoWater project, then associated changes to the South County Ag Pump Station siting could also be required. Such changes are expected to be minimal; because the SRWTP site has been previously designated for disturbance, the scope of any siting changes will necessarily fall well within the parameters identified for that project. However, if any changes are required they would be evaluated to ensure that the revised pump station siting does not result in any new environmental impacts.

Table 2-2: Proposed Components of Alternative 1 (Medium Service Area Alternative)

Alternative 1 Proposed Component	Location	Details	Level of Environmental Analysis
Pump Station	SRWTP	1 pump station, 7,000 horsepower (hp)	Project Specific
Transmission Pipeline (from proposed Pump Station to Twin Cities Road)	County, City, and Rural roads; on public rights-of-way	~72,800 feet (~13.8 miles) of 18 to 60-inch diameter pipeline	Project Specific
Distribution Mains	County, City, and Rural roads (public rights-of-way), private dirt roads and other private lands	~185,000 feet (25 miles) of 12 to 30-inch diameter pipeline	Programmatic
Service Connection Laterals	Private dirt roads and other private lands, public open space lands	6 to 12-inch diameter pipeline ¹	Programmatic
Turnouts	On existing private agricultural land	Pipe and metering equipment that connects directly into existing irrigation systems or discharge into a landowner's onsite water storage area	Programmatic
Potential Recharge Area	Private agricultural land	560 acres	Programmatic
Diluent Wells, if needed for recharge area	Private agricultural land	3 diluent wells within a 2,000 to 6,000 feet radius of the potential recharge area	Programmatic
Stone Lakes Managed Wetland	Stone Lakes NWR	Provision of water to South Stone Lakes wetlands	Programmatic
Wintertime Irrigation	Private agricultural land	Up to 16,000 acres	Programmatic

1. The length of pipeline will be determined upon identification of potential customers.



Figure 2-3: Proposed Pump Station Site

The maximum footprint of the pump station would be approximately 150 feet by 66 feet (up to 10,000 square feet), with a maximum height of 25 feet. The pump station would have a total installed horsepower (hp) of approximately 7,000 hp, including standby pumps, and have a flow rate of 144 cubic feet per second (cfs) (93 mgd).

As noted, the new South County Ag Pump Station would be adjacent to the EchoWater project's effluent channel for the Disinfection Contact Basin, and that channel would serve as the pump station's wet well. Use of the effluent channel for this purpose would minimize the overall pump station footprint, and pump casings (or cans, with vertical turbine pumps installed in each can) would be installed outside the effluent channel to draw water from the channel. The pump station would not have a building or other enclosure around it.

Pipelines

Transmission Pipeline

While the Notice of Preparation had considered multiple alternative transmission pipeline alignments, design has proceeded such that Regional San was able to select a preferred alignment. The Facilities Plan evaluated these alignments based on the following criteria: cost, area of permanent ROW required, environmental constraints, and utility conflicts. The Facilities Plan considered two reaches (northern and southern) and evaluated multiple alignments within each reach. Based on analysis, the preferred alignment would be located along the following roads: Big Horn Boulevard, Franklin Boulevard, Core Road, Eschinger Road, Bruceville Road, and Lambert Road, as shown in **Figure 2-2**. The 18-to 60-inch diameter transmission pipeline would extend approximately 14 miles from the new pump station at the SRWTP to Twin Cities Road. Each segment of the alignment and their characteristics is shown in **Table 2-3**.

Table 2-3: Alternative 1 (Medium Service Area Alternative) Transmission Pipeline Segments

Reach	Segment (from / to)	Total Length (linear feet)	Crossings	Construction Method
A1	EchoWater Pump Station to City of Elk Grove Limits	26,300	<ul style="list-style-type: none"> • UPRR (2x) • PG&E (high-pressure gas) • Laguna Boulevard • Elk Grove Boulevard • Large Drainage 	Primarily open cut with trenchless construction at crossings
A2	City of Elk Grove Limits to Intersection of Bruceville Road. and Twin Cities Road	46,500	<ul style="list-style-type: none"> • UPRR (1x) • PG&E HP Gas • Franklin Creek • Unnamed creek/ drainages 	Primarily open cut with trenchless construction at crossings

The transmission pipeline alignment would cross railroad tracks, Franklin Creek, other unnamed creek drainages), high pressure gas lines, areas of underground utilities, and a couple major, heavily traveled roadways, including Laguna Boulevard and Elk Grove Boulevard.

Where feasible, pipeline appurtenances (e.g., air valves, blowoffs, valves would be located below ground so that it would be possible to construct a roadway on top of them, with appropriate venting through the pavement surface using a structure similar to a manhole.

Distribution Mains, Service Connection Laterals, and Customer Turnouts

Distribution mains connect the transmission pipeline to the service connection laterals, and their purpose is to provide water to specific areas where potential customers are located. Distribution mains would range from 12-inch to 30-inch diameter. Service connection laterals provide water directly to individual customers. They would range in size from approximately 6- to 12-inches in diameter depending on individual customer demand.

Distribution mains and service lateral connections are not shown since their alignments would be based on customer's point of connection and this information has not yet been determined. Both distribution mains and service connection laterals would be located on public road ROW, private dirt roads, or agricultural lands and could cross irrigation ditches and utilities. These pipelines would be designed upon confirmation of customers to be served and points of connections to the customers. Service connections could be upwards of 200 when the system is fully built out.

For the purposes of this evaluation, it is assumed that a turnout would be required at every irrigated parcel larger than 10 acres within the service area. Customer turnouts would consist of a dedicated customer service line to point of service, flow meter, totalizing meter, and isolation valve, which all would be sized to accommodate the peak hour customer demand.

The location of the turnout for each customer will be determined based on feedback from each individual customer. Typically, the turnouts would be located adjacent to the customer's existing well or another appropriate connection to the irrigation system.

All turnouts would require backflow protection for the recycled water system connection and any wells connected to the irrigation system.

Potential Recharge Area

In addition to providing water to agricultural and urban irrigation users in south Sacramento County, Alternative 1 (Medium Service Area Alternative) would convey recycled water to a potential recharge area for "active recharge" to increase recycled water use, augment groundwater levels in the Central Sacramento Groundwater Basin, and improve base flow in the Cosumnes River. The area would be located in the eastern part of the service area near the Cosumnes River where the soils are suitable. While recycled water would be provided to irrigation users throughout the year, demand is greatest during the irrigation months (May through September). When irrigation demand is high, water would be provided to an up to 16,000-acre area for crop irrigation. When the irrigation demand is low (during 7 of the 12 months), recycled water could be diverted to an up to 560-acre recharge area within the irrigation area that could also be used for groundwater recharge; the 560-acre groundwater recharge area would have a recharge capacity of approximately 5,000 AFY (recycled water) for a total of 10,000 AFY of water, including diluent water. Based on California groundwater recharge with recycled water regulations, recycled water would need to be diluted as part of the recharge project. About 3,400 AFY of the total recharge capacity would need to be provided by diluent water. Groundwater could be used as diluent water. Three diluent wells would be constructed to dilute the recycled water in the potential recharge area. The diluent wells would extract groundwater (from the underlying Central Sacramento Groundwater Basin) and convey it to the

potential recharge area through new pipelines for blending with the recycled water. The diluent wells would likely range from 40 to 100 feet deep and would be located within a 2,000- to 6,000-foot radius of the recharge pond. The precise locations of the wells have not been determined, but would be sited to meet all Title 22 requirements, including retention time of the recycled water underground².

In addition to dilution from the diluent wells, additional dilution from precipitation would allow the Alternative 1 (Medium Service Area Alternative) to achieve a 20 to 50 percent dilution.

The approximate 560-acre recharge area would be excavated approximately 4 inches. This material would be compacted and used for berms to contain the recycled water. The berms would be approximately 3 feet high and 12 feet wide. As currently conceived, the recharge area would continue to be used for agriculture during the irrigation season and would be used for groundwater recharge purposes during the non-irrigation season, although future management options such as riparian restoration or wetlands enhancement could be considered in cooperation with the landowner.

Regional San is coordinating with The Nature Conservancy (TNC) to maximize the benefits of a recharge pond, as there are opportunities for TNC to improve riparian zones through elevated groundwater levels and to use a portion of the recharge area for wetlands restoration. However, as this component is only in conceptual design, the precise details, including the exact location of the recharge area and its configuration, as well as the locations of the diluent wells and associated pipelines have not yet been developed. For the purposes of analysis in this EIR, the potential recharge area is assumed to be up to 560 acres within the 1,100 acres shown in **Figure 2-2**. Any wetland restoration or other options considered by TNC in the future are not evaluated in this EIR, as such a project is independent of Alternative 1 (Medium Service Area Alternative) and would be evaluated by TNC separately if further pursued.

The parcels proposed for the recharge pond are currently irrigated. Use of the proposed site for a recharge pond would require either Regional San or another entity to purchase this land in fee title or to execute an agreement with the landowner for seasonal recharge.

Wintertime Irrigation

Alternative 1 (Medium Service Area Alternative) could also include a future program element of winter irrigation, which would be used to increase groundwater benefits of the Project. To complement or replace the recharge element of the Project, Regional San is investigating the feasibility of providing irrigation water to growers in the service area in the non-growing season in order to passively recharge the groundwater basin (as opposed to the active recharge component described above). Recharge of stormwater and flood flows on irrigated agricultural land is currently being investigated actively throughout the California Central Valley. (RMC 2015b) This wintertime irrigation concept with recycled water is being investigated presently by the Nature Conservancy, Regional San, and a group of research scientists and engineers, to ensure that the regulatory framework can be understood and established to allow recycled water

² Retention time refers to the time required for the recycled water to stay underground from the point of application to the withdrawal of water.

to complement stormwater as a wintertime passive recharge source that will be permitted for use without diluent water (RMC 2016)

Managed Wetland

Alternative 1 (Medium Service Area Alternative) proposes to provide recycled water to the Stone Lakes NWR. This refuge is located generally north and west of the Project area, and consists of approximately 17,640 acres of land owned by the State, County, USFWS, and private landowners some of which is managed under cooperative agreement or through conservation easements. The main mission of the NWR is to support migratory waterfowl through habitat creation and protection. USFWS owns in fee title and manages approximately 6,650 acres, including waters, lands, and managed wetlands in and around South Stone Lake. The wetlands are currently supported by water pumped from lakes (fed by sloughs tributary to the Sacramento River) using 12 pumps to fill the wetland units.

The distribution main that would be needed to deliver water to the managed wetlands would likely follow Lambert Road. As this component is only in conceptual design, the precise details of the distribution mains and service connection have not been defined.

2.2.4 Alternative 2 (No Reclamation Funding Alternative)

Regional San intends to request federal funding from Reclamation for the Project. This environmental document has been prepared to meet CEQA requirements, but may be used by Reclamation for future NEPA compliance. NEPA Section 1502.14(d) requires the alternatives analysis in an EIS to include the alternative of no action. For the purposes of this project, because Reclamation's action would be to provide funding for Alternative 1 (Medium Service Area Alternative), the No Bureau of Reclamation Funding Alternative would consist of Reclamation not funding Alternative 1 (Medium Service Area Alternative). Without funding by Reclamation, it is expected that Regional San would still move forward with the proposed Project, though other budgetary arrangements would have to be made and Regional San ratepayers would likely absorb more costs to fund the environmental benefits of the Project. Because this alternative would be exactly the same as the Alternative 1 (Medium Service Area Alternative), with the exception of funding sources, and the lack of funding by Reclamation would have no consequence with respect to the Project's potential environmental impacts, no further discussion of this alternative will be provided in this EIR.

2.2.5 Alternative 3 (Small Service Area Alternative)

This alternative is a reduced version of Alternative 1 (Medium Service Area Alternative). The service area would include a smaller portion of South County, and would exclude the former Elk Grove SOI and the agricultural lands south of Twin Cities Road, as shown in **Figure 2-4**. The managed wetlands at Stone Lakes NWR would continue to be included, and the potential recharge area is included under this alternative to benefit the Central Sacramento Groundwater Basin. The total acreage of land served under this alternative and the associated recycled water usage are shown in **Table 2-4** below. **Table 2-4** also shows the amount of groundwater contribution from existing wells that would be necessary to meet peak demand, given that the project would be sized to meet two-thirds of the peak demand.

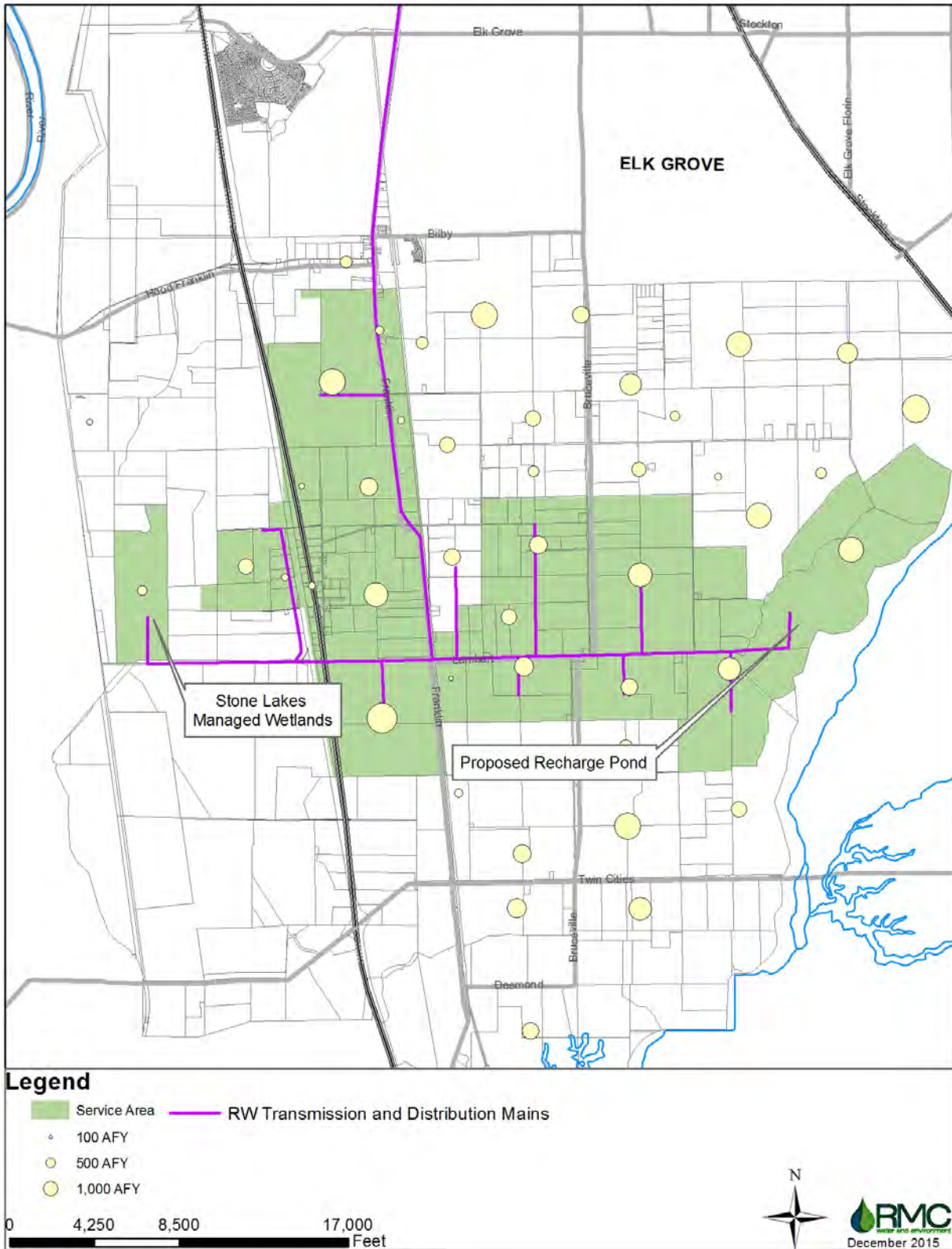


Figure 2-4: Alternative 3 (Small Service Area Alternative)

Table 2-4: Estimated Recycled Water Use for Alternative 3 (Small Service Area Alternative)

Program Area	Area (acres)	Average Annual Recycled Water Use		Peak Month Recycled Water Demand (mgd)
		(AFY)	(mgd)	
Agriculture	7,550	21,200	19.0	39.5
Stone Lakes Wetlands	400	500	0.5	-
Recharge Area	560	5,000	4.5	-
Total	8,510	26,700	24.4	39.5

Under this alternative, there would be fewer miles of pipelines proposed, but the basic infrastructure (pump station, transmission pipeline, distribution mains, and service connection laterals) would still be needed.

A pump station with installed horsepower of 2,500 would be constructed, at the same location at the SRWTP as that of Alternative 1 (Medium Service Area Alternative). Generally, the transmission pipeline would follow the same alignment as described for Alternative 1 (Medium Service Area Alternative), and the distribution mains and service connection laterals would also be the same as Alternative 1 for the portions of the service areas that are overlapping. The anticipated length of pipelines under this alternative (transmission and distribution mains) would be approximately 128,000 linear feet (LF), about 130,000 feet less than Alternative 1. The transmission pipeline and distribution mains are shown in **Figure 2-4**; the service lateral connections are not shown as they have not yet been defined. Service connections could be upwards of 81 under this alternative. The construction and operation of this alternative would be similar to that described for Alternative 1, but at a reduced scale. Turnouts would be necessary at the customer locations as described above for Alternative 1.

2.2.6 Alternative 4 (No Project Alternative)

CEQA and NEPA require the evaluation of a No Project Alternative. The No Project Alternative assumes that recycled water would not be beneficially reused through delivery to irrigation customers in South County, the Stone Lakes NWR, or to a potential recharge area. Landowners in the South County area would continue to use groundwater from their existing wells to supply irrigation demands. The Stone Lakes NWR would continue to use surface water to supply its wetland ponds.

As additional water supply is needed to supply municipal and industrial irrigation demands in the region, it is expected that new surface and groundwater supplies would be developed. Continued development of groundwater could ultimately result in depletion in the water table, exceeding limits set forth by the Water Forum. As a result of the lowered groundwater table, river flow in the Cosumnes River would continue to be substantially reduced during summer and fall months.

Regional San would construct treatment facilities to meet the requirements of the NPDES permit (Title 22 equivalent), and would continue to discharge to the Sacramento River, in accordance with its NPDES permit. Thus, up to 50,000 AFY of recycled water produced by Regional San would not be used to provide associated benefits to the region and the state.

Smaller recycled water projects to serve customers in the City of Elk Grove and City of Sacramento may still be constructed with or without the project. Existing customers served by the SCWA Phase I Demonstration Project, and planned customers served by the Regional San/Sacramento Power Authority (SPA)/City of Sacramento Water Recycling Pipeline Project³ would continue to be served. Other potential recycled water projects being considered by Regional San include the following:

- SCWA Phase II Demonstration Project to serve additional municipal customers in the communities of East Franklin and Laguna Ridge;
- Partnership with the City of Sacramento to serve golf courses, parks, and schools with recycled water north of the SRWTP.

For the Stone Lakes NWR, recycled water would not be delivered to the existing wetlands. USFWS would continue to provide water to the managed wetlands from its current surface water source.

Active groundwater recharge and its associated Basin benefits would not occur under this alternative.

2.3 Operation and Maintenance Requirements

2.3.1 Operations

The average annual recycled water delivered to potential irrigation customers under Alternative 1 (Medium Service Area Alternative) at full program implementation (including winter irrigation) would be up to 44,500 AFY. Recycled water would be delivered to approximately 16,000 acres of irrigated farmlands year-round and 400 acres of managed wetlands at Stone Lakes NWR during the spring and fall. The action alternatives would be designed to provide two-thirds of the maximum month demand augmented with existing private wells currently used for irrigation supply to provide peak water delivery. Thus, irrigation demands exceeding two-thirds of maximum month demand would be supplied by customers' existing wells.

Alternative 3 (Small Service Area Alternative) would provide less recycled water to potential customers. **Table 2-5** shows the estimated recycled water deliveries for the three action alternatives. **Figure 2-5** and shows the total recycled water deliveries under Alternative 1 (Medium Service Area Alternative) by month. They also show the portions that would be met by the proposed Project and existing groundwater wells. Alternative 3 (Small Service Area

³ The Regional San Water Recycling Pipeline Project was approved in November 2014. This project is a collaboration of Regional San and the Sacramento Municipal Utility District (SMUD) to provide recycled water to a cogeneration facility located 6.2 miles north of the SRWTP. This project consists of a pipeline (recycled water main) and necessary appurtenant facilities to convey recycled water from the SRWTP north to the SPA Cogeneration Plant. The recycled water main would initially convey 1 mgd to serve the SPA Cogeneration Plant on a year-round basis but would be sized to convey a maximum of 4.2 mgd to serve additional future users with recycled water needs within the project study area. Examples of future recycled water uses include landscaped areas such as common areas, medians, golf courses, parks, and school fields.

Alternative) would result in a similar distribution of recycled water demand as shown in **Figure 2-5** but would deliver less recycled water to potential customers compared to that shown in **Table 2-1**.

Table 2-5: Recycled Water Deliveries under the Action Alternatives

Alternative	Wetlands		Crop Irrigation (Growing Season/ Non-growing Season)			Recharge		Total Delivered Recycled Water (AFY)
	Area	Recycled Water Usage	Irrigated Area	Recycled Water Usage	Ground- water (customer wells)	Area	Recycled Water Usage	
	(Acres)	(AFY)	(Acres)	(AFY)	(AFY)	(Acres)	(AFY)	
Proposed Project Initial Phase			16,000	32,500	9,200			32,500
Proposed Project with Winter Irrigation	400	500	16,000	44,500	9,200	560	5,000	50,000
Small Service Area Alternative	400	500	7,550	21,200	3,900	560	5,000	26,700

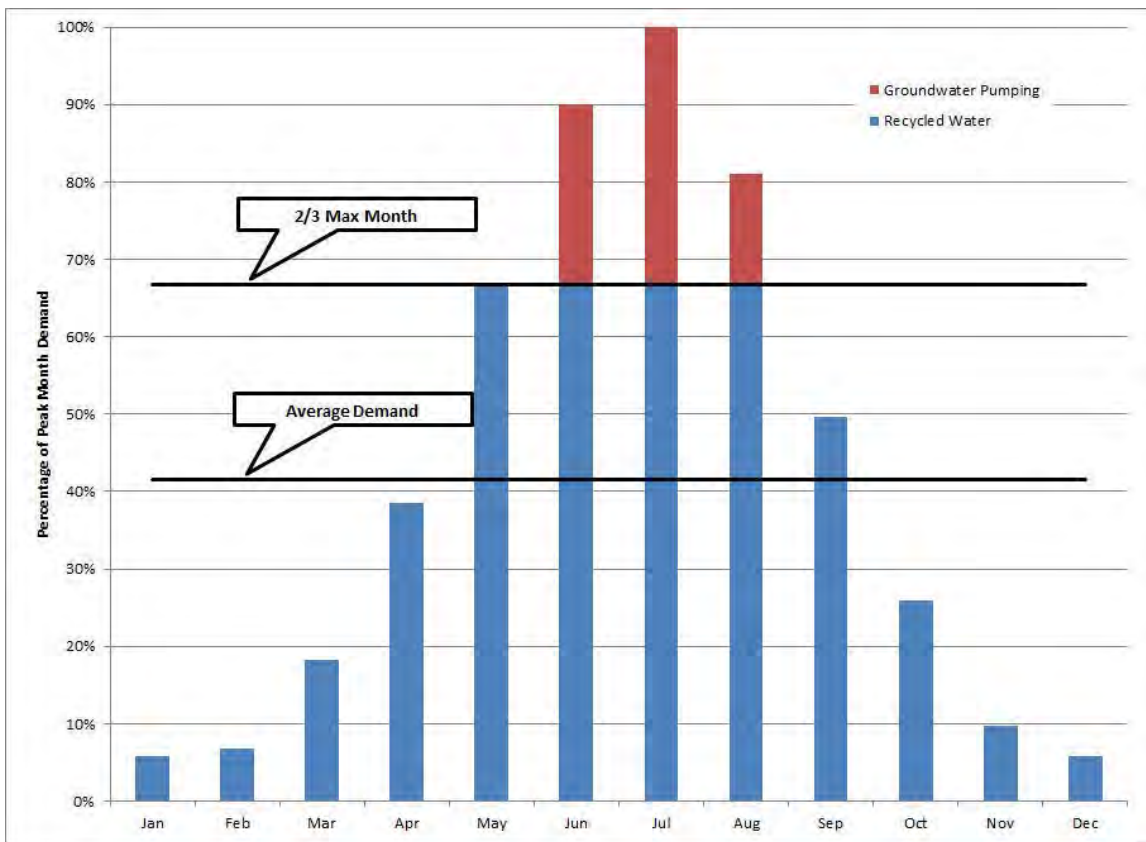


Figure 2-5: Monthly Demand for Water

The provision of recycled water to irrigation customers and for recharge would result in a reduction in the discharge to Sacramento River. Thus, Regional San would reduce discharge by up to 50,000 AFY at full program implementation, with agricultural irrigation in the growing season plus other program elements including wintertime irrigation. However, use of recycled water would benefit the groundwater basin, and higher groundwater levels would result in increased flows in the Cosumnes and Sacramento River because less water would flow out of those rivers into the groundwater basin. Once the groundwater basin reaches equilibrium the Project is expected to increase streamflows by about 45,000 AFY with implementation of wintertime irrigation. In the initial phase when irrigation is only occurring during the growing season, discharge to the Sacramento River would be reduced by about 32,500 AFY and the Project is projected to increase streamflows by over 28,000 AFY.

Operations of the potential recharge area would provide local benefits to both groundwater levels in the basin and an increase in the base flow of Cosumnes River downstream of Highway 99. It is expected that base flow would increase during summer and fall months, when plant and animal species are most sensitive to flow conditions. **Figure 2-6** shows the groundwater elevation increase for the Cosumnes River for Alternative 1 (Medium Service Area Alternative).

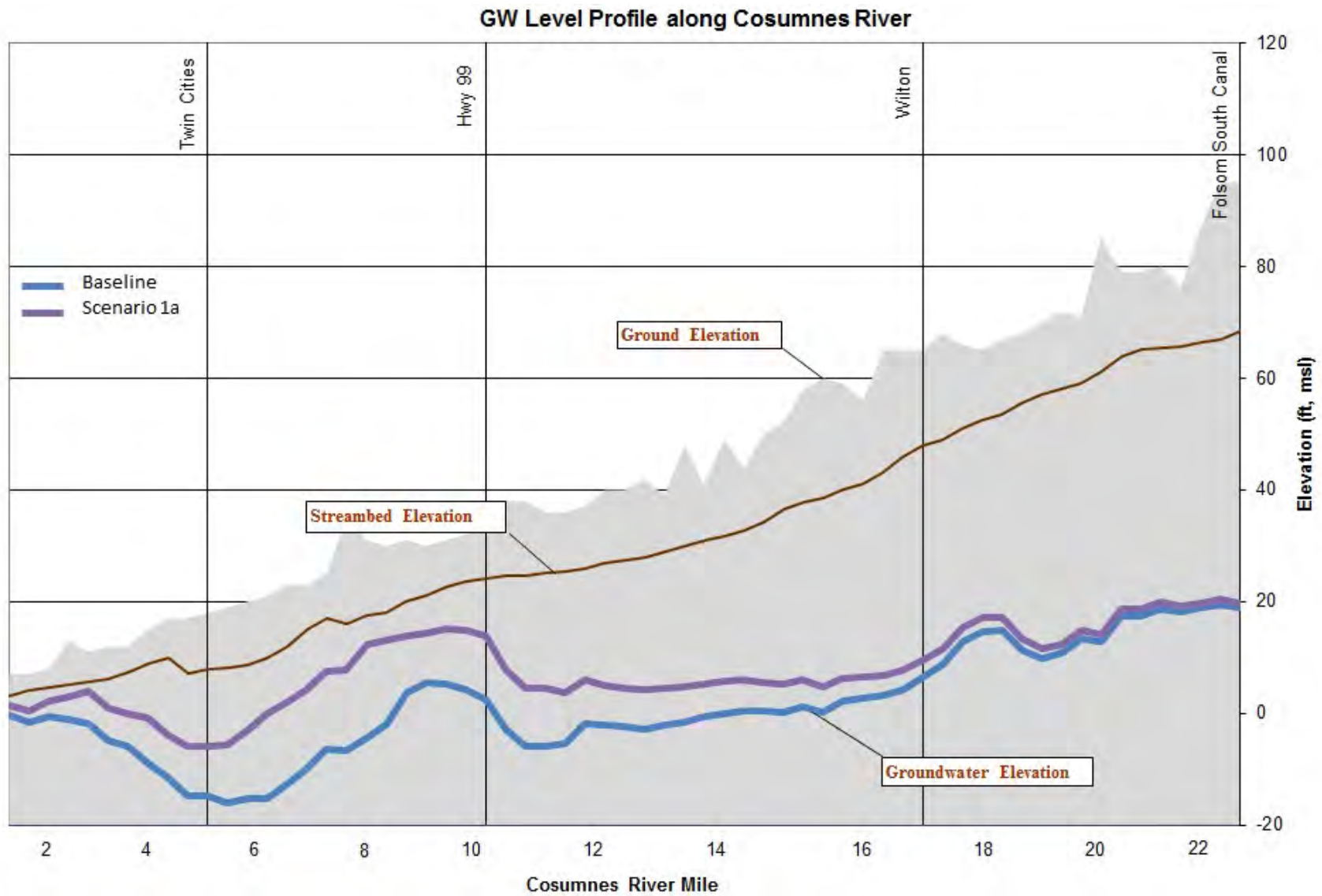


Figure 2-6: Cosumnes River Profile

Because recycled water would be used to meet most of the irrigation demand in place of groundwater, the action alternatives of the proposed Project is considered an in-lieu recharge Project. Although the action alternatives have a direct benefit for groundwater resources, Regional San is not proposing at this time to operate it within an administrative accounting framework such that the water savings over the life of the proposed Project would be accrued and reserved (groundwater banking) for other uses in the future. Regional San is considering participating in a groundwater banking framework in the future such that the stored groundwater would be available for beneficial use. If that occurs, Regional San would evaluate such a project in a separate environmental document.

With respect to the NWR, water would be delivered to the managed wetlands during low agricultural irrigation periods (spring and fall).

2.3.2 Maintenance

Maintenance of the Project would primarily involve regular inspections of the pipelines and pump station. The pipeline would be inspected as needed in any given year, and the pump station would be inspected monthly. Existing Regional San operations and maintenance staff would conduct maintenance activities. No additional vehicular trips would be needed for inspection of the pump station at the SRWTP because it is located on the treatment plant site, where existing staff currently maintain facilities and will maintain the new EchoWater facilities.

2.3.3 Monitoring

As part of ongoing operations, monitoring would be conducted to quantify benefits to the groundwater basin and to document the assurances that Regional San is providing to stakeholders and funding agencies as the project is developed. Monitoring would be done in cooperation with the Nature Conservancy and other resource managers responsible for lands within the project.

Riparian Corridor Health

Riparian corridor health would be monitored through groundwater elevation measurements and riparian vegetation surveys. A monitoring program acceptable to Regional San and the Nature Conservancy would be developed to quantify the Project's environmental benefits. A groundwater elevation monitoring network would be established in the Cosumnes River Corridor between Interstate 5 and Highway 99. Existing wells would be used to the extent possible. Numerous agricultural wells exist in and near the project area, and the effort would seek to include wells monitored by UC Davis for the Cosumnes Research Group and by SCGA for the California Statewide Groundwater Elevation Monitoring program. Emphasis would be placed on shallow wells capable of monitoring conditions important to riparian forests. Wells would be focused within the Cosumnes River corridor and specifically near critical areas such as Castello Forest, Valensin Forest, Shaw Forest, Orr Forest, and Tall Forest. If appropriate wells are not present, new dedicated monitoring wells would be installed.

Groundwater Basin Health

Groundwater basin health would be monitored through groundwater elevation measurements. A groundwater elevation monitoring network would be established to cover slightly beyond the Project footprint. Numerous agricultural wells exist in the basin, and the effort would seek to

include wells monitored by SCGA for the California Statewide Groundwater Elevation Monitoring program. Emphasis would be placed on wells screened at typical agricultural and municipal well depths. Selected wells for monitoring would be spread across the Project area to allow for estimation of stored water and estimation of losses to surface water. If appropriate wells are not present, new dedicated monitoring wells would be installed. Water level measurements would occur monthly while the Project is operating.

Salt and Nutrient Monitoring

Monitoring of salt and nutrients would occur through regular monitoring of the Groundwater Basin Health monitoring wells. These wells would be monitored annually for Total Dissolved Solids and Nitrate.

2.4 Construction Considerations

This section outlines the pipeline installation techniques under consideration for the proposed Project. The precise construction methods are yet to be determined but work is anticipated to follow the broad methods outlined in the following sections.

All pipeline construction would occur within public roadways or other public ROW, private dirt roads and agricultural lands, and public open space areas. An access agreement may be required for railroad crossings. Installation of the pipeline would be accomplished using open-cut construction, except at specific sensitive crossings (e.g., stream/river/sensitive biological resources, railroad crossings, canal/ditch, busy intersections, areas with dense utilities), where trenchless construction techniques would be employed. Specifically, trenchless construction (i.e., horizontal directional drilling or HDD) would occur at I-5 and encased within a larger conduit; construction pits associated with trenchless construction would be located outside the Caltrans ROW.

Spoil (soil and rock) excavated during construction would be reused on site for backfilling or would be disposed of properly. Any material that would not be reused as backfill would be stabilized and stored temporarily at the construction staging area until characterized and then hauled away to a permitted disposal site (e.g., landfill). Potential for reuse of spoil from a trenchless installation would depend on the trenchless method selected because some methods remove spoil using slurry (i.e. the material is mixed with water or drilling fluid) and for those methods it is not practical to reuse excavated spoil.

2.4.1 Construction Timing

The action alternatives of the proposed Project would be developed based on conveyance needs to meet potential demands, optimizing potential grant funding, and identifying components that may need additional time to meet regulatory and institutional requirements. The proposed Project's project-level components would be constructed first to serve irrigation customers and potentially riparian forest/recharge areas (to enhance use of water year-round). The programmatic components would be implemented at a later time and would serve additional irrigation customers, serve wetlands at the Stone Lakes NWR, and would further develop the potential recharge area component.

The project-level components would include construction of the pumping plant at the SRWTP, the transmission pipeline down to Lambert Road, and distribution and lateral main pipelines and related facilities to serve agricultural parcels adjacent to the transmission pipeline. The pumping plant would initially include fewer/smaller pumps. To the extent possible Regional San would endeavor to extend service to the east of the transmission main, serving a first phase of ground water recharge if feasible based on regulatory constraints and funding. Additional near-term work would include distribution mains, laterals, service pipelines and other facilities to serve the remaining service area customers, as well as expansion of the pumping plant to meet estimated demands. Service to the managed wetlands and full development of the potential recharge area component would occur thereafter.

Construction of the project-level components is tentatively scheduled to start in 2019/2020, and last approximately 2 to 3 years. Construction of the additional program-level components could occur in 2020 through 2041. The timing of serving Stone Lakes NWR and developing the full potential recharge area has not yet been determined, but could occur at a later time (after 2023) to accommodate potential regulatory and institutional processes that might slow full program implementation. Service to Stone Lakes NWR would require construction that could last 6 to 12 months, and construction of the potential recharge area could last 6 to 12 months.

For all components, construction would typically be limited to those hours consistent with the noise ordinance of the affected jurisdictions. Typical work hours would be Monday through Friday from 7:00 AM to 7:00 PM (construction noise is exempt between 6 AM and 8 PM on weekdays within Sacramento County and the City of Elk Grove), and construction might take place during weekends and nighttime (e.g., for connection of new pipelines to existing pipelines in heavy traffic areas) if necessary, and if approved by the affected jurisdictions. The Project construction contractor would be responsible for obtaining the necessary permits to conduct weekend and nighttime activities.

2.4.2 Staging Areas

Equipment, material and vehicle staging would be accommodated at the SRWTP and along the proposed pipelines. Spoils would not be located within Caltrans ROW (along I-5).

2.4.3 Pipeline Construction

Open-cut construction

Open-cut construction (also referred to as open trench with shoring, or cut-and-cover) is the proposed option for installing the majority of the pipeline, manholes, air vents, and turnouts along existing roadways and within private agricultural lands. Generally, the open-cut trench would be up to approximately 7 feet wide and up to 10 feet deep, depending on the pipe size, existing utility locations, and pipe bedding requirements. Shoring may be required to provide trench stability.

Open-cut construction would involve cutting and removing pavement in existing paved areas where needed. Asphalt would be cut using large saw blades mounted on a special cart that would be pushed by a construction laborer. The asphalt would be lifted in large chunks and slabs from

the cut area by a front-end loader or backhoe into a dump truck for off-hauling. The saw cutting operation would be relatively fast, with several hundred feet typically being cut within a few hours. Where possible, the pipelines would be installed along the shoulder of the roads to minimize paving and traffic disruption.

Installation of dewatering wells may be required prior to start of excavation depending on the soil type and groundwater level. Water pumped from the excavation area must be properly disposed to nearby irrigation ditches or impoundments. Dewatering pumps would run continuously (24 hours per day) in the open trench areas while excavation is taking place, to maintain the groundwater level below the bottom of trench. After the pipeline is installed and backfilled, the dewatering pumps would be removed and relocated to the next segment of pipeline construction.

Heavy equipment for excavation typically involves continuous use of an excavator to fill dump trucks which would make intermittent trips to an off-site disposal area. Typically two or more dump trucks would be used to allow continuous offloading from the excavator. In addition, dump trucks hauling material from off-site sources for pipeline bedding and backfill would make semi-continuous trips to the site as pipe is being installed. A front-end loader would be used to lift pipe segments from a flat-bed delivery truck and position the pipe in the trench. Temporary trench plates would be installed over the trench at the end of each work day. Final paving and marking typically would be done for the entire pipeline length after installation.

To accommodate construction equipment and work area, the entire construction corridor (active work area including the trench) would be up to 80 feet wide for the largest diameter pipelines. Because of the limited width of the existing roads and the size of the trench and construction zone, it is expected that the construction may require full road closures unless temporary access for construction equipment can be provided along the shoulders of the road and/or adjacent property. If access can be provided along the roadway shoulders and adjacent property, only partial road closures with appropriate traffic control would be required. Otherwise, segments of the affected roadway would be closed during pipeline installation activities. Traffic control operations would be noticed at the location of the temporary traffic restrictions a week in advance of any road work that impedes the flow of traffic (i.e. closes the road, closes a traffic lane, or closes the road shoulder).

It is expected that open trench construction within paved roadways would proceed at the rate of approximately 150 feet per day. Excavated trench materials would be sidecast within approved work areas and reused as appropriate for backfill. Excess material would be hauled off for disposal at an approved disposal site (e.g., landfill). Upon completion of pipeline installation, affected roadways would be repaved per the requirements of the affected jurisdiction.

Open-cut construction would also be used within private farmland areas. Some of the lands are fallowed while others are cultivated. Open-cut construction proposed for cultivated areas may require removal of the crop, depending on the crop and time of year. Temporary and permanent easements would be obtained from individual growers as needed and coordinated to avoid the need to remove crops.

Trenchless Pipeline Construction

Trenchless construction methods would be used for specific crossings. These methods are used to minimize the area of surface disruption required for pipeline installation or where open-cut construction is not practical or not allowed. The exact types of trenchless methods to be employed have not yet been defined, but could consist of HDD, jacking and boring (sometimes known as jack-and-bore construction), and/or microtunneling.

Horizontal Directional Drilling

HDD is a trenchless pipeline installation method that can be used for crossing major roadway intersections and waterways. HDD crossings are installed between an entry and exit area (see **Figure 2-7**). HDD involves the use of a drill rig tilted at the top at an angle, typically in the range of 10 to 15 degrees from horizontal. A small diameter (4 to 8 inch diameter) pilot hole is first drilled along a pre-determined horizontal and vertical alignment from the entry to exit area. This pilot hole can be guided using electromagnetic readings transmitted from the drill bit back to the drill rig. Excavation takes place by introducing pressurized slurry (a thin mixture of water and clay) through a drill string to the bit. The slurry pressure in combination with a rotating drill bit excavates the material, which is then transported back to the entry area along the outside of the drill string. In some cases, a larger diameter wash pipe may be rotated around the drill string to prevent sticking of the steerable string.

Entry and exit areas are required at each side of the crossing. These areas are approximately 50 to 100 feet square by approximately 5 feet deep, and are used as the collection point for the fluid material removed during drilling, which is a mixture of the drilling slurry and spoil. This fluid is then pumped to a slurry separation plant to separate the spoil from the fluid so that the fluid can be reused. The pilot hole is then enlarged by pulling larger reamers (see **Figure 2-7**) from the pilot exit back towards the drilling rig. The pipeline is then pulled into place behind the last reamer.

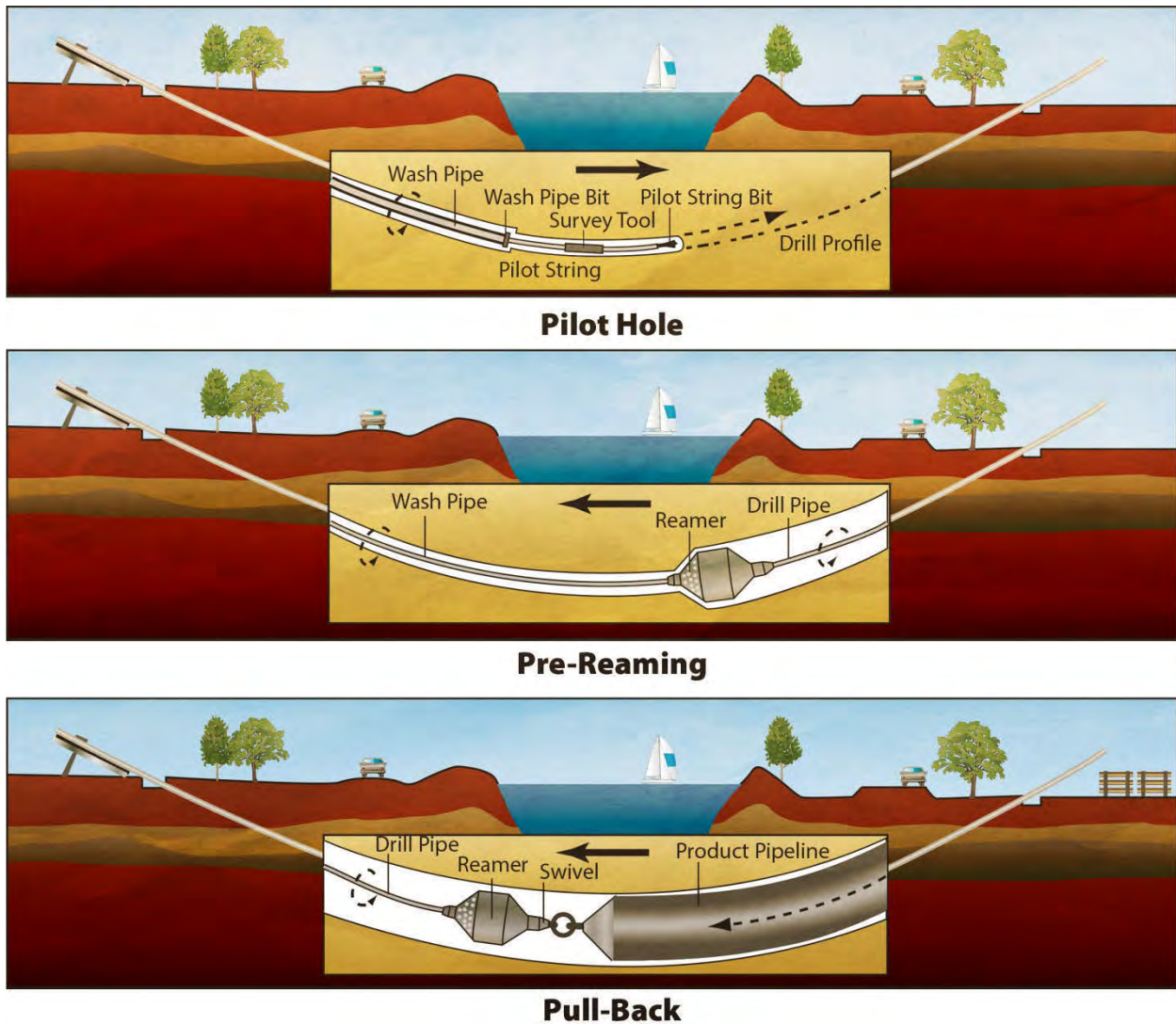


Figure 2-7: Diagram of Horizontal Directional Drilling (HDD) Process

The entry side requires a work area of approximately 1,500 to 3,000 square feet for the drill rig, slurry separation plant, material storage and other support equipment. The exit side requires a work area of about 1,000 to 1,500 square feet for the pullback. This area is exclusive of the area needed for the pipe assembly and laydown area. Typically, a corridor about 15 feet wide by the length of the pipe is needed for the buildup and laydown.

Pipes would be installed at varying depths depending on features being avoided, the existing underlying utilities, soil types, environmental constraints, entry and exit constraints, and bend radius of the installed product and drill pipe. Although the exact depths of the pits and drilling have not been defined as design has not yet been initiated, for the purpose of this analysis, it is assumed that the depth of construction would vary from 10 to 15 feet under Franklin Boulevard and other roads, railroad, and canals.

Jack and Bore Construction

Jack and bore is a method that is often used for major roadway intersections and railroad crossings where crossings are generally less than 300 feet long and above the groundwater level. Jack and bore would require two pits that are excavated at each end of the pipeline to be installed (see **Figure 2-8**). A boring machine is inserted into one pit to bore the soil using an auger to remove material, a casing is pushed forward as material is removed until it reaches the receiving pit, and the pipe is inserted in the casing. The jacking pit is excavated (and shored) with typical dimensions of 8 to 12 feet wide and 25 to 35 feet long depending on the casing length selected. The depth would depend on the feature to be avoided, existing utilities, or separation requirements. The exact depths of the pits and drilling have not been defined because design has not yet been initiated; however, for the purpose of this analysis, it is assumed that the depth of construction would be on the order of 15 to 20 feet deep for railroad and highway crossings. Jack and bore typically has very limited steering control and it is not the method of choice if precise line and grade control is required.

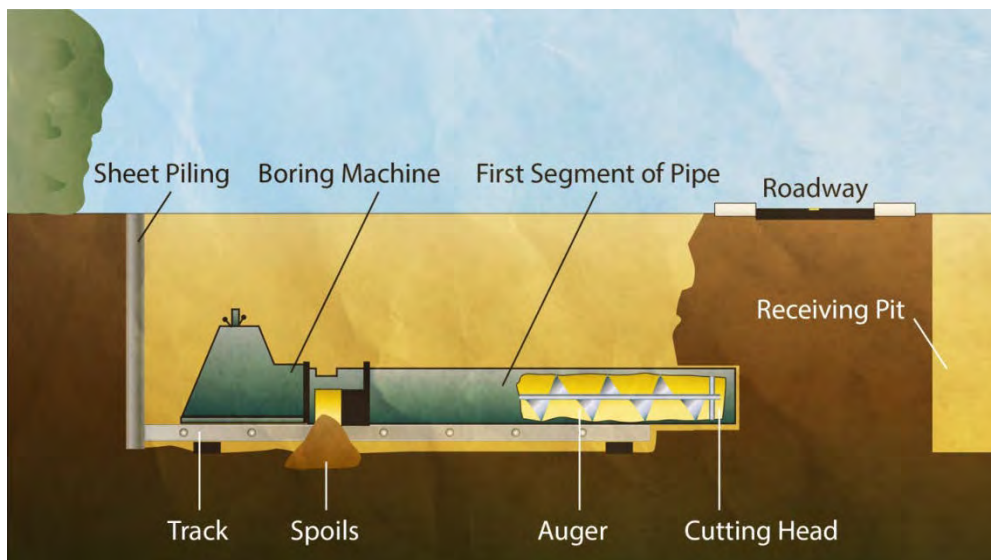


Figure 2-8: Diagram of Bore and Jack Process

Shoring, appropriate to the pit depth, would be used to support the excavation. In addition, the back wall of the jacking pit would need to be constructed so as to withstand the reactive forces from the jacking frame. An additional area of about 1,500 to 2,000 square feet would be needed around the pit for temporary storage of pipe sections and for loading material removed from the bore. The receiving pit at the other end of the crossing would be smaller, encompassing approximately 100 square feet. Pits and work areas would be located within existing ROW and along streets, where appropriate. Crossings of roadways would typically take three to five days. After pipeline construction and installation is complete, the work area would be restored to preconstruction conditions.

Microtunneling Construction

Microtunneling is a remotely-controlled pipe jacking process that can be used in saturated areas below the groundwater level. The microtunneling boring machine is advanced through the ground by incrementally adding jacking pipe segments to the end of the pipe string and advancing the pipe string from a jacking pit to a receiving pit on the opposite side of the crossing (see **Figure 2-9**). A cutting head excavates material at the face as the machine is jacked forward. The excavated material is mixed with clean slurry and pumped to the surface for separation and muck removal.

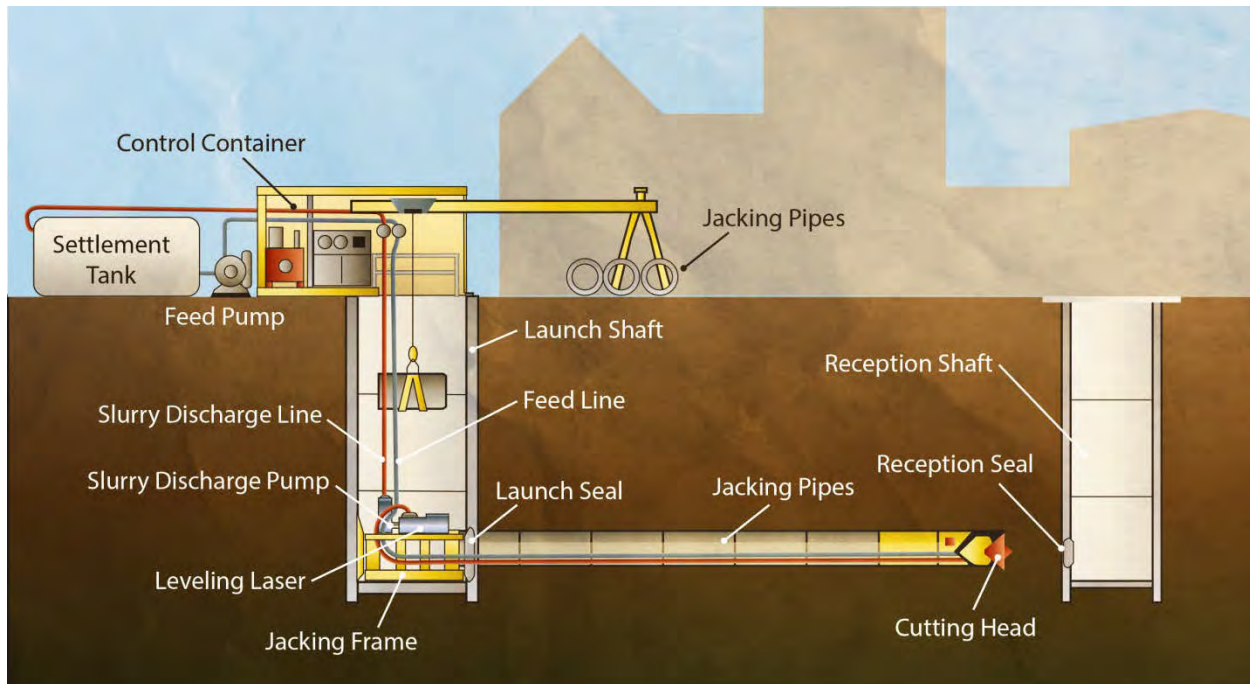


Figure 2-9: Microtunneling Construction

Jacking pits for microtunneling are typically 10 to 14 feet wide. The length is dictated by the pipe segment length that would be installed. Ten-foot segments require a pit about 15 feet long and 20-foot pipe segments require a pit about 25 feet long. Receiving pits are typically 12 to 16 feet square. Pit depths would vary depending on the feature being avoided, existing utilities, and the presence of soil layers that are more favorable to tunnel through than others. The exact depths of the pits and drilling have not been defined because design has not yet been initiated. A microtunnel operation requires a work area (including the area of the pit) of approximately 2,000 to 3,000 square feet at the jacking pit. The work area at the receiving pit can be smaller, but is typically a minimum of 1,000 square feet. Off-site staging areas can be used to reduce work areas.

2.4.4 Pump Station Construction

The new pump station would require site preparation (e.g., removal of vegetation, if any), excavation and shoring, installation of the slab on grade, and construction / placement of the structure. Dewatering equipment would likely not be required to maintain the groundwater level below the bottom of excavation, since other EchoWater project work will be ongoing at the time

of the South County Ag Pump Station construction, and SRWTP-wide dewatering will be ongoing for that project. After the structure has been constructed, electrical equipment (e.g., motor control cabinets, panels, switchboards, lighting) would be installed in the electrical building constructed for both the tertiary treatment facilities and the South County Ag Pump station, and other installations (e.g., conduits and cables) would occur. Finally, placement of pavement, restoration of the work site, and testing would be conducted prior to the start of operations. Equipment would be accommodated adjacent to the Project site during construction. Because the construction is anticipated to be done concurrently with the EchoWater project work, only incremental construction area is required for the South County Ag Pump Station work. The incremental construction zone, including the footprint of the pump station, would be approximately 175 feet by 100 feet to provide clearance for excavation, storage of construction materials, and equipment access.

2.4.5 Construction Equipment, Crew, Spoil and Trip Generation

Construction Equipment and Crew Size

Equipment required for installation of the proposed facilities would include, but is not limited to, the following: excavator, backhoe, front-end loaders, pavement saw, dump trucks, diesel generator, crane for lifting large diameter pipe, water tank, water truck, flat-bed truck, drill rig, compactors, double transfer trucks for soil hauling, concrete trucks, dewatering equipment and paving equipment. It is assumed that two crews of up to 40 workers would be installing the pipelines at any one time. One crew of up to ten members would be needed to construct the pump station.

Construction Spoil and Trip Generation

The amount of spoil generated would depend on the construction methods selected. **Table 2-6** shows estimated cubic yards (CY) of spoil from pipeline construction for each alternative.

Table 2-6: Spoil Generated by Pipeline Construction for the Project-Level Components of the Proposed Project

Alternative/Facility	Spoil Quantity (CY)	Number of Truck Trips
Alternative 1-Medium Service Area Alternative		
Open trench construction	152,900	9,500
Trenchless construction	1,300	80
Subtotal	154,200	9,580
Alternative 2-No Reclamation Funding	Same as Alternative 1	
Subtotal	154,200	9,580
Alternative 3-Small Service Area Alternative		
Open trench construction	59,000	3,690
Trenchless construction	1,300	80
Subtotal	60,300	3,770

For the new pump station, the spoil generated from excavation would be approximately 600 CY, resulting in approximately 60 truck trips. The pump station would use the new EchoWater project disinfection contact basin effluent channel as a wet well, and no additional excavation would be required for the wet well portion of the pump station.

Assuming an average of 150 feet of pipeline would be constructed per day (485 days of construction) for Alternative 1 (Medium Service Area Alternative), a maximum of 154,200 CY of material would be generated from pipeline construction during the first phase. Assuming a hauling truck capacity of 16 CY per truckload, and that none of the excavated spoil would be used for backfill, up to 9,580 truck trips (round trips) total would be generated.

For Alternative 3 (Small Service Area Alternative), assuming the same installation rate for the pipeline and truck capacity, the daily generation would be approximately 60,300 CY, resulting in approximately 3,770 truck trips (round trips).

The overall spoil generated for the project level components (associated with pump station and pipeline construction) of the proposed Project would be 154,200 CY, equivalent to about 9,580 truck trips.

Construction of the recharge pond, which could occur concurrently with a portion of the future pipeline construction or as a standalone component, would not generate any truck trips. The precise timing of the recharge pond construction has not been determined, and could occur concurrently with future phases of pipeline construction or as a standalone component.

In addition to equipment and material delivery, a total of 50 worker trips (round trip) would be generated per day assuming each individual drives separately and half of the workers travel for lunch.

2.4.6 Construction-Related Water Requirements

Water, from water trucks, would be used during construction activities for dust control purposes. Water generated from the trench dewatering operations may also be usable for dust control.

2.4.7 Surface Restoration

Repaving of disturbed roadway areas would occur after pipeline installation and testing. New asphalt or concrete pavement would be placed to match the surrounding road type. For asphalt repaving, a temporary asphalt material may be installed to allow traffic to use the roadway immediately after pipeline construction with permanent repaving near completion of the project. A repaving crew would follow the installation crew and prepare the road surface for repaving. Final repaving to restore all disturbed roadways would be done after pipeline installation and testing is completed. In some cases surface restoration may also include vegetation to return the site to its pre-construction condition.

2.4.8 Environmental Commitments

Mitigation measures are described in *Chapter 3, Environmental Setting/Affected Environment, Impact Analysis/Environmental Consequences*, and address potentially significant impacts for each resource area. As required by CEQA, the Project Partners will adopt a Mitigation Monitoring and Reporting Program (MMRP), which would specify the mechanisms by which implementation of mitigation measures would be ensured during construction and operation of

the South County Recycled Water Program. The MMRP would specify the environmental commitments that would be adopted as conditions of Project approval.

2.5 Alternatives Considered but Rejected

The following alternatives, evaluated during the preparation of the Feasibility Study (RMC 2015a) for the Project, are deemed to be infeasible or did not adequately meet Project objectives for the reasons described below.

2.5.1 Large Program Alternative

The Large Program Alternative encompasses irrigated area, including wetlands and agricultural parcels. It includes the former Elk Grove proposed SOI, the Stone Lakes managed wetlands, as well as the Cosumnes Preserve managed wetlands. It would include more than 281,500 LF of pipelines (transmission, distribution mains, and service connection laterals), and a pumping plant. The potential recharge area would also be included. The Large Program Alternative would result in the highest capital cost (\$228.9 million; not updated to current dollars) to build and implement the project but the least annual unit cost (\$240 per AF). Further, demand for water south of Twin Cities Road is reduced because of higher groundwater levels, so project benefits were determined to be less certain. While it would result in the same type of benefits as all the other alternatives (greater benefits to recipients and to the groundwater basin), it was not selected for reasons of its capital costs, size, and inclusion of the former Elk Grove SOI. At the time the Feasibility Study was developed, serving the SOI represented a risk to Regional San because of the uncertainty in the SOI area's future land use and the associated institutional issues. Since development of the Feasibility Study, the Local Agency Formation Commission determined that the Elk Grove SOI would remain in agricultural use. However, because of its larger size and because it reduces discharge to the Sacramento River to a greater extent than the proposed Project, the Large Program Alternative does not reduce any of the environmental impacts associated with the proposed Project. This alternative is thus eliminated from further evaluation in this EIR.

2.5.2 Medium Program Alternative

The Medium Program Alternative would cover a smaller portion of the service area compared to the Large Program Alternative and does not include the former Elk Grove proposed SOI or the Cosumnes Preserve managed wetlands. It would have nearly 153,000 LF of pipelines and a pumping plant. The potential recharge area would also be included. The Medium Program Alternative was identified as the recommended project in the Feasibility Study as it provided the highest potential benefit while limiting the potential institutional and political risks of including the former Elk Grove SOI area. Although selected as a recommended project in the Feasibility Study due to the balance of benefits, costs, and risks, this alternative was subsequently deemed to not meet the objectives of the proposed Project as it did not include the Elk Grove SOI. As noted in *Chapter 1, Introduction*, since completion of the Feasibility Study, the City of Elk Grove withdrew its request for extension of the SOI. After it was determined that the Elk Grove SOI would remain in agricultural use, inclusion of the former Elk Grove SOI better meets the objectives of the project by maximizing the demand served as well as minimizing the

conveyance costs. Alternative 1 in this EIR (Medium Service Area Alternative) is a modification of the Medium Program Alternative to include the Elk Grove SOI.

2.6 References

Ascent Environmental. 2014. *Final Environmental Impact Report for the Sacramento Regional County Sanitation District EchoWater Project*. September 12.

RMC Water and Environment (RMC). 2015a. *Sacramento Regional County Sanitation District South County Recycled Water Feasibility Study*. January.

_____. 2015b. *Creating an Opportunity: Groundwater Recharge through Winter Flooding of Agricultural Land in the San Joaquin Valley*, prepared for the California Water Foundation, October 2015

_____. 2016. *Tailored Collaborative Research Program in Water Reuse and Desalination – White Paper on Groundwater Replenishment with Recycled Water on Agricultural Land*.

This page intentionally left blank

Chapter 3 Environmental Setting, Impacts and Mitigation Measures

3.0 Introduction to Environmental Analysis

3.0.1 Organization of Chapter 3

Chapter 3 is organized by environmental resource area, as follows:

- 3.1 Aesthetics
- 3.2 Land Use and Agriculture
- 3.3 Recreation
- 3.4 Air Quality and Greenhouse Gas Emissions
- 3.5 Biological Resources
- 3.6 Cultural Resources
- 3.7 Energy Resources
- 3.8 Geology and Soils
- 3.9 Hazards and Hazardous Materials
- 3.10 Hydrology and Water Quality
- 3.11 Indian Trust Assets
- 3.12 Noise
- 3.13 Public Services and Utilities
- 3.14 Traffic and Transportation
- 3.15 Environmental Justice
- 3.16 Socioeconomics
- 3.17 Population and Housing

3.0.2 Organization of Discussion of Environmental Issue Areas

For each resource area, this Draft EIR evaluates the environmental impacts of the proposed Project. Sections 3.1 through 3.17 discuss the environmental impacts that may result with approval and implementation of the proposed Project. Each environmental resource section contains the following components:

1. **Environmental Setting** describes the setting as it relates to the specific resource topic. The setting information covers two major areas affected by the proposed Project: the SRWTP where the proposed pump station would be located, and the City of Elk Grove and South County where the proposed pipelines would be located;
2. **Regulatory Framework** provides an overview of relevant Federal, State, and local laws, regulations, and ordinances applicable to each resource area;

3. **Impact Analysis** includes the following subsections:

- **Methodology for Analysis**, which describes the approach used in analyzing the potential impacts;
- **Thresholds of Significance** or the CEQA significance criteria are based on those identified in Sacramento County's Initial Study Checklist, but are modified or supplemented as appropriate to address the proposed Project impacts;
- **Impacts and Mitigation Measures** provides an evaluation of impacts and identification of mitigation measures, if needed. The impact analysis is presented by a numbered impact summary statement that corresponds to the resource area. The impacts are presented for the following alternatives:
 - Alternative 1: Medium Service Area Alternative
 - Alternative 2: No Reclamation Funding Alternative
 - Alternative 3: Small Service Area Alternative
 - Alternative 4: No Project Alternative

Because Alternatives 1 and 2 are the same in terms of proposed facilities, they are discussed jointly. In some cases, all of the action alternatives are combined as they would result in similar effects.

Because this EIR is evaluated at both a project- and program-level of detail, the impacts analysis typically separates the discussion of project and program level components for each alternative when discussing individual components. Specifically, as itemized in **Table 2-2** in *Chapter 2, Alternatives Description of the Proposed Project*, the project and program components are as follows:

- **Project-Level Components:** Pump station and transmission pipeline alignment
- **Program-Level Components:** distribution mains, service connection laterals, turnouts, potential recharge area, and diluent wells, and provision of water to Stone Lakes NWR wetlands.

Under each level of analysis, effects of construction are typically presented first for the relevant components, followed by a discussion of the effects of operation of the proposed facilities. Project- and program-level components are discussed together if the potential impacts are determined to be similar.

It should be noted that the proposed pump station would be located within an area of the SRWTP that will be developed as part of the EchoWater Project. The EchoWater Project facilities are currently under design and although some construction has started most facilities have not yet been built. Discussion of the impacts of the proposed pump station under this Program will assume that the EchoWater facilities are not yet in place. The discussion of the pump station relative to the other EchoWater facilities is more appropriately evaluated under the cumulative discussion.

If applicable, mitigation measures are numbered to correspond to the impact summary statement number. For example, Mitigation Measure AES-1 is a mitigation measure identified for Impact AES-1 (Aesthetics). The impacts analysis will also evaluate the effects of cumulative project under its own heading. A discussion regarding cumulative projects is presented in Section 3.0.6 below.

4. The end of each impact statement includes a determination of the level of significance before and after mitigation measures are implemented.¹. Impacts that exceed identified threshold levels of significance are considered significant. In describing the significance of impacts, the following categories of significance are used:
 - **Significant and Unavoidable.** Adverse environmental consequences that exceed the threshold criteria identified for the resource, even after feasible mitigation strategies are applied and/or an adverse effect that could be significant and for which no feasible mitigation has been identified.
 - **Less than Significant with Implementation of Mitigation Measures.** Adverse environmental consequences with the potential to be significant, but can be reduced to less than significant levels through the application of identified mitigation strategies for the relevant alternative.
 - **Less than Significant.** Potential adverse environmental consequences have been identified. However, they are not so adverse as to meet the significance threshold criteria for a resource. Therefore, no mitigation measures are required.
 - **No Impact.** No adverse environmental consequences have been identified for the resource or the consequences are negligible or undetectable. Therefore, no mitigation measures are required.
 - **Beneficial.** Implementation of the alternative as proposed would result in a benefit to the environment. Therefore, no mitigation measures are required.

3.0.3 Approach to Analysis of Cumulative Impacts

CEQA Requirements

CEQA requires consideration of cumulative impacts. A cumulative impact is created as a result of the combination of the project evaluated in the EIR together with other projects causing related impacts. Cumulative impacts, as defined in Section 15355 of the CEQA Guidelines, refer to two or more individual effects that, when considered together, are considerable or that compound or increase other environmental impacts. The cumulative impact from several projects is the change in the environment that results from the incremental impact of the project when added to other closely related past, present, or reasonably foreseeable future projects. Pertinent guidance for cumulative impact analysis is provided in Section 15130 of the CEQA Guidelines:

¹ An exception is made for those environmental topics where only NEPA requires an evaluation (e.g., Socioeconomics). In this case, NEPA does not require a determination of significance for economic impacts and therefore, none have been made.

- An EIR shall discuss cumulative impacts of a project when the project's incremental effect is "cumulatively considerable" (i.e., the incremental effects of an individual project are considerable when viewed in connection with effects of past, current, and probable future projects, including those outside the control of the agency, if necessary).
- An EIR should not discuss impacts that do not result in part from the project evaluated in the EIR.
- The discussion of cumulative impacts shall reflect the severity of the impacts and their likelihood of occurrence, but the discussion need not be as detailed as it is for the effects attributable to the project alone.
- A project's contribution is less than cumulatively considerable, and thus not significant, if the project is required to implement or fund its fair share of a mitigation measure or measures designed to alleviate the cumulative impact.
- The focus of analysis should be on the cumulative impact to which the identified other projects contribute, rather than on attributes of the other projects that do not contribute to the cumulative impact.

The cumulative impact analysis for each individual resource topic is described at the end of each resource section in this Chapter.

Approach to Analysis

For evaluation of cumulative impacts, this EIR uses a list-based approach, and evaluates the potential for past, present and probable future projects in the project area to result in cumulative impacts. The list of projects was generated based on information from Regional San, Sacramento County and Reclamation staff, the 10-year capital improvements plan for the SRWTP, the City of Elk Grove planning website, and USFWS. The following factors were used to determine an appropriate list of projects to be considered in this cumulative analysis:

- Similar Environmental Impacts – a relevant project contributes effects on resources also affected by the proposed Project. A relevant future project is defined as one that is "reasonably foreseeable," such as one that has approved funding or for which an application has been filed with the approving agency.
- Geographic Scope and Location – a relevant project is located within a defined geographic scope for the cumulative effect. The geographic area considered for the cumulative impact depends upon the resource that is analyzed.
- Timing and Duration of Implementation – effects associated with activities for a relevant project (e.g., short-term construction or demolition, or long-term operations) would likely coincide in timing with effects of the proposed Project.

Table 3.0-1 contains a list of projects under consideration in the project area, and identifies those projects that have a potential nexus with the proposed Project (i.e. there is a possibility that the proposed Project could contribute to incremental effects on the same environmental resources). Projects that would not be considered to have impacts that could combine with those from the project include:

- Projects located outside of the area where the proposed Project would be constructed (which could thus not have impacts that would combine with effects of the proposed project).
- Projects of a type that would not produce impacts that could combine with the proposed Project.

The Wastewater Change Petitions and Reclamation projects identified as having the potential to combine impacts could have a cumulative effect on the flow reductions in the Sacramento River.

Construction of the Regional San, Sacramento County, and City of Elk Grove projects identified as having the potential to combine impacts would occur during the timeframe proposed for the Project. These projects are generally in the vicinity of the same major roadways anticipated to be used for the proposed Project and could have a cumulative effect on construction-related traffic. The Freeport Regional Water Project Intake Facility and Pipeline and Folsom South Canal Connection is already operational. Given that the proposed Project would not result in an increase in operational maintenance traffic, impacts are not expected to combine with the effects of the proposed Project to result in cumulative impacts. Freeport operational impacts associated with diversion of water are incorporated into the coordinated operation of the Central Valley Project. The Bay Delta Conservation Program (BDCP) is included as a cumulative project, but it is important to note that while a preferred alternative (Alternative 4C, California WaterFix) has been identified, environmental review is not yet complete and it is unknown when a decision regarding project approval may be made. Schedule for implementation of the BDCP is thus uncertain.

Table 3.0-1: List of Cumulative Projects

	Project Name	Estimated Schedule/Status	Project Description	Location	Potential to Combine Impacts?
<i>Regional San Capital Improvements Plan</i>					
1	EchoWater Program	Approved and under construction	Upgrades to the existing 480-acre SRWTP to comply with the adopted NPDES requirements. The project consists of preliminary and primary treatment facilities, secondary treatment facilities, tertiary treatment and disinfection facilities, auxiliary facilities/systems, odor control, and site improvements.	Within SRWTP	Y
2	Digester Rehabilitation	Construction 2012 – 2018	Rehabilitation of digesters 6 and 7 at SRWTP.	Within SRWTP	Y
3	SPA Recycled Water Project	EIR Certified, approved and under construction	Construct pipeline from SRWTP to Sacramento Power Authority Co-Gen Facility.	Within SRWTP	Y
<i>Sacramento County</i>					
4	Capital Southeast Connector	Program EIR completed in January 2012	The 35-mile parkway connects at I-5 and Hood Franklin Road in Elk Grove, and extends northeast to Highway 50 and Silva Valley Parkway near Folsom.	Hood Franklin Road and Franklin Boulevard	Y
5	Wilton Rancheria Casino	Draft EIS in preparation	Three alternatives including casino and hotel; casino and no hotel; and retail.	Twin Cities Road at Highway 99	N
<i>City of Elk Grove</i>					
6	Capital Reserve Project	Construction anticipated to begin in late 2015 or early 2016	Construction of 84 single family residences and commercial uses on 16.7 acres.	Near Highway 99 and Elk Grove Boulevard	Y
7	Civic Center Aquatic Project	EIR Finalized in August 2014	Competition/training swim facility, ancillary uses, parkland, and parking on a 30-acre site.	Civic Center Drive and Big Horn Boulevard	Y
8	Sheldon Park Estates	Construction 2015 - 2018	Rezoning and subdivision of 113 acres into 45 single family lots, open space, and multi-use trail easement.	Sheldon Road and Waterman Road	N
9	Fieldstone North	Subsequent mitigated negative declaration (MND) adopted by City in January 2014. Revised subdivision map adopted and determined exempt from CEQA in May 2014.	Entitlements for a General Plan Amendment, Specific Plan Amendment, Rezone, Large-Lot Tentative Subdivision Map, and Small-Lot Tentative Subdivision Map. The entitlements would allow for the development of 391 residential units on 107.1 acres.	Bradshaw Road and Grant Line Road	N

EIR

Draft

	Project Name	Estimated Schedule/Status	Project Description	Location	Potential to Combine Impacts?
10	Silverado Village	Elk Grove approved the project in July 2014	651 single family units, 125 senior multifamily units, and parks, trails, and paseos, open space, on 230 acres.	Bond Road and Waterman Road	N
11	Moore Sheldon Center	Subsequent EIR finalized in December 2013 Construction complete; opened April 2016.	Approximately 27,500 square feet of commercial land uses on 4.46 acres.	Near Sheldon Road and East Stockton Boulevard	N
12	Southeast Policy Area Strategic Plan Project	Community Plan adopted in July 2014 EIR finalized in June 2014	A Community Plan and Special Planning Area for an approximately 1,200-acre area. The project would allow for the development of approximately 7.8 million square feet of employment-generating uses; 4,790 residential units in various densities; and acreage for schools, parks, and infrastructure, such as road right-of-way and storm drainage facilities.	Bruceville Road, Kammerer Road, Poppy Ridge Road, West Stockton Boulevard	Y
13	Dignity Health Elk Grove Medical Campus	Construction to begin in 2017 with a 20 year build out	Construction of a six-story, 460,000-square-foot, 330-bed hospital; a three-story, 65,000-square-foot medical office building, and a five-level, 170,000-square-foot parking structure. Construction would be constructed in four phases.	Wymark Drive and Elk Grove Boulevard	Y
14	Storm Drain Master Plan		Various watershed projects for storm drainage and flood control, aquatic resources and water quality protection.	City-wide	Y
Wastewater Change Petitions					
15	City of Colusa	Project approved by City Council in March 2015 Wastewater change petition filed with SWRCB in June 2015	The City of Colusa has filed a wastewater change petition, seeking to reduce the discharge of treated wastewater to Powell Slough. The City proposes to divert approximately 0.41 million gallons per day of wastewater discharge for seasonal irrigation on up to 84 acres of land (within a 185-acre gross). Discharge would be reduced by 456 AFY, which corresponds to an average of 0.63 cfs.	Immediately east and south of Colusa wastewater treatment plant (WWTP), current discharge is to unnamed tributary of Powell Slough	Y
16	City of Woodland	Initial Study/MND (IS/MND) completed in February 2015 Wastewater change petition filed in May 2015 Construction anticipated to begin in 2015	The City of Woodland has filed a wastewater change petition, seeking to reduce the discharge of treated wastewater from its Water Pollution Control Facility (WPCF) to the Tule Canal tributary to the Sacramento River. With the petition, the City requests to deliver up to 0.5 million gallons per day (mgd) of its tertiary treated wastewater effluent to industrial use and landscape irrigation. Discharge would be reduced by 0.77 cfs, which would reduce annual discharge by 560 AFY.	Woodland Biomass Facility located at 1786 E Kentucky Avenue in Woodland and two parks located in the City.	Y
17	City of Biggs	EIR finalized in December 2013	The City of Biggs Wastewater Treatment Plant filed a wastewater change petition, seeking to eliminate discharge of effluent to Lateral K, which drains to Butte Creek, thence the Sacramento River. The	WWTP is located at 2951 West Biggs Gridley Road. West Option is immediate	Y

EIR

Draft

	Project Name	Estimated Schedule/Status	Project Description	Location	Potential to Combine Impacts?
		Wastewater Change Petition approved by SWRCB in June 2014	treated effluent would be used to irrigate 120 to 140 acres located to the south or west of the wastewater treatment plant. Discharge would be reduced by 0.46 cfs, which would reduce annual discharge by 333 AFY.	west of WWTP; South Option is immediately south of WWTP.	
Freepport Regional Water Authority					
18	Intake Facility and Pipeline and Folsom South Canal Connection	Operational	185 mgd water intake facility and pumping plant on the Sacramento River, and 17 miles of underground water pipelines within Sacramento County. Facilities provide Sacramento County Water Agency (SCWA) and East Bay Municipal Utility District (EBMUD) with 85 mgd and 100 mgd, respectively. EBMUD uses up to 100 mgd during dry years only as a supplemental water source.	Sacramento and San Joaquin Counties	N
Bureau of Reclamation					
19	Long-Term Water Transfers	2015 - 2024	Transfers of Central Valley Project (CVP) and non CVP water or transfers from north of the Delta to CVP contractors south of the Delta that require the use of CVP and State Water Project (SWP) facilities. Water would be made available for transfer through groundwater substitution, cropland idling, crop shifting, reservoir release, and conservation.	Alameda, Butte, Colusa, Contra Costa, Fresno, Glenn, Kings, Merced, Placer, Sacramento, San Benito, San Joaquin, Santa Clara, Shasta, Solano, Stanislaus, Sutter, Tehama, Yolo, and Yuba Counties	Y
20	Coordinated Long-Term Operation of the Central Valley Project and State Water Project	Final EIS published on November 23, 2015	Reclamation proposes to continue the operation of the Central Valley Project in coordination with the State Water Project by implementing the associated 2008 U.S. Fish and Wildlife Service Biological Opinion and the 2009 National Marine Fisheries Service Biological Opinion, including the Reasonable and Prudent Alternatives.	Statewide	Y
21	California WaterFix (Bay Delta Conservation Plan [BDCP], Alternative 4A)	Recirculated Draft EIR/EIS published on July 10, 2015; Final EIR/EIS in preparation	In cooperation with the California Department of Water Resources, Reclamation is considering a project to provide more reliable delivery of water exports from the Delta through the State Water Project and the Central Valley Project. Alternative 4A, California WaterFix has been identified as the preferred alternative but all of the BDCP alternatives will be considered by decision makers in determining whether to approve the project.	Intakes would be relocated from south Delta to a north Delta location downstream of the SRWTP	Y

Source: Ascent Environmental 2014, Reclamation 2015, Regional San 2015, Sacramento County 2015, State Water Resources Control Board 2015, City of Elk Grove 2015

3.1 Aesthetics

This section presents the physical and regulatory setting for visual resources surrounding the proposed Project area and evaluates the potential for the proposed Project to affect a scenic vista, scenic resources, or create a new source of light and glare. Aesthetic resources are defined as the visible natural and built landscape features that surround a project site. For the purpose of this analysis, the study area includes aesthetic resources in the vicinity of the proposed facilities to be constructed.

3.1.1 Environmental Setting

Regional Setting

The Project area is located in the southern portion of Sacramento County (South County), which is in the northern portion of the Central Valley. The terrain of the area is generally flat, giving way to rolling hills of the Sierra Nevada foothills approximately 30 miles to the east. Long-range views of the Sierra Nevada to the east are typically obscured or limited due to the haze and particulate air quality contamination in the Central Valley.

Approximately 18,000 acres of agricultural land, in the form of rectangular plots of tree and row crops, occur within South County. Most of these open space lands are visible from short-range views, given the flat terrain. Portions of this agricultural area overlap with the Cosumnes River Preserve, thus providing wildlife and habitat benefits, including serving as a portion of the Pacific Flyway for migratory birds.

Project Vicinity

The study area for the proposed Project is the area generally bounded by Cosumnes River Boulevard to the north, Sacramento River to the west, Twin Cities Road to the south, and Bruceville Road to the east.

Scenic resources in the project vicinity include the Sacramento River and Cosumnes River, Stone Lakes NWR, Cosumnes River Preserve, and agricultural lands. The Sacramento River and Cosumnes River are the primary bodies of water in the Project area and the dominant natural features, and bound the Project area to the west and east, respectively. Riparian trees and shrubs line the river corridors. The Stone Lakes NWR on the western edge of the project area, the Cosumnes River Preserve, and agricultural land in the southern part of the project area, define the land features of the visual landscape.

The 17,640-acre NWR, managed by the USFWS, provides wildlife habitat and recreation. The NWR is characterized by a mix of habitat that includes grasslands, riparian forest, woodland savanna, freshwater lakes, freshwater sloughs, perennial wetlands, and vernal pools (USFWS 2014). Examples of existing visual features at Stone Lakes NWR are shown in the photos in **Figure 3.1-1**.

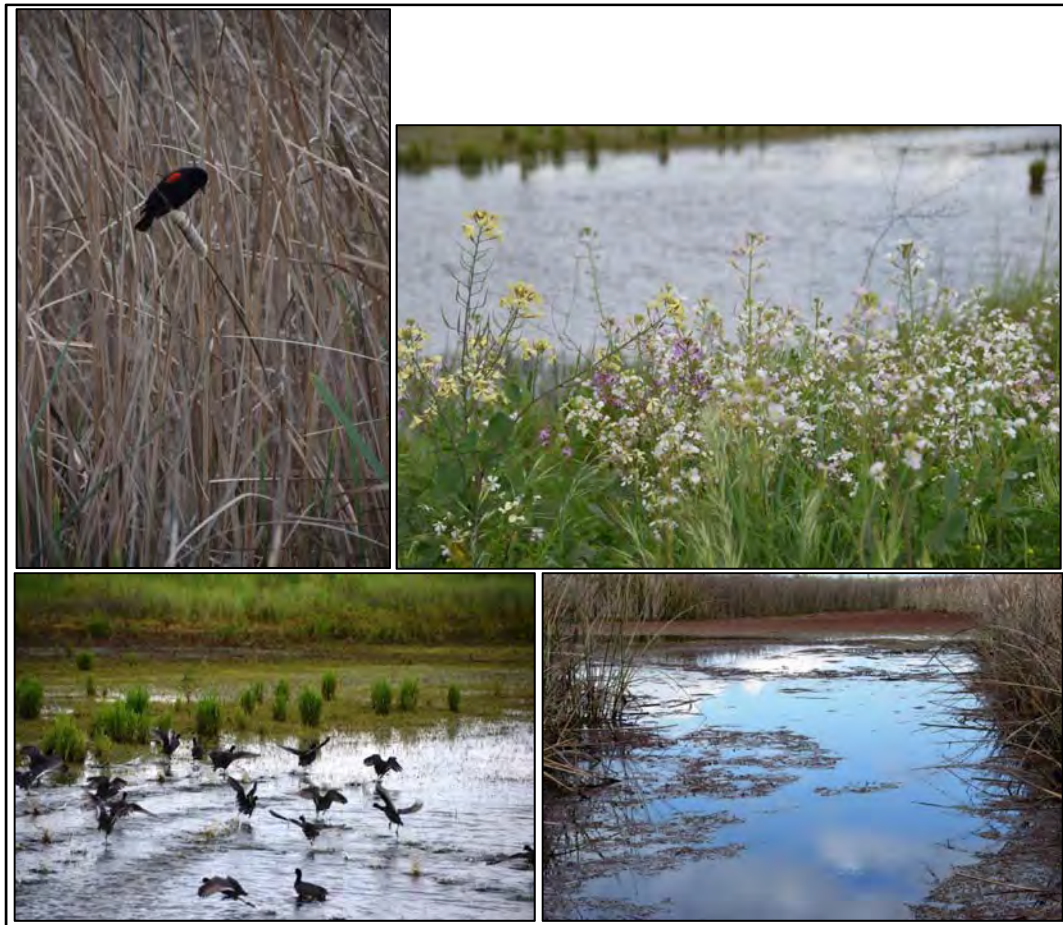


Figure 3.1-1: Visual Features in Stone Lakes National Wildlife Refuge

As described in *Chapter 1, Introduction*, the Cosumnes River Preserve includes approximately 46,000 acres of floodplain, riparian forest, vernal pools, grasslands, blue oak woodlands, and agricultural lands along the Cosumnes River (Kleinschmidt Associates 2008). Properties included in the Preserve overlap the recycled water service area in the southeast, southwest, and northwest areas (see **Figure 2-1**).

Within Sacramento County, Route 160 from the Contra Costa County line to the southern city limit of Sacramento is considered an officially designated state scenic highway. The road meanders through Delta agricultural areas and small towns along the Sacramento River (Caltrans 2015). At its closest location, Route 160 is approximately 1.5 miles west of the proposed pump station at the SRWTP. Between these two points is I-5, which is a protected scenic corridor, as described further below. Highway 99 is also a protected scenic corridor, as is the Sacramento River (Sacramento County 2011). There are no designated scenic highways or corridors within the City of Elk Grove.

SRWTP

The SRWTP is located at 8521 Laguna Station Road on a 3,200-acre site in Elk Grove, between Franklin Boulevard and I-5. The fenced-in site consists of above ground facilities including

buildings, parking lots, ponds, equipment, and a grit and screening landfill. The largest concentration of existing structures is on the east side of the facility, with less development on the western portion (Ascent 2014). Examples of the visual characteristics of some of the existing facilities at the SRWTP, illustrating its industrial nature, are provided in **Figure 3.1-2**. In the 1970s Regional San purchased approximately 2,300 acres of open space surrounding the SRWTP to serve as a buffer between the SRWTP and neighboring community and to allow for future expansion (referred to as the Bufferlands). The Bufferlands are characterized by upland and wetland habitats, riparian forests, and native perennial grasses. Views of the SRWTP from surrounding areas are limited due to the Bufferlands that separate the SRWTP from nearby urban development. The SRWTP cannot be seen from nearby major roads, including Franklin Boulevard to the east or I-5 to the west.



Figure 3.1-2: Existing Facilities at SRWTP

City of Elk Grove and South County

The proposed transmission pipeline corridor is located along roadways through South County and the City of Elk Grove. A portion of the proposed transmission pipeline corridor along Franklin Boulevard between Calvine Road and Hood Franklin Road crosses through urban development, including residential and commercial uses. The visual features are characterized by single-family residential houses, strip malls, sidewalks, street lights, and overhead utility lines (see **Figure 3.1-3**). The remainder of the pipeline alignment would traverse agricultural areas, characterized by orchards, fields of row crops, and scattered rural residences and farm structures (e.g., barns) (see **Figure 3.1-4**).



Figure 3.1-3: Urban Visual Features in Project Area (from Franklin Boulevard)



Figure 3.1-4: Agricultural Visual Features in Project Area

3.1.2 Regulatory Framework

This section describes laws and regulations at the state and local level that may apply to the proposed Project.

Federal Policies and Regulations

There are no federal policies or regulations associated with aesthetics that are relevant to the proposed Project.

State Policies and Regulations

California Scenic Highway Program

In 1963, the state legislature established the California Scenic Highway Program, a provision of the Streets and Highways Code, to preserve and enhance the natural beauty of California (Caltrans 2015). The State Highway System includes designated scenic highways and those that are eligible for designation as scenic highways. As described in *Section 3.1.1 Regional Setting*, Route 160 within Sacramento County is considered an officially designated state scenic highway.

Local Policies and Regulations

Sacramento County General Plan

There are multiple County roads and freeways within the County that have scenic qualities, and while not designated as State Scenic Highways, they are protected by Sacramento County. Within proximity to the Project area, I-5 and Highway 99 are both designated protected scenic corridors. Scenic corridors in the County are protected 660 feet in each direction from the right-of-way. Additionally, the Sacramento River is also protected by scenic corridors extending 500 feet to each side of the river (as measured from the center of the channel) or by a minimum of 300 feet from the edge of the river (Sacramento County 2011).

Circulation Element

The Circulation Element of the Sacramento General Plan (Sacramento County 2011) contains the following goals and policies relevant to the proposed Project:

- **GOAL:** To preserve and enhance the aesthetic quality of scenic roads.
 - Objective: To retain designation of the River Road (State Route [SR]160) as an Official State and County Scenic Highway and to preserve and enhance its scenic qualities.

City of Elk Grove General Plan

The City of Elk Grove has identified the following goals and actions in the Public Facilities and Finance Element, and Conservation and Air Quality Element of its General Plan (City of Elk Grove 2015).

Conservation and Air Quality Element

- Policy CAQ-8: Large trees (both native and non-native) are an important aesthetic (and, in some cases, biological) resource. Trees which function as an important part of the City's or a neighborhood's aesthetic character or as a natural habitat should be retained to the extent possible during the development of new structures, roadways (public and private, including roadway widening), parks, drainage channels, and other uses and structures. If trees cannot be preserved onsite, offsite mitigation or payment of an in-lieu fee may be required by the City. Where possible, trees planted for mitigation should be located in the same watershed as the trees, which were removed. Trees that cannot be protected shall be replaced either on-site or off-site as required by the City.

Public Facilities and Finance Element

- Policy PF-4: The City shall require new utility infrastructure for electrical, natural gas and other infrastructure services avoid sensitive resources, be located so as to not be visually obtrusive, and if possible, be located within roadway rights-of-ways or existing utility easements.

3.1.3 Impact Analysis

Methodology for Analysis

This section evaluates whether construction and operation of the proposed Project alternatives would result in significant impacts related to aesthetic resources. The analysis is based on consideration of whether proposed facilities would alter or degrade the visual quality of designated visual resources in the area.

Thresholds of Significance

Consistent with the thresholds of significance in Sacramento County's Initial Study Checklist, an impact on aesthetics would be considered significant if the proposed Project would:

- Substantially alter existing viewsheds such as scenic highways, corridors, or vistas;
- Substantially degrade the existing visual character or quality of the site and its surroundings; or
- Create a new source of substantial light, glare, or shadow that would result in safety hazards or adversely affect day or nighttime views in the area.

Impacts and Mitigation Measures

Impact AES-1 Substantially Alter Existing Viewsheds or Degrade the Existing Visual Character or Quality of the Site and its Surroundings.

Alternative 1 (Medium Service Area Alternative) and Alternative 2 (No Reclamation Funding Alternative)

Project Elements. Under Alternative 1 (Medium Service Area Alternative) and Alternative 2 (No Reclamation Funding Alternative), the proposed pump station would be located entirely within the fenceline of the SRWTP in a disturbed area with no vegetation or trees. Construction of the proposed pump station would not be visible from any public viewpoints in the vicinity of the SRWTP, including Route 160, a designated state scenic highway, given the Bufferlands that separate adjacent urban uses from the SRWTP. Because construction of the pump station would not be visible from public view points, the short-term visual impacts would be less-than-significant.

The proposed transmission pipeline would be located primarily within public roadways or other public ROW, private dirt roads and agricultural lands, and public open space areas. Transmission pipeline construction activities could potentially affect scenic resources within the viewshed and could degrade the site/surrounding's visual quality due to excavation activities, and the presence of construction equipment/materials and fencing around work areas. Existing residences located along the transmission pipeline alignment and motorists using the affected or adjacent roadways

would have foreground views of construction activities, vehicles, equipment, and materials. Motorists typically would have fleeting views of pipeline construction activities due to the speed of travel with slightly longer views when there is a momentary stoppage in traffic. For residences situated along the alignment, views of construction activities would generally be of short duration due to the nature of construction (i.e., construction would proceed at a rate of approximately 150 feet per day and the construction zone would move sequentially to the next segment upon completion of one segment). Given the temporary nature of transmission pipeline construction, the proposed transmission pipelines would not result in a substantial adverse effect on any scenic resources or degrade the visual quality of the affected sites or surroundings. The changes to visual quality would be short term in nature, and disturbed areas would be restored to pre-construction conditions as part of the Project.

Once constructed, the 25-foot-tall proposed pump station would be located on the eastern portion of the SRWTP site, which has the largest concentration of structures. The proposed pump station would blend with other buildings and structures on site with similar industrial appearance within the SRWTP. Thus, this component would not alter existing viewsheds or degrade the visual quality of the site or surrounding scenic resources, and impacts would be less than significant.

The proposed transmission pipelines would be installed underground and therefore not visible once construction is complete. Because all proposed pipelines would be located underground and would not be visible to the public, the proposed transmission pipelines would not result in a substantial adverse effect on any scenic resources or degradation of the visual quality of the affected sites or surroundings. Impacts would be less than significant.

These alternatives contribute to a beneficial effect because the partial offset of groundwater use would be expected to raise the base flows of Cosumnes River, which could improve the health and aesthetics of the riparian vegetation, thereby improving the visual appearance of the Cosumnes River corridor.

Program Elements. Construction and operational impacts of the proposed distribution pipelines, laterals, and turnouts would be similar to those described for the project elements above, and would be less than significant.

Recycled water supplied to the Stone Lakes NWR managed wetlands has the potential to enhance wetlands habitat through the provision of additional water, particularly during dry years, as recycled water is a sustainable, alternate water source that would be available during all hydrologic years and seasons. Providing recycled water to Stone Lakes NWR wetlands could result in a beneficial effect on the refuge's visual character.

These alternatives also includes development of a potential recharge area and three diluent wells. The 560-acre potential recharge area, located within existing agricultural land, would be surrounded by three-foot berms that are 12 feet wide. The berms would be visible from nearby roads, and would alter the visual quality of the site and surroundings due to its height relative to the surrounding topography. However, the change to the viewshed is not expected to be substantial and adverse given the existing flat landscape that is punctuated by scattered

residences, farm structures (dairies), and solar farms. Three diluent wells would also be needed to support operation of the potential recharge pond. These wells would likely be similar to other irrigation wells used by farmers within South County. The construction and operation of three wells are not expected to substantially change the viewshed or the visual quality of the site and surroundings due to their integration within a farm landscape. Thus, visual impacts associated with the recharge pond are expected to be less than significant.

With the provision of recycled water to farmers and the partial offset of groundwater use, it is expected Cosumnes River base flows would increase downstream of Highway 99 during the summer and fall months. Higher base flows could improve the health and aesthetics of the riparian vegetation, thereby improving the visual appearance of the Cosumnes River corridor. This would be a beneficial impact.

Alternative 3 (Small Service Area Alternative)

Project and Program Elements. The construction and operational impacts of both project and program components for Alternative 3 (Small Service Area Alternative) would be similar to those identified for Alternative 1 (Medium Service Area Alternative), except that the intensity of the effects would be less for construction of the proposed pipelines. Because the length of transmission pipelines would be less for this alternative, the duration of temporary, construction-related visual effects would be commensurately shorter. As with Alternative 1 (Medium Service Area Alternative), due to the temporary nature of construction and restoration of disturbed areas to pre-construction conditions as part of the Project, visual impacts would be less than significant. Operation-related effects would also be less than significant for the pump station because it would integrate with other existing facilities and for the pipelines because they would be buried underground. Visual impacts associated with the potential recharge pond, diluent well, and Stone Lakes NWR for Alternative 3 (Small Service Area Alternative) would be the same as Alternative 1 (Medium Service Area Alternative), and would be less than significant.

Alternative 4 (No Project Alternative)

Under the No Project Alternative, no facilities would be constructed. Therefore, no impacts on scenic resources or the area's visual character from construction would occur.

Landowners would continue to use groundwater as the sole source of supply for irrigation. Because additional water supply will likely be needed to meet municipal and industrial irrigation demands¹, it is possible that new surface and groundwater supplies would be developed over time, thus increasing drawdown of the groundwater basin. Further depletion of groundwater supplies could over the long term affect the base flows in the Cosumnes River such that the river is consistently dry in the summer and fall months. Reduction of water could affect the visual

¹ The Water Forum Agreement (WFA) in the Zone 40 WSMP describes total water needs and use of surface water and groundwater. To meet the South County M&I user's group demand, a firm water supply (from contract water and entitlement transfer), an intermittent surface water supply, and groundwater will be necessary. Intermittent surface water is available only when the water is surplus to the needs of the San Joaquin/Sacramento River and Delta. The WSMP states that upstream water transfers will be pursued to reduce reliance on intermittent surface water. The USMP also acknowledges that up to seven new groundwater treatment and storage facilities may be required to meet Zone 40's conjunctive use objectives. Water could also potentially be obtained from either 'appropriative' or 'other' surface water sources depending on availability.

quality of the Cosumnes River as the viability of the riparian corridor declines (i.e., health and quality of the vegetation deteriorate), particularly during extended drought years.

USFWS would continue to provide water to managed wetlands in the Stone Lakes NWR from its current surface water source, thus the No Project Alternative is not anticipated to result in a change in the visual quality of the Stone Lakes NWR.

Impacts associated with visual quality of the Cosumnes River corridor under the No Project Alternative would be potentially significant and unavoidable.

Significance Determination before Mitigation

Less than significant for all action alternatives. Significant and unavoidable for Alternative 4 (No Project Alternative) because there is no mitigation available to reduce impacts related to the decline in riparian corridor health and quality due to the reduction of water flows in the Cosumnes River.

Mitigation Measures

No mitigation measures are required.

Impact AES-2 Create a New Source of Substantial Light, Glare, or Shadow.

Alternative 1 (Medium Service Alternative) and Alternative 2 (No Reclamation Funding Alternative)

Project Elements. The proposed pump station would be located within the SRWTP and would not be visible from sensitive receptors (e.g., residences) or public roads due to the separation from urban land uses created by the Bufferlands surrounding the SRWTP. The pump station would include exterior lighting for security purposes, but lights would be shielded or directed downward, and would be similar to existing lighting at the SRWTP. Therefore, construction and operation of the pump station would not result in substantial changes to light, glare, or shadow conditions at the SRWTP. Impacts would be less than significant.

As described in *Section 2.4.1, Construction Timing*, construction would typically occur Monday through Friday from 7:00 AM to 7:00 PM. Construction may take place during weekends and nighttime if necessary, in which case the contractor would be responsible for obtaining required permits. If nighttime construction is required, temporary views of nighttime lighting associated with construction of the transmission pipeline could be a nuisance to adjacent residences and a potential hazard to motorists traveling on the affected roadway, which is a potentially significant impact. To minimize temporary adverse effects on residential views and motorists during nighttime construction, implementation of **Mitigation Measure AES-2** would ensure that nighttime construction lighting is shielded and oriented downward and would reduce this impact to a less-than-significant level. Once constructed, all recycled water pipelines would be underground and would therefore not result in a new source of substantial light or glare. Impacts would be reduced to less than significant with implementation of **Mitigation Measure AES-2**.

Program Elements. None of the program elements would require operational lighting, thus there would be no impacts associated with new light and glare. Impacts during construction would be similar to those associated with the project elements, and would be less than significant with implementation of **Mitigation Measure AES-2**.

Alternative 3 (Small Service Area Alternative)

Project and Program Elements. The construction and operational impacts for both the project and program components of Alternative 3 (Small Service Area Alternative) would be similar to those identified for Alternative 1 (Medium Service Area Alternative). Impacts would be reduced to less than significant with implementation of **Mitigation Measure AES-2**.

Alternative 4 (No Project Alternative)

Under the No Project Alternative, no structures or lighting would be constructed or installed. As such, this alternative would result in no impacts related to light and glare or shadow.

Significance Determination before Mitigation

Potentially significant for all action alternatives. No impact for Alternative 4 (No Project Alternative).

Mitigation Measure

Mitigation Measure AES-2: Nighttime Construction Lighting (All Action Alternatives).

If nighttime construction lighting is required, the construction contractor shall shield and orient lighting downward and directed away from any nearby receptors to minimize effects. Lighting shall be directed toward active construction areas only, and shall have the minimum brightness necessary to ensure worker safety.

Significance Determination after Mitigation

Less than significant for all action alternatives.

Cumulative Impact Analysis

The geographic scope of the cumulative impacts on aesthetic resources is in the immediate vicinity of the proposed Project components. New development in Sacramento County and the City of Elk Grove would continue to alter the visual environment of the area. However, aesthetic impacts are generally site-specific and would not combine with other projects that are not in the same viewshed to create a cumulative impact. If the proposed Project, as well as other projects listed in **Table 3.0-1**, occur in the same viewshed or impact the same scenic or visual resources from public viewpoints, they could result in a significant cumulative impact.

As discussed in Impact AES-1, impacts to scenic and visual resources at the site and surrounding areas from the construction of Alternatives 1, 2, and 3 would be temporary in nature. Of the projects listed in **Table 3.0-1**, the EchoWater project and rehabilitation of digesters 6 and 7 at the SRWTP would be in the immediate vicinity of the proposed pump station and could overlap with the construction of the proposed Project construction schedule. As discussed in Impact AES-1, construction of the pump station would occur entirely within the fenceline of the SRWTP and would not be visible from public viewpoints. Construction of the transmission pipeline would be

temporary in nature with a short duration of views for motorists and residents. Although the EchoWater project and rehabilitation of digesters 6 and 7 would result in additional structures and modifications to the SRWTP, they would also be entirely within the fence line of the SRWTP and not visible from surrounding areas; thus not resulting in an impact to scenic or visual resources. Disturbed areas would be restored to pre-construction conditions as part of the project after construction is complete. The Project would thus not contribute to a long-term cumulative impact to scenic resources and visual character.

As discussed in Impact AES-2, nighttime construction of the proposed Project could result in temporary light and glare impacts and create a nuisance to adjacent residents and hazard to motorists traveling near the transmission pipeline installation. However, implementation of **Mitigation Measure AES-2**, would ensure that construction lighting is oriented downwards towards the work areas. With implementation of this measure, there would be no cumulative impact to light and glare associated with the proposed Project. Once operational, the transmission pipeline would be underground and would not require new sources of light, and the proposed pump station would not result in substantial changes to light or glare conditions at the SRWTP. Construction of the EchoWater project and rehabilitation of digesters 6 and 7 could require lighting for nighttime construction, but would be within the fence line of the SRWTP and the effects would not extend beyond the SRWTP boundary. No other cumulative projects would occur in the immediate vicinity of the proposed Project components that would result in increased light or glare. Once operational, lighting would be contained within the perimeter of SRWTP and would be similar to existing lighting conditions. In addition, lighting from SRWTP would not be visible due to its separation from sensitive receptors by the Bufferlands. There would be no long-term cumulative impact related to permanent light and glare effects to which the proposed Project would contribute, and there would be no impact.

Significance Determination before Mitigation

Less than significant.

Mitigation Measures

See **Mitigation Measure AES-2**.

Significance Determination after Mitigation

Less than significant.

3.1.4 References

Ascent Environmental. 2014. *Final Environmental Impact Report for the Sacramento Regional County Sanitation District EchoWater Project*. September 12, 2014.

California Department of Transportation (Caltrans). 2015. California Scenic Highway Mapping System. Available at:
http://www.caltrans.ca.gov/hq/LandArch/scenic_highways/index.htm. Accessed January 14, 2015.

Elk Grove, City of. 2014. *Elk Grove Municipal Code through Ordinance 35-2014*. December 10, 2014.

_____. 2015. *The City of Elk Grove General Plan*. Reflects Amendments through March 2015.

Kleinschmidt Associates. 2008. *Cosumnes River Preserve Management Plan*. March 2008.

Sacramento County. 2011. *Sacramento County General Plan of 2005-2030*. Amended November 9, 2011.

U.S. Fish & Wildlife Service (USFWS). 2014. *Stone Lakes National Wildlife Refuge, Wildlife & Habitat*. Webpage last updated February 13, 2014. Available at:
http://www.fws.gov/refuge/Stone_Lakes/wildlife_and_habitat/index.html. Accessed February 10, 2015.

3.2 Land Use and Agriculture

This section presents the physical and regulatory setting for land use and agriculture in the proposed Project area. The impact analysis considers the potential for the proposed Project to physically divide the community or conflict with adopted land use plans or policies.

Additionally, the section evaluates the potential effects of the proposed Project on agricultural resources.

3.2.1 Environmental Setting

Regional Setting

The Project area encompasses south Sacramento County, including the City of Elk Grove, unincorporated Sacramento County, and a portion of the Stone Lakes NWR. It includes the SRWTP site, the pipeline alignment conveying recycled water from the SRWTP to the recycled water service area, and the recycled water service area itself. The recycled water service area is bounded to the south by Twin Cities Road, to the north primarily by Bilby Road and Kammerer Road, and lies mostly between I-5 and Highway 99, both of which run in a north-south direction. A portion of the service area is bisected by I-5. Land use within and adjacent to the proposed Project area includes both urban and rural uses (see **Figure 3.2-1**). Urban uses such as residential homes and commercial uses such as restaurants, shops, and offices are mainly located along the Franklin Boulevard corridor within the City of Elk Grove. The landscape in South County is dominated by large agricultural plots with scattered rural residential development. Land use designations within the Project area include public/quasi-public, natural preserve, commercial and offices, extensive industrial, low density residential, agricultural-residential, and agricultural cropland, which dominate the land use pattern for virtually all of the Project area (Sacramento County 2011).

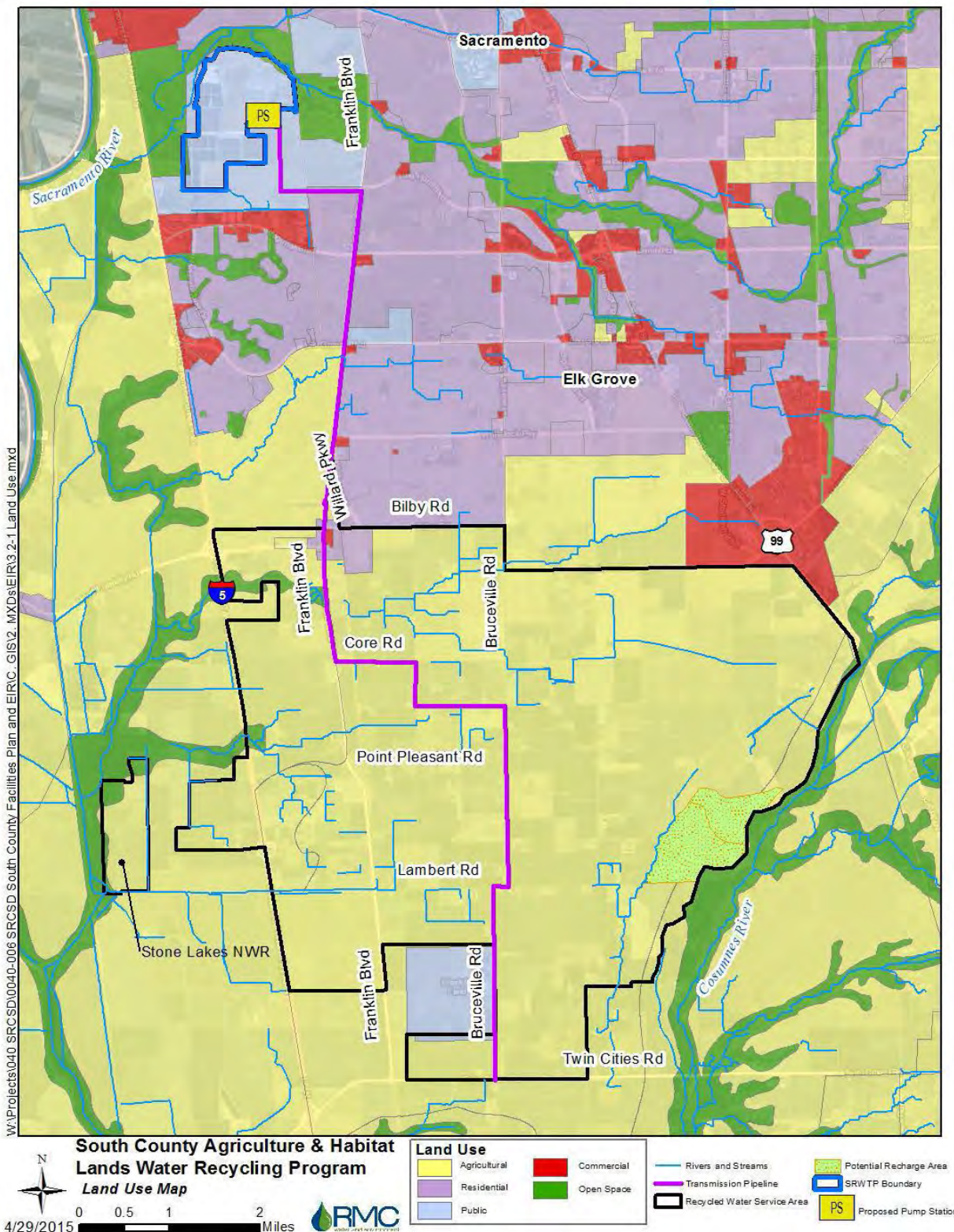


Figure 3.2-1: Land Uses in Project Area

Based on the *Sacramento County Crop and Livestock Report* (Sacramento County 2013), Sacramento Valley produces a multitude of agricultural products including fruits, vegetables, rice, other grains, meats, nuts, and milk. The ten leading farm commodities in 2013 were grapes (wine), milk, bartlett pears, poultry, field corn, nursery stock, cattle and calves, aquaculture, hay/alfalfa, and rice. Wine grapes are the County's top crop with a value of over \$141 million, representing almost one third of its production value. The County's gross value of agricultural production in 2013 was \$457,348,055, a 0.7 percent decrease from 2012. A summary of agricultural production is included in **Table 3.2-1**.

Table 3.2-1: Summary of Agricultural Production in 2013

Type	Harvested Acreage	Value of Production
Apiary (Honey and Pollination)	N/A	\$58,000
Field Crops	162,131	\$76,565,000
Fruit and Nut Crops	39,424	\$197,863,000
Livestock and Poultry	N/A	\$71,309,055
Livestock Products	N/A	\$65,526,000
Nursery Stock	540.5	\$24,916,000
Seed Crops	2,197	\$2,202,000
Vegetable Crops	3,464	\$18,909,000

Source: Sacramento County 2013.

Within the proposed Project area, there are Prime Farmland, Farmland of Statewide Importance, Unique Farmland, and Farmland of Local Importance, as shown in **Figure 3.2-2**. These farmlands are defined in the *Farmland Mapping and Monitoring Program* section. **Table 3.2-2** shows the change in the amount of farmland from 2004 to 2014 in Sacramento County, which shows a trend of decreasing agricultural lands. As shown in the table, Important Farmland in the County was reduced by approximately 12,800 acres. Grazing land decreased by approximately 9,700 acres, resulting in a total reduction of agricultural lands by approximately 22,500 acres.

Table 3.2-2: Land Conversions in Sacramento County, 2004-2014

	2004	2014	Net Acreage Changed
Prime Farmland	110,278	91,568	-18,710
Farmland of Statewide Importance	56,141	43,105	-13,036
Unique Farmland	15,188	15,125	-63
Farmland of Local Importance	39,873	58,852	18,979
Important Farmland Subtotal	221,480	208,650	-12,830
Grazing Land	163,173	153,452	-9,721
Agricultural Land Subtotal	384,653	362,102	-22,551
Urban and Built-up Land	165,629	181,296	15,667
Other Land	67,548	74,558	7,010
Water Area	18,253	18,120	-133
Total Area Inventoried	636,083	636,076	-7

Source: CDOC 2004a, 2014a

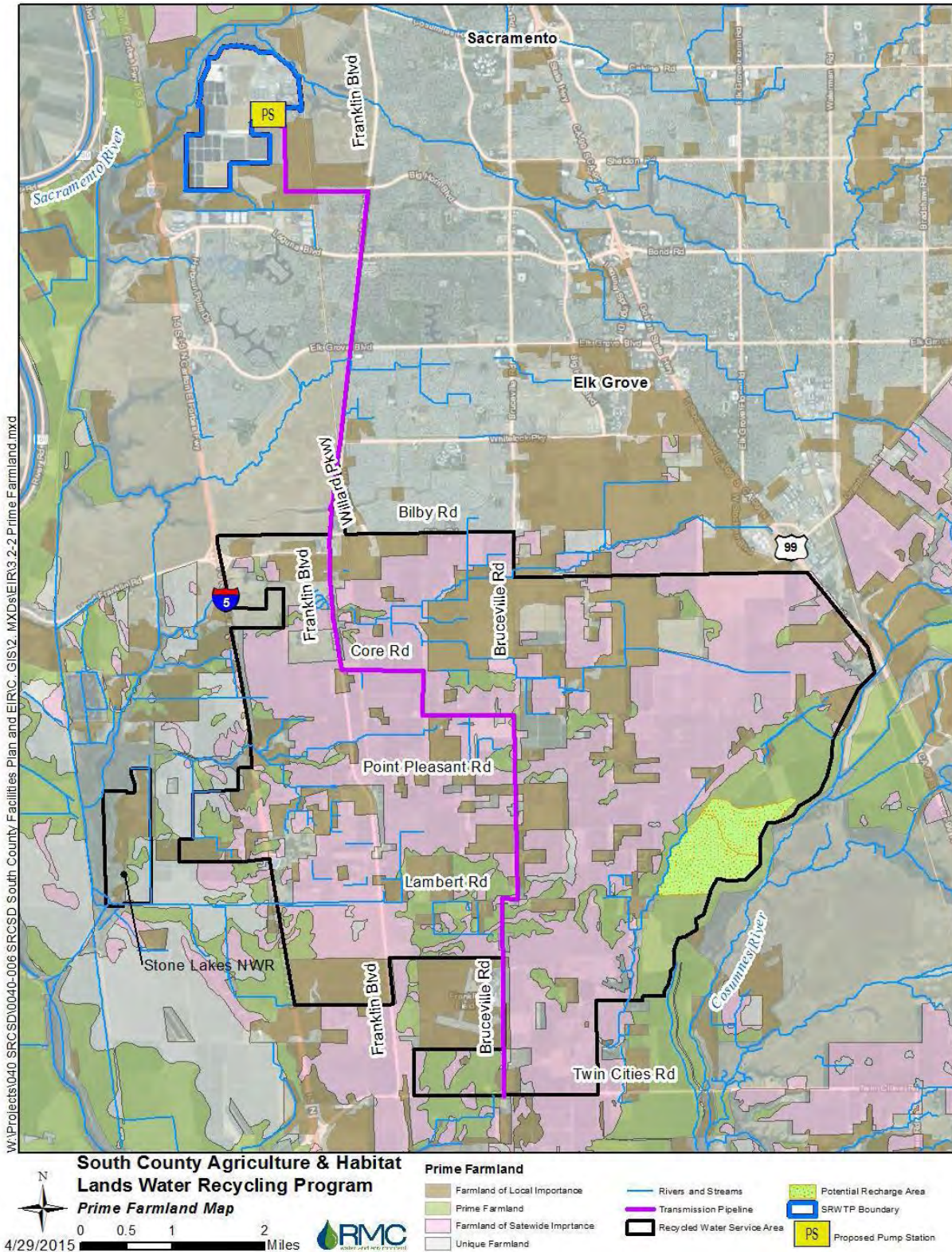


Figure 3.2-2: Prime Farmland in the Project Area

As of 2012, Sacramento County had 180,821 acres under Williamson Act enrollment (CDOC 2015). Within the recycled water service area are Williamson Act (WA) Prime Agricultural Land, WA Non-Prime Agricultural Land, and WA Non-Renewal Land, as shown in **Figure 3.2-3**. These are defined in the *California Land Conservation Act of 1965 (Williamson Act)* section. **Table 3.2-3** shows an overall increase of WA lands (approximately 4,500 acres) in Sacramento County from 2002 to 2012, with the increase attributed to non-prime agricultural land.

Table 3.2-3: Williamson Act Lands in Sacramento County, 2002-2012 (acres)

	2002	2012
Prime	87,650	87,566
Non-Prime	88,634	93,255
Total Land Conservation Act Lands	176,284	180,821

Source: CDOC 2004b, 2015

The Stone Lakes NWR is located west of the recycled water service area, west of I-5. It consists of approximately 17,640 acres of land owned by the State or County, USFWS, private landowners, or lands that are under cooperative agreement or conservation easements. The Stone Lakes NWR contributes to the USFWS's mission to support migratory waterfowl through habitat creation and protection. USFWS owns in fee title and manages approximately 6,650 acres, including waters, lands and managed wetlands in and around South Stone Lake. The wetlands in the Stone Lakes NWR that would receive recycled water are currently supported by surface water supplies including water pumped from lakes and from riparian sources. Sacramento County designates the Refuge as natural preserve.

The Cosumnes River Preserve, owned by seven partners, as described in *Section 3.1, Aesthetics*, includes over 40,000 acres of floodplain, riparian forest, vernal pools, grasslands, woodlands, and agricultural lands along the Cosumnes River. With the majority of the Preserve located to the east and south of the recycled water service area, there are properties included in the Preserve that overlap the recycled water service area in the southeast, southwest, and northwest areas, as shown in **Figure 3.2-4**.

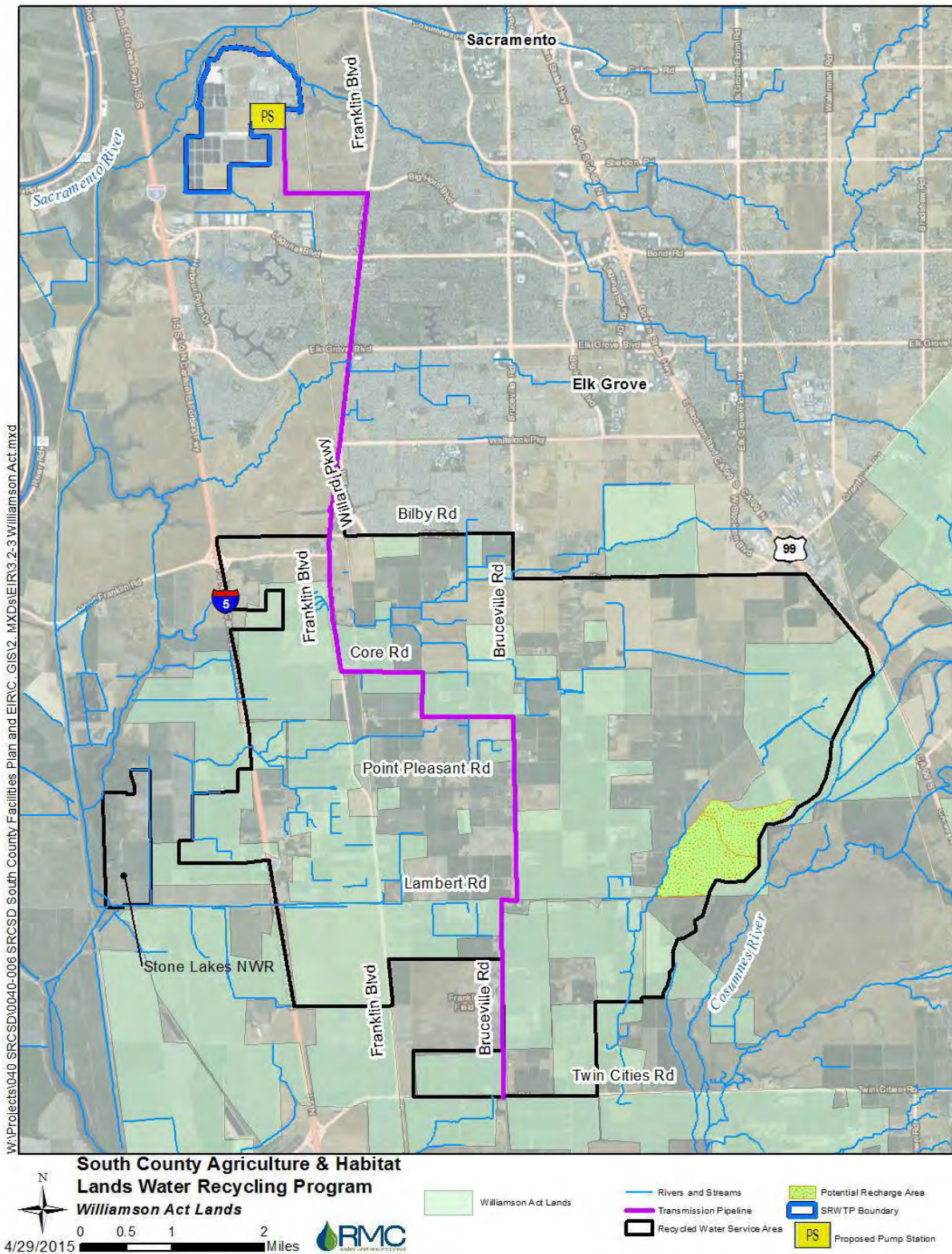


Figure 3.2-3: Williamson Act Lands in the Project Area

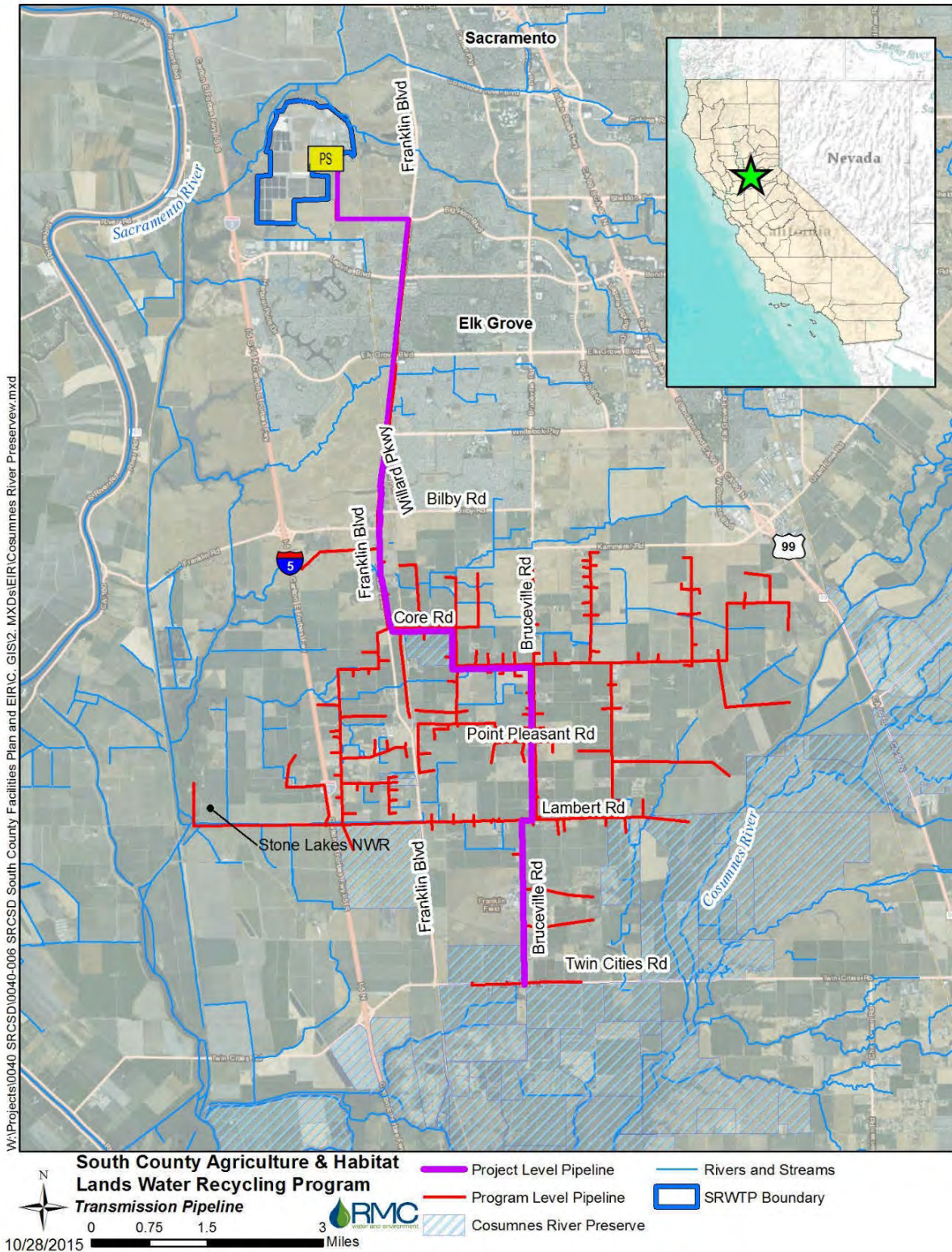


Figure 3.2-4: Cosumnes River Preserve Lands in Relation to Project Area

Local Setting

SRWTP

The SRWTP is located at 8521 Laguna Station Road in Elk Grove. The SRWTP, designated as public/quasi-public according to the Land Use element of the Sacramento County General Plan (Sacramento County 2011), consists of facilities that treat wastewater through solids settling, biological treatment, secondary settling, and disinfection (chlorination) and de-chlorination. Solids that require thickening receive further treatment and are either disposed of on site or are processed at an on-site biosolids recycling facility. A small water reclamation plant on site provides filtration and disinfection to a small portion of the secondary effluent (~5 mgd) for in-plant water and landscape irrigation for local users in Elk Grove. In addition to the treatment systems required for wastewater and the handling of biosolids, the SRWTP site includes ancillary facilities, including odor control systems, an energy cogeneration plant, and a grit and screening landfill (Ascent 2014). In the 1970s when the SRWTP was constructed, Regional San purchased an area surrounding the site to act as a buffer between the SRWTP and the neighboring community and provide an area that could accommodate future expansion; this area is referred to as the Bufferlands (Carollo 2000). The existing SRWTP treatment facilities occupy approximately 900 acres, while the Bufferlands occupy the remaining 2,300 acres of surrounding open space. The proposed pump station would be constructed on a currently-vacant parcel (located between Central Street and South Landfill Way), that will be developed with facilities constructed as part of the EchoWater Project.

City of Elk Grove and South County

The Elk Grove General Plan provides a detailed Land Use Policy map and other specific policies relating to land use within its city limits.

The proposed transmission pipeline, located within both the City of Elk Grove city limits and unincorporated Sacramento County, is surrounded by residential and commercial, agricultural, and open space land uses. Residential and commercial uses occur primarily along Franklin Boulevard between Simms Road and Bilby Road. Agricultural uses dominate the remaining portion of the proposed Project area. According to the City of Elk Grove Land Use Map, land uses along the proposed transmission pipeline alignment include residential (low density residential, estate residential, and high density residential), commercial, and open space (City of Elk Grove 2015). The Sacramento County General Plan Land Use Map designates the recycled water service area, including the area of the proposed distribution mains, as agriculture, with the exception of three small areas (Sacramento County 2011):

- One area designated as low density residential (1-12 dwelling units per acre) at the northern edge of the recycled water service area, immediately south of Bilby Road,
- One area designated as agricultural-residential (1-10 dwelling units per acre), near the intersection of Lambert Road and I-5, and
- Portions of the Stone Lakes NWR, west of the agricultural recycled water service, designated as open space.

As shown in **Figure 3.2-2** and **Figure 3.2-3**, the proposed pipelines are located within or adjacent to Prime Farmland, Farmland of Statewide Importance, Farmland of Local Importance, and Unique Farmland, and lands under Williamson Act contract (CDOC 2015 and CDOC 2013a). Portions of the potential recharge pond is located in an area considered Prime Farmland and on land within Williamson Act contract (CDOC 2014b and CDOC 2013a), as well as designated agricultural cropland according to the Land Use Element of the Sacramento County General Plan (Sacramento County 2011). The potential recharge area is currently irrigated and under private ownership.

Sensitive Receptors

Land uses such as residential, schools, day care centers, hospitals, and convalescent homes are considered to be sensitive to certain environmental effects, and thus are collectively known as sensitive receptors. Residential areas are located along the transmission main pipeline alignment. No hospitals are located within the proposed Project area; the closest medical office is Kaiser Permanente Promenade Medical Office, which is located less than one mile north of the recycled water service area at 10350 Promenade Parkway in Elk Grove. There are no convalescent homes within or immediately adjacent to the proposed Project area. The Marion Mix Elementary School, which opened in fall 2015, is located at 4730 Laguna Park Drive in Elk Grove, near the intersection of Laguna Park Drive and Franklin Boulevard. The Marion Mix Elementary School would be within a quarter-mile of the proposed transmission pipeline.

There are no other schools within a quarter-mile of the proposed transmission pipeline. The following schools are within one mile of the proposed transmission pipeline (from north to south):

- John Ehrhardt Elementary School
- Laguna Creek High School
- Foulks Ranch Elementary School
- Stone Lake Elementary School
- Helen Carr Castello Elementary School
- Elk Grove Charter School

3.2.2 Regulatory Framework

This section describes laws and regulations that may apply to the proposed Project. The federal, state, and local laws, regulations, and policies related to land use and agriculture that are applicable to the proposed Project are described as follows.

Federal Policies and Regulations

Habitat Conservation Plans

Habitat Conservation Plans (HCPs) serve as long-term agreements between the USFWS and applicants for an incidental take permit. They are designed to mitigate the potential adverse impacts of proposed activities that may affect a federally listed threatened or endangered species, or a species under consideration for listing. HCPs are regulated by the Endangered Species Act of 1973 under Section 10(a)(1)(B) (USFWS 2011). The Project area is within the area covered by the proposed SSHCP. The SSHCP has not been finalized, but is expected to be completed and

adopted in spring 2017 (Sacramento County 2016). Information regarding the SSHCP is presented in *Section 3.5, Biological Resources*.

Farmland Protection Policy Act

The Farmland Protection Policy Act (FPPA) requires federal agencies to (a) evaluate the adverse effects of their programs on the preservation of farmland; (b) consider alternative actions that could lessen adverse effects, and (c) ensure that their programs are compatible with state, local, and private programs and policies to protect farmland. For the purposes of the FPPA, farmland is defined as prime farmland, unique farmland, or land of statewide or local importance, as determined by the appropriate state or local agency. Federal agencies are required to develop and review their policies and procedures to implement the FPPA every two years (USDA 2014).

State Policies and Regulations

Natural Community Conservation Planning Act

The California Natural Community Conservation Plan Act of 2003 (NCCP) aims to provide protection to natural communities while remaining supportive of economic development in a region. It encourages regions to develop conservation plans by transferring some local or regional control to those regions with approved conservation plans in place. The NCCP uses an ecosystem-based approach to conservation and protection of biological diversity, and oversees conservation planning efforts including but not limited to multiple species conservation plans, multiple habitat conservation plans, and other conservation plans.

Farmland Mapping and Monitoring Program

The Farmland Mapping and Monitoring Program (FMMP), administered by the California Department of Conservation (CDOC), produces maps and statistical data for use in analyzing impacts on California's agricultural resources. The FMMP rates agricultural land according to soil quality and irrigation status and publishes Important Farmland maps. FMMP maps are updated every two years using a computer mapping system, aerial imagery, public review, and field reconnaissance (CDOC 2013b). For the purposes of CEQA review, Important Farmland categories that constitute agricultural land are as follows (CDOC 2013c):

- **Prime Farmland:** Farmland with the best combination of physical and chemical features able to sustain long-term agricultural production. These lands have 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 before the FMMP's mapping date.
- **Farmland of Statewide Importance:** Farmland similar to Prime Farmland, but with minor shortcomings, such as greater slopes or less ability to store soil moisture. Farmland of Statewide Importance must have been used for irrigated agricultural production at some time during the 4 years before the FMMP's mapping date.
- **Unique Farmland:** Farmland of lesser quality soils used for the production of the state's leading agricultural crops. These lands usually are irrigated but may include non-irrigated orchards or vineyards as found in some climatic zones. Unique Farmland must have been cropped at some time during the 4 years before the FMMP's mapping date.

- ***Farmland of Local Importance:*** Land of importance to the local agricultural economy as determined by each county's board of supervisors and a local advisory committee.
- ***Grazing Land:*** Land which has existing vegetation suitable for grazing of livestock.

California Land Conservation Act of 1965 (Williamson Act)

The California Land Conservation Act of 1965 (commonly referred to as the Williamson Act) allows local governments to enter into contracts with private landowners for the purpose of preventing conversion of agricultural land to non-agricultural uses (CDOC 2013d). In exchange for restricting their property to agricultural or related open space use, landowners receive property tax assessments that are substantially lower than the market rate (tax assessments are based upon farming and open space uses as opposed to full market value).

A Williamson Act contract may be terminated either through nonrenewal (preferred method) or cancellation. To terminate a Williamson Act contract, a landowner may file a notice of nonrenewal. Beginning on the next contract anniversary date, the contract winds down over the remaining (usually nine-year) term with the landowner's property taxes gradually increasing until they reach the full unrestricted rate at the end of the nonrenewal period (CDOC 2013e).

There are three types of Williamson Act lands, which are defined as follows (CDOC 2013c):

- **Prime Agricultural Land:** land enrolled under the California land Conservation Act contract and meets any of the following:
 - Land that qualifies for rating as class I or class II in the Natural Resources Conservation Service land use capability classifications.
 - Land that qualifies for rating 80 to 100 in the Storie Index Rating.
 - Land that supports livestock used for food and meets carrying capacity defined by U.S. Department of Agriculture.
 - Land planted with fruit or nut-bearing trees, vines, bushes, or crops that have a nonbearing period of less than five years and normally return during the commercial bearing period on an annual basis of at least \$200 per acre.
 - Land that has returned from the production of unprocessed agricultural plant production and has an annual gross plant production of at least \$200 per acre for three of the last five years.
- **Non-Prime Agricultural Land:** land enrolled under the California Land Conservation Act contract that does not meet any of the criteria for classification as Prime Agricultural Land.
- **Non-Renewal:** land that was enrolled but was filed as non-renewal pursuant to Government code Section 51245. The existing contract remains in effect for the balance of the remaining contract.

Local Policies and Regulations

Local policies related to land use and agriculture are presented in this section.

Planning and Zoning Designations

Pursuant to California Government Code 53091, Regional San, as a regional agency and utility district, is not subject to the building and zoning ordinances of local jurisdictions for projects involving facilities for the production, generation, storage, treatment or transmission of water. It is, however, the practice of Regional San to work with host jurisdictions and neighboring communities during project planning and to conform to local land use plans and policies to the extent possible. Therefore, the proposed Project's consistency with local land use plans and policies is discussed in this EIR.

Sacramento County General Plan

The Sacramento County General Plan (Sacramento County 2011) guides growth and development within the unincorporated county. It is the basis for land use and public policy decisions made by the Board of Supervisors and other policy makers.

Agricultural Element

The Agricultural Element of the General Plan contains the following goals, objectives, and policies relevant to the project. Goals are included for lands both inside and outside the Urban Service Boundary (USB):

- **GOAL:** Protect important farmlands from conversion and encroachment and conserve agricultural resources.
 - Objective: Protect prime, statewide importance, unique and local importance farmlands and lands with intensive agricultural investments (such as orchards, vineyards, dairies, and other concentrated livestock or poultry operations) from urban encroachment.
 - Objective: Prime farmland, farmland of statewide importance, unique farmland and farmland of local importance, and farmlands with intensive agricultural investments are to be protected from encroachment by natural resource preserves without compromising biologic diversity and habitat values.
 - Policy AG-5. Projects resulting in the conversion of more than fifty (50) acres of farmland shall be mitigated within Sacramento County, except as specified in the paragraph below, based on a 1:1 ratio, for the loss of the following farmland categories through the specific planning process or individual project entitlement requests to provide in-kind or similar resource value protection (such as easements for agricultural purposes):
 - prime, statewide importance, unique, local importance, and grazing farmlands located outside the USB;
 - prime, statewide importance, unique, and local importance farmlands located inside the USB.

The Board of Supervisors retains the authority to override impacts to Unique, Local, and Grazing farmlands, but not with respect to Prime and Statewide farmlands.

However, if that land is also required to provide mitigation pursuant to a Sacramento County endorsed or approved Habitat Conservation Plan (HCP), then the Board of Supervisors may consider the mitigation land provided in accordance with the HCP as meeting the requirements of this section including land outside of Sacramento County.

Note: This policy is not tied to any maps contained in the Agricultural Element. Instead, the most current Important Farmland map from the Department of Conservation should be used to calculate mitigation.

- Policy AG-10: The County shall balance the protection of prime, statewide importance, unique and local importance farmlands and farmlands with intensive agricultural investments with the preservation of natural habitat so that the protection of farmland can also serve to protect habitat.
- Objective: Reduce or eliminate groundwater cones of depression in farming areas by encouraging water conservation.
 - Policy AG-27: The County shall actively encourage groundwater recharge, water conservation and water recycling by both agricultural and urban water uses.
- **GOAL:** Enhanced viability of Sacramento County's agricultural economy.
 - Objective: Protect, conserve, and enhance agribusiness operations in Sacramento County for economic sustainability and viability.

Land Use Element

The Land Use Element of the General Plan contains the following goals, objectives, and policies relevant to the proposed Project:

- **GOAL:** A viable rural and recreational economy in all non-metropolitan areas outside of the Urban Service Boundary.
 - Objective: Limited agricultural residential land use expansion outside the USB that does not compromise objectives for protecting prime agricultural lands and open space, and avoids groundwater overdraft and contamination.
 - Policy LU-73: Sewer and water treatment and delivery systems shall not provide for greater capacity than that authorized by the General Plan.
 - Objective: Important farmlands protected to ensure the continuation of agricultural production and to preserve open space.

City of Elk Grove General Plan

Guiding and Focused Goals

The following guiding and focused land use goals from the City of Elk Grove General Plan are relevant to the proposed Project (City of Elk Grove 2015):

- Guiding Goal 3: Protection of the Natural Environment
 - Focused Goal 3-2: Open space lands in proximity to Elk Grove which provide for agricultural use and habitat for native species.
 - Focused Goal 3-3: Natural resources managed and protected for the use and enjoyment of current and future generations.
 - Focused Goal 3-4: Preservation and enhancement of Elk Grove's natural areas, in particular the areas within the floodplain of the Cosumnes River.
- Guiding Goal 5: Preservation of the Rural Character of Elk Grove
 - Focused Goal 5-2: Maintenance of those features that provide the character of Elk Grove's rural areas, including: large oak and other trees, small local roadways, animal keeping and raising, equestrians, agriculture, and limited commercial opportunities.

Land Use Element

The Land Use Element of the City of Elk Grove General Plan includes the following policy that is relevant to the proposed Project (City of Elk Grove 2015):

- Policy LU-17: Implement a comprehensive city-wide strategy for the preservation of open space, habitat and agriculture, both inside and outside the City's existing city limits.

Other Related Planning Efforts

Other planning documents relevant to the proposed Project are described below.

Bufferlands Master Plan

The Bufferlands Master Plan (Carollo 2000) was prepared to establish a long-term, cost effective management strategy for the Bufferlands while maintaining a buffer zone and providing for future expansion and operational changes at the SRWTP, as well as protecting and enhancing environmental resources. The Master Plan (Plan) provides guidelines and policies for alternative land uses, visitor use and access, and for vegetation and wildlife management. The Plan covers the 2,300-acre area surrounding the SRWTP between Franklin Boulevard and the Sacramento River. In the 1970s, Regional San purchased this area to act as a buffer between the SRWTP and the neighboring community and provide an area that could accommodate future expansion. The area is bisected by the Union Pacific Railroad (UPRR) right-of-way.

The principal objectives of Bufferlands management are:

- to maintain the function of the Bufferlands, allowing continued Plant operation and expansion while maintaining Plant security, and ensuring the safety of Regional San personnel and the surrounding public;

- to provide and maintain extensive areas of open space, high-quality wildlife habitat, and other valuable natural resources on the Bufferlands;
- to provide areas to mitigate environmental impacts associated with Regional San projects;
- to minimize conflicts and develop beneficial relationships with the local community;
- to promote public enjoyment and appreciation of the Bufferlands through educational outreach; and
- to generate lease revenues for Regional San in accordance with other Bufferlands management objectives.

Chapter 4 of the Plan provides goals and policies that relate to land use, public safety and security, public use, environmental education, research and development, cultural resources, aesthetic resources, water quality, managed wildlife habitat areas, open space areas, leased areas, horticultural areas, plant and process facilities (Carollo 2000).

Cosumnes River Preserve Management Plan

Please refer to Section 1.11 in *Chapter 1, Introduction*, for a discussion of the Cosumnes River Preserve. The Cosumnes Preserve Management Plan was developed in 2008 by the Preserve partners (Kleinschmidt Associates 2008) to provide a framework for how the Preserve should be managed over the next 10 years. The long-term vision statement for the Preserve is as follows:

“The Cosumnes River Preserve Partners envision the permanent protection of a continuous riparian corridor extending from the Cosumnes headwaters to the Delta, including adjacent floodplain and wetland habitats, and a vast vernal pool grassland complex supporting endangered species. The Partners will utilize stewardship and compatible ranching and farming activities as methods to sustain native plant and wildlife communities and the processes that perpetuate a dynamic mosaic of habitats. We will provide opportunities for people of all ages to appreciate the flora and fauna of the Cosumnes River Preserve and to experience being part of a natural landscape.”

To achieve the vision, the following two overarching goals were developed:

- Native biological communities and the resident and migratory species dependent on them are restored and maintained to sustainable conditions and populations levels.
- Compatible uses improve stewardship of the lands in the Cosumnes River Watershed.

A series of sub-goals were then developed in the categories of Watershed and Preserve; Natural Resource Stewardship; Agricultural Stewardship; Public Use; Cultural and Visual Resources; Property Management; and Operations, Maintenance, and Monitoring (Kleinschmidt Associates 2008).

Stone Lakes NWR Comprehensive Conservation Plan

USFWS prepared the Stone Lakes NWR Comprehensive Conservation Plan (CCP) in 2007 with the purpose of guiding the management of fish, wildlife, plants, other natural resources and

visitor use for a planning period of 15 years. The CCP identified the following goals related to managing the NWR (USFWS 2007):

- Goal 1 – Conserve, enhance, restore and manage Central Valley wetland, riparian, grassland and other native habitats to benefit their associated fish, wildlife, plants and special status species.
- Goal 2 – Conserve, enhance, and restore high quality migrating, wintering and breeding habitat for migratory birds within the Sacramento San Joaquin Delta of the Central Valley.
- Goal 3 – Provide visitors with wildlife-dependent recreation, interpretation and education opportunities which foster an understanding of the Refuge's unique wildlife and plant communities in an urban setting.
- Goal 4 – In cooperation with tribal representatives, identify and protect cultural resources on the Refuge and educate the public regarding American Indians and the history of the region.

Water Forum Agreement

Please refer to Section 1.04 in *Chapter 1, Introduction*, for a discussion of the Water Forum Agreement.

3.2.3 Impact Analysis

Methodology for Analysis

This section evaluates whether construction and operation of the proposed facilities would result in significant impacts related to land use or agriculture resources. Specifically, the analysis is based on a review of local land use plans and policies and aerial imagery and determination whether the proposed Project would affect land uses and protected agricultural resources.

Thresholds of Significance

Consistent with the thresholds of significance identified in Sacramento County's Initial Study Checklist, an impact would be considered significant if the proposed Project would:

- Physically disrupt or divide an established community;
- Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including but not limited to a general plan, specific plan or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect;
- Convert more than 50 acres of Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), or areas containing prime soils to uses not conducive to agricultural production;
- Conflict with any existing Williamson Act contract; or
- Introduce incompatible uses in the vicinity of existing agricultural uses.

Criterion Requiring No Further Evaluation

The criterion listed above that is not applicable to actions associated with the action alternatives of the proposed Project is identified below along with a supporting rationale as to why further consideration is unnecessary and a no impact determination is appropriate.

- *Physically disrupt or divide an established community:* The proposed Project would not construct any aboveground infrastructure that would physically divide a community. The majority of the project components would consist of underground pipelines. The proposed aboveground pump station would be located within the existing SRWTP site, and integrated with other similar industrial facilities that relate to the treatment of wastewater and production of recycled water. The potential recharge pond would be located within an agricultural area. Although it would have a new function of allowing recharge during the non-irrigation season, it would continue to be used as agricultural lands during the irrigation season. Thus, none of the proposed components of the action alternatives would disrupt or divide an established community. As such, there would be no impact, and no further discussion is warranted.

Impacts and Mitigation Measures

Impact LUA-1 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.

Alternative 1 (Medium Service Area Alternative) and Alternative 2 (No Reclamation Funding Alternative)

Project Elements. Construction and operation of project-level components of Alternative 1 (Medium Service Area Alternative) and Alternative 2 (No Reclamation Funding Alternative) would not result in any changes to land use. The proposed transmission pipeline and appurtenances would be located below ground primarily within road ROW although construction could temporarily occur on adjacent agricultural land (see Impact LUA-2 for more information regarding impacts to agricultural resources).

The proposed Project does not include residential, commercial, or agricultural development and would not alter land use designations of any existing land uses. The pump station would be constructed at the SRWTP surrounded by other wastewater and recycled water-related facilities already on site. The proposed Project would not introduce new uses or result in changes to the functions of the Bufferlands, Cosumnes River, or Stone Lakes NWR. Providing recycled water to agricultural customers in South County would contribute to Sacramento County's goal to "protect important farmlands from conversion and encroachment and conserve agricultural resources." These alternatives would be consistent with the Land Use Elements of the Sacramento County General Plan and City of Elk Grove General Plan, Bufferlands Master Plan, Cosumnes River Preserve Management Plan, and Stone Lakes NWR Comprehensive Conservation Plan. Providing recycled water for agriculture and to enhance wetlands is consistent with policies supporting enhancement of habitat.

Program Elements. The use of recycled water for agricultural uses and the provision of recycled water to a potential recharge pond in South County would be consistent with Sacramento County's goals and objective of protecting farmland, enhancing the viability of the agricultural economy, and reducing or eliminating groundwater cones of depression in farming areas. In addition, the use of recycled water in an area currently relying primarily on groundwater would be consistent with groundwater management policies in the area.

Providing recycled water to the Stone Lakes NWR managed wetlands would diversify their water supply and potentially enhance existing wetlands. Its use would not conflict with the Refuge's CCP or any relevant, land use plan, policy or regulation.

While the potential recharge area would be located on agricultural land and could result in greater than 50 acres of Important Farmland being used for groundwater recharge purposes during the non-irrigation season, as currently proposed, the area would continue to be used for agriculture during the irrigation season. Thus, this alternative would not conflict with Sacramento County policies related to the protection of Important Farmlands and the mitigation specified by Policy AG-5 would not be needed. If lands within the recharge area were, in the future, considered for any other uses such as riparian restoration and/or wetlands enhancement, this would be subject to future environmental review.

Based on the above discussion, Alternative 1 (Medium Service Area Alternative) and Alternative 2 (No Reclamation Funding Alternative) would not conflict with applicable land use plan, policy, or regulation of an agency with jurisdiction over the proposed Project/ and impacts would be less than significant/beneficial.

Alternative 3 (Small Service Area Alternative)

Project and Program Elements. The construction and operational impacts of both project and program components for Alternative 3 (Small Service Area Alternative) would be similar to those identified for Alternative 1 (Medium Service Area Alternative), except that the service area would be less. Alternative 3 (Small Service Area Alternative) would not conflict with any land use plan, policy, or regulation included in the Sacramento County or City of Elk Grove General Plans. It does not consist of development and would modify any land use designations. Thus, impacts would be less than significant/beneficial.

Alternative 4 (No Project Alternative)

Under the No Project Alternative, no facilities would be constructed. Therefore, no construction-related impacts to land use or agriculture would occur. However, if in the future water supplies become limited because of long-term drought or subsidence that requires restrictions in groundwater pumping in this area and subsequent long-term fallowing of land that may make conversion of land more favorable than preservation for farmers, such lands could be converted to non-agricultural uses. This impact would potentially be significant and unavoidable as such changes would be permanent, and no mitigation is available to reduce the potential irreversible conversion of agricultural land to non-agricultural uses. Although Sacramento County requires mitigation for conversion of more than 50 acres of farmland, conversion of smaller parcels can

occur without requiring preservation of farmland, which could potentially result in loss of a substantial amount of farmland if water is unavailable.

Significance Determination before Mitigation

Less than significant/beneficial for all action alternatives. Potentially significant and unavoidable for Alternative 4 (No Project Alternative).

Mitigation Measures

No mitigation measures are required for any of the action alternatives. No mitigation is available to reduce impacts for Alternative 4 (No Project Alternative).

Impact LUA-2 Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance or Area Containing Prime Soils to Uses Not Conducive to Agricultural Production, Conflict with Any Existing Williamson Act Contract, or Introduce Incompatible Uses in the Vicinity of Existing Agricultural Uses.

Alternative 1 (Medium Service Area Alternative) and Alternative 2 (No Reclamation Funding Alternative)

Project Elements. The proposed pump station would be located at the SRWTP, which is designated public/quasi-public according to the Sacramento County land use map and does not contain any farmlands. Thus, construction of the pump station would have no impact on farmlands.

As described in *Chapter 2, Alternatives Description of the Proposed Project*, the majority of the proposed transmission pipeline would be installed using open-cut construction methods, with trenchless pipeline construction for specific crossings. The open-cut trench would be approximately 7 feet wide and up to 10 feet deep, depending on the pipe size, existing utility locations, and pipe bedding requirements. To accommodate construction equipment and work area, the entire construction corridor (active work area including the trench) would be approximately 80 feet wide. The transmission pipelines and appurtenances would be located primarily along County and city streets and rural roads, within public road ROW. However, as shown in **Figure 3.2-2** and **Figure 3.2-3** there are areas, primarily within the recycled water service area, where the proposed transmission pipeline traverses and/or is adjacent to Prime Farmland, Farmland of Statewide Importance, Farmland of Local Importance, and Unique Farmland, as well as lands under Williamson Act contracts. Construction associated with the transmission pipeline could encroach upon adjacent private lands, including agriculture areas (e.g., due to the limited width of the existing roads, or to avoid utilities or traffic). In areas where the construction corridor would be located within agricultural lands, agriculture (on Important Farmlands / lands under a Williamson Contract) would be temporarily precluded for some portion of the 2-year construction period. Construction in agricultural fields may require the removal of crops, depending on the crop and time of year. Construction could also potentially affect small areas of land adjacent to the road ROW, however this would be temporary (i.e., would not permanently remove agricultural lands from production). Upon completion of construction, the area would be restored to pre-construction condition, and no permanent facilities would be located within the affected agricultural areas. Given the temporary nature of

construction and restoration of disturbed areas after construction, impacts to agricultural lands would be less than significant..

Construction outside of paved areas would involve the removal of topsoil to dig the pipeline trench. Heavy equipment (e.g., excavator, dump truck, flat-bed truck, front-end loader) would be used to dig trenches, transport pipe, and off-load excavated materials. Removal of topsoil and use of heavy equipment would also have the potential to adversely affect long-term soil characteristics and productivity of this land (i.e., through compaction/removal of topsoil). Potential exists that this could cause such areas to no longer be viable for agricultural production, which would be a significant impact. Implementation of **Mitigation Measure LUA-2**, which requires topsoil to be stockpiled and replaced, would reduce potential impacts to a less-than-significant level.

Over the long-term, agricultural land use in this area would be unaffected as a result of the installation of the transmission pipeline. The transmission pipeline would be buried underground, installed up to 10 feet deep, and soil (including topsoil as required under **Mitigation Measure LUA-2**) would be backfilled over the trench such that farming would be able to resume following construction. The transmission pipeline would need to be inspected and maintained periodically after construction (for which permanent easements would be acquired as necessary). Inspections would be conducted through the utility access manholes installed during construction. Maintenance would consist of monthly inspections of the pump station and pipeline. The inspections and maintenance activities would generally be isolated and confined to the manholes and immediate vicinity of the pipeline alignment. The inspection and maintenance activities therefore would not be expected to disturb agricultural operations. As the installation of the transmission pipeline would not result in the permanent conversion of any adjacent Important Farmland or areas containing prime soils to uses not conducive to agricultural production, would not remove any lands currently under Williamson Act contract from production, and would not introduce non-agricultural uses in the vicinity of existing agricultural uses, operational-impacts would be less than significant and no mitigation is required.

These alternatives would provide a benefit to agricultural lands in the proposed Project area, including those designated as prime farmland, unique farmland, farmland of local and statewide importance, and Williamson Act lands by providing a sustainable water supply that would be available even during droughts, when other groundwater supplies may be limited.

Program Elements. The distribution pipelines, potential recharge area, diluent wells, service connection laterals, and turnouts would be located on rural road ROW, private agricultural lands or dirt roads. These facilities would be located within and/or adjacent to farmland of local importance, prime farmland, farmland of statewide importance, and unique farmland, as well as lands under Williamson Act contract (see **Figure 3.2-2** and **Figure 3.2-3**).

Construction-related impacts for the program elements would be similar to those for the project elements and **Mitigation Measure LUA-2** would be implemented to reduce impacts to less than significant.

In the long-term, the proposed facilities would have minimal effect on important agricultural farmlands because they would be either located underground or would require minimal land (e.g., size of facilities for diluent wells would be about 100 by 100 feet) which would not affect existing agricultural operations or be incompatible with existing agricultural operations.

The potential recharge pond would be located within Important Farmlands and on lands under Williamson contract. However, as discussed in Impact LUA-1 above, because the potential recharge area would continue to be used for agriculture during the irrigation season, it would not result in the conversion of Important Farmlands or the removal of Williamson Act lands from production. Thus, impacts would be less than significant.

Alternative 3 (Small Service Area Alternative)

Project and Program Elements. The construction and operational impacts of both project and program components for Alternative 3 (Small Service Area Alternative) would be similar to those identified for Alternative 1 (Medium Service Area Alternative), except that the intensity of the effects would be less for construction-related effects. Because Alternative 3 (Small Service Area Alternative) would deliver recycled water to a smaller area of agricultural users in South County, construction of less pipeline would be required. Therefore, the duration of temporary, construction-related impacts would be less than Alternative 1 (Medium Service Area Alternative). Similar to Alternatives 1 (Medium Service Area Alternative), the potential exists for the removal of topsoil that could cause agricultural areas to be no longer viable for agricultural production, which would be a potentially significant impact. With the implementation of **Mitigation Measure LUA-2**, such impacts would be reduced to less than significant.

Similar to Alternative 1 (Medium Service Area Alternative), operation-related effects would also be less than significant, and have the potential to benefit agricultural users by providing a sustainable, drought-proof water supply, ensuring ongoing production and water supply reliability.

Alternative 4 (No Project Alternative)

Under the No Project Alternative, no facilities would be installed and existing agricultural land would not be affected. Therefore, there would be no impact associated with construction. However, as described in Impact LUA-2 above, if in the future water supplies become limited because of long-term drought or subsidence that requires restrictions in groundwater pumping in this area and subsequent long-term fallowing of land that may make conversion of land more favorable than preservation for farmers, there could be a permanent conversion of Important Farmland or areas containing prime soils to non-agricultural uses. This impact would be potentially significant and unavoidable as such changes would be permanent, and no mitigation is available to reduce the potential irreversible conversion of agricultural land to non-agricultural uses.

Significance Determination before Mitigation

Potentially significant for all action alternatives. Significant and unavoidable for Alternative 4 (No Project Alternative).

Mitigation Measure

Mitigation Measure LUA-2: Stockpile Topsoil (All Action Alternatives)

Regional San and/or its contractors shall stockpile topsoil removed during construction for later reuse. The soil shall be stored in a clear area of the construction site where it would not have the potential to affect agricultural or biological resources. Stockpiled soil shall be covered with a tarp at all times to prevent generation of fugitive dust. Following pipeline construction, soil shall be backfilled into the trench and restored to an appropriate level of compaction.

Significance Determination after Mitigation

Less than significant for all action alternatives. Potentially significant and unavoidable for Alternative 4 (No Project Alternative) because there is no mitigation available to reduce impacts.

Cumulative Impacts

The geographic scope of potential cumulative land use impacts consists of the proposed Project component areas and immediate vicinity. As discussed in Impact LUA-1, the proposed Project consisting of a pump station within the existing SRWTP and subsurface transmission pipelines, would not result in any land use changes. Therefore, the proposed Project would not conflict with applicable land use plans, policies, and regulations, and would have no cumulative land use impact.

Prime Farmland, Farmland of Statewide Importance, Unique Farmland, and Farmland of Local Importance in Sacramento County have been undergoing conversion to urban, built out, or other land uses (see **Table 3.2-2**). Continued conversion of farmland to non-agricultural uses in the County could result in a potentially significant cumulative impact. As discussed in Impact LUA-2, construction of the proposed Project could result in temporary impacts to agricultural land use. However, this impact would be reduced to a less-than-significant level with the implementation of **Mitigation Measure LUA-2**. The proposed pump station would be constructed within the existing SRWTP and subsurface transmission pipelines would not result in long term impacts to agricultural land uses. Therefore, the proposed Project would not contribute to cumulative agricultural land use impacts.

Significance Determination before Mitigation

Potentially significant.

Mitigation Measures

See **Mitigation Measure LUA-2**.

Significance Determination after Mitigation

Less than significant.

3.2.4 References

- _____. 2000. *Water Forum Agreement*. January 2000.
- Ascent Environmental. 2014. *Final Environmental Impact Report for the Sacramento Regional County Sanitation District EchoWater Project*. September 12, 2014.
- California Department of Conservation (CDOC). 2004a. Table A-23 Sacramento County 2002-2004 Land Use Conversion. Available:
<http://www.conservation.ca.gov/dlrp/fmmp/Pages/Sacramento.aspx>. Accessed May 23, 2016.
- _____. 2004b. *The California Land Conservation Act 2004 Status Report*. May 2004. Available at: http://www.conservation.ca.gov/dlrp/lca/stats_reports. Accessed May 23, 2016.
- _____. 2013a. *Sacramento County Williamson Act 2011/2012 Map*.
- _____. 2013b. Farmland Mapping and Monitoring Program. Available:
<http://www.conservation.ca.gov/dlrp/FMMP/Pages/Index.aspx>. Accessed January 21, 2015.
- _____. 2013c. Important Farmland Categories. Available:
http://www.conservation.ca.gov/dlrp/fmmp/mccu/Pages/map_categories.aspx. Accessed January 21, 2015.
- _____. 2013d. The Land Conservation (Williamson) Act. Available at:
<http://www.conservation.ca.gov/dlrp/lca/Pages/Index.aspx>. Accessed January 21, 2015.
- _____. 2013e. Contract Cancellations. Available at:
http://www.conservation.ca.gov/dlrp/lca/basic_contract_provisions/Pages/contract_cancellations.aspx. Accessed January 21, 2015.
- _____. 2014a. Table A-26 Sacramento County 2012-2014 Land Use Conversion. Available:
<http://www.conservation.ca.gov/dlrp/fmmp/Pages/Sacramento.aspx>. Accessed May 23, 2016.
- _____. 2015. *The California Land Conservation Act 2014 Status Report*. March 2015. Available at: http://www.conservation.ca.gov/dlrp/lca/stats_reports. Accessed May 23, 2016.
- _____. 2014. *Sacramento County Important Farmland 2012 Map*. August 2014.
- Carollo Engineers. 2000. *Bufferlands Master Plan – Final Draft*. August 2000.

Elk Grove, City of. 2015. *The City of Elk Grove General Plan*. Reflects Amendments through March 2015.

Kleinschmidt Associates. 2008. *Cosumnes River Preserve Management Plan*. March 2008.

Sacramento County. 2011. *Sacramento County General Plan of 2005-2030*. Amended November 9, 2011.

_____. 2013. *Sacramento County 2013, Crop & Livestock Report*.

_____. 2016. South Sacramento Habitat Conservation Plan fact sheet. Informational website available at: <http://www.southsachcp.com/>. Accessed on May 26, 2016.

Sacramento County, City of Elk Grove, City of Galt, City of Rancho Cordova, Sacramento Regional County Sanitation District, Sacramento Area Sewer District, Sacramento County Water Agency, Southeastern Connector. 2010. *South Sacramento Habitat Conservation Plan, Working Draft*. July 2010.

Sacramento Regional County Sanitation District (Regional San). 2007. *Water Recycling Opportunities Study, Executive Summary*. February 2007.

United States Department of Agriculture (USDA). 2014. Farmland Policy Protection Act. Natural Resource Conservation Service. Available at: <http://www.nrcs.usda.gov/wps/portal/nrcs/main/national/landuse/fppa/>. Accessed January 21, 2015.

United States Fish and Wildlife Service (USFWS). 2007. *Stone Lakes National Wildlife Refuge Comprehensive Conservation Plan*. January 2007.

3.3 Recreation

This section describes the physical and regulatory setting for recreation within the proposed Project area and evaluates the potential for the proposed Project to affect recreational resources.

3.3.1 Environmental Setting

Regional Setting

Residents and visitors in the proposed Project area have access to recreational opportunities and facilities including parks, fishing and rafting areas, bikeways, and recreational centers. Such opportunities are provided at Stone Lakes NWR, and multiple small parks in and around the City of Elk Grove, Sacramento River, and the Cosumnes River and Preserve. Bicycle facilities are address in *Section 3.14, Traffic and Transportation*.

Project Vicinity

SRWTP

There are no park facilities at the SRWTP, but the surrounding Bufferlands managed by Regional San provide opportunities for guided recreation and education. The Bufferlands consist of 2,300 acres of open space providing habitat for approximately 238 species of birds, 25 species of mammals, 20 species of fish, and 21 special-status species. While the Bufferlands are not open for public access, Regional San offers events and activities throughout the year, including hiking tours for viewing of wetlands, nesting birds, and habitat within the Bufferlands. Management staff can also tailor special tours to meet individual needs of a group covering a wide variety of natural resource topics (Regional San 2015).

City of Elk Grove and South County

The City of Elk Grove contains many public parks, some of which are owned and operated by the Cosumnes Community Services District (CSD), an independent agency (City of Elk Grove 2009). The CSD serves 157 square miles, including the City of Elk Grove, as well as a large unincorporated area of Sacramento County. CSD classifies parks as local parks (sometimes referred to as pocket parks), neighborhood parks, community parks, regional parks, special use parks, sports complexes/golf facilities, and open space (Pros Consulting 2009). There are no parks immediately adjacent to the proposed pump station or transmission pipeline locations. Local and neighborhood parks within a quarter mile of the proposed transmission pipeline include Fite Park, Wackman Park, Womack Park, Ehrhardt Oaks Park, and Buscher Park. Amenities at these parks include playgrounds, picnic shelters/pavilions, multi-purpose fields, basketball courts, tennis courts, and softball fields.

Elk Grove Unified School District also provides sports fields and indoor and outdoor courts at its elementary schools, middle schools, and high schools (Pros Consulting 2009). As described in *Section 3.2, Land Use and Agriculture*, there are no schools within a quarter mile of the proposed facilities.

Other recreational opportunities in the County include open space preserves, parkways along creeks, and wildlife refuges. Stone Lakes NWR is located within the Project area and provides various recreational opportunities (USFWS 2014). Stone Lakes NWR is generally managed by the North Stone Lake Unit (north of Hood Franklin Road) and South Stone Lake Unit (south of Hood Franklin Road). Stone Lakes NWR provides the following recreational opportunities:

- Blue Heron Trails, accessed from Elk Grove Boulevard and located approximately two miles west of the proposed transmission pipeline, offers year-round hiking and self-guided tours surrounding seasonal wetlands and upland habitat.
- Free docent-guided walks in normally restricted areas are provided in the fall and spring to view migratory birds.
- The Paddle Program, operated from June through September, offers wildlife viewing for canoers and kayakers in normally restricted areas of Lower Beach Lake in the North Stone Lake Unit.
- Waterfowl hunting is allowed during the hunting season in the South Stone Lake Unit.

The Cosumnes River Preserve, generally located east of the recycled water service area (with some portion of the recycled water service area overlapping the Preserve), consists of approximately 45,859 acres of wildlife habitat and agricultural lands and provides social, economic, and recreational benefits to the City of Elk Grove and South County. It provides a wide range of wildlife-compatible recreational activities such as wildlife viewing, hiking, boating, canoeing, hunting, fishing, site seeing, photography, and geocaching. There are trails, including the Cosumnes River Walk and the Rancho Seco Howard Ranch Trail, as well as facilities, including the Visitor Center, administrative offices, and kiosks, that are open to the public year-round. Due to the proximity of the Preserve to growing urban areas, such as Sacramento, future demands for recreational use, public access, and the use of facilities are expected to increase (Kleinschmidt 2008).

3.3.2 Regulatory Framework

This section describes the laws and regulations at the federal, state and local level that may apply to the proposed Project.

Federal

National Recreation and Park Association

The National Recreation and Parks Association creates benchmarking ratios based on national median amount of parkland per 1,000 residents, with the most recent being the 2013 value of 9.1 acres of parkland per 1,000 residents (NRPA 2014).

State

Landscaping and Lighting Districts

The California Landscaping and Lighting Act of 1972 authorizes local legislative bodies to establish benefit related assessment districts, or Landscaping and Lighting Assessment Districts (LLADs) and to levy assessments for the construction, installation, and maintenance of certain

public landscaping and lighting improvements. LLADs may be established to maintain local public parks.

Local

Sacramento County

There are no relevant goals identified in the Sacramento County General Plan related to Recreation.

City of Elk Grove

Vision and Focused Goals

The Parks, Trails, and Open Space Element in the City of Elk Grove's General Plan emphasizes the City's vision to retain significant amounts of open space and to create a trails system. The General Plan has the following Focused Goals related to providing a high quality of life to residents:

- Goal 1-2: Outdoor recreation opportunities for all residents.
- Goal 1-7: Active and passive park facilities and recreation programs that satisfy the leisure time and recreation needs of all residents.

Conservation and Air Quality Element

The Conservation and Air Quality Element of the City of Elk Grove General Plan includes the following policy that is relevant to the proposed Project (City of Elk Grove 2015):

- Policy CAQ-23: Uses in the stream corridors shall be limited to recreation and agricultural uses compatible with resource protection and flood control measures. Roads, parking, and associated fill slopes shall be located outside of the stream corridor, except at stream crossings.

Parks, Trails, and Open Space Element

The Parks, Trails, and Open Space policy relevant to the proposed Project is:

- Policy PTO-15: The City views open space lands of all types as important resource which should be preserved in the region, and supports the establishment of multi-purpose open space areas to address a variety of needs, including, but not limited to:
 - Maintenance of agricultural uses
 - Wildlife habitat
 - Recreational open space
 - Aesthetic benefits
 - Flood control

To the extent possible, lands protected in accordance with this policy should be in proximity to Elk Grove, to facilitate use of these areas by Elk Grove residents, assist in mitigation of habitat loss within the city, and provide an open space resource close to the urbanized areas of Elk Grove.

Elk Grove Master Plan of Parks

Cosumnes CSD prepared the Parks and Recreation Master Plan to provide a framework for decision-making and to identify standards for public parks, desired locations for new facilities and standards for the development of new parks. A vision was identified which includes the CSD and City of Elk Grove partnering “to provide high quality parks, recreation facilities, trails, and programs in a safe environment that are equitably distributed and create high-image and economic value for residents” (Pros Consulting 2009).

Other Related Planning Efforts

Other planning efforts that relate to recreation include the Cosumnes River Preserve Management Plan and the Stone Lakes NWR CCP described in *Section 3.2, Land Use and Agriculture*, and the Water Forum Agreement described in *Section 3.1, Introduction*.

3.3.3 Impact Analysis

Methodology for Analysis

This section evaluates whether construction and operation of the proposed Project alternatives would result in significant impacts related to recreation. Specifically, this analysis involves identification of existing recreational facilities and consideration of whether the proposed Project components would directly alter recreation facilities or indirectly disrupt recreation use.

Thresholds of Significance

Consistent with the thresholds of significance identified in Sacramento County’s Initial Study Checklist and Appendix G of the CEQA Guidelines, an impact on recreation would be considered significant if the proposed Project would:

- Result in substantial adverse physical impacts associated with the provision of park and recreation services; or
- Result in direct alteration of an existing recreational facility or disruption of recreational use.

Criterion Requiring No Further Evaluation

The criterion listed above that is not applicable to actions associated with the proposed Project is identified below along with a supporting rationale as to why further consideration is unnecessary and a no-impact determination is appropriate.

- *Result in substantial adverse physical impacts associated with the provision of park and recreation services* – The proposed Project would provide recycled water from the SRWTP as a source of non-potable water for beneficial use, serving as a water supply project. However, the proposed Project would not increase the capacity of wastewater treatment or disposal and would not generate demand such that population growth or increase in demand for recreation facilities would occur. The proposed Project/ does not include the construction or expansion of recreational facilities that could result in direct adverse physical effect on the environment. In addition, the action alternatives would not induce population growth that would increase use of existing parks or other recreational

facilities such that substantial physical deterioration of the facility would occur or be accelerated. As such, no impacts would occur and no further evaluation is warranted.

Impacts and Mitigation Measures

Impact REC-1 Result in Direct Alteration of an Existing Recreational Facility or Disruption of Recreational Use.

Alternative 1 (Medium Service Area Alternative) and Alternative 2 (No Reclamation Funding Alternative)

Project Elements. The proposed pump station would be located at the SRWTP and a portion of the transmission pipeline would cross the Bufferlands, where work would include open trench construction. Construction of the pump station would not affect any recreational facilities. The Bufferlands are not open to the public except through guided tours and events offered by Regional San. To ensure public safety, Regional San would not schedule tours in areas where work was occurring. As such, impacts to recreation associated with construction within the Bufferlands are anticipated to be less than significant.

Within the City of Elk Grove, none of the construction associated with the transmission pipeline would be immediately adjacent to local and neighborhood parks. While there are several parks within a quarter mile of the proposed transmission pipeline, construction of the pipeline would occur primarily in road ROWs. Therefore, the proposed transmission pipeline would not directly alter existing recreational facilities. Construction activities could result in short term impacts to park facilities access due to temporary closures of roadway lanes to accommodate the construction trench and staging areas or disrupt the enjoyment of users due to construction dust and noise (refer to *Section 3.4, Air Quality and Greenhouse Gas Emissions, Section 3.12, Noise, and Section 3.14, Traffic and Transportation* for a discussion of these impacts). This impact is considered potentially significant. However, mitigation measures identified in Sections 3.12 and 3.14 would require that access is maintained, and dust emissions and noise are limited, thus reducing disruption to recreational users. Specifically, **Mitigation Measure TR-1** would ensure access is maintained to adjacent uses, including parks. **Mitigation Measure NOI-1** would control and minimize noise during construction. With implementation of these mitigation measures and due to the temporary nature of construction, impacts to recreation would be reduced to less than significant.

Because the proposed pump station would be located entirely within the existing SRWTP site, operation of the proposed pump station would not result in any long-term impacts to recreation. No long-term operational-related impacts to recreation would occur due to the transmission pipeline since it would be buried underground. Thus, operational impacts from the pump station and transmission pipeline would be less than significant with mitigation.

Program Elements. While the majority of the program elements would be within agricultural lands, some of the distribution and lateral pipelines would be located within the Stone Lakes NWR and the Cosumnes River Preserve. The distribution pipeline to Stone Lakes NWR would be located on Lambert Road, a public ROW that is not a recreational resource, although it

provides recreational access. The precise location(s) of the laterals from the distribution mains to the wetland units have not been determined, and could occur adjacent to or cross established trails. Alteration of recreational facilities and temporary disruption of recreational use may occur with open trench construction, depending on the precise location of the proposed pipeline alignments. However, as part of the Project, disturbed areas would be restored to pre-construction conditions. Implementation of **Mitigation Measures TR-1** and **NOI-1** as described for the project-level component, and due to the temporary nature of pipeline construction (up to 6 weeks for the construction of the lateral), potential impacts to recreational facilities would be less than significant. The potential recharge area is located on private agricultural lands, some of which are included in the Cosumnes River Preserve. Operation would not impact recreational activities provided by the Preserve (e.g. wildlife viewing, hiking, boating, canoeing, hunting, fishing, sightseeing, photography, and geocaching), however, construction has the potential to do so. Similar to the impacts associated with construction of the distribution pipeline, with the implementation of **Mitigation Measures TR-1** and **NOI-1**, the impacts associated with construction of the potential recharge area would be expected to be less than significant.

The provision of recycled water to agricultural lands, Stone Lakes NWR, and the potential recharge area would increase groundwater levels, which could contribute to an increase in the baseflow of the Cosumnes River. Because the river offers recreational opportunities, any increase in baseflow could enhance to its existing recreational value. As such, this alternative would provide benefits to recreation.

Alternative 3 (Small Service Area Alternative)

Project and Program Elements. The construction and operational impacts of both project and program components for Alternative 3 (Small Service Area Alternative) would be similar to those identified for Alternative 1 (Medium Service Area Alternative), except that that the intensity of the effects would be less for construction- and operation-related effects. As with Alternative 1 (Medium Service Area Alternative), due to the temporary nature of construction, recreation impacts would be less than significant with implementation of **Mitigation Measures TR-1** and **NOI-1** described above. Operation-related effects would also be less than significant because of the location of the pump station and underground nature of the pipelines. Therefore, impacts would be less than significant with mitigation.

Alternative 4 (No Project Alternative)

Under this alternative, no facilities would be constructed. Therefore, no impacts to recreation would occur, including potential beneficial effects to recreation from increased Cosumnes River base flows.

Significance Determination before Mitigation

Potentially significant for all action alternatives. No impact for Alternative 4 (No Project Alternative)

Mitigation Measures

See **Mitigation Measures TR-1** and **NOI-1** (in *Sections 3.14* and *3.12*) for all action alternatives.

Significance Determination after Mitigation

Less than significant for all action alternatives.

Cumulative Impact Analysis

The geographic scope of potential cumulative impacts related to recreation encompasses the proposed Project component sites and immediate vicinity. Cumulative impacts related to recreation could occur if the project were to cause an increase in population, which would increase use and demand of parks and recreational facilities. As described in Impact REC-1, the proposed Project would have a beneficial impact to recreation by increasing groundwater levels, which would increase the baseflow of the Cosumnes River. Construction activities would result in short term impacts, which would be reduced to a less-than-significant level with the implementation of **Mitigation Measures TR-1**, and **NOI-1**. The nature of the proposed Project and provision of recycled water would not result in an increase in population that would in turn result in long term physical impacts or direct alteration to parks and recreational facilities. Therefore, the proposed Project would not contribute to cumulative recreation impacts.

Significance Determination before Mitigation

Potentially significant.

Mitigation Measures

See **Mitigation Measures TR-1**, and **NOI-1**.

Significance Determination after Mitigation

Less than significant.

3.3.4 References

Elk Grove, City of. 2015. *The City of Elk Grove General Plan*. Reflects Amendments through March 2015.

Kleinschmidt Associates. 2008. *Cosumnes River Preserve Management Plan*. March 2008.

National Recreation and Parks Association (NRPA). 2014. Parks and Recreation National Database Report. Available at:
http://www.nrpa.org/uploadedFiles/PageBuilder_Proragis/Content/commoc_elements/National-Database-Report.pdf. Accessed February 26, 2015.

Pros Consulting. 2009. *Parks and Recreation Master Plan, Summary Report*. September 2009.

Sacramento County. 2011. *Sacramento County General Plan of 2005-2030*. Amended November 9, 2011.

Sacramento Regional County Sanitation District (Regional San). 2015. *Wildlife & Environment 101*. Available at: <http://www.regionalsan.com/bufferlands-educational-opportunities>. Accessed February 23, 2015.

U.S. Fish and Wildlife Service (USFWS). 2014. *Stone Lakes National Wildlife Refuge, Visitor Activities*. Available at:
http://www.fws.gov/refuge/Stone_Lakes/visit/visitor_activities.html. Webpage last updated September 18, 2014. Accessed February 23, 2015.

3.4 Air Quality and Greenhouse Gas Emissions

This section evaluates the potential impacts related to air quality and greenhouse gases from implementation of the proposed Project. The Environmental Setting, Regulatory Setting, and Impact Analysis discussions are each divided into subsections to address air quality and greenhouse gas emissions.

3.4.1 Air Quality Environmental Setting

This section considers the environmental setting for air quality and greenhouse gases within the study area, which includes the project site and the Sacramento Valley Air Basin (SVAB).

Study Area

The study area is within Sacramento County, spanning portions of Elk Grove and unincorporated Sacramento County. The study area consists of the locations where physical actions associated with the proposed Project would take place (e.g., pump station site and transmission pipeline alignment). The site falls under a portion of the SVAB that is under the jurisdiction of the Sacramento Metropolitan Air Quality Management District (SMAQMD). The SMAQMD is a 994-square-mile area primarily at sea-level elevation, with lands varying from delta topography associated with the Sacramento River to the foothills of the Sierra Nevada Mountains to the east. The SVAB is characterized by a Mediterranean climate with hot, dry summers and cool, rainy winters. Summer temperatures range from 50°F to over 100°F. Walled off by mountains, the ocean breezes are held at bay and their moderating influence is reduced. A majority of precipitation occurs during the winter months, resulting from air masses from over the Pacific Ocean.

From May to October, meteorological conditions lead to poor air movement early in the day, cleared off later in the afternoon with a Delta sea breeze. This coupled with high insolation lead to high photochemical reactions and ozone concentrations. However, a phenomenon known as the Schulz Eddy can cause wind directions to change, blowing air pollutants back into the valley. Between July and September, this is the prevailing wind for half the time.

Air Pollutants

Air pollutants regulated by the federal and California Clean Air Acts, which establish air quality standards to protect public health, include criteria air pollutants and toxic air contaminants (TAC). Criteria air pollutants are measured by sampling concentrations in the ambient air. TACs are measured at the source and in the general atmosphere. These air pollutants are described below.

Carbon Monoxide (CO) is an odorless, colorless gas that is highly toxic. CO is formed by the incomplete combustion of fuels and is emitted directly into the air. Ambient CO concentrations normally are considered a local effect and typically correspond closely to the spatial and temporal distributions of vehicular traffic. CO concentrations are also influenced by wind speed

and atmospheric mixing. Under inversion conditions, carbon monoxide concentrations may be distributed more uniformly over an area at some distance from vehicular sources. CO binds with hemoglobin, the oxygen-carrying protein in blood, and reduces the blood's capacity for carrying oxygen to the heart, brain, and other parts of the body. At high concentrations, CO can cause heart difficulties in people with chronic diseases, can impair mental abilities, and can cause death.

Ozone (O_3) is a reactive gas consisting of three oxygen atoms. In the troposphere (the lowest region of the atmosphere), it is a product of the photochemical process involving the sun's energy. It is a secondary pollutant that is formed when NO_x and volatile organic compounds (VOC) react in the presence of sunlight. O_3 at the earth's surface causes numerous adverse health effects and is a criteria pollutant. It is a major component of smog. In the stratosphere, O_3 exists naturally and shields the Earth from harmful incoming ultraviolet radiation. High concentrations of ground level O_3 can adversely affect the human respiratory system and aggravate cardiovascular disease and many respiratory ailments. O_3 also damages natural ecosystems such as forests and foothill communities, agricultural crops, and some man-made materials such as rubber, paint, and plastics.

Oxides of Nitrogen (NO_x) are a family of gaseous nitrogen compounds and are precursors to the formation of O_3 and particulate matter (PM). The major component of NO_x , nitrogen dioxide (NO_2) is a reddish-brown gas that is toxic at high concentrations. NO_x results primarily from the combustion of fossil fuels under high temperature and pressure. On-road and off-road motor vehicles and fuel combustion are the major sources of this air pollutant.

Volatile Organic Compounds (VOCs) are hydrocarbon compounds that exist in the ambient air. VOCs contribute to the formation of smog and/or may themselves be toxic. VOC emissions are a major precursor to the formation of O_3 .

Particulate Matter (PM) is a complex mixture of extremely small particles and liquid droplets. PM is made up of a number of components including acids, organic chemicals, metals, and soil or dust particles. The size of particles is directly linked to the potential for causing health problems. PM particles that are smaller than 10 micrometers in diameter are of most concern because these particles pass through the throat and nose and enter the lungs. Once inhaled, these particles can affect the heart and lungs and cause serious health effects. These inhalable coarse particles, called PM_{10} , are typically found near roadways and dusty industries. PM_{10} particles are deposited in the thoracic region of the lungs. Fine particles, called $PM_{2.5}$, are particles less than 2.5 micrometers in diameter and are found in smoke and haze. $PM_{2.5}$ particles penetrate deeply into the thoracic and alveolar regions of the lungs.

Sulfur Dioxide (SO_2) is a colorless, irritating gas with a "rotten egg" smell formed primarily by the combustion of sulfur-containing fossil fuels. Suspended SO_2 particles contribute to the poor visibility that occurs in the SVAB and are a component of PM_{10} .

Lead is a metal that is a natural constituent of air, water, and the biosphere. Lead is neither created nor destroyed in the environment, so it essentially persists forever. The health effects of lead poisoning include loss of appetite, weakness, apathy, and miscarriage. Lead poisoning can also cause lesions of the neuromuscular system, circulatory system, brain and gastrointestinal tract.

Gasoline-powered automobile engines were a major source of airborne lead through the use of leaded fuels. The use of leaded fuel has been mostly phased out, with the result that ambient concentrations of lead have dropped dramatically.

Hydrogen Sulfide (H_2S) is associated with geothermal activity, oil and gas production, refining, sewage treatment plants, and confined animal feeding operations. H_2S is extremely hazardous in high concentrations and can cause death.

Sulfates are the fully oxidized ionic form of sulfur. Sulfates occur in combination with metal and/or hydrogen ions. In California, emissions of sulfur compounds occur primarily from the combustion of petroleum-derived fuels (e.g., gasoline and diesel fuel) that contain sulfur. This sulfur is oxidized to SO_2 during the combustion process and subsequently converted to sulfate compounds in the atmosphere. The conversion of SO_2 to sulfates takes place comparatively rapidly and completely in urban areas of California due to regional meteorological features.

The California Air Resources Board's (CARB) sulfate standard is designed to prevent aggravation of respiratory symptoms. Effects of sulfate exposure at levels above the standard include a decrease in ventilatory function (moving gas in and out of the lungs), aggravation of asthmatic symptoms, and an increased risk of cardio-pulmonary disease. Sulfates are particularly effective in degrading visibility, and, due to the fact that they are usually acidic, can harm ecosystems and damage materials and property. Sulfate emissions are not currently identified as a health concern for Sacramento County.

Vinyl Chloride Vinyl chloride is a colorless gas that does not occur naturally. It is formed when other substances such as trichloroethane, trichloroethylene, and tetrachloroethylene are broken down. Vinyl chloride is used to make polyvinyl chloride which is used to make a variety of plastic products, including pipes, wire and cable coatings, and packaging materials.

Toxic Air Contaminants (TACs) are a broad set of air pollutants that may lead to serious illness or increased mortality, even when present in relatively low concentrations. TACs are often referred to as "non-criteria" air contaminants because ambient air quality standards have not been established for them. Hundreds of different types of TACs exist, with varying degrees of toxicity. Many TACs are confirmed or suspected carcinogens, or are known or suspected to cause birth defects or neurological damage. For some chemicals, such as carcinogens, no thresholds exist below which exposure can be considered risk-free. Examples of TAC sources in the proposed Project include fossil fuel combustion.

Sources of TACs include stationary sources, area-wide sources, and mobile sources. The EPA maintains a list of 187 TACs, also known as hazardous air pollutants. These hazardous air pollutants are included on CARB's list of TACs (CARB 2011). According to the TAC Emissions chapter of the SMAQMD CEQA Guide Update (SMAQMD 2014), many researchers consider diesel PM (DPM) to be a primary contributor to health risk from TACs because particles in the exhaust carry many harmful organics and metals, rather than being a single substance as are other TACs. Unlike many TACs, outdoor DPM is not monitored by CARB because no routine measurement method exists. However, using the CARB emission inventory's PM₁₀ database, ambient PM₁₀ monitoring data, and results from several studies, CARB has made preliminary estimates of DPM concentrations throughout the state (OEHHA 2001).

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

For odor detection, the human nose is the detector and the public's nose serves as a dispersed series of monitoring stations. The sensitivity of the human nose to detect odors varies greatly in the population and is quite subjective. Some noses have the smell sensitivity to detect very small concentrations of specific substances; others may not but may more readily pick up on odors of other substances. In addition, reactions to the same odor can differ drastically, where the same odor can be perceived as unpleasant, acceptable, or pleasant depending on the individual (ex. Limburger). It is important to keep in mind that unfamiliar odors are more easily detected and more likely to cause complaints. This is a result of odor fatigue, the desensitization to an odor through continuous exposure where re-recognition only occurs with a change in the intensity.

Attainment Status

The CARB and the EPA have established Ambient Air Quality Standards in an effort to protect human health and welfare. Geographic areas are deemed to be in "attainment" if these standards are met or "nonattainment" if they are not met. Nonattainment status is classified by the severity of the nonattainment problem, with marginal, moderate, serious, severe, and extreme nonattainment classifications for ozone. Nonattainment classifications for PM range from marginal to serious. **Table 3.4-1** shows the attainment status for the SMAQMD.

Table 3.4-1: Sacramento County Attainment

Pollutant	Federal Standard	Federal Attainment	State Standard	State Attainment
Ozone	1-hour	Severe	1-hour	Serious Nonattainment
	8-hour (1997)	Severe	8-hour	Nonattainment
	8-hour (2008)	Severe	8-hour	Nonattainment
PM ₁₀	24-hr	Attainment	24-hour	Nonattainment
			Annual	Nonattainment
PM _{2.5}	24-hour	Moderate	No State 24-hr standard	NA
	Annual	Unclassified/Attainment	Annual	Attainment
Carbon Monoxide	1-hour	Attainment	1-hour	Attainment
	8-hour	Attainment	8-hour	Attainment
Nitrogen Dioxide	1-hour	Unclassified/Attainment	1-hour	Attainment
	Annual	Unclassified/Attainment	Annual	Attainment
Sulfur Dioxide	1-hour	Attainment Pending	1-hour	Attainment
			24-hour	Attainment
Sulfates	No Federal Standard	NA	24-hour	Attainment
Lead	3-month rolling average	Unclassified/Attainment	30 day average	Attainment
Visibility Reducing Particles	No Federal Standard	NA	8-hour	Unclassified
Hydrogen Sulfide	No Federal Standard	NA	1-hour	Unclassified

Air Monitoring Station Data

Criteria air pollutant concentrations are measured at 11 monitoring stations in the Sacramento County. The county average air quality was used to determine the existing air quality, sourced from ARB's Top 4 Summary data analysis tool (**Table 3.4-2**). PM₁₀ data was not available at the county level for this tool, therefore data at the SVAB-level was used for this pollutant.

Both the CARB and the EPA use this monitoring data to designate areas according to their attainment status for criteria air pollutants (attainment designations are summarized above in **Table 3.4-1**). The monitoring location closest to the project is Elk Grove-Bruceville Rd. The data for this monitoring location does not span all the pollutants of interest, therefore the County and Air Basin are used to better capture regional air quality issues. This is especially relevant given that the primary operational emissions would be indirect emissions from electricity consumption, contributing to county and regional-scale air quality issues.

Table 3.4-2: Summary of Sacramento County Ambient Air Quality Data (2010 – 2014)

Pollutant	Average Time	Standard	2010	2011	2012	2013	2014
Ozone	1-Hour	Maximum Concentration (ppm)	0.124	0.123	0.125	0.117	0.105
		Days > CAAQS (0.09 ppm)	12	24	20	6	10
		Days > NAAQS (0.12 ppm)	0	0	1	0	0
	8-Hour	Maximum Concentration (ppm)	0.112	0.098	0.106	0.087	0.084
		Days > CAAQS (0.070 ppm)	27	53	60	19	18
		Days > NAAQS (0.075 ppm)	20	41	40	7	20
PM ₁₀	24-Hour	Maximum Concentration (µg/m ³)	87.4	73.5	94.6	96.4	125.3
		Days > CAAQS (50 µg/m ³)	2	4	3	21	13
	Annual	Annual Arithmetic Mean (µg/m ³)	21.0	25.1	24.3	24.8	22.2
PM _{2.5}	24-Hour	Maximum Concentration (µg/m ³)	33.9	54.3	35.3	53.8	32.0
		Days > NAAQS (35 µg/m ³)	0	7	0	13	0
	Annual	Annual Arithmetic Mean (µg/m ³)	11.0	10.5	9.1	11.5	8.8
Carbon Monoxide	1-Hour	Maximum Concentration (ppm)	4.4	3.9	3.5	4.4	3.2
	8-Hour	Maximum Concentration (ppm)	3.4	2.5	2.3	3.8	2.6
Nitrogen Dioxide	1-Hour	Maximum Concentration (ppm)	95	61	69	59.3	64.7
	Annual	Annual Arithmetic Mean (ppm)	13	13	12	12	11

CAAQS=California Ambient Air Quality Standards; NAAQS=National Ambient Air Quality Standards; ppm= parts per million; µg/m³= micrograms per cubic meter

Source: Air Resources Board Top 4 Summary for Sacramento County, PM₁₀ data for SVAB.

Emissions Inventory

According to Sacramento County's estimated emissions inventory, mobile sources are the largest contributor to the estimated annual average for emissions of reactive organic gases (ROG) and NO_x, accounting for approximately 48 percent and 86 percent respectively, of the total anthropogenic emissions. Areawide sources account for approximately 90 percent and 76 percent of the County's PM₁₀ and PM_{2.5} emissions, respectively (CARB 2009).

3.4.2 Air Quality Regulatory Framework

This section describes laws and regulations at the federal, state, and local level applicable to the project.

Federal Policies and Regulations

The EPA is responsible for establishing the National Ambient Air Quality Standards (NAAQS), enforcing the Federal Clean Air Act (CAA), and regulating transportation-related emission sources, such as aircraft, ships, and certain types of locomotives, under the exclusive authority of the federal government. The EPA also establishes vehicular emission standards, including those for vehicles sold in states other than California. Automobiles sold in California must meet stricter emission standards established by CARB.

Clean Air Act

The CAA governs air quality in the United States and is administered by the EPA. The EPA is responsible for setting and enforcing the NAAQS for atmospheric pollutants, which are presented in **Table 3.4-3**. It regulates emission sources that are under the exclusive authority of the federal government, such as aircraft, ships, and certain locomotives. The EPA also has jurisdiction over emission sources outside state waters (outer continental shelf), and establishes various emissions standards for vehicles sold in states other than California. As part of its enforcement responsibilities, the EPA requires each state with nonattainment areas to prepare and submit a State Implementation Plan (SIP) that demonstrates the means to attain the federal standards. The SIP must integrate federal, state, and local plan components and regulations to identify specific measures to reduce pollution, using a combination of performance standards and market-based programs within the timeframe identified in the SIP.

Table 3.4-3: State and Federal Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards ¹		National Standards ²		
		Concentration ³	Method ⁴	Primary ^{3,5}	Secondary ^{3,6}	Method ⁷
O ₃	1 Hour	0.09 ppm (180 µg/m ³)	Ultraviolet Photometry	—	Same as Primary Standard	Ultraviolet Photometry
O ₃	8 Hour	0.070 ppm (137 µg/m ³)	Ultraviolet Photometry	0.075 ppm (147 µg/m ³)	Same as Primary Standard	Ultraviolet Photometry
PM ₁₀	24 Hour	50 µg/m ³	Gravimetric or Beta Attenuation	150 µg/m ³	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
PM ₁₀	Annual Arithmetic Mean	20 µg/m ³	Gravimetric or Beta Attenuation	—	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
PM _{2.5} ¹³	24 Hour	—	—	35 µg/m ³	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
PM _{2.5} ¹³	Annual Arithmetic Mean	12 µg/m ³	Gravimetric or Beta Attenuation	12 µg/m ³	15 µg/m ³	Inertial Separation and Gravimetric Analysis
CO	1 Hour	20 ppm (23 mg/m ³)	Non-Dispersive Infrared Photometry (NDIR)	35 ppm (40 mg/m ³)	—	Non-Dispersive Infrared Photometry (NDIR)
CO	8 Hour	9.0 ppm (10 mg/m ³)	NDIR	9 ppm (10 mg/m ³)	—	NDIR
CO	8 Hour (Lake Tahoe)	6 ppm (7 mg/m ³)	NDIR	—	—	NDIR
NO ₂ ⁸	1 Hour	0.18 ppm (339 µg/m ³)	Gas Phase Chemiluminescence	100 ppb (188 µg/m ³)	—	Gas Phase Chemiluminescence

Pollutant	Averaging Time	California Standards ¹		National Standards ²		
		Concentration ³	Method ⁴	Primary ^{3,5}	Secondary ^{3,6}	Method ⁷
NO ₂ ⁸	Annual Arithmetic Mean	0.030 ppm (57 µg/m ³)	Gas Phase Chemiluminescence	0.053 ppm (100 µg/m ³)	Same as Primary Standard	Gas Phase Chemiluminescence
SO ₂	1-hour	0.25 ppm (655 µg/m ³)	Ultraviolet Fluorescence	75 ppb (196 µg/m ³)	—	Ultraviolet Fluorescence; Spectrophotometry (Pararosaniline Method)
SO ₂	3-hour	—	Ultraviolet Fluorescence	—	0.5 ppm (1300 µg/m ³)	Ultraviolet Fluorescence; Spectrophotometry (Pararosaniline Method)
SO ₂	24-hour	0.04 ppm (105 µg/m ³)	Ultraviolet Fluorescence	0.14 ppm (for certain areas) ⁹	—	Ultraviolet Fluorescence; Spectrophotometry (Pararosaniline Method)
SO ₂	Annual Arithmetic Mean	—	Ultraviolet Fluorescence	0.030 ppm (for certain areas) ⁹	—	Ultraviolet Fluorescence; Spectrophotometry (Pararosaniline Method)
Lead ^{10, 11}	30-day average	1.5 µg/m ³	Atomic Absorption	—	—	High Volume Sampler and Atomic Absorption
Lead ^{10, 11}	Calendar quarter	—	Atomic Absorption	1.5 µg/m ³ (for certain areas) ¹¹	Same as Primary Standard	High Volume Sampler and Atomic Absorption
Lead ^{10, 11}	Rolling 3-month average	—	Atomic Absorption	0.15 µg/m ³	Same as Primary Standard	High Volume Sampler and Atomic Absorption
Visibility Reducing Particles ¹²	8-hour	See footnote 12	Beta Attenuation and Transmittance through Filter Tape	No National Standards	No National Standards	No National Standards
Sulfates	24-hour	25 µg/m ³	Ion Chromatography	No National Standards	No National Standards	No National Standards
Hydrogen Sulfide	1-hour	0.03 ppm (42 µg/m ³)	Ultraviolet Fluorescence	No National Standards	No National Standards	No National Standards
Vinyl Chloride ¹⁰	24-hour	0.01 ppm (26 µg/m ³)	Gas Chromatography	No National Standards	No National Standards	No National Standards

Source: CARB 2013

Notes: ppm = parts per million; ppb = parts per billion; µg/m³ = micrograms per cubic meter

1. California standards for O₃, CO (except 8-hour Lake Tahoe), SO₂ (1 and 24 hour), NO₂, and particulate matter (PM₁₀, PM_{2.5}, and visibility reducing particles), are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200, Title 17 of the California Code of Regulations.

2. National standards (other than O₃, particulate matter, and those based on annual arithmetic mean) are not to be exceeded more than once a year. The O₃ standard is attained when the fourth highest 8-hour concentration measured at each site in 1 year, averaged over 3 years, is equal to or less than the standard. For PM₁₀, the 24 hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m³

is equal to or less than 1. For $PM_{2.5}$, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over 3 years, are equal to or less than the standard. Contact EPA for further clarification and current national policies.

3. Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based on a reference temperature of 25 degrees Celsius ($^{\circ}C$) ($77^{\circ}F$) and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of $25^{\circ}C$ and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

4. Any equivalent measurement method which can be shown to the satisfaction of CARB to give equivalent results at or near the level of the air quality standard may be used.

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

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

7. Reference method as described by EPA. An "equivalent method" of measurement may be used but must have a "consistent relationship to the reference method" and must be approved by EPA.

8. To attain the 1-hour national standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 ppb. Note that the national 1-hour standard is in ppb. California standards are in ppm. To directly compare the national 1-hour standard to the California standards the units can be converted from ppb to ppm. In this case, the national standard of 100 ppb is identical to 0.100 ppm.

9. On June 2, 2010, a new 1-hour SO_2 standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 SO_2 national standards (24-hour and annual) remain in effect until one year after an area is designated for the 2010 standard, except that in areas designated nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved.

Note that the 1-hour national standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the 1-hour national standard to the California standard the units can be converted to ppm. In this case, the national standard of 75 ppb is identical to 0.075 ppm.

10. CARB has identified lead and vinyl chloride as 'toxic air contaminants' with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

11. The national standard for lead was revised on October 15, 2008 to a rolling 3-month average. The 1978 lead standard ($1.5 \mu g/m^3$ as a quarterly average) remains in effect until one year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved.

12. In 1989, CARB converted both the general statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are "extinction of 0.23 per kilometer" and "extinction of 0.07 per kilometer" for the statewide and Lake Tahoe Air Basin standards, respectively.

13. In On December 14, 2012, the national annual $PM_{2.5}$ primary standard was lowered from $15.0 \mu g/m^3$ to $12.0 \mu g/m^3$. The existing national 24-hour $PM_{2.5}$ standards (primary and secondary) were retained at $35 \mu g/m^3$, as was the annual secondary standard of $15 \mu g/m^3$. The existing 24-hour PM_{10} standards (primary and secondary) of $150 \mu g/m^3$ also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 3 years.

Clean Air Act and Conformity Rule

Pursuant to CAA Section 176(c) requirements, EPA promulgated Title 40 Code of Federal Regulations Part 51 (40 CFR Part 51), Subpart W and 40 CFR Part 93, Subpart B, "Determining Conformity of General Federal Actions to State or Federal Implementation Plans" (see 58 Federal Register 63214, [November 30, 1993], as amended; 75 Federal Register. 17253 [April 5, 2010]). These regulations, commonly referred to as the General Conformity Rule, apply to all federal actions, except for those federal actions which are excluded from review (e.g., stationary

source emissions) or related to transportation plans, programs, and projects under Title 23 U.S. Code or the Federal Transit Act, which are subject to Transportation Conformity.

In states such as California that have an approved SIP revision adopting General Conformity regulations, 40 CFR Part 51, Subpart W, applies; in states that do not have an approved SIP revision adopting General Conformity regulations, 40 CFR Part 93, Subpart B, applies.

The General Conformity Rule is used to determine if federal actions meet the requirements of the CAA and the applicable SIP by ensuring that air emissions related to the action do not:

- Cause or contribute to new violations of NAAQS.
- Increase the frequency or severity of any existing violation of NAAQS.
- Delay timely attainment of NAAQS or interim emission reduction.

A conformity determination under the General Conformity Rule is required if the federal agency determines the following: the action will occur in a nonattainment or maintenance area; that one or more specific exemptions do not apply to the action; the action is not included in the federal agency's "presumed to conform" list; the emissions from the proposed action are not within the approved emissions budget for an applicable facility; and the total direct and indirect emissions of a pollutant (or its precursors) are at or above the *de minimis* levels established in the General Conformity regulations (75 Federal Register 17255). The *de minimis* levels are shown in **Table 3.4-4**.

Conformity regulatory criteria are listed in 40 CFR Part 93.158. An action will be determined to conform to the applicable SIP if, for each pollutant that exceeds the *de minimis* emissions level in 40 CFR Part 93.153(b), or otherwise requires a conformity determination due to the total of direct and indirect emissions from the action, the action meets the requirements of 40 CFR Part 93.158(c). If on-site emissions reductions do not decrease emissions below the *de minimis* emissions level, then emissions must be off-set to zero for O₃ precursors through a combination of on-site and off-site mitigation.

In addition, federal activities may not cause or contribute to new violations of air quality standards, exacerbate existing violations, or interfere with timely attainment or required interim emissions reductions toward attainment. The proposed Project is subject to review under the EPA General Conformity Rule to assess whether a general conformity determination is required. Since the area is classified as severe nonattainment for O₃, the applicable *de minimis* level is 25 tons per year of NO_x or VOC. For CO, SO₂, NO₂, PM₁₀, and PM_{2.5} the applicable level is 100 tons per year. The level for lead is 25 tons per year.

Table 3.4-4: General Conformity De Minimis Levels

Pollutant	Area Type	Conformity Threshold (Tons/Year)
O ₃ (VOC or NO _x)	Serious nonattainment	50
	Severe nonattainment	25
	Extreme nonattainment	10
	Other areas outside an ozone transport region	100
O ₃ (NO _x)	Marginal and moderate nonattainment inside an O ₃ transport region	100
	Maintenance inside an O ₃ transport region	100
O ₃ (VOC)	Marginal and moderate nonattainment inside an O ₃ transport region	50
	Maintenance within an O ₃ transport region	50
	Maintenance outside an O ₃ transport region	100
CO, SO ₂ and NO ₂	All nonattainment & maintenance	100
PM ₁₀	Serious nonattainment	70
	Moderate nonattainment and maintenance	100
PM _{2.5} Direct emissions, SO ₂ , NO _x (unless determined not to be a significant precursor), VOC or ammonia (if determined to be significant precursors)	All nonattainment & maintenance	100
Lead	All nonattainment & maintenance	25

Source: EPA 2015b.

Note: Bold text indicates the current applicable conformity threshold for the study area.

Corporate Average Fuel Economy Standards

The Corporate Average Fuel Economy (CAFE) standards were first enacted by Congress in 1975, requiring vehicle manufacturers to comply with the gas mileage or fuel economy standards. These standards are set and regulated by the National Highway Traffic Safety Administration (NHTSA), with testing and data support from the EPA.

The issued rules include fuel economy standards for both light- and heavy-duty vehicles. On September 15, 2011, EPA and NHTSA issued a final rule on GHG emissions standards and fuel efficiency standards for medium- and heavy-duty engines and vehicles model years 2014 to 2018 (76 Federal Register 57106). On August 28, 2012, EPA and NHTSA issued a joint final rulemaking to establish 2017 through 2025 GHG emissions and CAFE standards for light-duty vehicles (77 Federal Register 62624). More fuel efficient vehicles result in lower air pollutant emissions.

Non-road Emission Regulations

EPA has adopted emissions standards for different types of nonroad engines, equipment, and vehicles. For nonroad diesel engines, EPA has adopted multiple tiers of emission standards.

EPA signed a final rule on May 11, 2004 introducing the Tier 4 emission standards, to be phased in between 2008 and 2015 (69 CFR 38957–39273, June 29, 2004). The Tier 4 standards require that emissions of PM and NO_x be further reduced by about 90 percent. Such emission reductions can be achieved through the use of control technologies, including advanced exhaust gas after-treatment. To enable sulfur-sensitive control technologies in Tier 4 engines, such as catalytic particulate filters and NO_x absorbers, EPA also mandated reductions in sulfur content in nonroad diesel fuels. In most cases, federal nonroad regulations also apply in California, which has only limited authority to set emission standards for new nonroad engines. The CAA preempts California's authority to control emissions from new farm and construction equipment under 175 horsepower (CAA Section 209[e][1][A]) and requires California to receive authorization from EPA for controls over other off-road sources (CAA Section 209[e][2][A]).

State Regulations and Policies

California Environmental Protection Agency

The California Environmental Protection Agency (CalEPA) is a state agency that includes CARB, the SWRCB, nine Regional Water Quality Control Boards, the Integrated Waste Management Board, the Department of Toxic Substances Control, the Office of Environmental Health Hazard Assessment, and the Department of Pesticide Regulation. The mission of CalEPA is to restore, protect, and enhance the environment and to ensure public health, environmental quality, and economic vitality.

California Clean Air Act

The California Clean Air Act (CCAA) requires nonattainment areas to achieve and maintain the health-based State Ambient Air Quality Standards by the earliest practicable date. The Act is administered by CARB at the state level and by local air quality management districts at the regional level, whereby the air districts are required to develop plans and control programs for attaining the state standards. **Table 3.4-3** above shows the California Ambient Air Quality Standards (CAAQS).

CARB is responsible for ensuring implementation of the CCAA, meeting state requirements of the federal CAA, and establishing the CAAQS. It is also responsible for setting emission standards for vehicles sold in California and for other emission sources, such as consumer products and certain off-road equipment. CARB also establishes passenger vehicle fuel specifications.

In-Use Off-Road Diesel Vehicle Regulation

In 2007, CARB adopted a regulation to reduce DPM and NO_x emissions from in-use off-road heavy-duty diesel vehicles in California. The regulation imposes limits on vehicle idling and requires fleets to reduce emissions by retiring, replacing, repowering, or installing exhaust

retrofits to older engines. In December 2010, major amendments were made to the regulation, including a delay of the first performance standards compliance date to no earlier than January 1, 2014.

Truck and Bus Regulation

On December 12, 2008, CARB approved a new regulation to substantially reduce emissions of DPM, NO_x, and other pollutants from existing on-road diesel vehicles operating in California. The regulation requires affected trucks and buses to meet performance standards and requirements between 2011 and 2023. Affected vehicles included on-road, heavy-duty, diesel-fueled vehicles with a gross vehicle weight rating greater than 14,000 pounds. The regulation was updated in 2011, with revisions that provide more compliance flexibility and reflect the impact of the economic recession on vehicle activity and emissions. Heavy-duty trucks used in proposed project activities would have to comply with this regulation.

Commercial Vehicle Idling Regulation

On October 20, 2005, CARB approved the Airborne Toxic Control Measure (ATCM) to limit diesel-fuel commercial motor vehicle idling. This regulation was a follow-up to previous idling ATCMs, and it consists of new engine and in-use truck requirements, as well as idling emission performance standards. The regulation requires 2008 and newer model year heavy-duty diesel engines to be equipped with a nonprogrammable engine shutdown system that automatically shuts down the engine after 5 minutes of idling or optionally meets a stringent NO_x idling emission standard (i.e., 30 grams/hour). The regulation also is applicable to the operation of in-use trucks, requiring operators of both in-state and out-of-state registered, sleeper berth-equipped trucks to manually shut down their engine when idling more than 5 minutes at any location within California, beginning in 2008. Affected vehicles include diesel-fueled commercial vehicles with a gross vehicle weight rating greater than 10,000 pounds. Trucks used for vendor delivery of materials for proposed project activities would comply with the commercial vehicle idling regulatory requirements.

Heavy-Duty On-Board Diagnostic System Regulations

In 2004, CARB adopted a regulation requiring on-board diagnostic systems (OBD) on all 2007 and later model year heavy-duty engines used in vehicles with a gross vehicle weight rating greater than 14,000 pounds in California. CARB subsequently adopted a comprehensive on-board diagnostic regulation for heavy-duty vehicles model years 2010 and beyond. The heavy-duty OBD regulation was updated in 2010 and 2013, with revisions to enforcement requirements, testing requirements, and implementation schedules. Heavy-duty trucks used for proposed project activities would comply with the heavy-duty on-board diagnostic regulatory requirements.

Heavy-Duty Vehicle Inspection Program

This program requires heavy-duty trucks and buses to be inspected for excessive smoke and tampering, and engine certification label compliance. Any heavy-duty vehicle (i.e., vehicles with a gross vehicle weight rating greater than 6,000 pounds) traveling in California, including

vehicles registered in other states and foreign countries, may be tested. Tests are performed by CARB inspection teams at border crossings, California Highway Patrol weigh stations, fleet facilities, and randomly selected roadside locations. Owners of trucks and buses found in violation are subject to minimum penalties, starting at \$300 per violation. Heavy-duty trucks used for proposed project activities would be subject to the inspection program.

California Standards for Diesel Fuel Regulations

These regulations require diesel fuel with sulfur content of 15 parts per million (ppm) or lower (by weight) to be used for all diesel-fueled vehicles that are operated in California. The standard also applies to non-vehicular diesel fuel, other than diesel fuel used solely in locomotives or marine vessels. The regulations also contain standards for the aromatic hydrocarbon content and lubricity of diesel fuels.

State Portable Engine Airborne Toxic Control Measure

The California Portable Engine ATCM is designed to reduce the PM emissions from portable diesel-fueled engines rated at 50 brake horsepower or larger. Because backpack sprayer engines are assumed to be electric or gas-powered and vehicle-mounted pump engines, such as dewatering pumps, are assumed to be smaller than 50 brake horsepower, they are exempt from the State Portable Engine ATCM. No other portable engines are expected to be used under the proposed project.

Portable Equipment Registration Program

The statewide Portable Equipment Registration Program establishes a system to uniformly regulate portable engines and portable engine-driven equipment units. After being registered in this program, engines and equipment units may operate throughout the state without the need to obtain individual permits from air districts. Owners or operators of portable engines and certain types of equipment can voluntarily register their units under this program, to operate their equipment anywhere in the state. Operation of registered portable engines still may be subject to certain district requirements for reporting and notification. Engines with less than 50 brake horsepower are exempt from this program; therefore, some of the engines used for the proposed project would be exempt.

Senate Bill 709

Senate Bill 709 amends the Health and Safety Code to give the SMAQMD more responsibility in terms of permitting, fee implementation, and agricultural assistance, as well as the authority to require the use of Best Available Control Technology (BACT) for existing emission sources, promote cleaner-burning alternative fuels, and encourage and facilitate ridesharing. Senate Bill 709 also amends the Vehicle Code to allow the SMAQMD to adopt a surcharge on motor vehicle registration fees.

Regional Regulations and Policies

Sacramento Metropolitan Air Quality Management District

The SMAQMD is responsible for (1) implementing air quality regulations, including developing plans and control measures for stationary sources of air pollution to meet the NAAQS and CAAQS, (2) implementing permit programs for the construction, modification, and operation of sources of air pollution, and (3) enforcing air pollution statutes and regulations governing stationary sources. With CARB oversight, the SMAQMD administers local regulations.

SMAQMD also has a set of rules and regulations applicable to construction, of which the following are relevant to this project:

- **Rule 402:** Nuisance. A person shall not discharge from any source whatsoever such quantities of air contaminants or other materials which cause injury, detriment, nuisance or annoyance to any considerable number of persons or the public, or which endanger the comfort, repose, health or safety of any such persons or the public, or which cause or have natural tendency to cause injury or damage to business or property.
- **Rule 403:** Fugitive Dust. The responsible person or entity is required to implement every reasonable method to control dust emissions from any construction, handling or storage activity, or any wrecking, excavation, grading, clearing of land or solid waste disposal operation to prevent fugitive dust generated through those activities from escaping the project site. Actions include but are not limited to application of water or chemicals, asphalt, and/or oil depending on the dust-generating activity.
- **Rule 442:** Architectural Coatings. The responsible person or entity may not use a coating with a VOC content in excess of the corresponding limits specified in this rule.

Sacramento County General Plan

The Sacramento County General Plan (Sacramento County 2011a) has the following applicable air quality policies:

- **Policy AQ-3:** Buffers and/or other appropriate mitigation shall be established on a project-by-project basis and incorporated during review to provide for protection of sensitive receptors from sources of odor or air pollution. The California Air Resources Board's "Air Quality and Land Use Handbook: A Community Health Perspective," and AQMD's approved Protocol (Protocol for Evaluating the Location of Sensitive Land uses Adjacent to Major Roadways) shall be applied when establishing these buffers.
- **Policy AQ-12:** Minimize air pollutant emissions from Sacramento County facilities and operations.
- **Policy AQ-13:** Use California State Air Resources Board and SMAQMD guidelines for Sacramento County facilities and operations to comply with mandated measures to reduce emissions from fuel consumption, energy consumption, surface coating operations, and solvent usage.
- **Policy AQ-16:** Prohibit the idling of on-and off-road engines when the vehicle is not moving or when the off-road equipment is not performing work for a period of time greater than five minutes in any one-hour period.

City of Elk Grove General Plan

The City of Elk Grove General Plan (City of Elk Grove 2015) has the following applicable air quality policy:

- Policy CAQ-33: The City shall require that public and private development projects use low emission vehicles and equipment as part of project construction and operation, unless determined to be infeasible.

3.4.3 Air Quality Impact Analysis

Air Quality Methodology

This section examines construction and operational emissions to determine significance and impacts on air quality and odors. As recommended by SMAQMD, construction and operation emissions were simulated using CalEEMOD 2013.2.2 and the Road Construction Emission Model, Version 7.1.5.1; eGRID emission factors were also applied to determine indirect emissions generated through electricity usage.

The construction phase of the project includes site preparation, excavation, grading, pump station construction, pipe construction, and paving. Consisting of construction of 72,800 linear feet of transmission pipeline and a pump station, project emissions would be widely dispersed geographically. Construction of the transmission pipeline was modeled to assume all sections would be constructed using the open trench method. Open trench construction results in a greater disturbed area and requires more construction equipment than trenchless piping. Therefore, the analysis takes a conservative approach in evaluating emissions. Construction of the project-level components is estimated to take approximately two years from 2020 to 2022.

The analysis follows the SMAQMD's guidance for evaluating construction-generated criteria air pollutant and precursor emissions. Construction-generated NO_x and PM emissions are evaluated for significance under CEQA on a daily mass emission basis. PM is also evaluated on an annual basis. Construction-related ROG was modeled and quantified, however the SMAQMD addresses construction-related emissions of ROG through the implementation of District Rule 442, which regulates ROG emissions from architectural coatings (SMAQMD 2015). SMAQMD's threshold for precursor emissions is for NO_x and recommends a discussion of whether the maximum daily construction-generated emissions would exceed the District's threshold for NO_x.

Construction would also involve significant dewatering efforts. However, these efforts cannot currently be quantified due to limited knowledge of the groundwater levels and hydrology during the anticipated construction period. Based on the anticipated construction period, it would coincide with dewatering efforts associated with Regional San's EchoWater Project work. The dewatering is anticipated to be powered by Sacramento Municipal Utility District (SMUD) and would add electrical load to the construction phase of the project, leading to an increase in indirect emissions.

Thresholds of Significance

Consistent with the Sacramento County Initial Study and SMAQMD recommendations, air quality would be considered significant if the Project would:

- Conflict with or obstruct implementation of the applicable air quality plan;
- Violate any air quality standard or contribute to an existing or projected air quality violation;
- Expose sensitive receptors to pollutant concentrations in excess of standards
- Create objectionable odors affecting a substantial number of people;
- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable federal or state ambient air quality standard

SMAQMD states that a significant impact would occur if implementation of the proposed Project would result in emissions that exceed the following SMAQMD thresholds shown in **Table 3.4-5**.

Table 3.4-5: SMAQMD CEQA Significance Thresholds

Pollutant	Construction Emissions (lbs/day)	Operational Emissions (lbs/day)
NO _x	85	65
ROG (VOC)	None	65
PM ₁₀		80
PM _{2.5}		82

Source: SMAQMD 2014, SMAQMD 2015a

Impacts and Mitigation Measures

Impact AQ -1 Construction emissions of criteria pollutants and precursors

Alternative 1 (Medium Service Area Alternative) and Alternative 2 (No Reclamation Funding Alternative)

Project Elements. Construction activities of the proposed Project such as excavation, trenching, grading, and clearing would generate fugitive dust (PM₁₀ and PM_{2.5}). PM is also contained in vehicle exhaust. SMAQMD requires all construction projects (regardless of size) implement the District’s Basic Construction Emission Control Practices, as required by District Rule 403. The proposed Project would be required to implement the following dust and exhaust emission controls:

- Water all exposed surfaces two times daily. Exposed surfaces include, but are not limited to soil piles, graded areas, unpaved parking areas, staging areas, and access roads.
- Cover or maintain at least two feet of free board space on haul trucks transporting soil, sand, or other loose material on the site. Any haul trucks that would be traveling along freeways or major roadways should be covered.

- Use wet power vacuum street sweepers to remove any visible trackout mud or dirt onto adjacent public roads at least once a day. Use of dry power sweeping is prohibited.
- Limit vehicle speeds on unpaved roads to 15 miles per hour (mph).
- All roadways, driveways, sidewalks, parking lots to be paved should be completed as soon as possible. In addition, building pads should be laid as soon as possible after grading unless seeding or soil binders are used.
- Minimize idling time either by shutting equipment off when not in use or reducing the time of idling to 5 minutes [required by California Code of Regulations, Title 13, sections 2449(d)(3) and 2485]. Provide clear signage that posts this requirement for workers at the entrances to the site.
- Maintain all construction equipment in proper working condition according to manufacturer's specifications. The equipment must be checked by a certified mechanic and determine to be running in proper condition before it is operated.

Combustion emissions from construction equipment and vehicles (i.e., heavy equipment and delivery/haul trucks, worker commute vehicles) would also be generated during construction. Criteria pollutant emissions of ROG and NO_x are associated mainly with paving activity, construction equipment, mobile sources, and on-road exhaust and these emission sources would add to the regional atmospheric loading of ozone precursors during construction. This impact would be temporary, but would span the duration of construction (approximately two years). The modeled construction emissions are shown in **Table 3.4-6** and **Table 3.4-7** for maximum daily construction emissions and overall annual construction emissions, respectively. As shown in these tables, NO_x emissions from construction would not exceed the SMAQMD threshold of 85 lb/day. Emissions of particulate matter were compared to the SMAQMD operational significance thresholds, and would not exceed thresholds for either PM₁₀ or PM_{2.5}.

Construction emissions for the proposed Project were also compared to the General Conformity *de minimis* thresholds to assess whether a general conformity determination would be required. As shown in **Table 3.4-7**, the proposed Project's construction emissions would not exceed the *de minimis* thresholds and would therefore require no further evaluation under the General Conformity Rule.

EIR

Draft

Table 3.4-6: Maximum Daily Construction Emissions (lbs/day) of Criteria Air Pollutants and Precursors

	VOC	NO _x	CO	SO ₂	PM ₁₀	PM _{2.5}
Pipeline	3.61	35.85	29.03	-	3.66	1.89
Pump Station (~7000 hp)	0.95	9.09	9.20	0.01	0.89	0.52
Total	4.56	44.94	38.23	0.01	4.55	2.41
SMAQMD Thresholds ¹	-	85	-	-	80	82
Significant Construction Emissions	NA	No	NA	NA	No	No

Notes:

Air quality modeling inputs and outputs are available in from Regional San upon request.

1. SMAQMD 2014, 2015a

Table 3.4-7: Overall Annual Construction Emissions (tons/year) of Criteria Air Pollutants and Precursors

	VOC	NO _x	CO	SO ₂	PM ₁₀	PM _{2.5}
Pipeline	0.91	9.07	7.34	-	0.65	0.42
Pump Station	0.95	9.09	9.20	0.01	0.89	0.52
Total	1.86	18.16	16.55	1.47E-02	1.54	0.94
SMAQMD	-	-	-	-	-	-
Federal General Conformity <i>de minimis</i> Thresholds ¹	25	25	100	100	100	100
Significant Construction Emissions	No	No	No	No	No	No

Notes:

Air quality modeling inputs and outputs are available from Regional San upon request.

1. Federal General Conformity thresholds based on EPA 2010 and EPA 2015b

The proposed Project would not exceed any of the applicable thresholds, thus impacts would be less than significant.

Program Elements. Construction of the proposed distribution pipelines, lateral and turnouts, would entail similar types of construction and would not be expected to result in significant short-term impacts. Drilling of diluent wells would not require extensive construction and is also expected to result in minor emissions. Construction of the berms for the potential recharge area would require grading, and emissions from construction would be evaluated as part of project-specific supplemental environmental review. Construction of the berms would include implementation of the dust and emissions control measures described above, which are expected to reduce impacts to a less-than-significant level.

Alternative 3 (Small Service Area Alternative)

Project and Program Elements. Alternative 3 (Small Service Area Alternative) is a smaller version of the proposed Project, with components that would fall within the footprint of Alternatives 1 and 2. Because Alternative 3 would have a smaller development footprint, it

would have annual construction emissions and maximum daily construction emissions similar or lower than Alternatives 1 and 2. As the emissions would either be consistent or lower, the alternative would also have a less than significant impact.

Alternative 4 (No Project Alternative)

Under the No Project Alternative, no facilities would be constructed. Therefore, no construction-related air quality impacts would occur.

Significance Determination before Mitigation

Less than significant for all action alternatives. No impact for Alternative 4 (No Project Alternative).

Mitigation Measures

No mitigation measures are required.

Impact AQ -2 Expose sensitive receptors to substantial pollutant concentrations

Alternative 1 (Medium Service Area Alternative) and Alternative 2 (No Reclamation Funding Alternative)

Project and Program Elements. No major stationary sources of TACs are known to exist along the proposed transmission pipeline alignment or in the vicinity of the distribution pipelines, laterals and turnouts. The project site is located between two highways, Interstate 5, approximately one mile to the west and Highway 99, 2.4 miles to the east. The southernmost portion of the transmission pipeline alignment would border the Franklin Field public use airport, which has approximately 36,000 operations per year, consisting primarily of flight training activities. These emissions sources contribute to TAC exposure.

The primary TAC emitted through this project would be DPM associated with construction equipment and truck trips, and PM₁₀ and PM_{2.5} contained in fugitive dust. The controls of particulates and fugitive dust is discussed above in Impact AQ-1. The pump station would be built on the SRWTP site, which is about 5,000 feet from the nearest sensitive receptors, and would have no impact.

The closest sensitive receptors consist of residential areas located along Franklin Boulevard generally between Hood Franklin Road and Dwight Road/Big Horn Boulevard. The pipeline would be installed under roadways, which in some areas are adjacent to residential dwellings. In these cases, sensitive receptors could be exposed to these emissions from a distance anticipated to be as close as 30 feet. The construction period for the proposed Project, which is approximately two years and would be continually moving in location along the transmission pipeline alignment, would not involve use of large numbers of construction equipment and thus would not emit substantial quantities of DPM. Sensitive receptors would not be exposed to significant quantities of TAC. Given the short duration of exposure associated with the transmission pipeline's daily advancement of 150 feet per day, the exposure of sensitive receptors at a distance as close as 30 feet would be brief and insignificant in contribution to

lifetime cancer risk and health hazard. Construction of program elements would also result in relatively brief exposure to construction emissions. Given the short duration of exposure and relatively low-intensity construction equipment mobilization, TAC exposure is anticipated to be less than significant.

Alternative 3 (Small Service Area Alternative)

Project and Program Elements. Alternative 3 (Small Service Area Alternative) is a smaller version of the proposed Project, with components that would fall within the footprint of Alternatives 1 and 2. Because Alternative 3 would have a smaller development footprint, it would have similar or lower annual construction and operational emissions and maximum daily construction emissions and associated TACs to Alternatives 1 and 2. As the emissions would either be consistent or lower, the alternative would also have a less than significant impact.

Alternative 4 (No Project Alternative)

Under the No Project Alternative, no facilities would be constructed. Therefore, no construction-related TAC exposure would occur.

Significance Determination before Mitigation

Less than significant for all action alternatives. No impact for Alternative 4 (No Project Alternative).

Mitigation Measures

No mitigation measures are required

Impact AQ -3 Direct operational emissions of criteria pollutants

Alternative 1 (Medium Service Area Alternative) and Alternative 2 (No Reclamation Funding Alternative)

Project and Program Elements. The majority of the operational emissions would be from energy use associated with the pump station at buildout. The buildout energy consumption for the proposed pump station is used for this analysis to account for maximum emission levels, despite buildout-level energy consumption attainment a number of years after completion of the project-level components. The indirect emissions associated with electricity consumption would occur at the SMUD Cosumnes Power Plant. Electricity would also be sourced from SMUD's renewable energy facilities which provided 39 percent of 2013's energy as a "renewable energy mix," of which its large hydroelectric capacity provided 17 percent of SMUD electricity (SMUD 2014). The NO_x and sulfur oxide (SO_x) emissions associated with the indirect emissions have been conservatively estimated using the eGrid CAMX region emission factors (EPA 2012). This component of criteria air pollutants would be an indirect emission and is noted here for completeness, though they would not impact local air quality, as the power plant is over 20 miles away from the project site. These indirect emissions would contribute to regional air emissions. As shown in **Table 3.4-8** and **Table 3.4-9**, the maximum daily operation emissions and annual operation emissions would be below SMAQMD thresholds. Because emissions are below SMAQMD thresholds, impacts would be less than significant.

EIR

Draft

Table 3.4-8: Maximum Daily Operation Emissions (lbs/day) of Criteria Air Pollutants and Precursors

	VOC	NO _x	CO	SO ₂	PM ₁₀	PM _{2.5}
Pipeline	-	-	-	-	-	-
Pump Station (~7000hp)	0.07	0.00	0.00	0.00	0.00	0.00
Power Generation Emissions	NA	35.50	NA	1.99	NA	NA
Total	0.0686	35.50	0.00	1.99	0.00	0.00
SMAQMD Thresholds ¹	65	65	-	-	80	82
Thresholds Exceeded?	NO	NO	NA	NA	NO	NO

Notes:

Air quality modeling inputs and outputs are available from Regional San upon request.

1. SMAQMD 2014, 2015a

Table 3.4-9: Overall Annual Operation Emissions (tons/year) of Criteria Air Pollutants and Precursors

	VOC	NO _x	CO	SO ₂	PM ₁₀	PM _{2.5}
Pipeline	-	-	-	-	-	-
Pump Station (~5833hp)	0.38	0.00	0.00	0.00	0.00	0.00
Power Generation Emissions	NA	6.49	NA	0.36	NA	NA
Total	0.38	6.49	0.00	0.36	0.00	0.00
SMAQMD Thresholds	-	-	-	-	14.6	15
Federal General Conformity Thresholds ¹	25	25	100	100	100	100
Thresholds Exceeded?	No	No	No	No	No	No

Notes:

Air quality modeling inputs and outputs are available from Regional San upon request.

1. Federal General Conformity thresholds based on EPA 2010 and EPA 2015b

Alternative 3 (Small Service Area Alternative)

Project and Program Elements. Alternative 3 (Small Service Area Alternative) is a smaller version of the proposed Project, with components that would fall within the footprint of Alternative 1 (Medium Service Area Alternative) and Alternative 2 (No Reclamation Funding Alternative). Because Alternative 3 (Small Service Area Alternative) would have a smaller development footprint, it would have annual operational emissions similar or lower to Alternatives 1 and 2. As the emissions would either be consistent or lower, the alternative would also have a less than significant impact.

Alternative 4 (No Project Alternative)

Under the No Project Alternative, no facilities would be constructed. Therefore, no operational emissions would occur.

Significance Determination before Mitigation

Less than Significant for all action alternatives. No impact for Alternative 4 (No Project Alternative).

Mitigation Measures

No mitigation measures are required.

Impact AQ-4 Create objectionable odors

Alternative 1 (Medium Service Area Alternative) and Alternative 2 (No Reclamation Funding Alternative)

Project and Program Elements. Construction activities under the proposed Project would not result in the generation of permanent or long-term objectionable odors. Odors associated with the intermittent operation of diesel-powered equipment might be detected by nearby sensitive receptors, but these odors would be of short duration and would not affect a substantial number of people. Soil excavated from construction may contain organic material that is decaying that may create an objectionable odor. The intensity of the odor perceived by a receptor depends on the distance of the receptor from the construction activity and the amount and quality of the exposed soil material. Exposed soil would be either reused on-site or hauled and disposed of properly off-site. There would be short term odor exposure associated with repaving roads with asphalt, which could result in a period of odor exposure as the asphalt off-gases post-installation. This exposure would similarly be transient as pipeline construction progresses, becoming undetectable relative to the surrounding asphalt after less than a week. Therefore any odor that could be produced would be short-term and temporary.

Operational activities would consist of pumping treated recycled water. The pump station and recycled water typically are not a substantial odor source. No long-term odorous emissions would result from the small number of maintenance trips during operations. Odor impact would be less than significant.

Alternative 3 (Small Service Area Alternative)

Project and Program Elements. Alternative 3 (Small Service Area Alternative) is a smaller version of Alternative 1 (Medium Service Area Alternative) and Alternative 2 (No Reclamation Funding Alternative), with components that would fall within the footprint of Alternatives 1 and 2. Because Alternative 3 (Small Service Area Alternative) would have a smaller development footprint, it would have similar or lower annual construction and operational odorous emissions and maximum daily construction odorous emissions to Alternatives 1 and 2. As the emissions would either be consistent or lower, the alternative would also have a less than significant impact.

Alternative 4 (No Project Alternative)

Under the No Project Alternative, no facilities would be constructed. Therefore, no odor impacts would occur.

Significance Determination before Mitigation

Less than Significant for all action alternatives. No impact for Alternative 4 (No Project Alternative).

Mitigation Measures

No mitigation measures are required

Impact AQ-5 Conflict with or obstruct applicable air quality plan

Alternative 1 (Medium Service Area Alternative) and Alternative 2 (No Reclamation Funding Alternative)

Project and Program Elements. The proposed Project is located in the SVAB, which is currently designated as nonattainment for ozone and PM₁₀. SMAQMD has developed Air Quality Attainment Plans (AQAPs), which present comprehensive strategies to reduce VOCs, NO_x, PM₁₀, and PM_{2.5} emissions from stationary, area, mobile, and indirect sources. VOC and NO_x are the principal precursor pollutants that cause the formation of ozone, the non-attainment pollutant commonly known as smog. Strategies in the AQAPs include the adoption of rules and regulations; enhancement of CEQA participation; implementation of a new and modified indirect source review program; adoption of local air quality plans; and stationary, mobile, and indirect-source control measures. The proposed Project would not modify land uses from those anticipated in the County and City General Plans and in the SMAQMD AQAP for long-range air quality planning and would not facilitate further growth.

The proposed Project would result in construction of a pump station and transmission pipeline. Specific air quality impacts related to criteria pollutants are discussed in Impacts AQ-1 through AQ-4. The proposed Project would comply with SMAQMD regulations. Therefore, the proposed Project would not conflict with or obstruct the SMAQMD AQAPs and the impact would be less than significant.

Alternative 3 (Small Service Area Alternative)

Project and Program Elements. Alternative 3 (Small Service Area Alternative) is a smaller version of Alternative 1 (Medium Service Area Alternative) and Alternative 2 (No Reclamation Funding Alternative), with components that would fall within the footprint of Alternatives 1 and 2. Because Alternative 3 would have a smaller development footprint, it would have similar or lower annual construction and operational emissions and maximum daily construction emissions to Alternatives 1 and 2. As the emissions would either be consistent or lower and Alternatives 1 and 2 are anticipated to have a less than significant impact, Alternative 3 would also have a less than significant impact.

Alternative 4 (No Project Alternative)

Under the No Project Alternative, no facilities would be constructed. Therefore, no operational emissions would occur.

Significance Determination before Mitigation

Less than significant for all action alternatives. No impact for Alternative 4 (No Project Alternative).

Mitigation Measures

No mitigation measures are required.

Impact AQ-6 Cumulative impact on air quality

Alternative 1 (Medium Service Area Alternative) and Alternative 2 (No Reclamation Funding Alternative)

Project and Program Elements. The SVAB is currently designated nonattainment for Ozone and PM₁₀. Past, present, and probable future projects would have a significant cumulative impact on air quality in the project area for ozone and PM. Because construction and operational emissions for the proposed Project would be below SMAQMD thresholds, no significant cumulative impacts are anticipated. This conclusion is supported by the SMAQMD document *Cumulative Air Quality Impacts* (2015), in which projects would not result in cumulatively considerable contribution to a significant impact if a project's emissions are less than the applicable thresholds.

Because emissions would be within SMAQMD thresholds for NO_x and VOC emissions, the project would have a less than significant cumulative impact on ozone in the region, per SMAQMD's definition of emissions below the thresholds as less than cumulatively significant. Other on-going or planned projects can be found in **Table 3.0-1** in *Section 3.0*. The proposed Project's aim is to satisfy existing demand and compensate for water lost to drought and environmental flows. In working towards maintaining water supply, the project would not deviate from existing demographic projections, as it would have a neutral impact. It also has a negligible impact on vehicle trips and regional miles travelled. Due to the short duration and size of the project, PM emissions are not anticipated to be cumulatively significant and would not contribute significantly to ongoing nonattainment. The proposed Project would fall below the SMAQMD screening levels for PM₁₀ and PM_{2.5}, resulting in a less than significant impact on PM exposure. Implementing the SMAQMD's required basic construction emission control practices would further reduce emissions below estimated levels. Therefore, the incremental contribution of Alternatives 1 or 2 would not be cumulatively considerable.

Alternative 3 (Small Service Area Alternative)

Project and Program Elements. Alternative 3 (Small Service Area Alternative) is a smaller version of Alternative 1 (Medium Service Area Alternative) and Alternative 2 (No Reclamation Funding Alternative), with components that would fall within the footprint of Alternatives 1 and 2. This would result in lower annual construction and operational emissions and maximum daily construction emissions that are either identical or slightly lower. Therefore, the incremental contribution of this alternative would not be cumulatively considerable.

Alternative 4 (No Project Alternative)

Under the No Project Alternative, no facilities would be constructed. Since there would be no new emissions associated with the no action alternative, the emissions would not be cumulatively considerable.

Significance Determination before Mitigation

Less than significant for all action alternatives. No impact for Alternative 4 (No Project Alternative).

Mitigation Measures

No mitigation measures are required.

3.4.4 Greenhouse Gas Regulatory Framework

This section describes laws and regulations at the federal, state, and local level that may apply to the project.

Federal Policies and Regulations

U.S. Supreme Court and Endangerment Ruling

The U.S. Supreme Court ruled for the first time in 2007 that GHG emissions are air pollutants, covered under the CAA, in *Massachusetts v. The Environmental Protection Agency*. The Court found that the EPA has a mandatory duty to enact rules regulating mobile GHG emissions pursuant to the CAA. The Court held that GHGs fit the definition of an air pollutant causing and contributing to air pollution, which reasonably may be anticipated to endanger public health or welfare. In 2009, the EPA Administrator determined that existing and projected concentrations of GHGs threaten public health and welfare of present-day and future generations, and that combined emissions from motor vehicles contribute to GHG pollution. EPA's endangerment finding covers emissions of six key GHGs: CO₂, CH₄, N₂O, HFCs, PFCs, and SF₆.

Corporate Average Fuel Economy and Greenhouse Gas Emission Standards

In 2009, the NHTSA and EPA issued the first joint ruling to establish a national program to regulate model year 2012 through 2016 passenger cars and light trucks, to improve fuel economy and reduce GHG emissions. NHTSA previously had set Corporate Average Fuel Economy standards for vehicle fuel efficiency, but the joint rule was the first coordinated effort between federal programs for fuel economy and GHGs. Since then, NHTSA and EPA have issued new fuel efficiency and GHG emission standards. On August 9, 2011, standards were issued to reduce GHG emissions and improve fuel efficiency for heavy-duty trucks and buses. On October 15, 2012, NHTSA and EPA established a program to reduce GHG emissions and improve fuel economy standards for new cars and light trucks through 2025 (EPA 2012).

Federal Leadership in Environmental, Energy, and Economic Performance

On October 5, 2009, Executive Order (EO) 13514, *Federal Leadership in Environmental, Energy, and Economic Performance*, was signed by CEQ. The EO required federal agencies to set a 2020 GHG emissions reduction target within 90 days, increase energy efficiency, reduce

fleet petroleum consumption, conserve water, reduce waste, support sustainable communities, and leverage federal purchasing power to promote environmentally responsible products and technologies.

State Policies and Regulations

Assembly Bill 32 (California Global Warming Solutions Act)

CARB is the lead agency for implementing Assembly Bill (AB) 32, the California Global Warming Solutions Act, adopted by the State Legislature in 2006. AB 32 set a statewide target to reduce GHG emissions to 1990 levels by 2020. AB 32 also required CARB to prepare a Scoping Plan with the main strategies to be used to achieve reductions in GHG emissions in California.

Assembly Bill 32 Climate Change Scoping Plan

After receiving public input on their discussion draft of the Proposed Scoping Plan (released in June 2008), CARB issued its Climate Change Proposed Scoping Plan in October 2008, and adopted the plan in December 2008 (CARB 2011b). This plan contains an outline of the proposed State strategies to achieve the 2020 GHG emission limits. Key elements of the Scoping Plan include the following recommendations:

1. Expanding and strengthening existing energy efficiency programs as well as building and appliance standards.
2. Achieving a statewide renewables energy mix of 33 percent.
3. Developing a California cap-and-trade program that links with other Western Climate Initiative partner programs to create a regional market system.
4. Establishing targets for transportation-related GHG emissions for regions throughout California and pursuing policies and incentives to achieve those targets.
5. Adopting and implementing measures pursuant to existing State laws and policies, including California's clean car standards, goods movement measures, and the Low Carbon Fuel standard.
6. Creating targeted fees, including a public goods charge on water use, fees on high global warming potential gases, and a fee to fund the administrative costs of the State's long-term commitment to AB 32 implementation.

Under the Scoping Plan, approximately 85 percent of the state's emissions are subject to a cap-and-trade program, where covered sectors are placed under a declining emissions cap. Emissions reductions are to be achieved through regulatory requirements and the option to reduce emissions further or purchase allowances to cover compliance obligations. Emission reductions from this cap-and-trade program are expected to account for a large portion of the reductions required by AB 32.

In 2014 CARB released the First Update of the Climate Change Scoping Plan to reflect progress since 2005, additional reduction measures, and plans for reductions beyond 2020 (CARB 2014). In this update CARB noted the progress toward the 2020 goal to reach 1990 levels established in

AB 32. CARB emphasizes the importance of establishing a mid-term target beyond 2020 to reach the goals of executive orders S-03-05 and B-16-2012 to reduce emissions to 80 percent below 1990 levels by 2050 (as described below). This mid-term target will be critical in helping to frame additional policy measures, regulations, planning efforts, and investments in clean technologies that are needed to continue to reduce emissions. Sector-specific actions that would be needed in order to reach long-term goals are outlined for: energy; transportation, land use, fuels, and infrastructure; agriculture; water; waste; and natural and working lands; short-lived climate pollutants; and green buildings. With respect to water, the Plan encourages development of state policy and regulatory frameworks that allow for effective regional integrated planning and implementation with measures to reduce GHG emissions and maintain water supply reliability during drought periods.

Executive Order S-03-05 and B-30-15

In 2005, EO S-03-05 was issued, calling for statewide GHG reductions to 2000 levels by 2010, to 1990 levels by 2020, and to 80 percent below 1990 levels by 2050. The EO also called for the creation of a "Climate Action Team," which was to report to the Governor every 2 years on progress toward meeting the targets and the effects of GHG emissions on the state. The latest of these reports, Climate Action Team Biennial Report, was published in December 2010 (Cal EPA 2010). In April 2015, EO B-30-15 was issued, establishing a new policy to reduce GHG emissions to 40 percent below 1990 levels by 2030, in order to ensure California meets its 80 percent below 1990 levels by 2050. EO B-30-15 directed CARB to update its Climate Change Scoping Plan to include the 2030 GHG emissions reduction target.

Low Carbon Fuel Standard

EO S-1-07, the Low Carbon Fuel Standard (LCFS), was issued in January 2007. The order called for a reduction of at least 10 percent in the carbon intensity of California's transportation fuels by 2020. The LCFS was approved by CARB in 2009, and it became effective in April 2010. The regulation established annual performance standards for fuel producers and importers, applicable to all fuels used for transportation in California (CARB 2011a).

Assembly Bill 1493

With the passage of AB 1493 in 2002, California launched an innovative and pro-active approach for dealing with GHG emissions and climate change at the State level. AB 1493 required CARB to develop and implement regulations to reduce automobile and light truck GHG emissions. These stricter emissions standards apply to automobiles and light trucks beginning with the 2009 model year. Litigation was filed by automakers, challenging these regulations. EPA initially denied California's related request for a waiver to allow California to regulate vehicle emissions beyond EPA requirements, but a waiver subsequently was granted (CARB 2013).

Renewable Portfolio Standard

Established in 2002 under Senate Bill 1078, California's Renewables Portfolio Standard (RPS) was accelerated in 2006 under Senate Bill 107 by requiring that 20 percent of electricity retail sales be served by renewable energy resources by 2010. Subsequent recommendations in

California energy policy reports advocated a goal of 33 percent by 2020. Senate Bill X1-2, which implemented the 33 percent by 2020 for electricity sales from renewable energy resources, was signed in April 2011. This new RPS applies to all electricity retailers in the state including publicly owned utilities, investor-owned utilities, electricity service providers, and community choice aggregators (local communities that offer procurement service to electric customers within their boundaries). All of these entities must adopt the new RPS goals of 20 percent of retail sales from renewables by the end of 2013, 25 percent by the end of 2016, and the 33 percent requirement being met by the end of 2020.

Senate Bill 1368

Senate Bill 1368 is the companion bill of AB 32 and was signed by Governor Schwarzenegger in September 2006. Senate Bill 1368 required the CPUC to establish a GHG emission performance standard for baseload generation from investor owned utilities by February 1, 2007. The CEC was required to establish a similar standard for local publicly owned utilities by June 30, 2007. These standards were not to exceed the GHG emission rate from a baseload combined-cycle natural gas fired plant. The legislation further required that all electricity provided to California, including imported electricity, must be generated from plants that meet the standards set by the CPUC and CEC.

Senate Bill 375

Senate Bill 375, the Sustainable Communities and Climate Protection Act of 2008, enhanced California's ability to reach its AB 32 goals, by promoting good land use and transportation planning with the goal of more sustainable communities. Sustainable Communities requires CARB to develop regional GHG emission reduction targets for 2020 and 2035 for each region covered by one of the state's 18 metropolitan planning organizations (MPOs). EO G-11-024 set these targets in 2011. The MPOs were tasked with developing Sustainable Communities Strategies, integrating land use and transportation planning and demonstrating an ability to attain the 2020 and 2035 reduction targets.

Regional Policies and Regulations

Sacramento Metropolitan Air Quality Management District

The SMAQMD maintains two significance thresholds for greenhouse gases, a 1,100 million tons (MT) CO₂e/yr land development threshold and a 10,000 MT CO₂e/yr stationary source threshold. These thresholds do not directly apply to this industrial infrastructure project; however, the stationary sources threshold has the greatest relevance for the project's operational emissions, given the scale of energy-use involved in operating the completed project.

Local Policies and Regulations

Sacramento County General Plan

The Sacramento County General Plan (Sacramento County 2011a) has the following applicable greenhouse gas policy:

- **Policy LU-115:** It is the goal of the County to reduce greenhouse gas emissions to 1990 levels by the year 2020. This shall be achieved through a mix of State and local action.

Sacramento County Climate Action Plan

The Sacramento County Climate Action Plan (Sacramento County 2011b) has the following applicable greenhouse gas goals:

- Comply with State requirements as well as commitments in the Water Forum Agreement for water conservation and reduction in potable water demand. Achieve 20% reduction in statewide average per capita water use by 2020, in compliance with the State's water conservation requirements (SBx7-7). Balance this with the Water Forum Agreement, which requires over 25% reduction in water demands from 1990 levels by 2030.
- Emphasize water use efficiency as a way to reduce energy consumption.
- Increase energy efficiency related to water system management.

City of Elk Grove General Plan

The City of Elk Grove General Plan does not directly address greenhouse gas emissions.

City of Elk Grove Climate Action Plan

The City of Elk Grove Climate Action Plan (City of Elk Grove 2015a) recognizes greenhouse gases and promotes recycled water use:

- **Policy RC-3** Promote and remove barriers to the use of greywater systems and recycled water for irrigation purposes.

3.4.5 Greenhouse Gas Environmental Setting

Study Area

Climate change is a global issue and planning surrounding it has been conducted at the state level. Accordingly, the study area for the purposes of greenhouse gas (GHG) emissions considers global GHG emissions in the context of statewide GHG emissions reduction targets that will allow for California to do its share in reducing GHG emissions globally.

Global Climate Change

Global warming and global climate change are terms that describe changes in the Earth's climate. Global climate change is a broader term, used to describe any worldwide, long-term change in the Earth's climate. This change could be, for example, an increase or decrease in temperatures, the start or end of an ice age, or a shift in precipitation patterns. The term global warming is more specific and refers to a general increase in temperatures across the Earth. Although global warming is characterized by rising temperatures, it can cause other climatic changes, such as a shift in the frequency and intensity of rainfall or hurricanes. Global warming does not necessarily imply that all locations will be warmer. Some specific, unique locations may

be cooler even though the Earth, on average, is warmer. All of these changes fit under the umbrella of global climate change.

Because GHGs persist and mix in the atmosphere, they have impacts on a global scale, rather than locally or regionally like most air pollutants. Consequently, GHG emissions that contribute to global climate change result in a worldwide cumulative impact (global warming) rather than a local or regional project-specific impact typically associated with criteria pollutants. Impacts related to GHG emissions are discussed in the context of the proposed Project's contribution to statewide and global GHG emissions.

Although natural processes can cause global warming, general scientific consensus is that present-day global warming is the result of human activity on the planet (IPCC 2007, 2013). This human-made, or anthropogenic, warming is caused primarily by increased GHG emissions, which keep the Earth's surface warm, known as "the greenhouse effect." The greenhouse effect and the role GHG emissions play in it are described below.

The Greenhouse Effect and Other Climate Change Effects

The Earth's atmosphere functions like a greenhouse, allowing sunlight in and trapping some of the heat that reaches the Earth's surface. When solar radiation from the sun enters the Earth's atmosphere, a small portion is reflected back toward space, although a majority of it is absorbed by the Earth's surface. The solar radiation that is absorbed by the Earth's surface then is re-emitted as heat in the form of low-frequency infrared radiation. Although GHGs in the atmosphere do not absorb solar radiation, they do absorb the lower frequency infrared radiation, thereby trapping it within the Earth's atmosphere and resulting in the warming of the Earth's surface.

The Earth's greenhouse effect has existed far longer than humans have, and it has played a key role in the development of life. Concentrations of major GHGs (discussed in further detail under *Greenhouse Gases and their Emissions* below) such as carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), and water vapor (H₂O) have been naturally present for millennia at relatively stable levels in the atmosphere, adequate to keep temperatures on the Earth hospitable. Without these GHGs, the Earth's temperature would be too cold for life to exist. However, as human industrial activity has increased, atmospheric concentrations of certain GHGs have grown dramatically. Anthropogenic sources are responsible for GHG emissions in excess of naturally occurring concentrations, thereby intensifying the greenhouse effect and resulting in global climate change.

The Intergovernmental Panel on Climate Change's (IPCC) Fifth Assessment Report: Climate Change 2013 stated that scientific consensus concurs that the global increases in atmospheric concentrations of GHGs since 1750 mainly have resulted from human activities such as fossil fuel use, land use change (e.g., deforestation), and agriculture (IPCC 2007, IPCC 2013). In addition, the report stated that it is likely that these changes in GHG concentrations have contributed to global warming. Confidence levels of claims in this report have increased since

2001, because of the large number of simulations run and the broad range of available climate models (IPCC 2013).

Global climate change is particularly important when discussing water infrastructure and supply. Changes in the climate are expected to cause more severe droughts and changes in annual rainfall and snowpack. Thus, it is important that the water infrastructure and supply be adaptable to meet climate change impacts.

Greenhouse Gases and Their Emissions

GHGs includes gases that contribute to the natural greenhouse effect as well as gases that are human-generated and are emitted by modern industrial products, such as perfluorocarbons (PFCs), hydro fluorocarbons, (HFCs), and sulfur hexafluoride (SF₆). These last two families of gases, although not naturally present, have properties that also cause them to trap infrared radiation when they are present in the atmosphere, thus making them GHGs. The effect each of these gases has on global warming is a combination of the volume of their emissions and their global warming potential (GWP). GWP indicates, on a pound for pound basis, how much a gas will contribute to global warming (its potential to trap heat) relative to how much warming would be caused by the same mass of CO₂. **Table 3.4-10** shows the six GHGs and their respective GWPs.

Table 3.4-10: Greenhouse Gas Overview and Global Warming Potential

GHG	GWP 100-year ¹	Brief Description
CO ₂	1/1	Released into the atmosphere through burning fossil fuels (coal, natural gas and oil), solid waste, trees and wood products, and also because of certain chemical reactions; removed from the atmosphere when it is absorbed by plants and the ocean; remains in the atmosphere for 50 to more than 100,000 years.
CH ₄	28/21	Emitted during production and transport of coal, natural gas, and oil; methane emissions also result from livestock and other agricultural practices and by decay of organic waste in municipal solid waste landfills; remains in the atmosphere for about 10 years.
N ₂ O	265/310	Emitted during agricultural and industrial activities, as well as during combustion of fossil fuels and solid waste; remains in the atmosphere for about 100 years.
HFCs	4-12,400/ 650-11,700	Typically used in refrigeration and air conditioning equipment, as well as in solvents; emissions primarily generated from use in air conditioning systems in buildings and vehicles; remain in the atmosphere from 10 to 270 years.
PFCs	6,630-11,100/ 6,500-9,200	Emitted as by-products of industrial and manufacturing sources; remain in the atmosphere from 800 to 50,000 years.
SF ₆	23,500/23,900	Used in electrical transmission and distribution; remain in the atmosphere approximately 3,200 years.

Sources: EPA 2013 and IPCC 2007.

Notes:

- As scientific understanding of global warming potentials of GHGs improves over time, GWP values are updated in the IPCC scientific assessment reports. However, for regulatory consistency, the Kyoto Protocol fixed the use of GWP values to those published in the IPCC 1996 Second Assessment Report (SAR). The table above shows GWP values for 100 years from both the IPCC 2013 and SAR.

These six gases are the major GHGs that were recognized by the Kyoto Accords. Other GHGs were not recognized by the Kyoto Accords, chiefly because of the smaller role that they play in global climate change or the uncertainties surrounding their effects. One GHG not recognized by

the Kyoto Accords is atmospheric H₂O, because an obvious correlation does not exist between H₂O and specific human activities. H₂O appears to act in a feedback manner; higher temperatures lead to higher H₂O concentrations, which in turn cause more global warming (IPCC 2003). A second GHG not recognized in the initial Kyoto Accords but subsequently included by the United Nations Framework Convention on Climate Change and recognized in California as a GHG is nitrogen trifluoride.

The most important GHG in human-induced global warming is CO₂. Although many gases have much higher GWPs than the naturally occurring GHGs, CO₂ is emitted in such vastly higher quantities that it accounts for 82 percent of the GWP of all GHGs emitted by the U.S. (EPA 2015a). Fossil fuel combustion, especially for the generation of electricity and powering of motor vehicles, has led to substantial increases in CO₂ emissions over time and, thus, substantial increases in atmospheric CO₂ concentrations. In 2005, atmospheric CO₂ concentrations were about 379 ppm, over 35 percent higher than the pre-industrial concentrations of about 280 ppm (IPCC 2007). In addition to the sheer increase in the volume of its emissions, CO₂ is a major factor in human-induced global warming because of its long lifespan in the atmosphere of 50 to 200 years.

California Climate Impacts

Global temperature increases and other climate changes may have a series of substantial negative effects on the health of California residents and California's economy. Studies have indicated that over the course of the 20th century, the Western U.S. has experienced spring temperature increases of 1 to 3 degrees Celsius between the 1970s and 1990s (Reclamation 2013). Effects of climate change include changing precipitation, snow pack levels, and reduced water supply; reduced air quality; higher risk of infestations by pests and pathogens in agricultural and forest environments; increased wildfire risk; alterations in the coastline and coastal habitats; and increased flood risk (CAT 2006). With respect to compromised air quality, warmer temperatures can cause more ground-level O₃, a pollutant that causes eye irritation and respiratory problems. With regard to water supply, California primarily relies on snowmelt for its drinking water and much of the water used in irrigation during the summer. Global warming could alter, and may already be altering, the seasonal pattern of snow accumulation and snowmelt, and reduce snow pack overall, affecting water supplies.

Reclamation reported on climate change implications for water supplies and related water resources within eight major Western U.S. river basins, including the mid-Pacific Region's Sacramento River, San Joaquin River, Truckee River, and Klamath River Basins. Reclamation stated that based on projections of future precipitation on the broader Western U.S. region, the northwestern and north-central portions of the U.S. may gradually become wetter while the southwestern and south-central portions gradually become drier (Reclamation 2013). Sea-level rise can pose problems for the Sacramento-San Joaquin Delta water infrastructure, result in risks to local water supplies, coastal lands, and native species (Reclamation 2013).

California GHG Emission Inventory

Since 2000, GHG emissions have decreased by 1.6 percent, after reaching a peak in 2004. In 2012, total California GHG emissions were 459 million metric tons of CO₂ equivalent (CO₂e)¹. This represents a 1.7 percent increase in total GHG emissions from 2011 and the first emissions increase since 2007. This increase was driven primarily by strong economic growth in the state, the unexpected closure of the San Onofre Nuclear Generating Station, and drought conditions that limited in-state hydropower generation. In 2012, the transportation sector was the largest source of emissions, accounting for approximately 37 percent of the total emissions. On-road vehicles accounted for more than 90 percent of emissions in the transportation sector. The industrial sector accounted for approximately 22 percent of the total emissions. Emissions from electricity generation were about 21 percent of total emissions.

Per capita emissions in California have decreased by 12 percent from 2000 to 2012, even though population increased by 11.4 percent during this period. Per capita emissions from in-state electricity generation have declined by 22 percent from 2000 to 2012.

Climate Change Adaptation

As described above, global climate change is already affecting ecosystems and society throughout the world. Climate change adaptation refers to the efforts undertaken by ecosystems and society to adjust to and prepare for current and future climate change, thereby reducing vulnerability to those changes. Plant and animal species adapt over time to changing conditions; they migrate or change behaviors in accordance with changing climates, food sources, and predators. Similarly, human adaptation has occurred naturally over history; people move to more suitable living locations, adjust food sources, and more recently, change energy sources.

Many national, as well as state and regional, governments, are implementing adaptive practices to address changes in climate, as well as planning for expected future impacts from climate changes. Reclamation's climate change adaptation work consists of basin studies for major river basins in the U.S., which identify adaptation options in the context of climate change (Halofsky, et. Al. 2015). Some examples of adaptations that already are in practice or under consideration include: conserving water and minimizing runoff with climate-appropriate landscaping, capturing excess rainfall to minimize flooding and maintain a constant water supply through dry spells, protecting valuable resources and infrastructure from flood damage, developing new water supply strategies such as water reuse, aquifer storage and recovery, and desalination, and use of water efficient appliances.

3.4.6 Greenhouse Gas Emissions Impact Analysis

Methodology

This section evaluates whether construction and operation of the proposed Project would result in significant impacts related to GHG emissions. CalEEMod was used to quantify GHG

¹ CO₂e is a metric measure used to compare the emissions from various GHGs based upon their GWP compared to CO₂. The CO₂e for a gas is derived by multiplying the tons of the gas by the associated GWP. For instance using a GWP of 21 for CH₄, 1 ton of CH₄ is equal to 21 tons of CO₂e.

emissions from the proposed Project construction and operation activities. The same assumptions used in the analysis of air quality impacts was used for GHG emissions. Construction-related GHG emissions were amortized over the operational life of the project (50 years) and combined with operational emission levels, which is one of the approaches recommended by SMAQMD (SMAQMD 2016). Indirect CO₂ emissions were estimated using The Climate Registry's 2012 Sacramento Municipal Utilities District number of 521.73 pounds of carbon dioxide per megawatt hour (lbs/MWh) (The Climate Registry 2015). Please refer to *Section 3.4.5* for a description of the site-specific inputs used for the analysis.

Thresholds of Significance

Consistent with the Sacramento County Initial Study, SMAQMD recommendations, and Appendix G of the CEQA Guidelines, greenhouse gas emissions would be considered significant if the Project would:

- Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment;
- Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing emissions of GHGs.

The incremental increase in GHG emissions associated with the project, both direct and indirect, is evaluated using the 10,000 MT CO_{2e} per year level proposed by SMAQMD staff. GHG emissions contribute to a global problem regardless of where they are emitted, and control policies have been developed on a state-wide basis. Thus, it is informative, absent a locally-adopted threshold, to review thresholds adopted by other agencies expert on the subject. This threshold level has been formally adopted by the Bay Area Air Quality Management District and the South Coast Air Quality Management District as the CEQA significance threshold for industrial projects where the air district is the lead agency. These are the two largest air districts in California (in terms of population served). The level of 10,000 MT CO_{2e} per year is also notable because it is the level at which most stationary sources are required to inventory and report their emissions to ARB's cap-and-trade program (Ascent 2014). For operational emissions, SMAQMD has adopted a significance threshold for GHG emissions of 10,000 metric tons of CO_{2e} per year.

The applicable plans and policies for operational-related emissions were determined to be CARB's Scoping Plan. Specifically, if a project activity does not conflict with CARB's GHG emission reduction policies, it would have a less than significant impact.

Impacts and Mitigation Measures

Impact GHG-1 Construction and Operational Emissions of GHGs

Estimates of construction emissions associated with the action alternatives were estimated using CalEEMod and the Road Construction Emissions Model with assumptions specified in Section 3.4.5.

Alternative 1 (Medium Service Area Alternative) and Alternative 2 (No Reclamation Funding Alternative)

Project Elements. Using standard equipment assumptions including material hauling trips, the anticipated construction emissions associated with Alternatives 1 and 2 are shown in **Table 3.4-11**. The combustion of carbon-based fuels used in equipment and vehicles and use of electricity generated in part by combustion of carbon-based fuels would lead to greenhouse gas emissions of CO₂, N₂O, and NH₄. The construction phase of the project would use a variety of construction equipment and emit a maximum of 114 MT CO₂e/year, or approximately 346 MT CO₂e for the entire construction period.

The operation of the proposed Project would involve a small number of vehicle trips associated with annual maintenance and inspection of the pump station and emissions associated with electricity power demands for the pump station. The GHG emissions associated with maintenance and inspection were not quantified.

The main source of GHG emissions during operations would be from the electricity used to run the pump station. The electricity used by the pump station would result in indirect GHG emissions and was quantified using the SMUD GHG emissions factor through the Climate Registry and eGRID (EPA 2012). The operation of the pump station at buildout when 32,572 AFY of recycled water would be delivered, is estimated to consume 8,870 MWh per year, but offsets other energy use for pumping wastewater to the Sacramento River outfall and for pumping groundwater for irrigation. With reductions of energy use estimated at 5,570 MWh per year, the net energy use would be 3,120 MWh per year, emitting 745 MT CO₂e per year. The energy consumption number was developed based on anticipated pumping efficiency, energy losses, and anticipated demand. The same assumptions discussed above were applied to this number to create an annual CO₂e emissions number for operations.

As shown in **Table 3.4-11**, construction activities would result in a total of 346 MT CO₂e, or approximately 7 MT CO₂e per year when amortized across the proposed Project's operational life of 50 years. Operation of the proposed Project would result in 745 MT CO₂e per year, and the combination of operational emissions and amortized construction emissions would result in a net increase of 752 MT CO₂e per year during the operational life of the project. The increase in GHG emissions associated with the proposed Project would not exceed the 10,000 MT CO₂e per year threshold, therefore impacts would be less than significant.

Table 3.4-11: Greenhouse Gas Emissions Associated with the Project (Tons of CO₂e/year)

	CO ₂ e
Construction-Related GHG Emissions	Entire Construction Period (MT)
Alternative 1 (Medium Service Area Alternative)	346
Alternative 2 (No Reclamation Funding Alternative)	346
Alternative 3 (Small Service Area Alternative)	<346
Operational-Related GHG Emissions	MT/year
Alternative 1 (Medium Service Area Alternative)	745
Alternative 2 (No Reclamation Funding Alternative)	745
Alternative 3 (Small Service Area Alternative)	<745
Project Totals	MT/year
Alternative 1 – Construction Amortized (50 years operational life) + Yearly Operational Emissions	752
Alternative 2 – Construction Amortized (50 years operational life) + Yearly Operational Emissions	752
Alternative 3 – Construction Amortized (50 years operational life) + Yearly Operational Emissions	752

Program Elements. Construction of the proposed distribution pipelines, lateral and turnouts, would entail similar types of construction and could occur in 2020 through 2041; construction emissions, amortized over the 50-year project live would not be projected to be substantially greater than the 7 MT CO₂e per year estimated for construction of project facilities. However the details and timing of the program elements are not known at this time. Drilling of diluent wells would not require extensive construction and is also expected to result in minor GHG emissions. Construction of the berms for the potential recharge area would require grading, and emissions from construction would be evaluated as part of project-specific supplemental environmental review. With implementation of program elements it is expected that total water delivery would increase to 50,000 AFY, this would result in a commensurate increase in emissions associated with pumping recycled water and a reduction in emissions for pumping for discharge and for groundwater pumping. Emissions could increase to about 1,200 MT CO₂e per year, which would still be less than the threshold of 10,000 MT CO₂e per year threshold, therefore impacts would be less than significant

Alternative 3 (Small Service Area Alternative)

Project and Program Elements. Alternative 3 (Small Service Area Alternative) is a smaller version of the proposed Project, with components that would fall within the footprint of Alternatives 1 and 2. Because Alternative 3 (Small Service Area Alternative) would have a smaller development footprint, it would have similar or lower GHG emissions to Alternatives 1 and 2. As the GHG emissions would either be consistent or lower, the alternative would also have a less than significant impact.

Alternative 4 (No Project Alternative)

Under the No Project Alternative, no facilities would be constructed. Therefore, there would be no construction and operational GHG emissions and no impact would occur.

Significance Determination before Mitigation

Less than significant for all action alternatives. No impact for Alternative 4 (No Project Alternative).

Mitigation Measures

No mitigation measures are required.

Impact GHG-2 Consistency with applicable GHG reduction plans

Alternative 1 (Medium Service Area Alternative) and Alternative 2 (No Reclamation Funding Alternative)

Project and Program Elements. The proposed Project would not conflict with any regulations or policies in CARB's Scoping Plan. Furthermore, the proposed Project would be consistent with CARB's First Scoping Plan Update that suggests the need for future infrastructure planning of water resources to ensure adequate supplies during droughts. It would also fulfill the RC-3 goal of the Elk Grove Climate Action Plan through expanding and promoting the use of recycled water (City of Elk Grove 2013). The Climate Action Plan anticipates use of recycled water would result in reduced electricity usage and decreased GHG emissions relative to existing alternatives. One of the main goals of the proposed Project is to utilize recycled water that is currently discharged to the river to provide irrigation water to areas that are in need of water and to protect wildlife refuges. The GHG emissions would be below significance thresholds, as the project would use electric pumps, with the exception of necessary emergency backup generators. The indirect emissions associated with the electricity use of the pumps would decrease over time as a result of existing regulations that require the electricity suppliers to increase the percentage of renewable electricity generating sources to 33 percent by 2020. In addition, recycled water provided for irrigation would reduce the need to pump groundwater at individual well sites, which would offset the emissions associated with generation of power for the pump station. There would be no impact.

Alternative 3 (Small Service Area Alternative)

Project and Program Elements. Alternative 3 (Small Service Area Alternative) is a smaller version of Alternatives 1 or 2, with components that would fall inside the current project footprint. This would result in similar or lower annual construction and operational emissions and maximum daily construction emissions that are either identical or slightly lower. There would be no impact.

Alternative 4 (No Project Alternative)

Under the No Project Alternative, no facilities would be constructed. Therefore, no impact on GHG emissions would occur.

Significance Determination before Mitigation

No impact for all action alternatives and Alternative 4 (No Project Alternative).

Mitigation Measures

No mitigation measures are required.

Cumulative Impact Analysis

Because GHG emissions and their contribution to global climate change is a global issue, the criteria above discussed in Impact GHG-1 and Impact GHG-2 address the cumulative impacts of the proposed Project's contributions to GHG emissions. Because emissions would not exceed the applicable SMAQMD significance thresholds for GHG emissions, the proposed Project's GHG emissions are not considered to be cumulatively considerable.

3.4.7 References

Ascent Environmental. 2014. *Final Environmental Impact Report for the Sacramento Regional County Sanitation District EchoWater Project*. September 12, 2014.

Bureau of Reclamation (Reclamation). 2013. *Technical Memorandum 86-68210-2013-06 Literature Synthesis on Climate Change Implications for Water and Environmental Resources, Third Edition*. Accessed September 30, 2015. Available at: <http://www.usbr.gov/climate/docs/ClimateChangeLiteratureSynthesis3.pdf>.

California Air Resources Board (CARB). 2009. *Almanac Emissions Projection Data-Sacramento County 2015 Estimated Annual Average Emissions*. Available at: http://www.arb.ca.gov/app/emsinv/emssumcat_query.php?F_YR=2015&F_DIV=0&F_SEASON=A&SP=2009&F_AREA=CO&F_CO=34&F_COAB=Y. Accessed September 30, 2015.

_____. 2011. *Toxic Air Contaminant Identification List*. 2011. Available at: <http://www.arb.ca.gov/toxics/id/taclist.htm>. Accessed September 30, 2015.

_____. 2013. *Ambient Air Quality Standards*. Accessed September 30, 2015. Available at: <http://www.arb.ca.gov/research/aaqs/aaqs2.pdf>.

_____. 2015. *Top 4 Summary – Sacramento County*. Accessed September 30, 2015. Available at: <http://www.arb.ca.gov/adam/topfour/topfour1.php>.

California Climate Action Team (CAT). 2010. *Climate Action Team Report of Governor Schwarzenegger and the Legislature*. Available at: <http://www.energy.ca.gov/2010publications/CAT-1000-2010-005/CAT-1000-2010-005.PDF>. Accessed September 30, 2015.

- Climate Registry, The. 2015. *General Reporting Protocol*. Available at:
<http://www.theclimateregistry.org/tools-resources/reporting-protocols/general-reporting-protocol/>. Accessed October 28, 2015.
- Council on Environmental Quality (CEQ). 2014. Revised Draft Guidance for Greenhouse Gas Emissions and Climate Change Impacts. Available at:
<https://www.whitehouse.gov/administration/eop/ceq/initiatives/nepa/ghg-guidance>. Accessed December 8, 2015.
- Elk Grove, City of. 2015a. *Climate Action Plan*. Available at:
http://www.elkgrovecity.org/UserFiles/Servers/Server_109585/File/Departments/Planning/climate-action-plan-public.pdf. Accessed September 30, 2015.
- _____. 2015b. *General Plan – City of Elk Grove, CA*. Reflects Amendments through March 2015. Available at:
http://www.elkgrovecity.org/UserFiles/Servers/Server_109585/File/Departments/Planning/Projects/General%20Plan/COEG_GP_Full_2015.pdf.
- Halofsky, Jessica, et. al. 2015. Climate Change Adaptation in United States Federal Natural Resource Science and Management Agencies: A Synthesis. April. Available at:
http://www.globalchange.gov/sites/globalchange/files/ASIWG_Synthesis_4.28.15_final.pdf.
- Intergovernmental Panel on Climate Change (IPCC). 2013. *Climate Change 2013: The Physical Science Basis*. Available at:
http://www.climatechange2013.org/images/uploads/WGIAR5_WGI-12Doc2b_FinalDraft_All.pdf
- _____. 2008. *Climate Change 2007: Synthesis Report. Contribution of Working Groups I, II, and III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change*. Available at:
http://www.ipcc.ch/publications_and_data/publications_ipcc_fourth_assessment_report_synthesis_report.htm.
- Office of Environmental Health Hazard Assessment (OEHHA). 2001. *Particulate Emissions from Diesel-Fueled Engines*. Available at:
http://oehha.ca.gov/air/toxic_contaminants/pdf_zip/diesel_final.pdf. Accessed July 18, 2014.
- Sacramento County. 2015. *General Plan-Land Use Element*. Available at:
<http://www.per.saccounty.net/LandUseRegulationDocuments/Documents/ZoningCodes/Land%20Use%20Element%20Amended%2011.9.11%2c%203.12.13%2c%207.22.15.pdf>
- _____. 2011a. *Sacramento County General Plan of 2005-2030*. Amended November 9, 2011.

- _____. 2011b. *Climate Action Plan-Strategy and Framework Document*. Available at:
http://www.green.saccounty.net/Documents/sac_030843.pdf
- Sacramento Metropolitan Air Quality Management District (SMAQMD). 2016. Greenhouse Gas Emissions. Revised through May 2016. Available at:
<http://www.airquality.org/ceqa/cequguideupdate/Ch6ghgFINAL.pdf>
- _____. 2015a. Particulate Matter Thresholds of Significance, Resolution 2015-022, adopted 28 May 2015. Available at:
<http://www.airquality.org/ceqa/PMThresholdsSignedResolution5-28-2015.pdf>.
- _____. 2015b. *Cumulative Air Quality Impacts*. June 2015. Available at:
<http://www.airquality.org/ceqa/cequguideupdate/Ch8CumulativeFinal.pdf>
- _____. 2015c. *Current AQMD Rules*. Last modified September 25, 2015. Available at:
<http://www.airquality.org/rules/>. Accessed October 1, 2015.
- _____. 2014. *SMAQMD Thresholds of Significance Table*. Revised November 2014. Available at: <http://www.airquality.org/ceqa/cequguideupdate/Ch2TableThresholds.pdf>
- _____. 2010. *Basic Construction Emission Control Practices*. Available at:
<http://www.airquality.org/ceqa/cequguideupdate/Ch3BasicConstructionEmissionControlPracticesFINAL.pdf>
- _____. 2009. *Response to Comments on the Draft CEQA Guide*. November 2009. Available at:
<http://www.airquality.org/ceqa/cequguideupdate/ResponsesToComments.pdf>
- Sacramento Municipal Utilities District. 2014. *SMUD Application for Green-e Energy Certification of the "Greenery Partner" Renewable Energy Option*. November 2014. Available at: <http://www.green-e.org/docs/energy/applications/SMUDGreeneryPartnerApplicationNov2014.pdf>
- United States Environmental Protection Agency (EPA). 2015a. Web page: Overview of Greenhouse Gases. Available at:
<http://www3.epa.gov/climatechange/ghgemissions/gases/co2.html>.
- _____. 2015b. *Current Nonattainment Counties for All Criteria Pollutants*. January 30, 2015. Available at: <http://www3.epa.gov/airquality/greenbk/ancl.html>
- _____. 2012. *eGRID 2012 Version 1.0 Year 2010 Summary Tables*. Available at:
http://www.epa.gov/cleanenergy/documents/egridzips/eGRID2012V1_0_year09_SummaryTables.pdf.

EIR

Draft

- _____. 2010. *Revisions to the General Conformity Report: 40 CFR Parts 51 and 93: [EPA-HQ-OAR-2006-00669; FRL-9131-7] RIN 2060-AH93*. Available at:
<http://www3.epa.gov/airquality/genconform/documents/20100324rule.pdf>
- _____. 2006. *Greenhouse Gas Emissions from the U.S. Transportation Sector 1990-2003*. Available at: <http://www3.epa.gov/otaq/climate/420r06003.pdf>

3.5 Biological Resources

This section describes the environmental setting for biological resources at and near the Project area, and discusses the potential for occurrence of sensitive or important natural resources in the Project area. Relevant regulatory laws and requirements are discussed. Potential impacts are evaluated, and mitigation measures are identified where appropriate to avoid or lessen significant impacts.

The California Natural Diversity Database (CNDDDB) Florin and Bruceville quadrangles (USGS 7.5-minute series) were queried to identify sensitive species and important natural communities that have historically been detected in the vicinity of the proposed Project (CNDDDB 2015). Ten additional quadrangles¹ adjacent to the Florin and Bruceville quadrangles were also queried to understand the broader historic occurrences of these resources, and of other sensitive resources not captured in the narrower two-quad query. A query of the USFWS Information for Planning and Conservation (IPaC) database was also conducted to supplement the CNDDDB query effort (USFWS 2016). Field reconnaissance visits and focused wetland delineation efforts were completed to supplement the CNDDDB queries and to provide detailed, site-specific information for a Wetland Delineation Study and Biological Assessment prepared in association with this Project. In addition, a project coordination meeting was conducted on May 25, 2015 with RMC, CH2M, and California Department of Fish and Wildlife (CDFW) staff to discuss CDFW's written comments on the EIR Notice of Preparation, and to better understand CDFW's initial concerns regarding potential impacts of the proposed Project.

The "Project area" evaluated in this section includes the approximately 13.8-mile-long pipeline alignment from the SRWTP southward to the intersection of Bruceville Road and Twin Cities Road. A uniform 250-foot-wide corridor was assumed for the pipeline construction corridor width². A disturbance area of 10,000 square feet was also considered for a new pump station near the existing SRWTP. Sensitive resources may be directly and/or indirectly impacted by the proposed Project within this defined Project area. In this section, the Project area is also referred to on occasion as the alignment. Elements of the Project that are outside of this defined Project area are discussed at a program-level.

Potential indirect effects to Sacramento River resources (primarily to fish species) resulting from reduced return flows to the Sacramento River are also evaluated in this section. Areas outside of the defined Project area, including the Sacramento River, are not expected to be directly impacted by the proposed Project. Indirect impacts to areas outside of the alignment are anticipated to be nominal, as described later in this section.

¹ The ten adjacent 7.5-minute series quadrangles are: Carmichael, Clarksburg, Courtland, Elk Grove, Galt, Isleton, Lodi North, Sacramento East, Sacramento West, and Thornton.

² An Area of Potential Effect (APE) was established within the cultural resources investigations completed for the proposed Project. The APE varies between 80 and 250 feet wide for the extent of the pipeline alignment.

3.5.1 Environmental Setting

The defined Project area generally crosses through or is adjacent to four different land use types in a north to south direction: 1) disturbed/ruderal vacant lands, 2) dense, urban/residential development, 3) relatively intact vernal pool/vernal swale grassland complexes and large drainage features, and 4) active agricultural lands. These are described below. **Figure 3.5-1** provides an aerial view of the Project area, showing areas of development, major drainage features and areas of agriculture/open space.

Disturbed/Ruderal Lands. Vacant, disturbed grasslands dominate the land cover within the northernmost 2-mile segment of the alignment from the SRWTP southward to approximately the Big Horn Boulevard intersection with Franklin Boulevard. Scattered relict vernal pool features are evident in this area, but past agricultural practices (as evidenced by furrowing) have severely disturbed these currently-vacant and fallowed lands. A wetland delineation report prepared for the proposed Project shows very few aquatic features in this section of the alignment (CH2M HILL 2015). Drainage features (agricultural drains and canals) present in this area were dry during summer 2015 site reconnaissance work. These presumably were constructed to serve historic agricultural land uses, but appear abandoned at present. Several appear to convey seasonal stormwater only. Native and natural vegetation is scarce in this section of the alignment.

Urban Development. From the intersection of Big Horn Boulevard and Franklin Boulevard, proceeding southward for a distance of approximately 2 miles to the intersection of Elk Grove Boulevard with Franklin Boulevard, dense residential housing has been developed at the southern portion of the City of Elk Grove. Natural features and habitats/land cover types of biological importance do not exist in this segment.

Vernal Pool/Vernal Swale Grassland Complexes and Large Drainage Features. Beginning at the intersection of Franklin Boulevard and Elk Grove Boulevard, and proceeding southward along Franklin Boulevard for a distance of about 3 miles (to about 0.7-mile south of Hood Franklin Road), protected conservation lands are located west of the alignment, while dense residential housing of Elk Grove and active agricultural land uses dominate the land cover east of Franklin Boulevard. Extensive vernal pool complexes west of Franklin Boulevard are conserved within the Stone Lakes NWR Wetland Preserve Unit. Most vernal swale features located in this portion of the NWR are tributary to North Stone Lake. Hundreds of vernal pools and features are located in the NWR preserve lands. Potential impacts to vernal features and sensitive species they may support are described later in this section.

Natural watercourses occur infrequently in this section of the alignment and, where present, have been highly modified. Most watercourses in this section were constructed, presumably to convey agricultural water (supply or drainage) or surface-water runoff from urban development. The Ehrhardt Channel is a large drainage corridor located about 0.1-mile south of Elk Grove Boulevard and east of Franklin Boulevard. It is a graded, unlined trapezoidal channel that conveys residential runoff from Elk Grove westward beneath Franklin Boulevard to join a natural drainage pathway through Stone Lakes NWR, ultimately joining North Stone Lake. Historically named the "Shed A Channel", this constructed drainage channel (east of Franklin

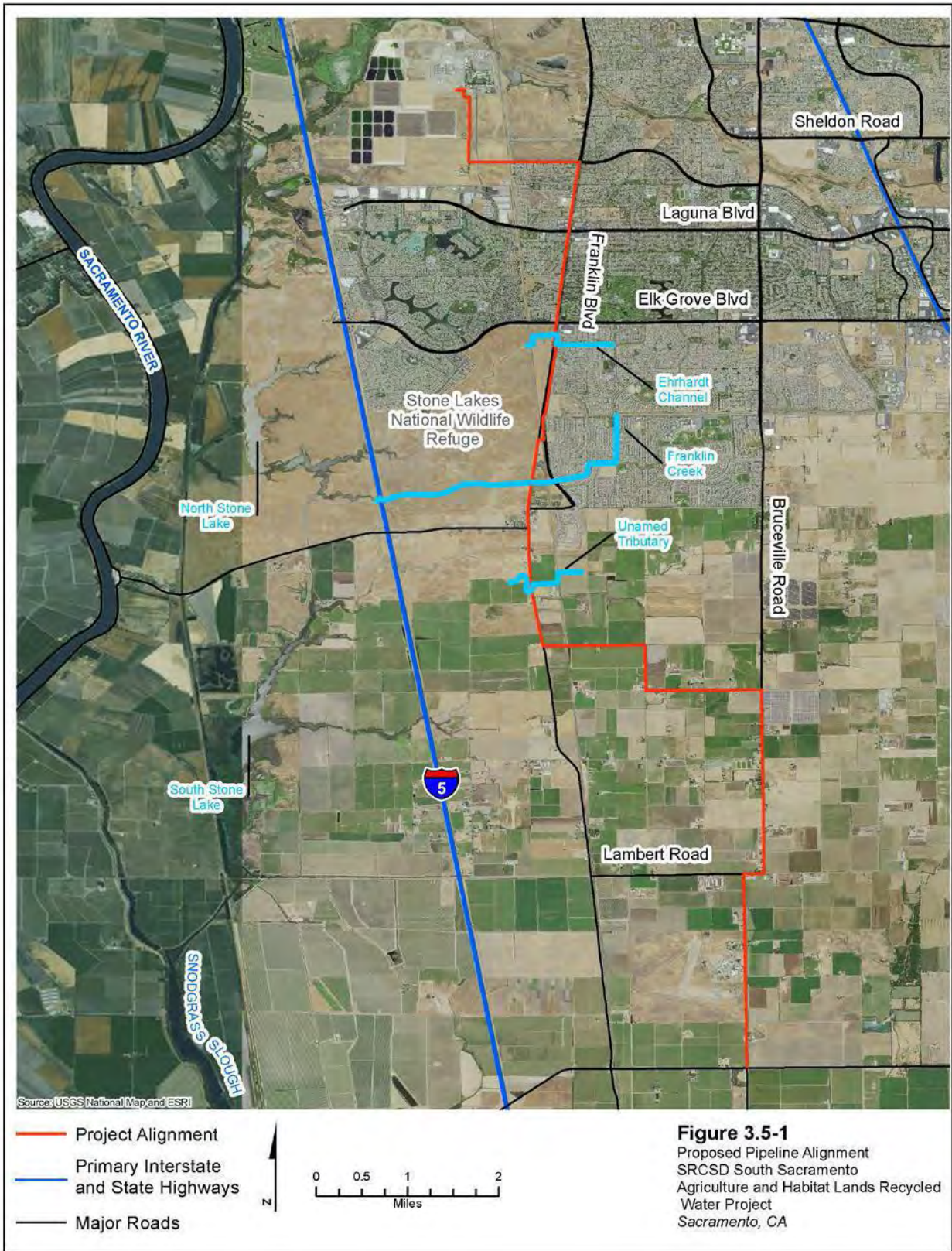


Figure 3.5-1: Aerial Photograph of Project Area

Boulevard) was renamed Ehrhardt Channel by the Elk Grove City Council in 2012 to better reflect its value as a community amenity. Franklin Creek, located about 0.5-mile north of Hood Franklin Road is another large, constructed drainage corridor (unlined trapezoidal channel east of Franklin Boulevard) that primarily captures residential runoff from the southern-most portion of the City of Elk Grove and conveys runoff westward to I-5 in the Stone Lakes NWR and, ultimately, North Stone Lake. Franklin Creek, when originally constructed, was named the "Shed B Channel". It also was renamed in 2012 by the Elk Grove City Council to better reflect its community value as an amenity. Both the Ehrhardt Channel and Franklin Creek appear to support only ephemeral flows.

A large and unnamed natural watercourse crosses beneath Franklin Boulevard about 0.7-mile south of Hood Franklin Road. The corridor has been heavily channelized east of the alignment and is currently impounded and used by a dairy farm as a settling basin. Outflow from the basin flows westward to a realigned natural channel that meanders through NWR lands and ultimately is tributary to South Stone Lake. The drainage appears to support perennial surface flows. The remaining watercourses in this section of the alignment are generally agricultural supply canals and drains. Potential impacts to drainage courses and sensitive species they may support are described later in this section.

Active Agriculture. The remaining portion of the alignment, from south of the natural watercourse described in the previous paragraph to the Project area terminus at the intersection of Bruceville Road and Twin Cities Road, traverses active or idled agricultural lands. Surface water features in this approximately 7-mi long section are largely limited to agricultural canals and drains, with some of these impounded and used for irrigation supply basins. A few undeveloped parcels supporting relict vernal pools and vernal swales are located in this section. Prior to urban and residential development in this portion of Sacramento County, the entirety of the Project area vicinity likely consisted of extensive complexes of vernal pools and swales. Currently, these natural, high-habitat-value features are largely restricted to Stone Lakes NWR.

3.5.2 Regulatory Framework

This section summarizes federal, state, and local laws, policies, and regulations that may be relevant to the proposed Project. Additional permitting and approval processes other than those listed below may be applicable.

Federal Policies and Regulations

Endangered Species Act

The 1973 Endangered Species Act (FESA) (16 USC 1531-1544) as amended provides for the conservation of ecosystems (both through federal action and by encouraging the establishment of state programs) upon which threatened and endangered species of fish, wildlife, and plants depend. The FESA is enforced by the USFWS (with jurisdiction over plants, wildlife, and resident fish) and by National Marine Fisheries Service (NMFS) (with jurisdiction over anadromous fish and marine fish and mammals).

Section 9 of the FESA and federal regulations prohibit the take of fish and wildlife species listed as endangered or threatened (16 USC 1538 (19)). The term "take" means to harass, harm,

pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct (16 USC 1532). "Harm" includes significant habitat modification or degradation that actually kills or injures listed wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, and sheltering (50 CFR 17.3 (c)). NMFS defines "harm" to include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, spawning, rearing, migrating, feeding, or sheltering.

Section 7 of the FESA mandates that all federal agencies consult with the USFWS and NMFS if they determine that a proposed project may result in take of a listed species or designated critical habitat. Section 10 of the FESA provides a permitting avenue for non-federal actions and applicants to secure incidental take permission. Section 10 requires the preparation of a Habitat Conservation Plan (discussed below).

Migratory Bird Treaty Act

The Migratory Bird Treaty Act of 1918 (MBTA; 16 United States Code 703-712) makes it unlawful to take, possess, buy, sell, purchase, or barter any migratory bird listed in 50 Code of Federal Regulations (CFR) Part 10, including feathers or other parts, nests, eggs, or products, except as allowed by implementing regulations (50 CFR 21). Disturbance that causes nest abandonment or loss of reproductive effort (e.g., killing or abandonment of eggs or young) may be considered a "take" and is potentially punishable by fines and imprisonment. Incidental take permits are not issued for the MBTA. Any proposed project must take measures to avoid the take of any migratory birds, nests, or eggs. The proposed Project will need to demonstrate compliance with the MBTA, and will develop avoidance and minimization measures as needed to avoid take as defined under the MBTA

Clean Water Act-Section 404

The federal Clean Water Act (CWA) provides guidance for the restoration and maintenance of the chemical, physical, and biological integrity of the nation's waters. Section 404 of the CWA is administered by the United States Army Corps of Engineers (USACE), which has jurisdiction over fill materials in essentially all water bodies, including wetlands. Section 404 established a permit program to regulate the discharge of dredged or fill material into waters of the U.S., including wetlands. The proposed Project will require Section 404 permit from USACE for regulated dredge and fill activities within jurisdictional waters of the U.S.

Clean Water Act-Section 401

Section 401 of the CWA requires that an applicant for a federal license or permit (e.g. 404 permit) that allows activities resulting in a discharge to waters of the U.S. must obtain a state certification that the discharge complies with other provisions of the CWA. The Regional Water Quality Control Boards (RWQCB) administer the certification program in California. The proposed Project will require a Section 401 certification, or waiver thereof, from the RWQCB for dredge and fill activities within the Project area.

State Policies and Regulations

California Endangered Species Act (CESA)

Section 2080 of the California Fish and Game Code prohibits the take of any species that the California Fish and Game Commission determines to be an endangered species or a threatened species. Take is defined in Section 86 of the Fish and Game Code as to “hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill.” The California Endangered Species Act (CESA) allows for take incidental to otherwise lawful activities. CESA emphasizes early consultation to avoid potential impacts to rare, endangered, and threatened species and to develop appropriate mitigation planning to offset project-caused losses of listed species’ populations and their essential habitats. If the project cannot avoid take of species listed under the CESA, the applicant may need to consult with CDFW under Section 2081 for an incidental take permit. Avoidance measures are commonly developed and implemented by a project proponent to avoid the need for a CESA permit.

California Fish and Game Code

The CDFW Streambed Alteration Program regulates activities that would “substantially divert or obstruct the natural flow of, or substantially change the bed, channel, or bank of, or use material from the streambed of a natural watercourse” that supports wildlife resources. Project activities within a streambed would require a Streambed Alteration Agreement from CDFW pursuant to Fish and Game Code Section 1600.

Section 3503 of the Fish and Game Code states that it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird. Section 3503.5 of the California Fish and Game Code states that it is unlawful to take, possess, or destroy any raptors, including their nests or eggs. Typical violations include destruction of active nests as a result of tree removal or disturbance caused by project construction or other activities that cause the adults to abandon the nest, resulting in loss of eggs and/or young.

Sections 3505, 3511, 3513, 3800, 4700, 5050, and 5515 of the California Fish and Game Code pertain to fully protected wildlife species and strictly prohibit the take of fully protected species. With certain exceptions, the California Department of Fish and Wildlife (CDFW) cannot issue a take permit for fully protected species and avoidance measures are typically implemented to avoid take. Avoidance and minimization measures will be developed and implemented to comply with various sections of the California Fish and Game Code.

Local Policies and Regulations

Sacramento County General Plan

Conservation Element

The Sacramento County General Plan Conservation Element (Sacramento County 2011) includes the following goals, objectives, and policies relevant to the proposed Project:

- **GOAL:** Preserve and manage natural habitats and their ecological functions throughout Sacramento County.

- **Objective:** Mitigate and restore for natural habitat and special status species loss.
- Policy CO-58: Ensure no net loss of wetlands, riparian woodlands, and oak woodlands.
- Policy CO-59: Ensure mitigation occurs for any loss or modification to the following types of acreage and habitat function: vernal pools, wetlands, riparian, native vegetative habitat, and special status species habitat.
- Policy CO-60: Mitigation should be directed to lands identified on the Open Space Vision Diagram.
- Policy CO-61: Mitigation should be consistent with Sacramento County-adopted habitat conservation plans.
- Policy CO-62: Permanently protect land required as mitigation.
- **GOAL:** Preserve, protect, and enhance natural open space functions of riparian, stream, and river corridors.
- **Objective:** Protect and restore natural stream functions.
- Policy CO-107: Maintain and protect natural function of channels in developed, newly developing, and rural areas.
- **GOAL:** Sacramento County vegetative habitats preserved, protected, and enhanced.
- **Objective:** Heritage and landmark tree resources preserved and protected for their historic, economic, and environmental functions.
- Policy CO-138: Protect and preserve non-oak native trees along riparian areas if used by Swainson's hawk, as well as landmark and native oak trees measuring a minimum of 6 inches in diameter or 10 inches aggregate for multi-trunk trees at 4.5 feet above ground.
- Policy CO-139: Native trees other than oaks, which cannot be protected through development, shall be replaced with in-kind species in accordance with established tree planting specifications, the combined diameter of which shall equal the combined diameter of the trees removed.
- Policy CO-140: For projects involving native oak woodlands, oak savannah, or mixed riparian areas, ensure mitigation through the methods described.

City of Elk Grove General Plan

Guiding and Focused Goals

The following guiding and focused goals from the City of Elk Grove General Plan are relevant to the proposed Project (City of Elk Grove 2015):

- Guiding Goal 3: Protection of the Natural Environment
 - Focused Goal 3-1: Development that recognizes environmental constraints and is designed and operated to minimize impacts on the environment.
- Guiding Goal 4: Preservation and Enhancement of Elk Grove's Unique Historic and Natural Features
 - Focused Goal 4-2: Preservation of the large oak and other tree species that are an important part of the City's historic and aesthetic character.

Conservation and Air Quality Element

The following policies from the Conservation and Air Quality Element of the City of Elk Grove General Plan (City of Elk Grove 2015) are relevant to the proposed Project:

- Policy CAQ-8: Large trees (both native and non-native) are an important aesthetic (and, in some cases, biological) resource. Trees that function as an important part of the City's or a neighborhood's aesthetic character or as natural habitat should be retained to the extent possible during the development of new structures, roadways, parks, drainage channels, and other uses and structures. If trees cannot be preserved onsite, offsite mitigation or payment of an in-lieu fee may be required. Trees that cannot be protected shall be replaced either onsite or offsite as required by the City.
- Policy CAQ-9: Wetlands, vernal pools, marshland, and riparian areas are considered to be important resources. Impacts to these resources shall be avoided unless shown to be technically infeasible. The City shall seek to ensure that no net loss of wetland area occurs, which may be accomplished by avoidance, revegetation, and restoration onsite or creation of riparian habitat corridors.
- Policy CAQ-11: The City shall seek to preserve areas, where feasible, where special-status plant and animal species and critical habitat areas are known to be present or potentially occurring that may be adversely affected by public or private development projects. Where preservation is not possible, appropriate mitigation shall be included in the public or private project.

Bufferlands Master Plan

Regional San manages the SRWTP Bufferlands consistent with management objectives and policies described in the Bufferlands Master Plan. The principle objectives of Bufferlands management are to maintain the function of the Bufferlands, allowing continued SRWTP operation and expansion; provide and maintain extensive areas of open space, high-quality wildlife habitat, and other valuable natural resources; provide areas to mitigate environmental impacts associated with Regional San projects; minimize conflicts and develop beneficial relationships with the local community; promote public enjoyment and appreciation through educational outreach; and generate lease revenues. Consistent with the Sacramento County General Plan, the Bufferlands Master Plan contains policies for the preservation and management of natural habitats and their ecological functions including avoiding, minimizing, and mitigating impacts to special-status species.

Sacramento County Swainson's Hawk Ordinance

Chapter 16.130 of Title 16 of the Sacramento County Code addresses the reduction in Swainson's hawk foraging habitat within unincorporated Sacramento County. Participating in the County's Swainson's hawk Mitigation Program, which is voluntary, is one option for mitigating the loss of foraging habitat within unincorporated areas of the County. Under this program, mitigation for impacts less than 40 acres can be achieved by paying a mitigation fee or providing replacement habitat (title or easement to suitable Swainson's hawk mitigation lands on a per-acre basis); mitigation for impacts of 40 acres or greater can be achieved only by providing replacement habitat under this program. Another option for permitting impacts to Swainson's

hawk is participation in Sacramento County's South Sacramento Habitat Conservation Plan, discussed in detail later in this section.

Sacramento County Tree Preservation Ordinance

The Sacramento County Tree Preservation Ordinance provides protection for trees within the designated urban area of the unincorporated area of Sacramento County. The Tree Preservation Ordinance applies only to the designated urban area, except for projects that require a discretionary land use entitlement, such as a parcel map. The main facilities portion of the project area is within a designated urban area ("public and quasi-public") and subject to the Tree Preservation Ordinance. The tree preservation ordinance applies to trees meeting the following specifications:

- native oak trees with a diameter at breast height (DBH) of 6 inches or greater;
- heritage oak trees, which are defined as California oak trees native to Sacramento County with a DBH of 19 inches (or circumference of 60 inches) or greater; and
- public trees, which are defined as any tree with one-half of its crown diameter (drip line) overlapping public property; and landmark trees, which are defined as especially prominent or stately trees.

No person shall trench, grade or fill within the dripline of any tree or destroy, kill or remove any tree as defined, in the designated urban area of the unincorporated area of Sacramento County, on any property, public or private, without a tree permit, or unless authorized as a condition of a discretionary project approval by the Board of Supervisors, County Planning Commission, Zoning Board of Appeals, the Zoning Administrator or the Subdivision Review Committee. The Tree Coordinator is responsible for administration of the Tree Preservation Ordinance. The ordinance protects all oak trees unless they are specifically designated for removal as part of an approved project. When oaks are removed they must be replaced with the same tree species equaling in sum the diameter of the tree lost. Any person may pay a fee of \$325.00 per inch diameter to remove oaks when their replacement is not possible due to site constraints (Sacramento County 2011).

South Sacramento Habitat Conservation Plan

Sacramento County and its Plan Partners are currently drafting a Habitat Conservation Plan (HCP) to secure permission to incidentally take Covered Species. Covered Species are species that will be listed on the CESA and federal ESA Incidental Take Permits issued by the two Wildlife Agencies (USFWS and CDFW). The South Sacramento HCP (SSHCP), anticipated to be completed and adopted in spring 2017 (Sacramento County, 2016), includes and analyzes projects and activities and estimates the effects from each activity on Covered Species currently identified in the Plan. Projects and activities described in the SSHCP are referred to as "covered activities". HCP-covered activities are conditionally afforded coverage from prohibitions (namely, "take" of Covered Species) if they are implemented in a manner that is consistent with the expectations of and commitments within the HCP.

The proposed Project would be a covered activity within the SSHCP. As such, FESA consistency and permitting requirements will be facilitated by demonstrating consistency with

and satisfying requirements of the SSHCP. Incidental take of state-listed species would be permitted under the California Endangered Species Act (CESA) through a process being completed in conjunction with the SSHCP. Although the SSHCP has not yet been approved, Sacramento County intends to approve the HCP before permitting and construction of the proposed Project is scheduled to start.

The SSHCP establishes an Urban Development Area (UDA) within which most future development is anticipated to occur during the permit term. Outside of the UDA a limited amount of incidental take is requested for specific infrastructure projects (such as this one) and to provide for species conservation activities. Near the proposed Project alignment, the UDA boundary is located near the intersection of Franklin Boulevard with Kammerer Road: north of this junction is within the UDA, and south of this junction is outside of the UDA. HCP conditions for covered activities developed in the HCP Plan Area are different within and outside of the UDA. Mitigation ratios are applied to directly impacted and to indirectly impacted high-value resources (e.g., vernal pools).

Consistency with the SSHCP is demonstrated on a project-by-project basis. Jurisdictional delineations are completed by applicants and results of these project-specific efforts are compared with mapping efforts of the SSHCP. If differences are noted, project delineations are provided to Sacramento County so that they may update the GIS files and information in the SSHCP. If projects-specific impact calculations (based on land cover types) are consistent with the estimates included in the SSHCP, the project would provide compensatory mitigation per the terms and conditions of the SSHCP. In this manner, several different permits and approval processes (e.g., CWA section 404 and 401, FESA, CESA, and Lake and Streambed Alteration Agreements under section 1600 of the Fish and Game Code) are intended to be facilitated by the SSHCP.

The SSHCP's Conservation Strategy is based on the concepts of conservation biology and landscape ecology, biological goals and objectives for the covered species, and the nature, quality, and geographical distribution of the suitable habitats in the HCP Plan Area. The strategy includes requirements to:

- Create an integrated Preserve System that conserves the natural land covers, certain Cropland, and Irrigated Pasture–Grassland in the Plan Area. The Preserve System will preserve at least 33,796 acres for the benefit of the SSHCP Covered Species, and the natural communities, biological diversity, and ecosystem function of the Plan Area.
- Provide for the continued persistence of Covered Species in the Plan Area.
- Protect remaining natural segments of Elder Creek, Frye Creek, Gerber Creek, Morrison Creek, Paseo Central, Sun Creek, and their first and second order tributaries within the Urban Development Area (UDA) portion of the Plan Area.
- Protect all of the Laguna Creek Corridor within the Plan Area.
- Manage preserved lands to enhance populations of Covered Species and maintain biological diversity within the Preserve System.
- Maintain existing watershed functions in the Plan Area to benefit wetlands (aquatic land cover types), and to support aquatic Covered Species and their habitats.

- Re-establish Vernal Pool land cover to ensure the Plan meets County of Sacramento (County), state, and federal requirements for “no-net-loss” of waters and wetlands and to offset impacts to vernal pool Covered Species.
- Re-establish riparian and other aquatic land cover to ensure the Plan meets County, state, and federal requirements for “no-net-loss” of waters and wetlands and to offset impacts to riparian Covered Species.

In short, SSHCP participants implementing covered activities agree to complete specific habitat-level and species-level actions for the benefit of HCP-covered species. Sacramento County will collect development fees from projects (based on impact to habitat ratios, by habitat type) to accomplish the SSHCP’s conservation goals and objectives, and assemble a network of conservation areas.

3.5.3 Special-Status Resources

Special-status resources evaluated in this EIR include both sensitive habitats and plant communities, and sensitive species. These are defined below.

Special-Status Natural Communities

Special-status natural communities include important habitats or plant associations considered by the CDFW as communities that are of limited distribution statewide or within a county or region and are often vulnerable to environmental effects of projects. These communities may or may not contain special status species or their habitat. Nomenclature for these communities was originally established by Holland (1986), but has been modified through time to reflect the current understanding of vegetation associations and their distributions (e.g., Sawyer Keeler-Wolf 1995). Sensitive natural communities are tracked and reported by the California Natural Diversity Database (CNDDDB) along with sensitive species.

A CNDDDB query of the Florin and Bruceville quadrangles and their 10 adjacent quadrangles identified seven special-status natural communities in the vicinity of the Project area (**Table 3.5-1**). Three of these seven natural communities are intersected by the defined Project area. These are coastal and valley freshwater marsh, Great Valley mixed riparian forest, and northern hardpan vernal pool.

Coastal and valley freshwater marsh (CVFWM). This natural community is dominated by perennial emergent monocots like cattails (*Typha* spp.) and tules (*Schoenoplectus acutus*). Locations supporting CVFWMs are often permanently flooded by freshwater and lack significant currents. Prolonged saturation often allows the formation of peaty soils. Historically, the community was extensively distributed in the Central Valley, but is currently much reduced due to land development and reclamation actions. CVFWM was documented at six locations totaling 4.6 acres in the defined wetland survey area of the wetland delineation report prepared for the proposed Project (CH2M, 2015).

Great Valley mixed riparian forest. This community is characterized by tall, dense, winter-deciduous and broad-leafed species including Fremont cottonwood (*Populus fremontii*), California sycamore (*Platanus racemosa*), California black walnut (*Juglans hindsii*), Goodding's

willow (*Salix gooddingii*), red willow (*S. laevigata*), yellow willow (*S. lasiandra*), and box elder (*Acer negundo*). Soils supporting this community are typically fine-textured alluvial materials from historic or active river channels, with overbank flooding common. Formerly extensive in the Sacramento and north San Joaquin valleys, this community has been reduced substantially by land clearing for agricultural, flood control, and urban expansion. The wetland delineation report prepared for the proposed Project reports nine locations where forested/scrub-shrub wetlands occur in the defined wetland survey area, totaling 4.4 acres.

Northern hardpan vernal pool. This natural community type is typically characterized by small-statured annual herbs and grasses. Germination and growth of vegetation begins with winter rains that fill pool features when collected water perches on the soil hardpan. Rising spring temperatures evaporate the ponded surface waters, leaving bands of vegetation that circle the drying pools. Once extensive in the Central Valley between Tulare and Fresno counties, northward to Shasta County, northern hardpan vernal pools have been reduced by land conversion such as agriculture and urban development. As described in the wetland delineation report prepared for the proposed Project (CH2M Hill 2015), vernal pools are extensively distributed in the Stone Lakes NWR lands near the northern portion of the alignment, west of Franklin Boulevard. The wetland delineation reports 48 vernal pools/swales within the defined wetland survey area totaling 20.2 acres.

Potential impacts to these special status natural communities are described later in this section. The remaining four special-status natural communities shown in **Table 3.5-1** do not occur in the Project area, and these are not discussed further in this EIR.

Wetlands and Other Waters of the U.S.

Most types of wetlands and riparian communities are considered special status natural communities due to their limited distribution in California. These natural communities often contain special status plants such as those described above. As describe previously in this section, certain activities within wetlands and other waters of the U.S. are regulated by the USACE under the federal Clean Water Act. The CDFW may regulate activities in wetlands and aquatic areas under Fish and Game Code section 1600 and section 2081, among other sections of code.

A wetland delineation report has been prepared for the proposed Project to document aquatic features within and near the Project area (CH2M HILL 2015), and to support future permitting needs. The wetland delineation report established a wetland survey area within which all aquatic features were identified and quantified (enumerated and areas measured). The wetland survey area included the Project APE (which ranges from 80 to 250 feet wide along the alignment) and a 250-foot buffer on each side of the APE.

Within the defined wetland survey area, the following aquatic feature types and areas were identified: vernal pools and vernal swales (20.2 acres), seasonal wetlands (1.2 acres), freshwater marshes (4.6 acres), scrub-shrub and forested wetlands (4.4 acres), constructed basins (6.4 acres), natural watercourses (0.6-acre), and constructed watercourses (10.4 acres). At the time of writing

this section, the wetland delineation report had not yet been reviewed and verified by the USACE, and these total areas should therefore be considered provisional.

Forested and scrub-shrub wetlands occur in the Project area in association with natural watercourses and constructed watercourses. Most of these habitats are fragmented and likely represent just a fraction of their historic distribution and areal extent. These vegetated communities are more fully developed and in better condition when the associated watercourses are consistently wetted, either perennially or intermittently. Watercourses with ephemeral hydrology rarely support forested or scrub-shrub wetlands in the Project area.

Constructed basins included dairy and agricultural tailwater ponds or settling basins, though some basins appeared to be constructed for irrigation supply sources (based on the associated presence of large water pumps). Freshwater marsh areas in the Project area are located where water sources are perennial, usually near the outlets of constructed basins or at the margins of agricultural supply canals. Seasonal wetlands are uncommon in the Project area and, like vernal pools, are only seasonally wetted.

Special-Status Species

Special-status species are defined as species that are legally protected or that are otherwise considered sensitive by Federal, State, or local resource agencies. Special-status species are species, subspecies, or varieties that fall into one or more of the following categories, regardless of their legal or protection status:

- Species officially listed under the CESA or the FESA as endangered, threatened, or rare;
- Species identified as a candidate for CESA or FESA listing as endangered, threatened, or rare;
- Species identified by CDFW as Species of Special Concern;
- Species listed as Fully Protected under the California Fish and Game Code;
- Species considered by the California Native Plant Society (CNPS) to be “rare, threatened, or endangered in California” and assigned a California Rare Plant Rank (CRPR) of 1 or 2. Ranks 1 and 2 include:
 - Rank 1A – Plants presumed to be extinct in California;
 - Rank 1B – Plants that are rare, threatened, or endangered in California and elsewhere;
 - Rank 2 – Plants that are rare, threatened, or endangered in California but more common elsewhere;

All plants with a CRPR are considered “special plants” by CDFW. The term “special plants” is a broad term used by CDFW to refer to all of the plant taxa inventoried in CDFW’s CNDDDB, regardless of their legal or protection status. Plants ranked as CRPR 1A, 1B, and 2 may qualify as endangered, rare, or threatened species within the definition of State CEQA Guidelines CCR Section 15380. CDFW recommends, and local governments may require, that CRPR 1A, 1B, and 2 species be addressed in CEQA projects.

The term “California Species of Special Concern” is applied by CDFW to animals not listed under the CESA, but that are considered to be declining at a rate that could result in listing, or historically occurred in low numbers and known threats to their persistence currently exist. CDFW’s Fully Protected status was California’s first attempt to identify and protect animals that were rare or facing extinction. Most species listed as fully protected were eventually listed as threatened or endangered under CESA; however, some species remain listed as fully protected but do not have simultaneous listing under CESA. Fully protected species may not be taken or possessed at any time and no take permits can be issued for these species except for scientific research purposes or for relocation to protect livestock.

A CNDDDB query of the Florin and Bruceville quadrangles (which completely contain the proposed Project elements) and their 10 adjacent quadrangles (which in total contain all Project and program elements) identified 51 special-status species historically detected in the vicinity of the Project area (**Table 3.5-1**). A query of the USFWS IPaC database added one rare plant to this CNDDDB list. Suitable habitat for 31 of these 52 species (13 plants, 3 invertebrates, 4 amphibians/reptiles, and 5 birds) occurs in or near the defined Project area. Conversely, suitable habitat for 21 of the 52 species does not exist in the Project area, and/or their database records are suspect for one or more reasons. These 21 species are not discussed further in this EIR. Additionally, based on site-specific information, loggerhead shrike is known to occur in the Project area. The potential for occurrence of the 32 species for which suitable habitat does occur in or near the defined Project area is discussed below.

While sensitive fish species do not occur in the Project area, a reduction in Sacramento River flows may adversely affect species in that system. For this reason, species profiles for several fish species that may be affected by the Proposed Project or its action alternatives are included in this section.

Plants

Review of relevant literature and presence of suitable habitat in the Project area suggests that 13 sensitive plant species may potentially occur in the proposed Project area. These are described below.

Bristly sedge. Bristly sedge is a perennial, rhizomatous herbaceous species typically found along the edges of marshes and within riparian understories, but also within wet areas of grasslands. Bristly sedge may associate with freshwater marsh species such as cattails and tules, and occurs from sea level to 650 meters above sea level. It blooms from May through September, and the CNDDDB reports 10 occurrences of this species from the Bruceville quad, with most of these from the southern Stone Lakes area and the lower Mokelumne River area. This CRPR 2B.1 species has a moderate potential to occur in the Project area in association with freshwater marshes and ditch features that are regularly and consistently wetted.

Dwarf downingia. Dwarf downingia is a small annual and herbaceous vernal pool associate that blooms from March to May. It may also be found in association within mesic grasslands. The CNDDDB reports a 2010 occurrence (of over 1,000 plants) within vernal pools near the Elk Grove Boulevard intersection with I-5. This CRPR 2B.2 species has a moderate potential to occur

within the Project area where it intersects vernal pools or vernal swales. Dwarf downingia is a covered species in the SSHCP.

Boggs Lake hedge-hyssop. Boggs Lake hedge-hyssop is an annual herbaceous vernal pool associate that grows at elevations from 10 to 2400m above sea level. It may also associate with freshwater marshes and swamps. The CNDDDB does not report this species within the Bruceville or Florin quads. Five occurrences are reported from vernal pools in adjacent quadrangles (Elk Grove and Carmichael quads). This CRPR 1B.2 and CESA-listed endangered species has a low potential to occur within the Project area where it intersects vernal pools or vernal swales. Boggs Lake hedge hyssop is a covered species in the SSHCP.

Woolly rose-mallow. Woolly rose-mallow is a perennial, herbaceous species found in association with freshwater marshes and swamps, and sometimes growing within the riprap of drainage levees, from sea level to 120 meters above sea level. It blooms from June through September. The CNDDDB reports nine occurrences of this species within the Florin and Bruceville quads, most of which include the lower Cosumnes River and Snodgrass Slough areas. This CRPR 1B.2 species has a low potential to occur in the Project area in association with perennially wetted drainage features.

Northern California black walnut. Northern California black walnut is a large, deciduous, perennial tree species that typically is found in riparian settings. The CNDDDB reports a single occurrence of this species in the Bruceville quad, along the Sacramento River near Walnut Grove. However, this species is well-represented along the major riverfronts in the Sacramento area, but not recorded in the CNDDDB. This CRPR 1B.1 species has a moderate potential to occur in the Project area along perennially wetted ditches with established and mature riparian vegetation.

Ahart's dwarf rush. Ahart's dwarf rush is a small-statured rush species found in vernal pools and mesic grassland areas from 30 to 229 meters above sea level. This annual herb blooms from March through May. The CNDDDB does not report this species from the Florin or Bruceville quads, but does report a single occurrence from a vernal pool complex at Mather AFB in 2006. This CRPR 1B.1 species has a low potential for occurrence with the Project area's vernal pool features. This is a covered species in the SSHCP.

Delta tule pea. Delta tule pea is a perennial, herbaceous species that associates with freshwater and brackish water marshes and swamps near sea level (0 to 5 meters above sea level). It blooms from May through September. The CNDDDB reports four occurrences of this species in the Florin and Bruceville quads, with most of these near the tidally-influenced Snodgrass Slough. This CRPR 1B.1 species has a low potential for Project area occurrence in association with freshwater marsh habitats.

Legenere. Legenere is an annual, herbaceous vernal pool associate found from sea level to 880 meters above sea level. It blooms from April through June. The CNDDDB reports five occurrences of this species from the Florin and Bruceville quads, one of which (in 1995) is located near the Regional San Bufferlands, near the northern portion of the alignment. This

CRPR 1B.1 species has a moderate potential for occurrence in association with Project area vernal pools and swales. Legenere is a covered species in the SSHCP.

Heckard's pepper-grass. Heckard's pepper-grass is an annual, herbaceous species that blooms from March through May and ranges from sea level to 200 meters above sea level. This plant is a California endemic known only from five California counties, including Sacramento County. The CNDDDB reports only two historic occurrences of this species from the 12-quad search area, one of which (in 2010) was located in association with a seasonal wetland pool south of Stone Lake. Heckard's pepper-grass typically associates with alkaline flats in grassland habitats. This CRPR 1B.2 species has a low potential to occur in the Project area in association with seasonal wetland or vernal pool/swale habitats.

Sanford's arrowhead. Sanford's arrowhead is a perennial herbaceous species associated with marshes and ponded areas, and in ditches with slow-moving water, occurring from sea level to 650 meters above sea level. It blooms from May through November. The CNDDDB reports 18 occurrences of this species within the Florin and Bruceville quads. Most occurrences are along marshy creeksides near the southern portion of the Project area. This CRPR 1B.2 species has a moderate potential for occurrence in the Project area in association with consistently wetted ditch features. Sanford's arrowhead is a covered species in the SSHCP.

Marsh skullcap. Marsh skullcap is a perennial herbaceous species found in association with marshes and swamps, seeps, mesic meadows, and lower montane coniferous forests. It is commonly found growing on logs. This species blooms from June through September and is found from sea level to 1,950 meters above sea level. The CNDDDB reports two occurrences of this species in the Florin and Bruceville quads, both at Snodgrass Slough near the Twin Cities Road crossing. This CRPR 2B.2 species has a low potential for occurrence in the Project area where slow moving or ponded waters are persistent.

Side-flowering skullcap. Side-flowering skullcap is a perennial herbaceous species found in association with marshes and swamps, seeps, and mesic meadows. This species blooms from July through September, ranges in elevation from sea level to 500 meters above sea level, and is also commonly found growing on logs. It is known from only three California counties, one of which includes Sacramento County. The CNDDDB reports five occurrences of side-flowering skullcap from the Florin and Bruceville quads, all of which are at Snodgrass Slough. This CRPR 2B.2 species has a low potential for occurrence in the Project area where slow moving or ponded waters are persistent.

Saline clover. Saline clover is an annual herbaceous species associated with marshes and swamps, mesic and alkaline valley and foothill grasslands, and vernal pools. It blooms from April through June and ranges in elevation from sea level to 300 meters above sea level. The CNDDDB reports four occurrences of this species from the Florin and Bruceville quads, all of which were found in association with vernal pools in the Stone Lakes NWR. This CRPR 1B.2 species has a low potential for occurrence in vernal pools of the Project area.

Invertebrates

Review of relevant literature and presence of suitable habitat in the Project area suggest that three sensitive invertebrate species may occur in the Project area. These are described below.

Vernal pool fairy shrimp. The vernal pool fairy shrimp (VPFS) is currently found in 28 counties across the Central Valley and coastal ranges of California (and in Jackson County of southern Oregon). The species occupies a variety of vernal pool habitats and is distributed more widely than most other fairy shrimp species, but it is generally uncommon throughout its range, and is rarely abundant (USFWS 2005). VPFS are documented by the CNDDDB to occur in the Stone Lakes NWR Wetland Preserve Unit to the west of the Project area, and this species has a moderate potential for occurrence in the Project area where the alignment crosses vernal pool or vernal swale features. VPFS is listed as a threatened species under the FESA, and is an SSHCP covered species.

Valley elderberry longhorn beetle. Valley elderberry longhorn beetle (VELB) are obligate associates with their larval host plant, elderberry (*Sambucus* spp.) - typically blue elderberry (*S. mexicana*). Elderberry is a common component of the remaining riparian forests and adjacent upland habitats of California's Central Valley. Use of elderberry by adult VELB, a wood borer, is rarely apparent. Instead, the only exterior evidence of VELB presence is an exit hole created by larvae. The life cycle takes one or two years to complete. This insect species spends most of its life in the larval stage, living within the stems of an elderberry plant. Adult emergence is from late March through June, about the same time the elderberry produces flowers. The adult stage is short-lived (USFWS 1999). The CNDDDB reports only a single occurrence of VELB in the Bruceville or Florin quads along the Cosumnes River corridor. Where large elderberry bushes occur in the Project area, VELB has a moderate potential for occurrence. This species is listed as threatened under the FESA and is an SSHCP covered species.

Vernal pool tadpole shrimp. The vernal pool tadpole shrimp (VPTS) is currently distributed across the Central Valley of California and in the San Francisco Bay area. The species' distribution has been greatly reduced over time as a result of widespread destruction and conversion of vernal pool habitat. VPTS are uncommon even where vernal pool habitats occur (USFWS 2005). VPTS are documented by the CNDDDB to occur in the Stone Lakes NWR Wetland Preserve Unit to the west of the Project area, and this species has a moderate potential for occurrence in the Project area where the alignment crosses higher-value, relatively intact vernal pool features. VPTS is listed as endangered under the FESA, and is an SSHCP covered species.

Amphibians and Reptiles

Review of relevant literature and presence of suitable habitat in the Project area suggests that two sensitive reptile species and two sensitive amphibian species may occur in the Project area. These are described below.

Western pond turtle. The western pond turtle is uncommon to common in suitable aquatic habitat throughout California, which includes permanent to semi-permanent waters of slow moving rivers and streams, ponds, and lakes. Pond turtles require basking sites such as partially submerged logs, rocks, mats of floating vegetation, or open mud banks. The CNDDDB reports five

occurrences of this species in the Florin and Bruceville quads, with most from Stone Lakes NWR. A ditch occurrence is also reported north of Franklin near the Franklin Boulevard intersection with the Western Pacific Railroad alignment. This species is listed as SSC by the CDFW, and is an SSHCP-covered species. Pond turtles have a moderate potential for occurrence in the Project area at locations where permanent slow-moving waters occur.

California tiger salamander. California tiger salamander (CTS) habitat includes vernal pools, seasonal and perennial ponds, and surrounding upland areas in grassland, oak savannah, edges of mixed hardwood-conifer woodland and low elevation coniferous forest plant communities from sea level to about 1,067 meters. Adult CTS emerge from their upland refugia at night to feed and migrate to breeding ponds when fall or winter rains start. Eggs are laid in ephemeral ponds (like vernal pools), where juveniles rear and metamorphose before ponds dry up in the spring. Juveniles move out and away from breeding ponds into the surrounding uplands, where they live continuously for several years. Upon reaching sexual maturity, most individuals return to their natal (birth) pond to breed, while others disperse to other ponds. A CTS breeding site is defined as a location where CTS are able to successfully breed in years of normal rainfall and persist during the dry months of the year. Therefore, suitable habitat includes both suitable wetlands and surrounding upland habitats. The CNDDDB does not report this species in either the Florin or Bruceville quads, and only reports a single, very dated (1914) occurrence in the Galt quad. Nevertheless, suitable CTS habitat exists in the vast vernal pool complex habitats associated with the Stone Lakes NWR west of the Project area. This species is listed as threatened under both the FESA and CESA, and is an SSHCP covered species. CTS has a low potential for occurrence in the Project area.

Western spadefoot (toad). The western spadefoot associates with ephemeral pools in grasslands and valley-foothill hardwood woodlands throughout the Central Valley and adjacent Sierra foothills. Adults remain in underground burrows during most of the year, but the first rains of fall usually initiate surface movements. Breeding activities in pools normally conclude by the end of March. Tadpoles transform during late spring and juveniles disperse after spending a few hours or days near the breeding pond margins. The CNDDDB does not report this species in either the Florin or Bruceville quads, but reports two occurrences near Mather AFB. Similar to CTS, suitable spadefoot habitat exists in the vernal pool complex habitats associated with the Stone Lakes NWR west of the Project area. Spadefoot is a CDFW SSC and an SSHCP covered species, and has a low potential for occurrence in the Project area.

Giant garter snake. The giant garter snake (GGS) is usually found in marshes, sloughs, ponds, small lakes, low gradient streams, irrigation and drainage canals, and rice fields. Upland habitat is used for cover during the snake's active season and for refuge from flood waters during its dormant season. The geographic distribution of GGS is generally limited to wetlands within the Central Valley floor. The CNDDDB reports 10 occurrences of GGS within the Florin and Bruceville quads, many of which are somewhat dated. Locations of occurrence include Elk Grove Creek, Laguna Creek, Beach Lake in Stone Lakes NWR, and a 1976 detection within a ditch near the intersection of Franklin Boulevard and Hood-Franklin Road. This last detection suggests that GGS have a moderate to high likelihood of occurring in the Project area where

suitable habitat exists. GGS is list threatened under both the CESA and FESA, and is an SSHCP covered species.

Birds

Review of relevant literature and presence of suitable habitat in the Project area suggests that six sensitive bird species may occur in the Project area. These are described below.

Tricolored blackbird. Tricolored blackbirds are highly colonial and typically establish nests in and near freshwater marshes dominated by cattails and bulrushes, and in grain fields in the San Joaquin Valley, especially fields that have relatively large amounts of invasive mustards or mallows. Nesting occurs typically from April through July. The CNDDDB reports 10 occurrences from the Franklin and Bruceville quads, with a number of these very near the defined Project area. However, most occurrences are fairly dated, likely reflecting the accelerated decline of this species since the mid-1980s. On 10 December 2015, the California Fish and Game Commission designated the tricolored blackbird as a candidate for protection under CESA. The species is protected under CESA while the Commission considers full listing. The USFWS is also evaluating a petition to list the species under the FESA; the review period began on 17 November 2015, although, unlike the CESA, additional protections will not go into effect until a decision on listing is announced (the “12-month review period” sometimes takes longer than a year). Tricolored blackbird is an SSHCP covered species. This species has a moderate-potential for occurrence in the Project area where freshwater marsh habitat exists or where large stands of Himalayan blackberry provide potential nesting habitat.

Western burrowing owl. Burrowing owls are ground-dwelling residential or migratory species that exhibit high site fidelity to the ground squirrel (or other mammal) burrows they typically adopt and occupy. Burrowing owls are typically found in short-grass grasslands, open scrub habitats, and a variety of open, human-altered environments, such as the edges of canals or roadways, ditches, and drains along agricultural fields. The CNDDDB reports 16 occurrences within the Florin and Bruceville quads, with several of these from the Regional San Bufferlands, Stone Lakes NWR, and near the Cosumnes River corridor south of the Project area. This species is considered a SSC species by CDFW, and is an SSHCP covered species. Burrowing owl is unlikely to occupy burrows within the defined Project area, but has a moderate potential to occupy nearby grasslands.

Swainson's hawk. Swainson's hawks are migratory, arriving in the Central Valley in late-February to early-March, with nesting typically occurring in April through June. By September, most Swainson's hawk have left California for South America, where they overwinter. Swainson's hawks require large, open grasslands with abundant prey in association with suitable nest trees. Suitable foraging areas include native grasslands or lightly grazed pastures, alfalfa and other hay crops, and certain grain and row croplands. Swainson's hawks often nest in proximity to riparian systems as well as using lone trees or groves of trees in agricultural fields. CNDDDB reports 80 occurrences of Swainson's hawk from the Florin and Bruceville quads, many of which are near the proposed Project area. Swainson's hawk is listed under the CESA as threatened and is an SSHCP covered species. This species has a high potential to nest in or relatively near the Project area where suitable nest trees occur.

White-tailed kite. White-tailed kite is a year-round resident of California typically found in savanna, open woodlands, marshes, desert grassland, partially cleared lands, and cultivated fields. They hunt over lightly grazed or ungrazed fields where there may be larger prey populations than in more heavily grazed areas. This species nests in the upper portion of trees that may be 10–160 feet tall. These can be open-country trees growing in isolation, or at the edge of or within a forest. The nesting season typically ranges from February through October. The CNDDDB reports only a single occurrence of this species in the Florin and Bruceville quads: within the Regional San Bufferlands property, but it is likely that nesting is more widespread than reported. White-tailed kite is an SSHCP covered species, and is considered SSC and fully-protected by the CDFW. It has a moderate potential to nest in or near the Project area.

Loggerhead shrike. Loggerhead shrike is a common resident and winter visitor in lowlands and foothills throughout California. It prefers open habitats with scattered shrubs, trees, posts, fences, utility lines, or other perches. The highest densities occur in open-canopied valley foothill hardwood, valley foothill hardwood-conifer, valley foothill riparian, pinyon-juniper, juniper, desert riparian, and Joshua tree habitats. Loggerhead shrikes typically avoid completely treeless and shrubless areas and urbanized and densely wooded areas. In California, loggerhead shrikes nest from March into May, with young fledging in July or August. Nests are built on stable branches in shrubs or trees, usually well-concealed. The CNDDDB does not report this species from the query area, but it is known to occur at the Bufferlands. Loggerhead shrike is an SSHCP Covered Species and is listed as SSC by the CDFW. It has a moderate potential to nest in Project area trees and shrubs where they abut open grasslands.

Song sparrow (Modesto pop.). Formerly referred to as the Modesto song sparrow and afforded subspecies status (*M. m. mailliardi*), the Modesto Population of song sparrow is a year-round resident of California that is distributed only in the north-central portion of the Central Valley, with highest densities known from the Butte Sink area of the Sacramento Valley and in the Sacramento-San Joaquin River Delta. Nesting occurs from March to June (peaking in May) in freshwater marshes and riparian thickets. CNDDDB reports 10 occurrences of this species within the Florin and Bruceville quads, most of which are from the Sacramento River and Snodgrass Slough areas. This species is listed as SSC by the CDFW. It has a moderate potential for occurrence in the Project area within freshwater marsh and riparian habitats.

Fish

Several sensitive fish species that may be impacted by the proposed Project occur in the Sacramento River and Delta regions. These are described below.

Longfin smelt, Delta smelt, and Sacramento splittail are residents of the Bay-Delta and the lower portions of the Sacramento River system. Longfin smelt is a candidate for listing under the FESA and is state listed as threatened. Delta smelt is listed as federal threatened and state endangered. Sacramento splittail is a California species of special concern. Delta smelt critical habitat is designated in the Delta, the lower Sacramento River to I-Street Bridge, and the lower San Joaquin River near Vernalis (USFWS 1994).

Steelhead and salmon are anadromous, spending much of their life-cycle as adults in the ocean, and returning to spawn in their natal freshwater streams and rivers. Over-summering (holding), spawning, incubation, and rearing of **steelhead, California Central Valley (CCV) Distinct Population Segment (DPS)** (federal threatened) and **Chinook salmon, Central Valley spring-run (SRC) Evolutionarily Significant Unit (ESU)** (federal and state threatened) occurs mainly in the colder headwaters of tributaries to the Sacramento River. Adults and smolts primarily use the Sacramento River mainstem as movement habitat to and from tributary streams. For SRC, self-sustaining populations occur in Deer, Mill, and Butte creeks. CCV steelhead inhabit and spawn in more Sacramento River tributaries than do SRC. Juvenile steelhead and SRC migrate to the ocean after hatching and rearing for some time in natal streams (generally less than 1 or 2 years). Critical habitat for CCV steelhead is designated in the Delta, the Sacramento River mainstem below Keswick Dam, many Sacramento River and San Joaquin River tributaries, and elsewhere (NMFS 2005). Critical habitat for SRC is designated on the Sacramento River mainstem and many of its tributaries, and in the Delta (NMFS 2005).

Chinook salmon, Sacramento River ESU winter-run (federal and state endangered), unlike Central Valley steelhead and Central Valley spring-run Chinook, spawn in the mainstem of the Sacramento River from Keswick Dam downstream to approximately Tehama. Adults return to the Sacramento River from November through May or June, with spawning occurring from late-April through mid-August, and peak spawning in May and June. Fry emergence occurs from mid-June through mid-October. Fry typically emerge beginning in July, with juveniles dispersing to rearing habitats shortly after emergence. Juveniles rear from July through March, and emigrate to the ocean peaking in March and April. Winter-run Chinook salmon are particularly sensitive to excessive water temperatures. Recommended temperatures by life-stage are: migrating adults (<65 F), holding adults (<60 F), spawning (53 to 57.5 F), egg incubation (<55 F), juvenile rearing (53 to 57.5 F), and smoltification (<64 F) (Reclamation 2008). Critical habitat for WRC is designated on the Sacramento River mainstem below Keswick Dam, and in the Bay-Delta (NMFS 1993).

Green sturgeon, southern DPS (federal threatened, SSC) are also anadromous. Adults move up the Sacramento River in March and April, spawning in the mainstem between Hamilton City and Keswick Dam between April and June. Eggs adhere to and between rocky substrates. Hatchlings rear in the same area as spawned for 1 to 2 months. Incubating and rearing green sturgeon are sensitive to water temperature, with 63-64 F the upper limit of optimal temperature for embryos, and 66-75 F optimal for rearing juveniles. Incubating eggs died when water temperature reached 73-79 F (Reclamation 2008). Juveniles rear from 1 to 4 years in freshwater and estuarine habitats, with ocean residence taken up thereafter (Reclamation 2008). Critical habitat for green sturgeon is designated within the Bay-Delta, the Sacramento River mainstem below Keswick Dam, the lower Yuba and Feather rivers, and elsewhere (NMFS 2009).

Table 3.5-1: Potential for Occurrence of Sensitive Natural Community Types and Sensitive Species in Project Area and Vicinity

Resource/ Common Name	Scientific Name	Status Fed/CA/CNPS	General Habitat Description	Potential for Occurrence in Project /Action Area
Communities				
Coastal and valley freshwater marsh	N/A	N/A	Permanently to regularly flooded wetland areas dominated by herbaceous emergent species like cattails and bulrushes	Occurs. Patchily distributed in association with drainages that cross alignment. Mapped in wetland delineation report.
Elderberry savanna	N/A	N/A	Open to moderately-closed stands of elderberry (<i>Sambucus</i> spp.) on floodplains, generally reflecting past disturbance and lack of flood flows.	Does not Occur. Community not present along alignment. May be present in association with natural drainage corridors to south and west.
Great Valley cottonwood riparian forest	N/A	N/A	Community dominated by medium to tall (to 100 feet), broad-leaved winter-deciduous trees including Fremont cottonwood and valley oak.	Does not Occur. Community not present along alignment. May be present in association with natural drainage corridors to south and west.
Great Valley mixed riparian forest	N/A	N/A	Community composed of medium to tall, broad-leaved winter-deciduous trees including Fremont cottonwood, California sycamore, California black walnut, Goodding's willow, red willow, yellow willow, and box elder.	Occurs. Remnant stands patchily located in association with drainages that cross alignment. Mapped in wetland delineation report.
Great Valley valley oak riparian forest	N/A	N/A	Historically occurred extensively along the highest parts of floodplains. Dominated by valley oak, Oregon ash, and California sycamore.	Does not Occur. Community not present along alignment. May be present in association with natural drainage corridors to south and west.
Northern hardpan vernal pool	N/A	N/A	Hummocky complexes that form on old alluvial fans on acidic, iron-silica hardpans. Usually in grassland matrices.	Occurs. Widespread and abundant near northern portion of alignment in Stone Lakes NWR lands. Mapped in wetland delineation report.
Valley oak woodland	N/A	N/A	Valley oak woodlands vary from open savannahs to closed canopy forests. Dense stands occur along natural drainages in deep soils.	Does not Occur. Community not present along alignment. May be present in association with natural drainage corridors to south and west.
Plants				
Large-flowered fiddleneck	<i>Amsinckia grandiflora</i>	FE/CE/1B.1	Cismontane woodland and valley and foothill grasslands at 275-550 meter elevation.	Unlikely. Known from fewer than 5 natural occurrences at moderate elevations of east-facing slopes of the coast range in the northern San Joaquin Valley. Not reported from the project area vicinity.

EIR

Draft

Resource/ Common Name	Scientific Name	Status Fed/CA/CNPS	General Habitat Description	Potential for Occurrence in Project /Action Area
Ferris' milk-vetch	<i>Astragalus tener</i> var. <i>ferrisiae</i>	—/—/1B.1	Vernally mesic meadows and seeps, and sub-alkaline flats in valley and foothill grasslands. 2-75 meter elevation.	Unlikely. Suitable habitat not present in Project area. CNDDDB reports a single, dated (1954) occurrence from 10-quadrant area (in the Yolo Bypass). Not reported from the Project area vicinity.
watershield	<i>Brasenia schreberi</i>	—/—/2B.3	Freshwater marshes and swamps. 30-2,200 meter elevation.	Unlikely. Out of range. Single dated record in CNDDDB from personal collection. Not field verified.
bristly sedge	<i>Carex comosa</i>	—/—/2B.1	Marshes and swamps. 0-650 meter elevation.	May Occur. Suitable habitat exists in Project area. CNDDDB reports several occurrences near Stone Lakes.
Bolander's water hemlock	<i>Cicuta maculata</i> var. <i>bolanderi</i>	—/—/2B.1	Coastal freshwater or brackish water marshes and swamps. 0-200 meter elevation.	Unlikely. Out of range. Single dated record in CNDDDB from personal collection. Not field verified.
Peruvian dodder	<i>Cuscuta obtusiflora</i> var. <i>glandulosa</i>	—/—/2B.2	Freshwater marshes and swamps. 15-280 meter elevation. Parasitic plant.	Unlikely. Out of range. Single dated record in CNDDDB from personal collection. Not field verified.
dwarf downingia	<i>Downingia pusilla</i>	—/—/2B.2	Vernal pools in valley and foothill grasslands. 1-445 meter elevation.	May Occur. Suitable habitat exists in Project area. SSHCP-covered species
Boggs Lake hedge-hyssop	<i>Gratiola heterosepala</i>	—/CE/1B.2	Vernal pools, freshwater marshes and swamps. 10-2,400 meter elevation.	May Occur. Suitable habitat exists in Project area. SSHCP-covered species.
woolly rose-mallow	<i>Hibiscus lasiocarpus</i> var. <i>occidentalis</i>	—/—/1B.2	Freshwater marshes and swamps. Often in riprap on sides of levees. 30-2,200 meter elevation.	May Occur. Suitable habitat exists in Project area.
northern California black walnut	<i>Juglans hindsii</i>	—/—/1B.1	Riparian forest and riparian woodland. 0-440 meter elevation.	May Occur. Suitable habitat exists in Project area.
Ahart's dwarf rush	<i>Juncus leiospermus</i> var. <i>ahartii</i>	—/—/1B.2	Valley and foothill grasslands. 30-230 meter elevation.	May Occur. Suitable habitat exists in Project area. SSHCP-covered species
Delta tule pea	<i>Lathyrus jepsonii</i> var. <i>jepsonii</i>	—/—/1B.2	Freshwater and brackish water marshes/swamps. 0-5 meter elevation.	May Occur. Suitable habitat exists in Project area.
legenere	<i>Legenere limosa</i>	—/—/1B.1	Vernal pools. 1-880m elev.	May Occur. Suitable habitat exists in Project area. SSHCP-covered species
Heckard's pepper-grass	<i>Lepidium latipes</i> var. <i>heckardii</i>	—/—/1B.2	Alkaline flats in valley and foothill grasslands. 2-200 meter elevation.	May Occur. Suitable habitat exists in Project area.
Mason's lilaeopsis	<i>Lilaeopsis masonii</i>	—/CR/1B.1	Marshes and swamps (brackish or freshwater), and riparian scrub. 0-10 meter elevation. Typically in low elevation portions of Delta.	Unlikely. Suitable habitat not present in Project area.

EIR

Draft

Resource/ Common Name	Scientific Name	Status Fed/CA/CNPS	General Habitat Description	Potential for Occurrence in Project /Action Area
<i>Delta mudwort</i>	<i>Limosella australis</i>	—/—/2B.1	Mud banks of marshes, swamps, and riparian scrub. 0-3 meter elevation. Typically in low elevation portions of Delta.	Unlikely. Suitable habitat not present in Project area.
slender Orcutt grass	<i>Orcuttia tenuis</i>	FT/SE/1B.1	Vernal pools; particularly gravelly-based. 35-760 meter elevation.	Unlikely. Suitable habitat not present in Project area. Range is primarily north of the Project area. SSHCP-covered species
Sacramento Orcutt grass	<i>Orcuttia viscida</i>	FE/SE/1B.1	Vernal pools. 30-100 meter elevation.	Unlikely. Out of range. Single dated record in CNDDDB from personal collection. Not field verified. SSHCP-covered species
Sanford's arrowhead	<i>Sagittaria sanfordii</i>	—/—/1B.2	Shallow freshwater marshes and swamps. 0-650 meter elevation.	May Occur. Suitable habitat exists in Project area. SSHCP-covered species
marsh skullcap	<i>Scutellaria galericulata</i>	—/—/2B.2	Lower montane coniferous forest, meadows and seeps (mesic), marshes and swamps. 0-2,100 meter elevation.	May Occur. Suitable habitat exists in Project area.
side-flowering skullcap	<i>Scutellaria lateriflora</i>	—/—/2B.2	Meadows and seeps (mesic), marshes and swamps from 0-500 meter elevation.	May Occur. Suitable habitat exists in project area.
Suisun Marsh aster	<i>Symphyotrichum lentum</i>	—/—/1B.2	Brackish and freshwater marshes and swamps. 0-3 meter elevation.	Unlikely. Out of range.
saline clover	<i>Trifolium hydrophilum</i>	—/—/1B.2	Marshes and swamps, valley and foothill grassland (mesic, alkaline), vernal pools. 0-300 meter elevation.	May Occur. Suitable habitat exists in Project area.
Invertebrates				
vernal pool fairy shrimp	<i>Branchinecta lynchi</i>	FT/—	All life stages associated with a variety of artificial and natural vernal pools and ephemeral swales in grassland communities.	May Occur. Suitable habitat exists in Project area. SSHCP-covered species
valley elderberry longhorn beetle	<i>Desmocerus californicus dimorphus</i>	FT/—	All life stages associated with elderberry trees (<i>Sambucus</i> spp.) in the Central Valley. Found in riparian communities along rivers and streams.	May Occur. May occur where host plants are located within alignment corridor. SSHCP-covered species
vernal pool tadpole shrimp	<i>Lepidurus packardii</i>	FE/—	All life stages associated with a variety of artificial and natural vernal pools in grassland communities.	May Occur. Suitable habitat exists in Project area. SSHCP-covered species
Fish				
Sacramento perch	<i>Archoplites interruptus</i>	—/SSC	Historically found in sloughs, slow-moving rivers, and lakes of the Central Valley. Extant relict populations exist in Clear Lake and near Alameda Creek in gravel ponds.	Unlikely. Out of range, and suitable habitat not present in Project area. Not known from any of the Stone Lakes NWR lakes/ponds.

EIR

Draft

Resource/ Common Name	Scientific Name	Status Fed/CA/CNPS	General Habitat Description	Potential for Occurrence in Project /Action Area
green sturgeon, southern Distinct Population Segment (DPS)	<i>Acipenser medirostris</i>	FT/SSC	Anadromous. Spawns in Sacramento River mainstem below Keswick Dam.	Occurs. In Bay, Delta, and Sacramento River mainstem.
Southern DPS green sturgeon critical habitat				Designated in the San Francisco Bay-Delta, the Sacramento River mainstem below Keswick Dam, several Sacramento River tributaries, and elsewhere.
Delta smelt	<i>Hypomesus transpacificus</i>	FT/SE	Endemic to the upper delta region of the Sacramento-San Joaquin River system.	Occurs. In Bay, Delta, and lower Sacramento River system.
Delta smelt critical habitat				Designated in the Delta, the lower Sacramento River mainstem below I Street Bridge, and elsewhere.
steelhead: California Central Valley DPS	<i>Oncorhynchus mykiss</i>	FT/—	Anadromous. Spawns in Sacramento River and some San Joaquin River tributaries	Occurs. In Bay, Delta, and Sacramento River tributaries.
CCV steelhead critical habitat				Designated in the Delta, the Sacramento River mainstem below Keswick Dam, many Sacramento River tributaries, and elsewhere.
Chinook salmon: Central Valley spring-run Evolutionarily Significant Unit (ESU)	<i>Oncorhynchus tshawytscha</i>	FT/ST	Anadromous. Spawns in Sacramento River tributaries	Occurs. In Bay, Delta, and Sacramento River tributaries.
CVSRC ESU critical habitat				Designated in the Delta, the Sacramento River mainstem below Keswick Dam, and many Sacramento River tributaries.
Chinook salmon: Sacramento River winter-run ESU	<i>Oncorhynchus tshawytscha</i>	FE/SE	Anadromous. Spawns in the Sacramento River mainstem below Keswick Dam.	Occurs. In Bay, Delta, and Sacramento River mainstem.
WRC SR ESU critical habitat				Designated in the San Francisco Bay-Delta and the Sacramento River mainstem below Keswick Dam, and elsewhere.
Sacramento splittail	<i>Pogonichthys macrolepidotus</i>	—/SSC	Found in slow-moving river sections, dead-end sloughs, and marshes of the Delta, Suisun Bay, and associated marshes. Requires flooded vegetation for spawning and juvenile foraging.	Occurs. In Delta, and lower Sacramento River system.
longfin smelt	<i>Spirinchus thaleichthys</i>	FC/ST	Typically found in open waters of estuaries (e.g., Bay-Delta) in salinities of 15-30 ppt. Ranges upstream in the Sacramento River mainstem to near Sacramento International Airport.	Occurs. In Bay, Delta, and lower Sacramento River system.

EIR

Draft

Resource/ Common Name	Scientific Name	Status Fed/CA/CNPS	General Habitat Description	Potential for Occurrence in Project /Action Area
Amphibians and Reptiles				
western pond turtle	<i>Actinemys marmorata</i>	—/SSC	Highly aquatic and associated with riparian habitat including streams, rivers, sloughs, ponds, and artificial water bodies with deep pools, basking sites, and aquatic vegetation.	May Occur. May occur in larger drainage ditches with consistent ponded water and aquatic vegetation. SSHCP-covered species
California tiger salamander	<i>Ambystoma californiense</i>	FT/ST	Require mammal burrows or crevices in winter, and nearby seasonal water sources (i.e., vernal pools) for reproduction.	May Occur. Suitable habitat exists in Project area. SSHCP-covered species
foothill yellow-legged frog	<i>Rana boylei</i>	—/SSC	Partly-shaded shallow streams with cobble substrate and at least 15 weeks of consistent (contiguous) water to allow metamorphosis.	Unlikely. Suitable habitat not present in Project area. CNDDDB reports a single occurrence in 1958 5 mi north of Lodi in association with the Mokelumne River corridor.
western spadefoot (toad)	<i>Spea hammondi</i>	—/SSC	Require seasonal water sources (e.g., vernal pools) in grasslands and valley and foothill hardwood woodlands.	May Occur. Suitable habitat exists in Project area. SSHCP-covered species
giant garter snake	<i>Thamnophis gigas</i>	FT/ST	Endemic to the Central Valley. Highly aquatic and occurs in drainages with vegetated pools and banks. May also be found in artificial situations such as flooded rice fields. Use mammal burrows or crevices for hibernation and cover.	May Occur. Suitable habitat exists in Project area. SSHCP-covered species
Birds				
tricolored blackbird	<i>Agelaius tricolor</i>	—/SC	Colonial species found throughout the Central Valley in wetland areas with dense vegetation such as cattails, tules, and bulrushes, as well as Himalayan blackberry, milk thistle, and stinging nettle. Forage on insects in grassland and agricultural fields.	May Occur. Suitable habitat exists in Project area. SSHCP-covered species
golden eagle	<i>Aquila chrysaetos</i>	—/CFP	Nest in cliff-walled canyons and large trees near rolling foothills and mountain areas.	Unlikely. Nesting habitat not present in Project area. CNDDDB reports foraging observation only in 1991. Winter visitor to Bufferlands, Stone Lakes NWR, and Cosumnes Preserve lands.
western burrowing owl	<i>Athene cucularia</i>	—/SSC	Require burrows in/near open grassland foraging areas.	May Occur. Suitable habitat exists in Project area. SSHCP-covered species

EIR

Draft

Resource/ Common Name	Scientific Name	Status Fed/CA/CNPS	General Habitat Description	Potential for Occurrence in Project /Action Area
Swainson's hawk	<i>Buteo swainsoni</i>	—/ST	Nests primarily in riparian or isolated trees adjacent to pasture, grassland, and agricultural areas.	May Occur. Suitable habitat exists in Project area. SSHCP-covered species
western yellow-billed cuckoo	<i>Coccyzus americanus occidentalis</i>	FT/SE	Nests in dense riparian forests along broad, flood-bottoms of larger rivers.	Unlikely. Suitable nesting habitat not present in Project area. CNDDDB reports 2009 occurrence near Snodgrass Slough.
white-tailed kite	<i>Elanus leucurus</i>	CFP	Dense-topped trees next to meadows, marshes, or grasslands.	May Occur. Suitable habitat exists in Project area. SSHCP-covered species
loggerhead shrike	<i>Lanius ludovicianus</i>	—/SSC	Nests mainly in shrublands or open woodlands near open grassland foraging areas.	Regional San notes this species is present in Project area. SSHCP-covered species
song sparrow (Modesto pop)	<i>Melospiza melodia</i>	—/SSC	Nests in riparian scrub-shrub and wetland habitat of the north-central portion of the Central Valley. Most abundant in wetlands of the Delta and the Butte Sink area.	May Occur. Suitable habitat exists in Project area.
purple martin	<i>Progne subis</i>	—/SSC	Cavity nester in low-elevation coniferous forests. Nests in weep holes under bridges in Sacramento.	Unlikely. Suitable nesting habitat not present in Project area. Not reported by the CNDDDB within the Florin or Bruceville quads. CNDDDB reports 9 occurrences, all of which are associated with roadway bridges.
bank swallow	<i>Riparia riparia</i>	—/ST	Colonial nester. Requires vertical cliffs and stream banks of fine-textured sands near water.	Unlikely. Nesting habitat not present in Project area. CNDDDB reports two occurrences in the American River Parkway.
least Bell's vireo	<i>Vireo bellii pusillus</i>	FE/SE	Migratory. Summer resident of low riparian scrub in southern California.	Unlikely. Out of range. CNDDDB reports two occurrences near the Yolo Bypass. Also recorded at Bufferlands and Cosumnes River Preserve.
yellow-headed blackbird	<i>Xanthocephalus xanthocephalus</i>	—/SSC	Nests in freshwater emergent wetlands with dense vegetation and deep water, often along borders of lakes or ponds. In California, resident of San Joaquin Valley and Colorado River Valley areas.	Unlikely. CNDDDB reports single occurrence from 1899 in Florin and Bruceville quads (near Freeport). No other occurrences reported by the CNDDDB within the broad 10 quad query region. Rare visitor to SLNWR, Bufferlands, Cosumnes River Preserve.

Resource/ Common Name	Scientific Name	Status Fed/CA/CNPS	General Habitat Description	Potential for Occurrence in Project /Action Area
Mammals				
western red bat	<i>Lasiurus blossevillii</i>	—/SSC	Roosts in foliage of trees and shrubs, commonly near water. Known primarily from the San Francisco Bay area, and also the Central Valley and surrounding foothills.	Unlikely. Suitable roosting habitat not present in Project area. SSHCP-covered species
riparian brush rabbit	<i>Sylvilagus bachmani riparius</i>	FE/SE	Riparian habitat with thick understory vegetation associated with San Joaquin River in northern Stanislaus County.	Out of range. CNDDDB reports a single occurrence at the White Slough Wildlife Area along the Mokelumne River.
American badger	<i>Taxidea taxus</i>	—/SSC	Typically found in open grasslands and rangelands with friable soils and rodents for prey.	Unlikely. Suitable habitat not present in the Project area. Badgers may occur in grassland habitats west of the Project area near the Regional San Bufferlands and the Stone Lakes NWR. CNDDDB reports a single, dated (1938) occurrence within the Florin and Bruceville quads. SSHCP-covered species

Notes:

Key to Status Codes:

CRPR - California Rare Plant Rank:

1A – May be extirpated in California

1B.1 – rare throughout its range and seriously threatened in California

1B.2 – rare throughout its range and moderately threatened in California

2B.1—rare and seriously threatened in California, but more common elsewhere

2B.2 – rare and moderately threatened in California, but more common elsewhere

2B.3—rare but not very threatened in California, but more common elsewhere

CFP – California Fully Protected

CH – Critical Habitat

FE – Federal Endangered

FT – Federal Threatened

SC – State Candidate

SE – State Endangered

SR – State Rare

ST – State Threatened

SSC – State Species of Special Concern

3.5.4 Impact Analysis

This section describes potential impacts that could occur with implementation of the proposed Project alternatives.

Thresholds of Significance

Consistent with the thresholds of significance identified in Sacramento County's Initial Study Checklist, an impact would be considered significant if the proposed Project would:

- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service.
- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service.
- Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means
- Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites
- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance
- Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

Impacts and Mitigation Measures

Impact BIO-1 Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service.

Alternative 1 (Medium Service Area Alternative) and Alternative 2 (No Reclamation Funding Alternative)

Project Elements. A number of sensitive species (plants, invertebrates, amphibians and reptiles, birds) have the potential to occur in or near the Project area. Construction of the proposed Project could kill or injure individuals, particularly during ground-disturbing activities such as grubbing, grading, and excavating. Construction related equipment and storage/moving of construction materials could also impact sensitive species. Habitat for sensitive species could also be adversely affected by Project construction, and this could indirectly impact sensitive species. Substantial impacts to sensitive species, either directly, or indirectly through habitat impacts, may occur, and this would be a potentially significant impact. Most sensitive species

and their habitats with the potential to occur in the Project area are covered species and conserved habitats in the SSHCP. Although the SSHCP has not yet been approved, it is thought that the HCP may be approved before construction of the proposed Project is scheduled to start. It was thus deemed appropriate to propose mitigation that would be consistent with the SSHCP. If the SSHCP is not approved before the start of construction, Regional San is committed to implementing the mitigation actions that are included in the Draft SSHCP, though, permitting agencies may require additional or different mitigation than measures prescribed in the SSHCP.

As such, four mitigation approaches have been identified: **Mitigation Measure BIO-1a** is applicable to habitats for all sensitive species, regardless of whether they are covered in the SSHCP; this mitigation thus addresses avoidance of habitats and land cover types for sensitive species covered and not-covered by the SSHCP. **Mitigation measures under BIO-1b** address compensation for any unavoidable effects on sensitive habitats and land cover types included in the SSHCP; because those habitats are used by both SSHCP-covered and non-SSHCP-covered species this measure addresses impacts to all sensitive species in the Project area. **Mitigation measures under BIO-1c** address sensitive species covered in the SSHCP. **Mitigation measures under BIO-1d** address sensitive species not covered in the SSHCP. Implementation of **Mitigation Measures BIO-1a, BIO-1b, BIO-1c, and BIO-1d** would reduce impacts to sensitive species and their habitats to less than significant.

Program Elements. The same sensitive species and their habitats that have the potential to occur in the defined Project area also likely occur in the areas that would support development of the distribution mains, service connection laterals, turnouts, groundwater recharge area, diluent wells, and Stone Lakes NWR habitat areas. Impacts to species and their habitats in these program element areas would be similar to those in the Project element area. Implementation of **Mitigation Measures BIO-1a, BIO-1b, BIO-1c, and BIO-1d** would reduce impacts to sensitive species and their habitats to less than significant.

Alternative 3 (Small Service Area Alternative)

Project and Program Elements. Construction impacts of the Small Service Area Alternative would be similar to the proposed Project, but less extensive because less construction would be required. Implementation of **Mitigation Measures BIO-1a, BIO-1b, BIO-1c, and BIO-1d** would reduce impacts to sensitive species and their habitats to less than significant.

Alternative 4 (No Project Alternative)

Sensitive species or their habitats would not be impacted by the No Project Alternative. Therefore no impacts to sensitive species and their habitats would occur.

Significance Determination before Mitigation.

Potentially Significant for all action alternatives. No impact for Alternative 4 (No Project Alternative).

Mitigation Measures

Mitigation Measure BIO-1a: Avoid Impacts (Both Permanent and Temporary) to the Extent Feasible to Habitats and Land Cover Types Used by HCP-Covered and Non-HCP-Covered Sensitive Species (All Action Alternatives).

Regional San and its contractors will avoid and minimize permanent and temporary impacts to habitats and land cover types used by sensitive species potentially occurring in the Project Area (Table 3.5-1). Avoidance and minimization of habitat areas will be accomplished during Project design work, and/or during construction by implementing best management practices, including establishment of buffer zones, installation of fencing around sensitive habitats, and implementation of a storm water pollution prevention plan (SWPPP) to reduce the potential for sediments or contaminants to enter sensitive habitats.

Mitigation Measure BIO-1b: Mitigate Impacts to Habitats and Land Cover Types Used by HCP-Covered and Non-HCP-Covered Sensitive Species (All Action Alternatives)

To mitigate unavoidable losses to habitats used by sensitive species (both SSHCP-covered and non-SSHCP-covered) in the Project area, Regional San shall participate in and comply with the habitat-level conservation measures identified in the SSHCP. Conservation commitments of the SSHCP summarized below are presented as mitigation measures, and would be implemented by Regional San even if the SSHCP is not adopted. Details for implementation of these measures can be referenced in Section 7.3.2 of the draft SSHCP. As noted previously, if the SSHCP is not approved prior to the project permitting phase, regulatory and permitting agencies may require mitigation that is different from measures prescribed in the SSHCP. In this circumstance, Sacramento County would not manage implementation of the SSHCP and would not receive monies from SSHCP participants to implement the SSHCP. Applicants would likely work directly with federal and state permitting agencies to secure necessary environmental permits. This section assumes SSHCP participation.

- To mitigate impacts to vernal pool associated species, provide funding to compensate for unavoidable losses of vernal pool habitat at the following ratios: 3:1 (2 acres preservation and 1 acre re-establishment/establishment) for direct impacts; 2:1 for indirect impacts (2 acres preservation). Provide funding to compensate for unavoidable losses of direct impacts to swale habitat at a 2:1 ratio (1 acre preservation and 1 acre re-establishment/establishment) and a 1:1 ratio (1 acre preservation) for indirect impacts.
- To mitigate impacts to seasonal wetland associated species, provide funding to compensate for unavoidable losses of seasonal wetland, seasonal swale, and seasonal impoundment habitat at a 2:1 ratio (1 acre preservation and 1 acre re-establishment/establishment).
- To mitigate impacts to open water associated species, provide funding to compensate for unavoidable losses of this habitat at a 2:1 ratio (1 acre preservation and 1 acre re-establishment/establishment).
- To mitigate impacts to freshwater marsh associated species, provide funding to compensate for unavoidable losses of this habitat at a 2:1 ratio (1 acre preservation and 1 acre re-establishment/establishment).
- To mitigate impacts to species associated with streams and creeks, provide funding to compensate for unavoidable losses of these habitats at a 2:1 ratio (1 acre preservation and 1 acre re-establishment/establishment).

- To mitigate impacts to species associated with mixed riparian woodland and mixed riparian scrub habitat, provide funding to compensate for unavoidable losses of these habitats at a 2:1 ratio (1 acre preservation and 1 acre re-establishment/establishment) ratio.
- To mitigate impacts to species associated with croplands and valley grassland habitats, provide funding to compensate for unavoidable losses of these land cover types at a 1:1 ratio (1 acre preservation).

Mitigation Measure BIO-1c: Mitigate Impacts to HCP-Covered Species (All Action Alternatives).

Regional San shall participate in and comply with the species-specific conservation measures identified in the SSHCP for SSHCP-covered species. Conservation commitments of the SSHCP listed below are presented as mitigation measures, and would be implemented by Regional San even if the SSHCP is not adopted. The following species-specific measures have been taken directly from the SSHCP. Where "Implementing Entity" is used below, it refers to Sacramento County or the SSHCP implementing agency.

- **Sacramento Orcutt Grass and Slender Orcutt Grass:** Due to their rarity, take of either of these species is not permitted under the SSHCP, with the exception of take related to Preserve management and monitoring (see SSHCP Section 5). If a project site is located within 1 mile of the Mather Core Recovery Area and the site contains vernal pools, the project site will be surveyed for Sacramento and slender Orcutt grass by an approved biologist following California Department of Fish and Wildlife (CDFW) rare plant survey protocols or most recent CDFW guidelines to determine if Sacramento and/or slender Orcutt grass is present. An approved biologist will conduct the field investigation to identify and map occurrences.

Where known or new Sacramento or slender Orcutt grass occurrences are found, they will be protected within an SSHCP Preserve that is at least 50 acres. The occurrence will be located interior to the Preserve at a distance of no less than 300 feet from the edge of the Preserve boundary. If Regional San encounters a previously undiscovered occurrence of Sacramento or slender Orcutt grass at the project site, Regional San will contact the SSHCP Implementing Entity or Land Use Authority Permittee with authority over the project (under the HCP), who will coordinate with the Wildlife Agencies for written concurrence of avoidance to ensure that the project does not cause take of the species.

- **California Tiger Salamander (CTS).** The SSHCP has modeled CTS habitat in the SSHCP Plan Area. Ground-disturbing activities within California tiger salamander modeled habitat will occur outside the breeding and dispersal season (occur after July 31 and before October 15), to the maximum extent practicable. If Covered Activities must be implemented in mapped, modeled habitat during the breeding and dispersal season (after October 15 and before July 31), construction activities will not start until 30 minutes after sunrise and must be complete 30 minutes prior to sunset.

If an activity must be implemented in modeled habitat during the breeding and dispersal season (after October 15 and before July 31), exclusion fencing will be installed around

the project footprint before October 15. Temporary high-visibility construction fencing will be installed along the edge of work areas, and exclusion fencing will be installed immediately outside of the temporary high-visibility construction fencing to exclude California tiger salamanders from entering the construction area or becoming entangled in the construction fencing. Exclusion fencing will be at least 1 foot tall and be buried at least 6 inches below the ground to prevent salamanders from going under the fencing. Fencing will remain in place until all construction activities within the construction area are complete. No project activities will occur outside the delineated project footprint. An approved biologist must inspect the exclusion fencing and project site every morning before 7:00 a.m. for integrity and for any entrapped California tiger salamanders. However, the SSHCP Implementing Entity may, with approval of the U.S. Fish and Wildlife Service (USFWS) and California Department of Fish and Wildlife (CDFW), determine that it is appropriate for an activity to not erect fencing for certain long and linear projects if it appears that the exclusion fencing will likely trap individuals or cause more take of California tiger salamander than it would prevent.

If activities must be implemented in modeled habitat, an approved biologist experienced with California tiger salamander identification and behavior will monitor the project site, including the integrity of any exclusion fencing. The approved biologist will be on site daily while construction-related activities are taking place, and will inspect the project site for California tiger salamander every morning before 7:00 a.m., or prior to construction activities. The approved biologist will also train construction personnel on the required California tiger salamander avoidance procedures, exclusion fencing, and correct protocols in the event that a California tiger salamander enters an active construction zone.

If activities must be implemented in modeled habitat, all excavated steep-walled holes or trenches more than 6 inches deep will be covered with plywood (or similar material) or provided with one or more escape ramps constructed of earth fill or wooden planks at the end of each work day or 30 minutes prior to sunset, whichever occurs first. All steep-walled holes or trenches will be inspected by the approved biologist each morning to ensure that no wildlife has become entrapped. All construction pipes, culverts, similar structures, construction equipment, and construction debris left overnight within California tiger salamander modeled habitat will be inspected for California tiger salamanders by the approved biologist prior to being moved.

If a California tiger salamander is encountered during construction activities, the approved biologist will notify the Wildlife Agencies immediately (California Department of Fish and Wildlife (CDFW) and U.S. Fish and Wildlife Service (USFWS)). Construction activities will be suspended in a 100-foot radius of the animal until the animal is relocated by an approved biologist with appropriate handling permits from the Wildlife Agencies. Prior to relocation, the approved biologist will notify the Wildlife Agencies to determine the appropriate procedures related to relocation. If the animal is handled, a report will be submitted, including date(s), location(s), habitat description, and any corrective measures taken to protect the salamander, within 1 business day to the

Wildlife Agencies. The biologist will report any take of listed species to USFWS and CDFW immediately. Any worker who inadvertently injures or kills a California tiger salamander or who finds dead, injured, or entrapped California tiger salamander(s) must immediately report the incident to the approved biologist.

If erosion control is implemented within California tiger salamander modeled habitat, non-entangling erosion control material will be used to reduce the potential for entrapment. Tightly woven fiber netting (mesh size less than 0.25 inch) or similar material will be used to ensure that salamanders are not trapped (no monofilament). Coconut coir matting and fiber rolls with burlap are examples of acceptable erosion control materials. This limitation will be communicated to the contractor through use of special provisions included in the bid solicitation package.

If project activities are within SSHCP-mapped California tiger salamander modeled habitat, rodent control will be allowed only in developed portions of a project site. Where rodent control is allowed, the method of rodent control will comply with the methods of rodent control discussed in the 4(d) Rule published in the U.S. Fish and Wildlife Service's (2004) final listing rule for tiger salamander.

- **Western Spadefoot Toad (WST):** The SSHCP has modeled WST habitat in the SSHCP Plan Area. Ground-disturbing activities within western spadefoot mapped, modeled habitat will occur outside the breeding and dispersal season (after May 15 and before October 15), to the maximum extent practicable.

If activities must be implemented in modeled habitat after October 15 and before May 15, exclusion fencing will be installed around the project footprint before October 15, and the project site must be monitored by an approved biologist following rain events.

Temporary high-visibility construction fencing will be installed along the edge of work areas, and silt fencing will be installed immediately behind the temporary high-visibility construction fencing to exclude western spadefoot from entering the construction area. Fencing will remain in place until all construction activities within the construction area are completed. No project activities will occur outside the delineated project footprint.

If activities must be implemented in mapped, modeled habitat in the breeding and dispersal season (after October 15 and before May 15), an approved biologist experienced with western spadefoot identification and behavior will monitor the project site, including the integrity of any exclusion fencing. The approved biologist will be on site daily while construction-related activities are taking place, and will inspect the project site daily for western spadefoot prior to construction activities. The approved biologist will also train construction personnel on the required avoidance procedures, exclusion fencing, and protocols in the event that a western spadefoot enters an active construction zone.

If an activity occurs in western spadefoot modeled habitat, all excavated steep-walled holes and trenches more than 6 inches deep will be covered with plywood (or similar

material) or provided with one or more escape ramps constructed of earth fill or wooden planks at the end of each work day or 30 minutes prior to sunset, whichever occurs first. All steep-walled holes and trenches will be inspected by the approved biologist each morning to ensure that no wildlife has become entrapped. All construction pipes, culverts, similar structures, construction equipment, and construction debris left overnight within western spadefoot modeled habitat will be inspected for western spadefoot by the approved biologist prior to being moved.

If erosion control is implemented within western spadefoot modeled habitat, non-entangling erosion control material will be used to reduce the potential for entrapment. Tightly woven fiber netting (mesh size less than 0.25 inch) or similar material will be used to ensure that western spadefoots are not trapped (no monofilament). Coconut coir matting and fiber rolls containing burlap are examples of acceptable erosion control materials.

If activities must be implemented in modeled habitat during the breeding and dispersal season (after October 15 and before May 15), and a western spadefoot is encountered during construction activities, the approved biologist will notify the Wildlife Agencies immediately. Construction activities will be suspended in a 100-foot radius of the animal until the animal leaves the project site on its own volition. If necessary, the approved biologist will notify the Wildlife Agencies to determine the appropriate procedures related to relocation. If the animal is handled, a report will be submitted, including date(s), location(s), habitat description, and any corrective measures taken to protect the western spadefoot within 1 business day to the Wildlife Agencies. The biologist will report any take of listed species to the U.S. Fish and Wildlife Service and California Department of Fish and Wildlife immediately. Any worker who inadvertently injures or kills a western spadefoot or who finds dead, injured, or entrapped western spadefoot(s) must immediately report the incident to the approved biologist.

- **Western Pond Turtle (WPT):** The SSHCP has modeled WPT habitat in the SSHCP Plan Area. If modeled habitat for western pond turtle is present within a project footprint or within 300 feet of a project footprint, then an approved biologist will conduct a field investigation to delineate western pond turtle aquatic habitat within the project footprint and within 300 feet of the project footprint. Western pond turtle aquatic habitat includes, but is not limited to, low-gradient streams and creeks, open water, freshwater marsh, and rice fields. Adjacent parcels under different land ownership will be surveyed only if access is granted or if the parcels are visible from authorized areas. Regional San will map all existing or potential sites and provide those maps to the Local Land Use Permittees and the SSHCP Implementing Entity. Locations of delineated western pond turtle habitat must also be noted on plans that are submitted to a Local Land Use Permittee. Regional San will use this information to finalize project design. Project activities may occur throughout the year as long as western pond turtle habitat is identified and fully avoided. Otherwise, Regional San will implement the following additional measures:

Maintenance and improvements to existing structures may occur throughout the year as long as western pond turtle habitat is identified and avoided, and movement of equipment is confined to existing roads. Otherwise, construction and ground-disturbing activities must be conducted outside of western pond turtle's active season. Construction and ground-disturbing activities will be initiated after May 1 and will commence prior to September 15. If it appears that construction activities may go beyond September 15, Regional San will contact the Local Land Use Permittee and the Implementing Entity as soon as possible, but not later than September 1, to determine if additional measures are necessary to minimize take.

If a project activity is occurring in western pond turtle modeled habitat, an approved biologist experienced with western pond turtle identification and behavior will monitor the project site, including the integrity of any exclusion fencing. The approved biologist will be on site daily while construction-related activities are taking place in aquatic habitat or within 300 feet of aquatic habitat, and will inspect the project site daily for western pond turtle prior to construction activities. The approved biologist will also training construction personnel on the required avoidance procedures, exclusion fencing, and protocols in the event that a western pond turtle enters an active construction zone.

If construction activities will occur in western pond turtle aquatic habitat, aquatic habitat for the turtle will be dewatered and then remain dry and absent of aquatic prey (e.g., crustaceans and other aquatic invertebrates) for 15 days prior to the initiation of construction activities. If complete dewatering is not possible, the Implementing Entity will be contacted to determine what additional measures may be necessary to minimize effects to western pond turtle. After aquatic habitat has been dewatered 15 days prior to construction activities, exclusion fencing will be installed extending a minimum of 300 feet into adjacent uplands to isolate both the aquatic and adjacent upland habitat. Exclusionary fencing will be erected 36 inches above ground and buried at least 6 inches below the ground to prevent turtles from attempting to burrow or move under the fence into the construction area. In addition, high-visibility fencing will be erected to identify construction limits and to protect adjacent habitat from encroachment of personnel and equipment. Western pond turtle habitat outside construction fencing will be avoided by all construction personnel. The fencing and work area will be inspected by the approved biologist to ensure that the fencing is intact and that no turtles have entered the work area before the start of each work day. Fencing will be maintained by the contractor until completion of the project. If, after exclusion fencing and dewatering, western pond turtles are found within the project footprint or within 300 feet of the project footprint, Regional San will discuss the next best steps with the Implementing Entity and Wildlife Agencies.

If a project activity occurs within western pond turtle modeled habitat, all excavated steep-walled holes and trenches more than 6 inches deep will be covered with plywood (or similar material) or provided with one or more escape ramps constructed of earth fill or wooden planks at the end of each work day or 30 minutes prior to sunset, whichever occurs first. All steep-walled holes and trenches will be inspected by the approved biologist each morning to ensure that no wildlife has become entrapped. All construction

pipes, culverts, similar structures, construction equipment, and construction debris left overnight within western pond turtle modeled habitat will be inspected for western pond turtle by the approved biologist prior to being moved.

If erosion control is implemented within western pond turtle modeled habitat, non-entangling erosion control material will be used to reduce the potential for entrapment. Tightly woven fiber netting (mesh size less than 0.25 inch) or similar material will be used to ensure that turtles are not trapped (no monofilament). Coconut coir matting and fiber rolls containing burlap are examples of acceptable erosion control materials.

Construction and maintenance vehicles will observe a 20-mile-per-hour speed limit within western pond turtle modeled upland habitat.

If a western pond turtle is encountered during construction activities, the approved biologist will notify the Wildlife Agencies immediately. Construction activities will be suspended in a 100-foot radius of the animal until the animal leaves the project site on its own volition. If necessary, the approved biologist will notify the Wildlife Agencies to determine the appropriate procedures related to relocation. If the animal is handled, a report will be submitted, including date(s), location(s), habitat description, and any corrective measures taken to protect the turtle, within 1 business day to the Wildlife Agencies. The biologist will report any take of listed species to the U.S. Fish and Wildlife Service immediately. Any worker who inadvertently injures or kills a western pond turtle or who finds one dead, injured, or entrapped must immediately report the incident to the approved biologist.

After completion of ground-disturbing activities, Regional San will remove any temporary fill and construction debris and will restore temporarily disturbed areas to pre-project conditions. Restoration work includes such activities as re-vegetating the banks and active channels with a seed mix similar to pre-project conditions. Appropriate methods and plant species used to re-vegetate such areas will be determined on a site-specific basis in consultation with the Implementing Entity. Restoration work may include replanting emergent aquatic vegetation and placing appropriate artificial or natural basking areas in waterways and wetlands. A photo documentation report showing pre- and post-project conditions will be submitted to the Implementing Entity 1 month after implementation of the restoration.

- **Giant Garter Snake (GGS):** The SSHCP has modeled GGS habitat in the SSHCP Plan Area. If modeled habitat for giant garter snake is present within the project footprint or within 300 feet of the project footprint, then an approved biologist will conduct a field investigation to delineate giant garter snake aquatic habitat within the project footprint and adjacent areas within 300 feet of the project footprint. Giant garter snake aquatic habitat includes, but is not limited to, low-gradient streams and creeks, open water, freshwater marsh, agricultural ditches, and rice fields. Adjacent parcels under different land ownership will be surveyed only if access is granted or if the parcels are visible from authorized areas. Regional San will map all existing or potential sites and provide these

maps to the Local Land Use Permittees and the Implementing Entity. Locations of delineated giant garter snake habitat must also be noted on plans that are submitted to a Local Land Use Permittee. Regional San will use this information to finalize project design. Project activities may occur throughout the year as long as giant garter snake habitat is identified and fully avoided. Otherwise, Regional San will implement the following additional measures:

Project activities that do not fully avoid giant garter snake modeled habitat will be conducted during the snake's active season. Construction and ground-disturbing activities will be initiated after May 1 and will end prior to September 15. If it appears that construction activities may go beyond September 15, Regional San will contact the Local Land Use Permittee and the Implementing Entity as soon as possible, but not later than September 1. The Local Land Use Permittee and the Implementing Entity will discuss with the Wildlife Agencies additional measures necessary to minimize take.

If a project activity is occurring in giant garter snake modeled habitat, an approved biologist experienced with giant garter snake identification and behavior will monitor the project site, including the integrity of any exclusion fencing. The approved biologist will be on site daily while construction-related activities are taking place in aquatic habitat or within 300 feet of aquatic habitat, and will inspect the project site daily for giant garter snake prior to construction activities. The approved biologist will also train construction personnel on the required avoidance procedures, exclusion fencing, and protocols in the event that a giant garter snake enters an active construction zone.

If construction activities will occur in giant garter snake aquatic habitat, aquatic habitat will be dewatered and then remain dry and absent of aquatic prey (e.g., fish and tadpoles) for 15 days prior to initiation of construction activities. If complete dewatering is not possible, the Implementing Entity will be contacted to determine what additional measures may be necessary to minimize effects to giant garter snake. After aquatic habitat has been dewatered 15 days prior to construction activities, exclusion fencing will be installed extending a minimum of 300 feet into adjacent uplands to isolate both the aquatic and adjacent upland habitat. Exclusionary fencing will be erected 36 inches above ground and buried at least 6 inches below the ground to prevent snakes from attempting to move under the fence into the construction area. In addition, high-visibility fencing will be erected to identify the construction limits and to protect adjacent habitat from encroachment of personnel and equipment. Giant garter snake habitat outside construction fencing will be avoided by all construction personnel. The fencing and the work area will be inspected by the approved biologist to ensure that the fencing is intact and that no snakes have entered the work area before the start of each work day. The fencing will be maintained by the contractor until completion of the project.

If an activity occurs in giant garter snake modeled habitat, all excavated steep-walled holes and trenches more than 6 inches deep will be covered with plywood (or similar material) or provided with one or more escape ramps constructed of earth fill or wooden planks at the end of each work day or 30 minutes prior to sunset, whichever occurs first.

All steep-walled holes and trenches will be inspected by the approved biologist each morning to ensure that no wildlife has become entrapped. All construction pipes, culverts, similar structures, construction equipment, and construction debris left overnight within giant garter snake modeled habitat will be inspected for giant garter snake by the approved biologist prior to being moved.

If erosion control is implemented within giant garter snake modeled habitat, non-entangling erosion control material will be used to reduce the potential for entrapment. Tightly woven fiber netting (mesh size less than 0.25 inch) or similar material will be used to ensure snakes are not trapped (no monofilament). Coconut coir matting and fiber rolls containing burlap are examples of acceptable erosion control materials.

If a giant garter snake is encountered during construction activities, the approved biologist will notify the Wildlife Agencies immediately. Construction activities will be suspended in a 100-foot radius of the animal until the animal leaves the project site on its own volition. If necessary, the approved biologist will notify the Wildlife Agencies to determine the appropriate procedures related to relocation. If the animal is handled, a report will be submitted, including date(s), location(s), habitat description, and any corrective measures taken to protect the giant garter snake within 1 business day to the Wildlife Agencies. The biologist will report any take of listed species to the U.S. Fish and Wildlife Service immediately. Any worker who inadvertently injures or kills a giant garter snake or who finds one dead, injured, or entrapped must immediately report the incident to the approved biologist.

After completion of ground-disturbing activities, Regional San will remove any temporary fill and construction debris and will restore temporarily disturbed areas to pre-project conditions. Restoration work includes such activities as re-vegetating the banks and active channels with a seed mix similar to pre-project conditions. Appropriate methods and plant species used to re-vegetate such areas will be determined on a site-specific basis in consultation with the Implementing Entity. Restoration work may include replanting emergent aquatic vegetation. Refer to the U.S. Fish and Wildlife Service's (USFWS) Guidelines for the Restoration and/or Replacement of Giant Garter Snake Habitat (USFWS 1997), or the most current USFWS guidelines at the time of the activity. A photo documentation report showing pre- and post-project conditions will be submitted to the Implementing Entity 1 month after implementation of the restoration.

- **Tricolored Blackbird (TCBB):** The SSHCP has modeled TCBB habitat in the SSHCP Plan Area. If modeled habitat for tricolored blackbird is present within a project footprint or within 500 feet of a project footprint, then an approved biologist will conduct a field investigation to determine if existing or potential nesting or foraging sites are present within the project footprint and adjacent areas within 500 feet of the project footprint. Adjacent parcels under different land ownership will be surveyed only if access is granted or if the parcels are visible from authorized areas. Within the SSHCP Plan Area, potential tricolor blackbird nest sites are often associated with freshwater marsh and seasonal wetlands, or in thickets of willow, blackberry, wild rose, thistle, and other

thorny vegetation. Tricolored blackbirds are also known to nest in crops associated with dairy farms. Foraging habitat is associated with annual grasslands, wet and dry vernal pools and other seasonal wetlands, agricultural fields (such as large tracts of alfalfa and pastures with continuous haying schedules and recently tilled fields), cattle feedlots, and dairies. Regional San will map all existing or potential nesting or foraging sites and provide these maps to the Local Land Use Permittees and Implementing Entity.

Pre-construction surveys will be required to determine if active nests are present within a project footprint or within 500 feet of a project footprint if existing or potential nest sites were found during design surveys and construction activities will occur during the breeding season (March 1 through September 15). An approved biologist will conduct pre-construction surveys within 30 days and within 3 days of ground-disturbing activities, and within the proposed project footprint and 500 feet of the proposed project footprint to determine the presence of nesting tricolored blackbird. Pre-construction surveys will be conducted during the breeding season (March 1 through August 31). Surveys conducted in February (to meet pre-construction survey requirements for work starting in March) must be conducted within 14 days and 3 days in advance of ground-disturbing activities. If a nest is present, the approved biologist will inform the Land Use Authority Permittee and the Implementing Entity of species locations, and they in turn will notify the Wildlife Agencies.

If active TCBB nests are found within the project footprint or within 500 feet of any project-related activity, Regional San will establish a 500-foot temporary buffer around the active nest until the young have fledged.

If nesting tricolored blackbirds are present within the project footprint or within 500 feet of any project-related activity, then an approved biologist experienced with tricolored blackbird behavior will be retained by Regional San to monitor the nest throughout the nesting season and to determine when the young have fledged. The approved biologist will be on site daily while construction-related activities are taking place near the disturbance buffer. Work within the nest disturbance buffer will not be permitted. If the approved biologist determines that tricolored blackbirds are exhibiting agitated behavior, construction will cease until the buffer size is increased to a distance necessary to result in no harm or harassment to the nesting tricolored blackbirds. If the biologist determines that the colonies are at risk, a meeting with Regional San, the Implementing Entity, and Wildlife Agencies will be held to determine the best course of action to avoid nest abandonment or take of individuals. The approved biologist will also train construction personnel on the required avoidance procedures, buffer zones, and protocols in the event that a tricolored blackbird flies into an active construction zone.

On SSHCP Agricultural Preserves, pesticides (including herbicides) will not be applied from January 1 through July 15.

- **Burrowing Owl (BUOW):** The SSHCP has modeled BUOW habitat in the SSHCP Plan Area. Surveys within modeled habitat are required for both the breeding and non-

breeding season. If the project site falls within modeled habitat, an approved biologist will survey the project site and map all burrows, noting any burrows that may be occupied. Occupied burrows are often (but not always) indicated by tracks, feathers, egg shell fragments, pellets, prey remains, and/or excrement. Surveying and mapping will be conducted by the approved biologist while walking transects throughout the entire project site plus all accessible areas within a 250-foot radius from the project site. The centerline of these transects will be no more than 50 feet apart and will vary in width to account for changes in terrain and vegetation that can preclude complete visual coverage of the area. For example, in hilly terrain with patches of tall grass, transects will be closer together, and in open areas with little vegetation, they can be 50 feet apart. This methodology is consistent with current survey protocols for this species. Adjacent parcels under different land ownership will be surveyed only if access is granted or if the parcels are visible from authorized areas. If suitable habitat is identified during the initial survey, and if the project does not fully avoid the habitat, pre-construction surveys will be required. Burrowing owl habitat is fully avoided if project-related activities do not impinge on a 250-foot buffer established by the approved biologist around suitable burrows.

Prior to any ground disturbing activity, an approved biologist will conduct pre-construction surveys in all areas that were identified as suitable habitat during the initial surveys. The purpose of the pre-construction surveys is to document the presence or absence of burrowing owls on the project site, particularly in areas within 250 feet of construction activities. To maximize the likelihood of detecting owls, the pre-construction survey will last a minimum of 3 hours. The survey will begin 1 hour before sunrise and continue until 2 hours after sunrise (3 hours total), or begin 2 hours before sunset and continue until 1 hour after sunset. Additional time may be required for large project sites. A minimum of two pre-construction surveys will be conducted (if owls are detected on the first survey, a second survey is not needed). All owls observed will be counted and their location will be mapped. Surveys will conclude no more than 2 calendar days prior to construction. Therefore, Regional San must begin surveys no more than 4 days prior to construction (2 days of surveying plus up to 2 days between surveys and construction). To avoid last-minute changes in schedule or contracting that may occur if burrowing owls are found, Regional San may also conduct a preliminary survey up to 15 days before construction. This preliminary survey may count as the first of the two required surveys as long as the second survey concludes no more than 2 calendar days in advance of construction.

If western burrowing owl or evidence of western burrowing owl is observed on the project site or within 250 feet of the project site during pre-construction surveys, then the following will occur:

During Breeding Season: If the approved biologist finds evidence of western burrowing owls within a project site during the breeding season (February 1 through August 31), all project-related activities will avoid nest sites during the remainder of the breeding season or while the nest remains occupied by adults or young (nest occupation includes individuals or family groups foraging on or near the site following fledging). Avoidance

is establishment of a minimum 250-foot buffer zone around nests. Construction and other project-related activities may occur outside of the 250-foot buffer zone. Construction and other project-related activities may be allowed inside of the 250-foot non-disturbance buffer during the breeding season if the nest is not disturbed, and Regional San develops an avoidance, minimization, and monitoring plan that is approved by the Implementing Entity and Wildlife Agencies prior to project construction based on the following criteria:

- The Implementing Entity and Wildlife Agencies approve of the avoidance and minimization plan provided by the project applicant.
- An approved biologist monitors the owls for at least 3 days prior to construction to determine baseline nesting and foraging behavior (i.e., behavior without construction).
- The same approved biologist monitors the owls during construction and finds no change in owl nesting and foraging behavior in response to construction activities.
- If there is any change in owl nesting and foraging behavior as a result of construction activities, the approved biologist will have authority to shut down activities within the 250-foot buffer. Construction cannot resume within the 250-foot buffer until any owls present are no longer affected by nearby construction activities, and with written concurrence from the Wildlife Agencies.
- If monitoring by the approved biologist indicates that the nest is abandoned prior to the end of nesting season and the burrow is no longer in use, the non-disturbance buffer zone may be removed if approved by the Wildlife Agencies. The approved biologist will excavate the burrow in accordance with the latest California Department of Fish and Wildlife guidelines for burrowing owl to prevent reoccupation after receiving approval from the Wildlife Agencies.
- The Implementing Entity and Wildlife Agencies will respond to a request from Regional San to review the proposed construction monitoring plan within 21 days.

During Non-Breeding Season: During the non-breeding season (September 1 through January 31), the approved biologist will establish a minimum 250-foot non-disturbance buffer around occupied burrows. Construction activities outside of this 250-foot buffer will be allowed. Construction activities within the non-disturbance buffer will be allowed if the following criteria are met to prevent owls from abandoning over-wintering sites:

- An approved biologist monitors the owls for at least 3 days prior to construction to determine baseline foraging behavior (i.e., behavior without construction).
- The same approved biologist monitors the owls during construction and finds no change in owl foraging behavior in response to construction activities.
- If there is any change in owl foraging behavior as a result of construction activities, the approved biologist will have authority to shut down activities within the 250-foot buffer.
- If the owls are gone for at least 1 week, Regional San may request approval from the Implementing Entity and Wildlife Agencies that an approved biologist excavate usable burrows and install one-way exclusionary devices to prevent owls

- from re-occupying the site. After all usable burrows are excavated, the buffer zone will be removed and construction may continue.
- Monitoring must continue as described above for the non-breeding season as long as the burrow remains active.

During construction activities, 250-foot construction buffer zones will be established and maintained around any occupied burrow. An approved biologist will monitor the site to ensure that buffers are enforced and owls are not disturbed. The approved biologist will also train construction personnel on avoidance procedures, buffer zones, and protocols in the event that a burrowing owl flies into an active construction zone.

Passive relocation is not allowed without the express written approval of the Wildlife Agencies. Passive owl relocation may be allowed on a case-by-case basis on project sites during the non-breeding season (September 1 through January 31) with the written approval of the Wildlife Agencies if the other measures described in this condition preclude work from continuing. Passive relocation must be done in accordance with the latest California Department of Fish and Wildlife guidelines for burrowing owl. Passive relocation will only be proposed if the burrow needing to be removed or with the potential to collapse from construction activities is the result of a Covered Activity. If passive relocation is approved by the Wildlife Agencies, an approved biologist can passively exclude birds from their burrows during the non-breeding season by installing one-way doors in burrow entrances. These doors will be in place for 48 hours to ensure that owls have left the burrow, and then the biologist will excavate the burrow to prevent reoccupation. Burrows will be excavated using hand tools only. During excavation, an escape route will be maintained at all times. This may include inserting an artificial structure into the burrow to avoid having materials collapse into the burrow and trap owls inside. Other methods of passive relocation, based on best available science, may be approved by the Wildlife Agencies over the 50-year SSHCP Permit Term.

All activities adjacent to existing or planned SSHCP Preserves, Preserve Setbacks, or Stream Setback areas will be seasonally timed, when safety permits, to avoid or minimize adverse effects on occupied burrows.

Rodent control will be allowed only in developed portions of a project site within western burrowing owl modeled habitat. Where rodent control is allowed, the method of rodent control will comply with the methods of rodent control discussed in the 4(d) Rule published in the U.S. Fish and Wildlife Service's (2004) final listing rule for tiger salamander.

- **Swainson's Hawk (SWHA):** The SSHCP has modeled SWHA habitat in the SSHCP Plan Area. If modeled habitat for Swainson's hawk is present within a project footprint or within 0.25 mile of a project footprint, then an approved biologist will conduct a survey

to determine if existing or potential nesting sites are present within the project footprint and adjacent areas within 0.25 mile of the project footprint. Adjacent parcels under different land ownership will be surveyed only if access is granted or if the parcels are visible from authorized areas. Nest sites are often associated with riparian land cover, but also include lone trees in fields, trees along roadways, and trees around structures. Nest trees may include, but are not limited to, Fremont's cottonwood (*Populus fremontii*), oaks (*Quercus* spp.), willows (*Salix* spp.), walnuts (*Juglans* spp.), eucalyptus (*Eucalyptus* spp.), pines (*Pinus* spp.), and Deodar cedar (*Cedrus deodara*). Regional San will map all existing and potential nesting sites and provide these maps to the Local Land Use Permittees and Implementing Entity. Nesting sites must also be noted on plans that are submitted to a Local Land Use Permittee.

Pre-construction surveys will be required to determine if active nests are present within a project footprint or within 0.25 mile of a project footprint if existing or potential nest sites were found during initial surveys and construction activities will occur during the breeding season (March 1 through September 15). An approved biologist will conduct pre-construction surveys within 30 days and 3 days of ground-disturbing activities to determine presence of nesting Swainson's hawk. Pre-construction surveys will be conducted during the breeding season (March 1 through September 15). The approved biologist will inform the Land Use Authority Permittee and Implementing Entity of species locations, and they in turn will notify the Wildlife Agencies.

If active nests are found within the project footprint or within 0.25 mile of any project-related activity, Regional San will establish a 0.25 mile disturbance buffer around the active nest until the young have fledged, with concurrence from the Wildlife Agencies.

If nesting Swainson's hawks are present within the project footprint or within 0.25 mile of any project-related Covered Activity, then an approved biologist experienced with Swainson's hawk behavior will be retained by Regional San to monitor the nest throughout the nesting season and to determine when the young have fledged. The approved biologist will be on site daily while construction-related activities are taking place within the buffer. Work within the temporary nest disturbance buffer can occur with the written permission of the Implementing Entity and Wildlife Agencies. If nesting Swainson's hawks begin to exhibit agitated behavior, such as defensive flights at intruders, getting up from a brooding position, or flying off the nest, the approved biologist will have the authority to shut down construction activities. If agitated behavior is exhibited, the biologist, Regional San, Implementing Entity, and Wildlife Agencies will meet to determine the best course of action to avoid nest abandonment or take of individuals. The approved biologist will also train construction personnel on the required avoidance procedures, buffer zones, and protocols in the event that a Swainson's hawk flies into an active construction zone

- **Other Covered Raptor Species.** To avoid direct and indirect effects of Covered Activities on covered raptor species, the following measures will be implemented. for Cooper's hawk (*Accipiter cooperii*), loggerhead shrike (*Lanius ludovicianus*), northern

harrier (*Circus cyaneus*), and white-tailed kite (*Elanus leucurus*). The following measures do not apply to ferruginous hawk (*Buteo regalis*), as they do not nest in the Plan Area. The following measures also do not apply to Swainson's hawk or burrowing owl, as specific measures have been developed for these covered raptor species.

The SSHCP has modeled habitat for "other Covered raptors" in the SSHCP Plan Area. If modeled habitat for a covered raptor species is present within a project footprint or within 0.25 mile of a project footprint, then an approved biologist will conduct a field investigation to determine if existing or potential nesting sites are present within the project footprint and adjacent areas within 0.25 mile of the project footprint. Adjacent parcels under different land ownership will be surveyed only if access is granted or if the parcels are visible from authorized areas. Regional San will map all existing or potential nesting sites and provide these maps to the Local Land Use Permittees and Implementing Entity. Nesting sites must also be noted on plans that are submitted to a Local Land Use Permittee.

Pre-construction surveys will be required to determine if active nests are present with a project footprint or within 0.25 mile of a project footprint if existing or potential nest sites are found during initial surveys and construction activities will occur during the raptor breeding season. An approved biologist will conduct pre-construction surveys within 30 days and 3 days of ground-disturbing activities within the proposed project footprint and within 0.25 mile of the proposed project footprint to determine presence of nesting covered raptor species. Pre-construction surveys will be conducted during the raptor breeding season.

If active nests are found within the project footprint or within 0.25 mile of any project-related Covered Activity, Regional San will establish a 0.25 mile temporary nest disturbance buffer around the active nest until the young have fledged.

If project-related activities within the temporary nest disturbance buffer are determined to be necessary during the nesting season, then an approved biologist experienced with raptor behavior will be retained by Regional San to monitor the nest throughout the nesting season and to determine when the young have fledged. The approved biologist will be on site daily while construction-related activities are taking place within the disturbance buffer. Work within the temporary nest disturbance buffer can occur with the written permission of the Implementing Entity and Wildlife Agencies. If nesting raptors begin to exhibit agitated behavior, such as defensive flights at intruders, getting up from a brooding position, or flying off the nest, the approved biologist/monitor will have the authority to shut down construction activities. If agitated behavior is exhibited, the biologist, Regional San, Implementing Entity, and Wildlife Agencies will meet to determine the best course of action to avoid nest abandonment or take of individuals. The approved biologist will also train construction personnel on the required avoidance procedures, buffer zones, and protocols in the event that a covered raptor species flies into an active construction zone.

Mitigation Measure BIO-1d: Mitigate Impacts to Sensitive Non-HCP-Covered Species (All Action Alternatives)

Several sensitive species with a low- to moderate potential to occur in or near the Project area are not included as covered species in the SSHCP. For these species, Regional San shall implement the following mitigation measures:

- **Non-SSHCP-Covered Sensitive Plants.** Prior to construction-related disturbance of natural community types and land covers in the Project area, a botanical survey(s) will be completed to determine if sensitive plant species occur in the Project area. Surveys will be conducted during the appropriate time of the year to facilitate detections and identifications. Sensitive non-SSHCP-covered plant species detected in the Project area will be avoided as feasible. If impacts to sensitive non-covered plant species cannot be feasible avoided, Regional San will coordinate with Sacramento County and the resource agencies (CDFW and/or USFWS) as appropriate to determine the course of action, which may include relocation of plants to the SSHCP Preserve System or another conserved location.
- **Non-SSHCP-Covered Birds:** Song sparrow (Modesto population) or other sensitive, non-SSHCP-covered bird species may occur in the Project area. Prior to disturbance of natural community or land covers, Regional San or its contractors will conduct nesting bird surveys to determine if active nesting is occurring in the Project area. All active nests will be avoided to the extent feasible and a 25-foot buffer will be established and maintained around each active nest until such time that the nest is vacated.

Significance after Mitigation

Less than significant for all action alternatives.

Impact BIO-2 Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service

Alternative 1 (Medium Service Area Alternative) and Alternative 2 (No Reclamation Funding Alternative)

Project Elements. Construction of the proposed Project could substantially and adversely affect riparian habitat or other sensitive natural communities known to occur in the Project area (CH2M HILL 2015). Impacts would occur where ground-clearing, grading, and excavating activities are implemented. Riparian habitat has been mapped by Regional San at several locations in the Project area (CH2M HILL 2015) that may be impacted by the proposed Project or its action alternatives. Northern hardpan vernal pool, coastal and valley freshwater marsh, and Great Valley mixed riparian forest natural communities, all considered sensitive community types, occur in the Project area. Implementation of **Mitigation Measures BIO-1a, BIO-1b and BIO-2** would reduce impacts to riparian habitats and other sensitive natural communities to less than significant.

Program Elements. Riparian habitats and sensitive natural communities that occur in the defined Project area also assumed to occur in the areas that would support development of the distribution mains, service connection laterals, turnouts, groundwater recharge area, diluent

wells, and Stone Lakes NWR habitat areas. Impacts to habitats and communities in these Program areas would be similar to those in the Project area. Implementation of **Mitigation Measure BIO-2** would reduce impacts to riparian habitats and other sensitive natural communities to less than significant.

Alternative 3 (Small Service Area Alternative)

Project and Program Elements. Impacts to riparian habitat and other sensitive natural communities would be similar under Alternative 3 (Small Service Area Alternative) to Alternative 1 (Medium Service Area Alternative) since necessary facilities to be constructed are very similar. Fewer distribution mains and laterals associated with the lower volume of recycled water would require less construction and impacts to habitats and communities would be less than Alternative 1 (Medium Service Area Alternative). Implementation of **Mitigation Measures BIO-1a, BIO-1b and BIO-2** would reduce impacts to riparian habitats and other sensitive natural communities to less than significant.

Alternative 4 (No Project Alternative)

No riparian habitat or sensitive natural community would be adversely affected under the No Project Alternative.

Significance Determination before Mitigation

Potentially significant for all action alternatives. No Impact for Alternative 4 (No Project Alternative)

Mitigation Measures

Implement **Mitigation Measures BIO-1a and BIO-1b**, and the following:

Mitigation Measure BIO-2: Secure Regulatory Permits to Impact Riparian Habitat and other Sensitive Natural Communities (All Action Alternatives)

Regional San has delineated and described riparian habitats and other sensitive natural communities (as identified by the CDFW, and summarized in Table 3.5-1) in the Project area. These habitats and communities are described earlier in this section, and are quantified in the wetland delineation report prepared for the proposed Project (CH2M HILL 2015). Regional San shall obtain all necessary permits and approvals required to impact riparian habitat and sensitive natural communities, to the extent that these impacts may occur with development of any of the action alternatives. Necessary permits and approvals will include Clean Water Act permits (section 404 and 401), FESA and CESA permits, and CDFW Lake and Streambed Alteration Agreement, and would include measures to avoid, minimize and compensate for any impacts so as to avoid any net loss in habitat value. Mitigation would include restoration of any habitats that were affected temporarily during construction, and could include purchase of credits from a mitigation bank if there are any permanent impacts to sensitive natural communities.

Significance after Mitigation

Less than significant for all action alternatives.

Impact BIO-3 Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means

Alternative 1 (Medium Service Area Alternative) and Alternative 2 (No Reclamation Funding Alternative)

Project Elements. Construction of Alternative 1 (Medium Service Alternative) and Alternative 2 (No Reclamation Funding Alternative) would potentially impact federally-protected wetlands in the Project area. Surface water quality could also be impacted with implementation of the alternatives. The specific magnitudes and locations of impacts to federally protected wetlands have not been finalized, but total impacts to Waters of the U.S. are anticipated to be less than 0.5 acre. Operational delivery of irrigation water to the service area would likely supplement hydrology to aquatic features (including federally-protected wetlands) within the Project area, increasing the reliability, frequency, and volume of water supply currently available to federally protected wetlands and other aquatic features in the Project area. This would be a beneficial effect. Impacts to wetlands are thus expected to be confined to temporary construction impacts, and implementation of **Mitigation Measures BIO-1a, BIO-1b, BIO-2, and BIO 3** would ensure restoration of any wetlands that were affected during construction.

Program Elements. The Project would deliver treated water to Stone Lakes NWR to supplement irrigation water for high-value natural communities and sensitive habitats (including federally-protected wetlands), and the species that use these communities and habitats. This is also a beneficial effect. Some federally-regulated wetlands could be impacted during construction of water conveyance facilities under the program elements of the Project. . Implementation of **Mitigation Measures BIO-1a, BIO-1b, BIO-2, and BIO 3** would reduce impacts to federally protected wetlands to less than significant.

Alternative 3 (Small Service Area Alternative)

Project and Program Elements. Impacts to federally-protected wetlands would likely be less than impacts associated with Alternative 1 (Medium Service Area Alternative) and Alternative 2 (No Reclamation Funding Alternative) because less construction would be needed for Alternative 3 (Small Service Area Alternative). The same amount water would still be delivered to Stone Lakes NWR under this alternative; therefore beneficial effects would be the same as under Alternative 1 (Medium Service Area Alternative). Implementation of **Mitigation Measures BIO-1a, BIO-1b, BIO-2, and BIO 3** would reduce impacts to federally protected wetlands to less than significant.

Alternative 4 (No Project Alternative)

Under the No Project alternative, federally protected wetlands would not be impacted by Project construction activities. Irrigation water would not be provided to Stone Lakes NWR and its high-value resources, including federally-protected wetlands.

Significance Determination before Mitigation

Potentially significant for all action alternatives. No impact for Alternative 4 (No Project Alternative).

Mitigation Measures

Implement **Mitigation Measures BIO-1a, BIO-1b, and BIO-2** and the following:

Mitigation Measure BIO-3: Secure Clean Water Act Permits/Approvals (All Action Alternatives)

Regional San has prepared a wetland delineation report to identify and characterize aquatic resources within the vicinity of the Project area (CH2M HILL 2015) and will use this information to avoid wetlands and waters of the U.S. to the extent feasible. Once verified by the USACE, the delineation will be used to secure permits/approvals under sections 404 and 401 of the Clean Water Act. The wetland delineation report will also be used to demonstrate consistency with the SSHCP and its terms and conditions for CWA and Endangered Species Act compliance. Compliance with SSHCP habitat-level conservation measures is assumed to satisfy mitigation requirements under Section 404 permitting, and conservation measures would be implemented by Regional San even if the SSHCP is not adopted. As stated earlier in this section, Regional San may be required to work directly with the U.S. Army Corps of Engineers to satisfy Section 404 permitting needs for project impacts to wetlands and other waters of the U.S. if permitting associated with the SSHCP is not finalized at the time of the project permitting phase.

Mitigation may include restoration of affected jurisdictional areas to ensure no net loss of wetland functions and values. Mitigation may also include preservation or enhancement of existing wetland habitat, or creation of wetland habitat.

Significance Determination after Mitigation

Less than significant for all action alternatives.

Impact BIO-4 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

Two impacts are evaluated under Impact BIO-4: direct impacts to drainage corridors of the Project area during construction and operation activities (Impact BIO-4a), and indirect impacts to the Sacramento River and Delta resulting from Project operation (Impact BIO-4b).

Impact BIO-4a Impact movement of native resident species in drainage corridors of the Project area.

Alternative 1 (Medium Service Area Alternative), Alternative 2 (No Reclamation Funding Alternative), and Alternative 3 (Small Service Area Alternative)

Project and Program Elements. Project area drainage features with fragmented and disturbed riparian vegetation may be impacted during construction activities. Previous and existing intensive land uses within the Project area have resulted in degraded conditions such that no intact, high-value drainage corridors or riparian vegetation occur in the Project area. Drainage corridors associated with the Ehrhardt Channel, Franklin Creek, and the unnamed tributary to Stone Lake south of Hood Franklin Road (discussed earlier in this section) are highly degraded and likely function poorly as migratory corridors for native resident species. Direct impacts to drainage corridors would be limited to the construction phase of the Project, as these features would be available for use as movement corridors following construction.

Alternative 4 (No Project Alternative)

Under No Project Alternative, there would be no impact to native species movement within existing drainage corridors or elsewhere in the Project area.

Significance Determination before Mitigation

Less than significant for all action alternatives. No impact for Alternative 4 (No Project Alternative).

Mitigation Measures

No mitigation measures are required.

Impact BIO-4b Impact movement or reproduction of sensitive or important fish species in the Sacramento River or Delta region

Alternative 1 (Medium Service Area Alternative) and Alternative 2 (No Reclamation Funding Alternative)

Project and Program Elements. By reclaiming and delivering for irrigation, recharge and wetland use at full Project buildout, a maximum of 50,000 acre-feet per year (TAFY) of treated wastewater that otherwise would be discharged to the Sacramento River, the proposed Project and No Reclamation Funding Alternative would reduce flows in the Sacramento River at Freeport by up to 108 cfs during periods of peak irrigation demand. Flows would be redirected (withheld from discharge) during every month on the pattern shown in **Table 3.5-2**, with the largest reduction from expected future return discharges occurring during the irrigation season of May through September. Without implementation of wintertime irrigation, the proposed Project is expected to use an average of 32,572 AFY, with discharge reductions in each month as shown in **Table 3.5-3**.

Table 3.5-2: Monthly Reduction in Discharges from SRWTP under Alternative 1 (Medium Service Area Alternative) and Alternative 2 (No Reclamation Funding Alternative) at full Project Buildout, including Wintertime Irrigation

Month	Maximum Monthly Reduction in AF	Maximum Monthly Reduction in cfs
January	3,492	56.8
February	3,492	62.3
March	3,567	58.0
April	2,195	36.9
May	6,088	99.0
June	6,428	108.0
July	6,428	104.5
August	6,425	104.5
September	3,875	65.1
October	1,018	16.6
November	3,495	58.7
December	3,493	56.8
TOTAL ANNUAL	50,000	

Table 3.5-3: Monthly Reduction in Discharges from SRWTP under Alternative 1 (Medium Service Area Alternative) and Alternative 2 (No Reclamation Funding Alternative) without Wintertime Irrigation

Month	Maximum Monthly Reduction in AF	Maximum Monthly Reduction in cfs
January	7	0.1
February	7	0.1
March	81	1.3
April	2,195	36.9
May	6,088	99.0
June	6,428	108.0
July	6,428	104.5
August	6,425	104.5
September	3,875	65.1
October	1,018	16.6
November	10	0.2
December	8	0.1
TOTAL ANNUAL	32,572	

Although reductions in discharges from the SRWTP would reduce flows at Freeport, the Project would lead to increases in groundwater recharge that would benefit the groundwater basin, and higher groundwater levels would result in increased flows in the Cosumnes, lower Mokelumne, and Sacramento rivers because more water would remain in those rivers instead of recharging the groundwater basin. Once the groundwater basin reaches approaches a long-term balance, the Project is expected to increase streamflows by about 45,000 AFY with implementation of wintertime irrigation. Before wintertime irrigation can be implemented, and irrigation is only occurring during the growing season, the Project is projected to increase streamflows by over 28,000 AFY. These return flows are shown in **Table 3.5-4** and **Table 3.5-5**.

Table 3.5-4: Groundwater-Induced Increases in Streamflows with Implementation of Wintertime Irrigation

Month	Average monthly return flows in AF	Average monthly return flows in CFS
January	5,155	83.8
February	5,125	91.5
March	5,810	94.5
April	5,032	84.6
May	4,579	74.5
June	3,779	63.5
July	3,024	49.2
August	2,064	33.6
September	1,575	26.5
October	1,905	31.0
November	2,982	50.1
December	4,164	67.7
TOTAL ANNUAL	45,194	

Table 3.5-5: Groundwater-Induced Increases in Streamflows without Wintertime Irrigation

Month	Average monthly return flows in AF	Average monthly return flows in CFS
January	3,263	53.1
February	3,215	57.4
March	3,587	58.3
April	3,147	52.9
May	2,981	48.5
June	2,536	42.6
July	1,993	32.4
August	1,288	21.0
September	937	15.7
October	1,156	18.8
November	1,840	30.9
December	2,625	42.7
TOTAL ANNUAL	28,569	

As storage in the groundwater basin increases, the net effect of the discharge reduction is substantially reduced. These benefits are not fully realized until the groundwater system reaches a new balance with the surface water system. At the end of the simulation period modeling projects that the net change in annual flows is a reduction of about 4,000 AF without wintertime irrigation and about 4,800 AF with wintertime irrigation. Due to return flows produced by higher groundwater levels, and because those flows are larger in winter months when contractors are not taking as much water, the Project is expected to result in virtually no change in Delta outflows (an increase of 2.1 TAFY without wintertime irrigation or an increase of 0.9 TAFY with wintertime irrigation).

As described in *Section 3.10, Hydrology and Water Quality* section of this EIR, the maximum impact of this discharge reduction when it occurs during “balanced” conditions (when CVP and SWP [collectively, water project] reservoirs are releasing stored water) is to require the additional release of stored water from reservoirs to maintain water quality standards. Conversely, the maximum impact of this discharge reduction when it occurs during “excess” conditions (when there is adequate Delta outflow and water project reservoirs are not releasing stored water) is to reduce flows through the Delta and out to San Francisco Bay.

Impacts during “Excess” Operational Conditions. “Excess” operational conditions typically occur in wetter water year types (SWRCB D-1641 40-30-30 Index wet and above normal year types). During excess operational conditions, water project reservoirs are generally not making releases of stored water from reservoirs. Excess operational conditions generally occur 50 percent of the time during the period of time in which the Project-related discharge reductions would occur. Excess conditions occur specifically 95 percent of the time in April, 84 percent in May, 40 percent in June, 11 percent in July, 20 percent in August, 54 percent in September, and 89 percent in October. If all months and all years were considered, excess conditions would occur 70 percent of the time.

The discharge reductions shown by month in **Table 3.5-2** would result in reduced Sacramento River flows from Freeport to the Delta during excess operational conditions. Reductions of the magnitude and pattern shown in Table 3.5-2 represent decreases in river flow of, on average: -0.2

percent in April, -0.6 percent in May, -0.6 percent in June, -0.6 percent in July, -0.7 percent in August, -0.6 percent in September, and -0.2 percent in October, considering the 82-year period of record from 1922 to 2003 at Freeport using the CalSim II model. Project-related reductions in Sacramento River flows for other months range from -0.2 percent in February to -0.5 percent in November. For these reasons, impacts of Alternative 1 (Medium Service Area Alternative) and Alternative 2 (No Reclamation Funding Alternative) would be negligible to Sacramento River flows, water temperatures and to Delta salinity gradients during excess operational conditions, and the impacts to sensitive fish species using the reach of the Sacramento River below Freeport, and the Delta, are also anticipated to be negligible under these conditions.

Impacts during “Balanced” Operational Conditions. During balanced operational conditions, water project reservoirs are generally making releases to meet demands lower in the system, and to meet Delta flow and salinity requirements and Delta exports. Balanced operational conditions generally occur 50 percent of the time during the period of time in which Project-related reductions would occur. Balanced conditions occur 5 percent of the time in April, 16 percent in May, 60 percent in June, 89 percent in July, 80 percent in August, 46 percent in September, and 11 percent in October. Project-related proportional reductions during balanced operational conditions typically occur in drier water year types (SWRCB D-1641 40-30-30 Index critically dry and dry year types) and in the summer months (June, July, August). During balanced operational conditions, a discharge reduction of flow at Freeport has the potential effect of depleting storage in project reservoirs (mainly Shasta Lake), if increased releases are required to meet regulatory requirements.

Reductions of the magnitude and pattern shown in **Table 3.5-2** represent proportional decreases (during balanced conditions) of on average -0.4 percent in April, -1.1 percent in May, -0.9 percent in June, -0.6 percent in July, -0.8 percent in August, -0.3 percent in September, and -0.2 percent in October, considering the 82-year period of record from 1922 to 2003 at Freeport using the CalSim II model. Sacramento River flows are unchanged in February, March, and December, and are decreased by -0.5 percent in January. During balanced conditions, water project operations would respond to these nominal reductions in flows by making reservoir releases, resulting in no net change in Sacramento River flows below Freeport.

Over the 82-year period of record from 1922 to 2003, sequential drought years during the periods 1929-1934 and 1986-1992 created circumstances in the CalSim II model simulation where the Proposed Project would have reduced Shasta storage by up to about 35,000 AF without wintertime irrigation and about 30,000 AF with wintertime irrigation over a worst-case 6-year drought period without changes to retain more cold water at Shasta Lake. This decrease in storage could create thermal impacts to fisheries habitat downstream of Shasta. Such thermal impacts could stress temperature-sensitive fish species that spawn in the Sacramento River mainstem, like winter-run Chinook salmon and green sturgeon. The magnitude and importance of Project-related temperature changes associated with a worst-case 6-year drought period have not been modeled. Implementation of **Mitigation Measure HYD-4** would ensure that discharge reductions during balanced operational conditions are timed to reduce impacts associated with reduced Shasta storage to less than significant.

Alternative 3 (Small Service Area Alternative)

Alternative 3 (Small Service Area Alternative) would result in smaller reductions to discharges to the Sacramento River as compared to Alternative 1 (Medium Service Area Alternative) and Alternative 2 (No Reclamation Funding Alternative). As such, potential impacts to fish resources in the Sacramento River would be less than those potentially occurring under Alternatives 1 and 2. Implementation of **Mitigation Measure HYD-4** would ensure that discharge reductions during balanced operational conditions are timed so as to reduce impacts associated with reduced Shasta storage to less than significant.

Alternative 4 (No Project Alternative)

With no Project, there would be no reduction in discharges to the Sacramento River and therefore No Impact to sensitive fish resources of the Sacramento River and Delta.

Significance Determination before Mitigation

Less than significant for all action alternatives under excess operational conditions.

Potentially significant for all action alternatives under balanced conditions. Spawning green sturgeon and spawning winter-run Chinook salmon in the Sacramento River mainstem below Keswick Dam could be impacted by incremental and serial depletions of Shasta Lake cold water storage.

No impact for Alternative 4 (No Project Alternative) under both excess operational and balanced operational conditions.

Mitigation Measures

Mitigation Measure HYD-4: Coordinate Operations with Relevant Resource Agencies (All Action Alternatives).

To minimize potential thermal impacts to the Sacramento River downstream of Lake Shasta during critically dry years due to losses of cold water storage from reduced treated wastewater discharges, Regional San shall work with the Bureau of Reclamation and other relevant resource agencies to make appropriate operational changes in recycled water use and timing of discharge reductions in the spring months when the cold water pool in Shasta is critical. In critically dry years when storage in Lake Shasta falls below 2,400,000 AF in April, Regional San will coordinate with Central Valley Operations staff to reduce deliveries of recycled water to farmers in April and May if needed to avoid thermal impacts to the Sacramento River below Lake Shasta, as determined by the Sacramento River Temperature Model being utilized by Reclamation in the given year.

Significance Determination after Mitigation

Less than significant for all action alternatives under excess or balanced operational conditions.

Impact BIO-5 Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance

Alternative 1 (Medium Service Area Alternative), Alternative 2 (No Reclamation Funding Alternative), and Alternative 3 (Small Service Area Alternative)

Project and Program Elements. Sacramento County General Plan, Bufferlands Master Plan, and City of Elk Grove General Plan policies regarding habitat and species preservation would be addressed by complying with Mitigation Measures BIO-1(a through d) and BIO-2 above. No additional plan inconsistencies would occur. Some trees may need to be trimmed or removed to accommodate construction and installation of the proposed Project. Sacramento County has a Tree Preservation Ordinance that protects various species and sizes of trees within its jurisdiction. Regional San would participate in and comply with the terms and conditions of this ordinance. Compliance with Mitigation Measure BIO-5 would reduce impacts from tree trimming or removal to less than significant.

Alternative 4 (No Project Alternative)

No trees would be trimmed or removed under the No Project Alternative. Therefore no impact to trees would occur.

Significance Determination before Mitigation

Potentially significant for all action alternatives. No impact for Alternative 4 (No Project Alternative).

Mitigation Measures

Mitigation Measure BIO-5: Comply with Sacramento County Tree Preservation Ordinance (All Action Alternatives)

Regional San shall participate in and comply with the terms and conditions of the Sacramento County Tree Preservation Ordinance. Native oak trees with a DBH of six inches or greater, street or public trees, and landmark trees shall not be destroyed, killed, or removed without a permit. The ordinance protects all oak trees unless they are specifically designated for removal as part of an approved project. When oaks are removed they must be replaced with the same tree species equaling in sum the diameter of the tree lost.

Significance after Mitigation

Less than significant for all action alternatives.

Impact BIO-6 Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan

Alternative 1 (Medium Service Area Alternative), Alternative 2 (No Reclamation Funding Alternative), and Alternative 3 (Small Service Area Alternative)

Project and Program Elements. The SSHCP is currently being drafted and, as such, has not been formally adopted. There is no other adopted HCP, NCCP, or other approved conservation plan guiding development in the Project area. Regional San anticipates that the SSHCP will be completed and formally adopted prior to Project permitting. The recycled water pipeline Project

is an SSHCP-covered activity, and Regional San intends to participate in the SSHCP and comply with terms and conditions of the SSHCP to gain regulatory permits and approvals necessary for completion of the proposed Project. For these reasons the action alternatives would have no impact on consistency with relevant conservation plans.

Alternative 4 (No Project Alternative)

Under The No Project Alternative, there would be no Project or Action and therefore no need for conservation plan consistency.

Significance Determination

There would be no impact under all action alternatives and the No Project Alternative.

Cumulative Impact Analysis

The geographic scope of potential operational impacts on aquatic biological resources extends to the entire Sacramento River watershed. As noted in the discussion of Impact BIO-4b, the evaluation of effects on aquatic resources was based on modeling using CalSim II. Modeling of Project impacts was thus done in the context of ongoing operations of other projects that divert water from the system, and considers cumulative effects. Even when considering other potential diversions in the communities of Colusa, Woodland and Biggs (as identified in **Table 3.0-1**), cumulative impacts to aquatic species are expected to be less than significant with implementation of **Mitigation Measure HYD-4**.

For terrestrial resources, impacts of the proposed Project are confined to Sacramento County, where past development has resulted in a substantial loss of native habitat to other uses. Future projects proposed in the vicinity of the Project area, including development projects in Sacramento County and the City of Elk Grove (see **Table 3.0-1**) would be required to mitigate significant impacts on terrestrial biological resources, in compliance with CEQA, the Federal ESA, CESA, and other State, local, and Federal statutes. Significant and unavoidable impacts to species that are protected under ESA or CESA would not be permitted under law. Both of these acts require that any take of species is minimized and fully mitigated. The development of the proposed SSCHCP, and its implementation if approved, aims to ensure that cumulative development within the County would not substantially affect special-status species. However, the SSCHCP is currently undergoing environmental review and is not an adopted plan.

As described above, the proposed Project has the potential to affect sensitive species and habitats. **Mitigation Measures BIO-1a through 1d, BIO-2, BIO-3 and BIO-5** include provisions to reduce, avoid, and/or compensate for impacts in accordance with the requirements of ESA and CESA and other regulatory programs that protect habitats, such as CWA Section 404, and in compliance with Sacramento County General Plan goals and policies for resource protection. Through full implementation of the mitigation measures, potential Project-related impacts would be avoided, reduced, or compensated to such an extent that they are not expected to not result in a considerable contribution to a cumulative impact. Therefore, the Project would not result in a cumulatively considerable contribution to a cumulatively significant biological resource impact; the cumulative impact would be **less than significant**.

Significance Determination before Mitigation

Potentially significant.

Mitigation Measures

See **Mitigation Measures BIO-1a through 1d, BIO-2, BIO-3, HYD-4 and BIO-5.**

Significance Determination after Mitigation

Less than significant.

3.5.5 References

CH2M HILL. 2015. Wetland delineation for the Sacramento Regional County Sanitation District Recycled Water Project. Prepared for RMC Water and Environment. September.

CNDDDB (California Natural Diversity Database). 2015. Rarefind 5. Queries of USGS 7.5-minute series quadrangles: Bruceville, Carmichael, Clarksburg, Courtland, Elk Grove, Florin, Galt, Isleton, Lodi North, Sacramento East, Sacramento West, and Thornton. Query completed on: November 13, 2015.

Holland, R.F. 1986. Preliminary descriptions of the terrestrial natural communities of California. The Resources Agency, Department of Fish and Game. Non-game Heritage Program. October.

NMFS (National Marine Fisheries Service). 1993. Designated Critical Habitat; Sacramento River winter-run Chinook salmon. Federal Register 58: 33212-33219.

NMFS (National Marine Fisheries Service). 2005. Endangered and Threatened Species; Designation of critical habitat for seven Evolutionarily Significant Units of Pacific Salmon and Steelhead in California; Final Rule. Federal Register 70: 52488-52627.

NMFS (National Marine Fisheries Service). 2009b. Endangered and Threatened Wildlife and Plants; Final Rulemaking to Designate Critical Habitat for the Threatened Southern Distinct Population Segment of North American Green Sturgeon. Federal Register 74: 52300-52351.

Sacramento County. 2016. South Sacramento Habitat Conservation Plan fact sheet. Informational website available at: <http://www.southsachcp.com/>. Accessed on May 26, 2016.

Sawyer, J.O., and T. Keeler-Wolf. 1995. A manual of California vegetation. California Native Plant Society, Sacramento, California. 471 pages.

USFWS (U.S. Fish and Wildlife Service). 1994. Endangered and Threatened Wildlife and Plants; Critical Habitat Determination for the Delta Smelt. Federal Register 59: 65256-65278.

- USFWS (U.S. Fish and Wildlife Service). 1997. Guidelines for the Restoration and/or Replacement of Giant Garter Snake Habitat
- USFWS (U.S. Fish and Wildlife Service). 1999. Conservation guidelines for the valley elderberry longhorn beetle. United States Department of the Interior. Sacramento Fish and Wildlife Office. July.
- USFWS. (U.S. Fish and Wildlife Service). 2004. Endangered and Threatened Wildlife and Plants; Determination of Threatened Status for the California Tiger Salamander; and Special Rule Exemption for Existing Routine Ranching Activities; Final Rule. 50 CFR 17. Federal Register, August 4, 2004.
- USFWS (U.S. Fish and Wildlife Service). 2005. Recovery plan for vernal pool ecosystems of California and Southern Oregon. Region 1. Portland, Oregon.
- USFWS (U.S. Fish and Wildlife Service). 2016. Online query of the IPaC (Information for Planning and Conservation) resource database, available at <https://ecos.fws.gov/ipac>. Queried on June 27, 2016.
- U.S. Bureau of Reclamation (Reclamation). 2008. Biological Assessment on the continued long-term operations of the Central Valley Project and the State Water Project. U.S. Department of the Interior. Bureau of Reclamation. Mid-Pacific Region. Sacramento, California. August.

3.6 Cultural Resources

This section discusses the cultural resources inventory, assessments and findings for the proposed Project. The cultural resources inventory was conducted in compliance with Section 5024.1 of the California Public Resources Code (PRC) and Section 106 of the National Historic Preservation Act (NHPA) to assess the potential to affect historical resources and historic properties, respectively. Cultural resources include prehistoric and historic archaeological sites; districts and objects; standing historic structures, buildings, districts and objects; and locations of important historic events or sites of traditional/cultural importance to various groups. The evaluation of impacts on cultural resources is based on the Cultural Resources Inventory Report prepared by CH2M HILL (2015).

3.6.1 Area of Potential Effects

Regional San proposes to expand the recycled water system from existing facilities in the SRWTP, which is located at 8521 Laguna Station Road in Elk Grove on an approximately 3,200-acre site. The entire SRWTP site is located north of Laguna Boulevard in the unincorporated area of Sacramento County, between Franklin Boulevard and Interstate 5 (I-5). The site's northern boundary is predominantly south of the future Cosumnes River Boulevard. Additionally, Regional San would construct a pump station at the SRWTP (see Figure 2-3) and new pipelines. Recycled water would be conveyed to the irrigated lands and to the Stone Lakes NWR by a new transmission pipeline, which would extend 13.8 miles from the existing SRWTP to Twin Cities Road.

The area studied for potential impacts to cultural resources comprises approximately 260-acres and consists of a corridor ranging from 100 to 150 feet wide situated within existing road rights-of-way; the corridor includes staging and laydown areas to be used for equipment staging and storage (see **Figure 2-2** in *Chapter 2, Alternatives Description of the Proposed Project*). This area of potential effects (APE) is 13.8 miles long, within which the 18- to 60-inch pipeline would be placed. The proposed alignment would be located along the following roads: Big Horn Boulevard, Franklin Boulevard, Core Road, Eschinger Road, Bruceville Road, and Lambert Road. The Project is located within the jurisdictions of Florin, Elk Grove, and Franklin, in Sacramento County, California at approximately 18-22 feet above mean sea level (msl).

The proposed Project includes construction of a pump station at the SRWTP, but the entire plant site has already been evaluated for cultural resources as part of the EchoWater Project. Environmental documentation for that project assumed disturbance of the entire SRWTP site, so the Project would not result in any new impacts on cultural resources at the SRWTP. Nevertheless the pump station site at the SRWTP is included in the evaluation of cultural resources impact.

3.6.2 Environmental Setting

Paleontological Setting

Paleontological resources are the fossilized remains or impressions of plants and animals. Sensitivity for paleontological resources depends on the age of the underlying soils at a particular site and the degree of previous disturbance. The entire Project area is located within the Pleistocene-age Riverbank Formation (California Geological Survey 1981), which has a potential to contain paleontological resources. No known paleontological resources have been identified within the SRWTP (Ascent Environmental 2014).

Cultural Context

In central California, which includes the north-central valley, cultural resources minimally represent 12,000 years of prehistory. Although written historical sources tell the story of only the past 200 years, archaeologists have reconstructed general trends of prehistory in the region. The central valley of California is established as a region that extends to the Siskiyou Mountains in the north and as far south as the Tehachapi Mountains (CH2M HILL 2015).

Prehistory

Paleo-Indian Period (12,000 to 5,000 years ago)

The Paleo-Indian Period covers the interval from the first documented presence of humans in California in the late Pleistocene until approximately 5,000 years ago. Artifacts and cultural activities from this period represent a predominantly hunting culture; diagnostic artifacts include extremely large, often fluted two-sided tools known as bifaces, which are associated with use of the spear and the atlatl. Populations appeared to have been relatively small and highly mobile, living in temporary camps near readily available water. Abundant evidence exists that humans were present in North America for at least the past 12,000 years. Also fragmentary, but growing, evidence exists that humans were present long before that date. Linguistic and genetic studies suggest that human colonization of North America may have occurred 20,000 to 40,000 years ago. The earliest sites in central California are Fluted Point Tradition and Western Pluvial Lakes Tradition sites found at Tracy, Tulare, and Buena Vista lakes (CH2M HILL 2015).

Windmill Pattern (5,000 to 3,000 years ago)

For the region, the cultural sequence begins with the Windmill Pattern. The majority of the known Windmill Pattern sites date to approximately 5,000 to 2,250 years ago. Windmill populations moved seasonally between the valleys in the winter and the Sierra Nevada foothills in the summer. Fishing and hunting were the primary subsistence strategies. Windmill sites are characterized by tools related to hunting, fishing, and milling and include mortars, baked clay balls, trident fish spears, two types of angling hooks, pecan-sized baked clay fish line sinkers, bone awls and needles, polished charmstones, shell working and shell appliqué, and flaked tools, including projectile points (CH2M HILL 2015). Mortuary practices frequently consisted of fully extended burials, oriented towards the west with abundant funerary paraphernalia.

Berkeley Pattern (3,000 to 1,250 years ago)

The majority of known Berkeley Pattern sites dates to approximately 3,000 to 1,250 years ago. In response to environmental and technological factors, economies became more diversified and sedentary, while population growth and expansion occurred. The Berkeley Pattern subsistence relied less on hunting and fishing than did the Windmill Pattern though riverine exploitation and occupation continues; sites are diversely distributed through various environments. Increase dependence on plant goods defines the artifact assemblage encountered in Berkeley sites in the form of milling stones. Mortars and pestles are present in far greater numbers than in preceding cultural periods. Other artifacts characterizing Berkeley sites include shell and steatite beads, slate pendants, ear ornaments, distinctive diagonal flaking of large concave base points, and greater numbers of bone tools of superior manufacture. Mortuary practices also differ from the previous. There is a marked preference towards a flexed versus an extended interment, orientation is not always to the west and there is a noticeable decrease in the number of burial goods found in cemeteries.

Augustine Pattern (1,250 to 250 years ago)

The Augustine Pattern generally dates from 1,250 to 250 years ago. Augustine Pattern sites are much more widespread than Berkeley Pattern sites and are characterized by intensive fishing, hunting, and acorn gathering. Population densities are much higher and exchange systems are more sophisticated and include the advent of using clamshell disk beads for goods exchange. The period is marked by intensive fishing, hunting and gathering, specifically with an increase in acorn use. High variability in funerary artifacts seems to indicate more social stratification. Cremations and flexed burials are common. Artifacts associated with the Augustine Pattern include the bow and arrow, shaped mortars and pestles, and pottery in some parts of central California (CH2M HILL 2015). Elaborate trade networking, decrease in previous technologies, increase in the use of the bow and arrow, and cremations are hallmarks of this pattern.

Ethnohistory

The Project is in the territory associated with the ethnographic and historic boundaries of the Miwok (CH2M HILL 2015). The Miwok occupied the areas from the inner Coast Ranges near Mount Diablo and into the Delta region to the Sierra Nevada and were distinct as three groups: the Bay Miwok, Plains/Lake Miwok and Northern Sierra Miwok (CH2M HILL 2015). The Plains/Lake Miwok occupied the Project area and as far north as American River.

Similar to other groups in California, the Miwok practiced a hunting and gathering economy. For all Miwok subsistence was based primarily on hunting, gathering, and fishing. Only tobacco was occasionally planted and cultivated. Hunted animals included deer, antelope, tule elk, and rabbit. Quail, pigeons, jays, and flickers were trapped. Duck and other water fowl were caught in nets. A wide variety of plant foods were gathered, but the acorn was the most important and the Miwok gathered several different varieties. Nuts, seeds, and roots were also gathered and many different types of plants were eaten as greens (Levy 1978). In historic times, the Miwok traded with the Yokuts and Costanoan (CH2M HILL 2015).

The indigenous lifeway apparently disappeared by the early 1800s because of disruption by new diseases, a declining birth rate, the impact of the mission system, depredation by prospectors on

their way to the gold country, and later displacement by Euro-American farming. As with other native California groups, the Miwok were transformed from hunters and gatherers into agricultural laborers who lived at the missions and worked with former neighboring groups such as the Costanoan and Esselen.

Historic Period

In 1542, Juan Rodriguez Cabrillo explored the California coast by ship. Much of the early exploration of California was conducted this way. California's interior, including the Delta region and Central Valley, remained unexplored by Europeans until the beginning of the Spanish Period.

In California, the historic era is generally divided into three periods: the Spanish or Mission Period (1769 to 1834), the Mexican or Rancho Period (1821 to 1848), and the American Period (1848 to present).

Spanish/Mission Period (1769-1820)

The Spanish period spans 1769 to 1820, beginning with the founding of the first mission, the Mission San Diego de Alcalá in 1769. It was not until March 1772 that the first formal European expedition, led by Pedro Fages, entered the northern San Joaquin Valley. The purpose of the Fages expedition was to find an overland route to Point Reyes. The company kept to the shoreline until they reached the mouth of the San Joaquin River and first observed the valley it traversed (CH2M HILL 2015). Shortly after the Fages expedition returned to Monterey, Father Francisco Garcés entered the San Joaquin Valley and made the first observations of the area. His observations included native villages, wide rivers, large tule swamps, and huge herds of tule elk.

The nearest mission to the Project area was the Mission San Francisco, which was founded in 1776 by members of the de Anza Expedition. A measles epidemic swept through the mission in 1806, and many at the mission succumbed to the disease.

Mexican/Rancho Period (1821-1848)

Mexico became independent of Spain in 1821 and the Decree of Secularization, passed in 1834, effectively ended the Mission Period in California. The following years were marked by the proliferation of cattle ranching throughout the region, as the last Mexican governor of California, Pio Pico, granted vast tracts of land to Mexican (and some American) settlers. The former mission lands were then opened for grants by the Mexican government to citizens who would colonize the area and develop the land, generally for grazing cattle and sheep (CH2M HILL 2015).

American Period (1848-Present)

Following the signing of the Treaty of Guadalupe Hidalgo in 1848, the United States took possession of California; in 1850, California was accepted into the Union of the United States primarily because of the population increase created by the Gold Rush of 1849. The treaty bound the United States to honor the legitimate land claims of Mexican citizens residing in captured territories. The Land Act of 1851 established a board of Land Commissioners to review these records and adjudicate claims, and charged the Surveyor General with surveying confirmed land

grants. In order to investigate and confirm titles in California, American officials acquired the provincial records of the Spanish and Mexican governments that were located in Monterey. Those records, most of which were transferred to the U.S. Surveyor General's Office in San Francisco, included land deeds and sketch maps (CH2M HILL 2015).

During the American period, in addition to cattle and sheep ranches, a growing number of farms appeared. A rural community cultural pattern existed in the Project area from approximately 1860 to 1930. This pattern consisted of communities that lived within well-defined geographic boundaries, shared common bonds, and solved shared problems. They lived on farmsteads tied together by a common school district, church, post office, and country store. These farmsteads and dispersed farming communities gave way to horse ranches, dairies, and nurseries, which in turn were replaced by the newly established roadside service complex. The roadside service industry thrived in the highly mobile, mechanized, pre- and post-war society, which was linked by state and federal roadways.

Sacramento County

In 1808, a Spanish expedition into the Sacramento Valley was headed by Gabriel Moraga. Moraga, upon coming onto the valley, named it Sacramento after the Holy Sacrament, a name first given to the great river that traverses the region (CH2M HILL 2015). After various attempts to explore the region via the waterways, in 1826, Jedediah Strong Smith, an American, was the first to successfully blaze an overland trail into the valley; a year later, Smith opened another trail going north from the Sacramento River, naming it the Buenaventura (Kyle 1990). In 1828 Smith and his group forged routes leading from Sacramento through what is commonly known as the Trinity and Humboldt regions and into Oregon; this provided an entryway by the Hudson's Bay Company for trapping, hunting and trade (CH2M HILL 2015).

In 1839, the first Euro-American settlement was founded by John A. Sutter, a German born Swiss settler who had been granted citizenship by the region's then Mexican Governor Juan B. Alvarado (CH2M HILL 2015). At this time, the valley remained largely unoccupied by the Spanish/Mexicans and it had been entirely devoid of other Euro-American settlers. Populations of Native Americans still retained a presence in the Sacramento Valley. Concerns about Native American raids lead to Sutter's proposal to establish a fort. Construction of the fort, named New Helvetia (but known today as Sutter's Fort), was completed by 1844. New Helvetia became a refuge to new settlers, as these newcomers were afforded work and the trading post within the community became a significant center for the region (CH2M HILL 2015). After turning the fort over to his son, in 1849, John Sutter Junior began plans for the construction of a port city at the confluence of the American River and the Sacramento River. Sacramento was founded that year and was formally incorporated in California as Sacramento City in 1850.

The Sacramento Valley developed into a significant farming region, and by 1850 it was a major agricultural producer within the new state of California. The Homestead Act, passed by Congress in 1862, involved the transferring of 160 acres of open public land to any American that filed for a land patent and satisfied the act's requirements. These consisted of the applicant being head of household, over 21 years old, making land improvements, occupying the property for five

consecutive years, and paying \$1.25 per acre. This act further encouraged western expansion and settlement in the valley.

Initially, crops grown in the region included potatoes, beans, and onions. After 1870, Delta farmers diversified and began growing wheat, oats, barley, and fruit trees. By the 1910s, the region was producing approximately two-thirds of California's potato, asparagus, bean, onion, and celery crops (CH2M HILL 2015). In the Sacramento Valley, dairy farming became a major industry and it experienced a boom as California had a high demand for its products. To date, agriculture and dairy farming remains an important industry in the Sacramento Valley.

Railroad

In 1856, the only rail line in central/northern California was the Sacramento Valley Railroad, which ran east from the coast to Folsom, California. The Atchison, Topeka, Santa Fe railroad (ATSF) was chartered in 1859 and broke ground in Topeka, Kansas, in 1868. The ATSF was part of the Transcontinental railroad. The Western Pacific Railroad (WPR) was founded in 1862 to help connect in the west to the Transcontinental railroad. The connection was completed by 1869. With the opening of the west by rail to the rest of the county, additional lines and railroad companies were established. Additionally, the Oakland, Antioch and Eastern Railway was constructed, linking San Francisco to Sacramento and traversing the Redwood Canyons through Moraga Valley (CH2M HILL 2015). The section of the WPR which runs almost parallel to Franklin Boulevard in the Project area was completed in 1909 and has been owned by Union Pacific Railroad (UPR) since 1980.

Elk Grove

Elk Grove was founded in 1850 by James Hall. Aided by the western expansion of the railroad, it became a prominent community in Sacramento County. Hall built a hotel, named the Elk Grove Hotel and Stage Stop, along Upper Stockton Road. For the largely agricultural community in the region, this was an important center for commerce and travel. Elk Grove experienced a building boom in the early 20th Century with the construction of the Toronto Hotel, a post office, a bank, drug store, and other businesses (CH2M HILL 2015). The current jurisdiction of Elk Grove includes the historic communities of Bruceville, Franklin, Hood and seven others, as well as the Mexican land grants of Leidesdorff's Rancho Rio de los Americanos and Sheldon and Daylor's Rancho Omochumnes (CH2M HILL 2015). In 1988, Old Town Elk Grove was listed on the National Register of Historic Places (NRHP) as a Historic District.

Franklin

Franklin is a small farming community in south Sacramento County with a current population under 160 people. Named after the Franklin House, built in 1856 by Andrew George, the community was originally known as George Town (CH2M HILL 2015). By 1862, the community had a post office. The hub of the town contains a relocated two story Victorian house first named Oakwood, built in 1886 and moved to 10466 Franklin Boulevard in 2005, and a dozen 1920s commercial buildings flanking Franklin Boulevard. In the southwest end of the town lies the Franklin Cemetery containing the grave of Alexander Hamilton Willard, a member of the Lewis and Clark Expedition. Willard settled in California in 1852 and died in 1865 (CH2M HILL 2015). His grave is listed as a California Historical Landmark.

Literature Search

A literature search was conducted at the North Central Information Center (NCIC) of the California Historical Resources Information System (CHRIS) on May 18, 2015. The records search included a review of all recorded prehistoric and historic archaeological sites and historic architectural resources, as well as all known cultural resource survey and excavation reports documented in the National Archaeological Database (NADB). The literature search area consisted of the Project APE, approximately 260 acres, and a 0.5-mile buffer. Additionally, the NRHP, the California Register of Historical Resources (CRHR), California Historical Landmarks, and California Points of Historic Interest were all examined. Historic maps ranging from 1855 to 1953 were also examined. The 1855 General Land Office Township 6N Range 5E map and 1855 General Land Office Township 7N Range 5E map depict the northern end of the Project area as cultivated fields and general agricultural community, also shown is an early alignment of Lower Stockton/Telegraph Road, which was realigned by 1909.

A total of 48 prior cultural resource studies have been conducted within the study area; 20 of these studies were conducted within the APE from 1980 through 2010 and resulted in over 50 percent of the APE having been previously examined for presence of cultural resources. The literature search revealed that a total of 23 sites have been previously recorded within the broad study area. Five historic period sites are located within the APE. Seventeen historic period sites and one prehistoric site as well as a California Historical Landmark (No. 657 Grave of Alexander Hamilton Willard) are located within the 0.5-mile search radius, but well outside the APE. **Table 3.6-1** depicts all previously recorded sites located within the APE.

Table 3.6-1: Previously Recorded Cultural Sites within the APE

Source: CHRIS North Central Information Center.

Site Number	Site Description	Site Description	NRHP/CRHR Evaluation/Year
P-34-000491	Historic	Western Pacific Railroad	Not eligible/2005 & 2014
P-34-000764	Historic	Backer Ranch	Not eligible/1994
P-34-000766	Historic	Nicholas Ranch Annex (destroyed)	Not eligible/1994
P-34-000829	Historic	9853 Franklin Rd. (destroyed)	Not eligible/1995
P-34-004499	Historic	Dump/trash	Not eligible/2012

Native American Consultation

The California Native American Heritage Commission (NAHC) was contacted on May 26, 2015, to request information about traditional cultural properties such as cemeteries and sacred places in the Project area. The NAHC responded on June 9, 2015 with a list of Native Americans interested in consulting on development projects. Each of these individuals/groups was contacted by letter on June 17, 2015. No response expressing concerns or requests have been received as of the date of this report. The NAHC record search of the Sacred Lands file did not indicate the presence of Native American cultural resources in the Project survey area. The record search conducted at the NCIC of the CHRIS also did not indicate the presence of Native American

traditional cultural properties. Native American consultation is being conducted by Reclamation and is ongoing. No concerns have been identified to date.

Survey

Archaeological Resources

An intensive, systematic pedestrian survey was conducted on June 16 through 19, 2015 as detailed in the technical report prepared by CH2M HILL (2015). The APE, as defined in Section 3.6.1, was completely inventoried using pedestrian transects spaced no more than 15 meters apart.

The APE is predominantly located within agricultural, residential and some commercial zones in the Sacramento County historic communities of Bruceville, Franklin and Florin and the City of Elk Grove. Ground visibility throughout the survey corridor was generally poor as the APE contains a large percentage of paved roads, agricultural fields with vegetation, residential, and disturbed ground surfaces. Fallow fields, cut banks and other soil exposures were thoroughly assessed. Within the APE the survey area included streets, fenced fields, dairy farms, residential properties, irrigation ditches, culverts, bridges, driveways, and other built elements. Disturbances from agricultural activities, utilities, road construction and maintenance, and residential and commercial development within the survey area have affected 100 percent of the horizontal and an unknown percentage of the vertical APEs.

No archaeological resources of any kind were observed as a result of the pedestrian survey.

Architectural Resources

A historic architecture survey was conducted from July 17 through 19, 2015 as detailed in the technical report prepared by CH2M HILL (2015). Five architectural resources were newly recorded in the APE (**Table 3.6-2**). All five newly recorded resources were recorded on DPR 523 forms, additionally, updates to DPR forms for the previous five recorded resources were made as required (**Table 3.6-1**). A description of each newly-recorded resource is given below.

Table 3.6-2: Cultural Resources Newly Recorded during the Proposed Project Cultural Resources Survey

Site ID Number	Site Period	Site Description	NRHP/CRHR Status	Project Effects
Temporary CH-S-01	Historic	Unnamed paved road	Not eligible	No adverse effects
Bridge No. 24C0156	Historic	1933 Bridge	Not eligible	No adverse effects
Temporary CH-S-03	Historic	Drainage pipe	Not eligible	No adverse effects
24C0153	Historic	1933 Bridge	Not eligible	No adverse effects
24C0157	Historic	1933 Bridge	Not eligible	No adverse effects

Temporary Site CH-S-01

This is an unnamed paved road that is depicted in the 1909 Franklin, CA 7.5 Minute USGS quadrangle, and was observed during pedestrian survey. A 15-foot portion of the approximate 1-mile road is within the APE as it starts off of Franklin Boulevard in the east and continues west

towards I-5. Approximately 25 feet east of Franklin Boulevard, the road is inaccessible because it lies within a wildlife preserve and is behind fencing.

Bridge No. 24C0156

This bridge was observed during the survey and is also recorded in the Caltrans Structure Maintenance and Investigations: Historic Significance, Local Agency Bridges 2014 inventory (Caltrans 2014). Bridge #24C0156 is concrete and continuous, cast-in-place slab style. It was built in 1933 and measures 38 feet in length and is 30 feet wide (road width).

Temporary Site CH-S-03

This resource is a drainage feature that includes a refurbished wooden pipe from a pre-1930s city/county water main. The original owner of the residence salvaged the pipe after it was decommissioned and installed it in his driveway along with a concrete pipe and tiles as a drainage, c. 1954. The entire feature measures 9 feet 9 inches in length at the top, 1 foot 6 inches at the bottom (it tapers), and is 3 feet in height. The feature is located at the entrance of the driveway of a private residence.

Bridge No. 24C0153

This bridge is recorded in the Caltrans Structure Maintenance and Investigations: Historic Significance, Local Agency Bridges 2014 Inventory (Caltrans 2014). Bridge #24C0153 is concrete and continuous, cast-in-place slab style. The bridge was built in 1925 and reconstructed in 1933; it measures 65 feet in length and is 36 feet wide (road width). No bridge number is listed on the bridge itself.

Bridge No. 24C0157

This bridge is recorded in the Caltrans Structure Maintenance and Investigations: Historic Significance, Local Agency Bridges 2014 inventory (Caltrans 2014). Bridge #24C0157 is concrete and continuous, cast-in-place slab style. It was built in 1933 and measures 36 feet in length and is 30 feet wide (road width).

Determinations of Eligibility

A total of ten historic architectural sites were documented within the APE; five were previously recorded and five were newly recorded. Each resource was evaluated for its potential to meet both CRHR and NRHP criteria.

Site P-34-000491

This portion of the Western Pacific Railroad was built in 1909 and runs almost parallel to Franklin Boulevard in the historic community of Franklin, as seen in historic and modern USGS topographic maps. The rail line has been modernized and is active. UPR purchased the rail line in 1980 and continues to maintain it. At the time of first recordation, it was assessed as not eligible to the CRHR/NRHP and has since been updated several times and re-evaluated, with each update concurrence on its ineligibility has been reached (CH2M HILL 2015). This resource would not be affected by Project construction.

Site P-34-000764

This site is the historic Backer Ranch located at 3431 Sims Rd. in Elk Grove. The site was originally the property of Jacob Miller and later the 390-acre area was purchased and established as a dairy farm by Fredrick Backer in 1890. Much of the dairy farm's facilities and the residence have been removed since its purchase in 1960; the only remnants are a barn and pumphouse, built in the 1940s. This site was evaluated as not eligible to the CRHR/NRHP (CH2M HILL 2015). This resource would not be affected by Project construction.

Site P-34-000766

This site is the historic Nicolaus Ranch Annex located at 3501 Dwight Rd. in Elk Grove. The site consists of a house and detached garage built c.1950 and was evaluated as not eligible to the CRHR/NRHP (CH2M HILL 2015). This resource would not be affected by Project construction.

Site P-34-000829

This site is a historic residence located at 3853 Franklin Boulevard in Elk Grove. The building was recorded as a one and a half story residence with little architectural significance, built in 1924. This resources was evaluated as not fulfilling any of the applicable criteria for the NRHP (CH2M HILL 2015). An update to the record in 2006 reported this site had been destroyed and a new residential community had been established (CH2M HILL 2015).

Site P-34-004499

This is a historic site consisting of a utility pole, a pump, and two irrigation cisterns within a fenced area. It is located within an empty field and exact age is undetermined. It has been evaluated as not eligible to the CRHR/NRHP (CH2M HILL 2015). This resource would not be affected by Project construction.

Temporary Site CH-S-01

This unnamed road was originally a private road and apparently was later expanded to be used as a local travel corridor. This resource does not meet any of the criteria for the CRHR or NRHP¹. It is not associated with any 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, (Criterion 1/A), it is not associated with the lives of persons important to local, California or national history (Criterion 2/B), it does not embody a distinctive characteristics of a type, period, region or method of construction or represents the work of a master or possesses high artistic values (Criterion 3/C), and the resource is not likely to yield any important new information about the prehistory or history of the local area, California or the nation (Criterion 4/D). It is recommended that this resource not be considered eligible to the CRHR/NRHP. This resource would not be affected by Project construction.

Bridge No. 24C0156

This bridge was originally built in 1933 over an unnamed drainage. It is found in the Caltrans database (Caltrans 2014) and has been evaluated by Caltrans and recommended as ineligible to

¹ CRHR criteria are numbered 1 through 4 and correspond to NRHP criteria A through D. Both are referenced here.

the CRHR/NRHP because it does not meet any of the criteria for listing (CH2M HILL 2015). This resource would not be affected by Project construction.

Temporary Site CH-S-03

This resource is a culvert feature and it was built c. 1954 from refurbished materials. It is not associated with any 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, (Criterion 1), it is not associated with the lives of persons important to local, California or national history (Criterion 2), it does not embody distinctive characteristics of a type, period, region or method of construction or represent the work of a master or possess high artistic values (Criterion 3), and the resource is not likely to yield any important new information about the prehistory or history of the local area, California or the nation (Criterion 4). It is recommended that this resource not be considered eligible to the CRHR/NRHP. This resource would not be affected by Project construction.

Bridge No. 24C0153

This bridge was originally built in 1925 and was reconstructed in 1933. Caltrans previously recommended this bridge as ineligible to the CRHR/NRHP (Caltrans 2014) because it does not meet any of the criteria for listing. This resource would not be affected by Project construction.

Bridge No. 24C0157

This bridge was originally built in 1933. Caltrans has assessed this bridge as ineligible to the CRHR/NRHP (Caltrans 2014) because it does not meet any of the criteria for listing. This resource would not be affected by Project construction.

Potential for Buried Archaeological and Paleontological Resources

The potential for an area to contain buried resources can often be assessed by an examination of topography, soil types, and proximity to water. The Pleistocene-age Riverbank formation that underlies the Project area has the potential to contain paleontological resources. Buried archaeological sites are found in many contexts, especially alluvial fans and stream terraces. Buried sites are more likely in certain locations near water courses where deposition is deep, where previous studies have shown there is a higher density of sites, or where there is ongoing deposition. All of these conditions were taken into account to assess the sensitivity for sub-surface archaeological deposits at the Project site.

The Project area has been generally utilized for agricultural activities for the past 100 years or so. The APE has been heavily disturbed by decades of agricultural use, construction of roads, utilities, and regular road maintenance and upgrades. Maintained alluvial channels flank the roads. Storm water drainages, ditches, and other infrastructure have contributed to heavy disturbance within the roadway corridor where Project construction would occur.

Importantly, ground disturbances from the Project are expected to be entirely limited within the existing road prism and existing pipeline corridor. Given these conditions, it is therefore considered unlikely that buried intact archaeological or paleontological resources could be

present and the APE is considered to possess low sensitivity for historical and paleontological resources and historic properties.

3.6.3 Regulatory Framework

Federal Policies and Regulations

The protection of historic properties is governed by several federal laws and regulations, including the NHPA (1966), the Archaeological and Historic Preservation Act (1974), the American Indian Religious Freedom Act (1978), the Archaeological Resources Protection Act (1979), and the Native American Graves Protection and Repatriation Act (1990). Section 106 of the NHPA states that federal agencies must take into account the effect of the undertaking on any district, site, building, structure, or object that is included in, or eligible for, inclusion in the NRHP.

The enabling legislation for Section 106 is contained in 36 CFR 800 "Protection of Historic Properties." The Section 106 process entails the following three basic steps:

- Identify historic properties potentially affected by the undertaking.
- Assess adverse effects on historic properties.
- Seek ways to avoid, minimize, or mitigate any adverse effects on historic properties.

In accordance with 36 CFR Part 800, determinations regarding the potential effects of an undertaking on historic properties are presented to the State Historic Preservation Office, federally recognized Native American Tribes, and other interested parties.

Under Section 106 of the NHPA, an adverse effect is found when an undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the NRHP in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association. Adverse effects may include reasonably foreseeable effects caused by the undertaking that may occur later in time, be farther removed in distance, or be cumulative. Following are examples of adverse effects:

- Physical destruction or damage
- Alteration inconsistent with the Secretary of the Interior's Standards for the Treatment of Historic Properties
- Relocation of the property
- Change in the character of the property's use or setting
- Introduction of incompatible visual, atmospheric, or audible elements
- Neglect and deterioration
- Transfer, lease, or sale out of federal control without adequate preservation restrictions

National Register of Historic Places

The preservation of historic properties first became national policy with the passage of the Antiquities Act of 1906. The Historic Sites Act of 1935 and the NHPA in 1966 continued the goal of preserving historic properties. The NRHP was established as part of the NHPA.

Cultural resources include prehistoric and historic archaeological sites, districts, and objects; standing historic structures, buildings, districts, and objects; locations of important historic events; and sites of traditional or cultural importance to various groups. 36 CFR Part 800 defines a historic property as any prehistoric or historic district, site, building, structure, or object listed in, or eligible for listing in, the NRHP. The criteria used to evaluate properties for the NRHP are provided in 36 CFR 60 and listed in the following bullets. A resource must meet one or more of these following criteria to be considered for eligibility:

- Be associated with events that have made a significant contribution to the broad patterns of history (Criterion A)
- Be associated with the lives of persons significant to our past (Criterion B)
- Embody the distinctive characteristics of a type, period, or method of construction, or represent the work of a master, possess high artistic values, or represent a significant and distinguishable entity whose components might lack individual distinction (Criterion C)
- Have yielded, or have the potential to yield, information important to prehistory or history (Criterion D)

Generally, properties must be 50 years old to be eligible for the NRHP, but those that have achieved significance within the past 50 years may be eligible if they are of exceptional importance.

In addition to meeting one or more of these criteria, a resource must retain integrity to be considered a historic property. Integrity is the authenticity of the physical identity, as evidenced by the survival of characteristics that existed during the resource's period of significance. Historic properties must retain enough of their historic character or appearance to be recognizable and to convey the reasons for their significance. The seven aspects of integrity, presented in 36 CFR 60, are location, design, setting, materials, workmanship, feeling, and association. A resource that has lost its historic character or appearance and is not eligible for the NRHP still might have sufficient integrity for the CRHR if it maintains the potential to yield significant scientific or historic information or specific data.

State Policies and Regulations

CEQA Guidelines

According to the CEQA Guidelines Appendix G (2002), impacts to cultural resources would be considered significant if the Project would:

- Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5

- Cause a substantial adverse change in the significance of an archeological resource pursuant to Section 15064.5
- Disturb any human remains, including those interred outside of formal cemeteries

A historical resource is a resource listed in, or determined to be eligible for listing in, the CRHR. Historical resources as defined in subdivision (k) of Section 4020.1, and included as such in a local register, or deemed significant pursuant to criteria set forth in subdivision (g) of Section 5024.1, are presumed to be historically or culturally significant for purposes of this section, unless the preponderance of the evidence demonstrates that the resource is not historically or culturally significant. The fact that a resource is not listed in, or determined to be eligible for listing in, the CRHR, not included in a local register, or not deemed significant pursuant to criteria set forth in subdivision (g) of Section 5024.1, shall not preclude a lead agency from determining whether the resource may be a historical resource.

Pursuant to Section 15064.5 (Determining the Significance of Impacts to Archaeological and Historical Resources of the State California Environmental Quality Act), a resource shall be considered to be historically significant if it meets the criteria for listing on the CRHR (PRC Section 5024.1, Title 14 CCR, Section 4852), including the following:

- It is associated with events that have made a significant contribution to the broad patterns of local or regional history or the cultural heritage of California of the United States (Criterion 1)
- It is associated with the lives of persons important to local, California, or national history (Criterion 2)
- It embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values (Criterion 3)
- Has yielded, or has the potential to yield, information important to the prehistory or history of the local area, California, or the nation (Criterion 4)

In addition to the above criteria, a resource must retain integrity to be considered historically significant. Integrity is the authenticity of the physical identity that is evidenced by the survival of characteristics that existed during the resource's period of significance. Historical resources must retain enough of their historic character or appearance to be recognizable as historical resources and to convey the reasons for their significance. Rehabilitation or restoration does not necessarily discount a resource from eligibility. Integrity must also be evaluated with regard to the retention of location, design, setting, materials, workmanship, feeling, and association. A resource that has lost its historic character or appearance may still have sufficient integrity for the CRHR, if it maintains the potential to yield significant scientific or historical information or specific data.

An adverse effect on a cultural resource is defined as:

- Substantial adverse change in the significance of a historical resource by physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings
- Demolishes or materially alters those physical characteristics of a historical resource that convey its significance and that justify its inclusion in, or eligibility for inclusion in, the CRHR, or inclusion in a local register

Section 7052 of the Health and Safety Code establishes a felony penalty for mutilating, disinterring, or otherwise disturbing human remains, except by relatives. Penal Code Section 622.5 provides misdemeanor penalties for injuring or destroying objects of historical or archaeological interest located on public or private lands, but specifically excludes the landowner. PRC Section 5097.5 defines as a misdemeanor the unauthorized disturbance or removal of archaeological, historical, or paleontological resources located on public lands.

California Register of Historical Resources

As provided in California PRC Section 5020.4, the California Legislature established the CRHR in 1992. The CRHR is used as a guide by state and local agencies, private groups, and citizens to identify the state historical resources and to include which properties are to be protected, to the extent prudent and feasible, from substantial adverse change. The CRHR, as instituted by the California PRC, automatically includes all California properties already listed in the NRHP. It also includes those formally determined to be eligible for listing in the NRHP (Categories 1 and 2 in the State Inventory of Historical Resources), as well as specific listings of the State Historical Landmarks and in the State Inventory of Historical Resources), as well as specific listings of State Historical Landmarks and State Points of Historical Interest. The CRHR may also include various other types of historical resources that meet the criteria for eligibility, including the following:

- Individual historic resources
- Resources that contribute to a historic district
- Resources identified as significant in historic resource surveys
- Resources with a significance rating of Category 3 through Category 5 in the State Inventory (Categories 3 and 4 refer to potential eligibility for the NRHP; Category 5 indicates a property with local significance)

The CRHR follows the lead of the NRHP in utilizing the 50-year threshold. A resource is usually considered for its historical significance after it reaches the age of 50 years. This threshold is not absolute, but was selected as a reasonable span of time after which a professional evaluation of historical value/importance can be made.

California Public Resources Code

The Public Resources Code protects paleontological resources through Section 5097.5 which prohibits “knowing and willful” excavation, removal, destruction, injury, and defacement of any

paleontological feature on public lands (lands under state, county, city, district, or public authority jurisdiction, or the jurisdiction of a public corporation), except where the agency with jurisdiction has granted permission.

Local Policies

Sacramento County General Plan

The county's General Plan (County of Sacramento 2011) recognizes the importance of cultural resources on lands over which it has jurisdiction and outlines goals, policies, and procedures for managing these resources. The General Plan "Conservation Element" *Section VIII Cultural Resources* states that its intent is to promote the inventory, protection and interpretation of the cultural heritage of Sacramento County, including historical and archaeological settings, sites, buildings, features, artifacts and/or areas of ethnic historical, religious or socioeconomic importance. Policies included in the General Plan regarding cultural resources are: CO-150 through CO-164 guide archaeological resources and protection, CO-164 through CO-168 encourage historic structures preservation, CO-169 through CO-171 address destruction of cultural resources sites, and CO-172 through CO-175 support public education and awareness.

City of Elk Grove General Plan

Historical Resources Element

The City's General Plan (City of Elk Grove 2015) contains a Historical Resources Element, which outlines recommended policies to aid in the protection of cultural resources. The recommended policies specifically addressing cultural resources are:

- Policy HR-1: Encourage the preservation and enhancement of existing historical and archaeological resources in the City.
- Policy HR-2: The City supports the goals and objectives for the *Comprehensive Statewide Historic Preservation Plan for California 2000-2005*.
- Policy HR-3 Encourage restoration, renovation, and/or rehabilitation of all historic structures.
- Policy HR-4: Support the use of federal financial incentive programs to encourage preservation of historic structures.
- Policy HR-5: Maintain and improve the aesthetic quality and architectural diversity of the Old Town historical district.
- Policy HR-6: Protect and preserve prehistoric and historic archaeological resources throughout the City.

3.6.4 Impact Analysis

Methodology for Analysis

This section evaluates whether construction and operation of the proposed Project would result in significant impacts to historical resources and/or historic properties. As identified in *Chapter 2, Alternatives and Proposed Project*, the pump station and transmission pipeline are being evaluated at a project-specific level and construction of the remaining facilities, including the

distribution mains, service connection laterals, turnouts, potential recharge area, diluent wells, and the Stones Lake NWR, are being evaluated at the program level. From a cultural resources perspective, the potential impacts would be similar whether they are at the project level or the program level. The primary difference is that the construction schedule and the potential construction-related trips have been identified for the project-level activities, but are not yet known for the program-level components. Like the project-level activities, the program-level activities, particularly the construction of approximately 25 miles of distribution mains which would occur in the public ROW, would result in temporary surface disturbance. For this reason, the potential cultural resources impacts of the Project and program elements are discussed together. Detailed inventory to identify the potential presence of cultural resources in the construction area for the Project has only been performed for the project-level facilities, and additional inventory would be required before construction of the program-level elements.

A total of ten known historic resources have been recorded and are located within the APE. Of these, five were previously recorded. Two of the previously recorded resources have been destroyed; these resources were previously evaluated and recommended not eligible to the NRHP/CRHR. Five newly recorded resources were documented within the APE; three are bridges and would be completely avoided by construction activities. Two newly recorded resources (Temporary Site Numbers CH-S-01 and CH-S-03) are located within the direct impact area where construction of the pipeline would occur and have potential to be impacted by construction. However, neither of these resources appear to meet any criteria for listing on the CRHR or NRHP and therefore are not recommended as qualifying as historical resources or historic properties, respectively.

The proposed Project as described and reported in this document would not adversely affect historical resources or historic properties in any way.

Surface disturbance as a result of proposed Project activities would be strictly contained and limited to the existing disturbed road prisms. In addition, the pipeline would be buried and has no potential to directly or indirectly affect architectural resources.

No historical resources or historic properties would be adversely affected by the proposed Project. The APE is considered to have a low sensitivity for buried resources.

Thresholds of Significance

Consistent with the thresholds of significance identified in Sacramento County's Initial Study Checklist and Appendix G of the CEQA Guidelines, an impact on cultural resources would be considered significant if the proposed Project would:

- Cause a substantial adverse change in the significance of a historical resource as defined in CEQA Guidelines Section 15064.5.
- Cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines Section 15064.5.

EIR

Draft

- Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.
- Disturb any human remains, including those interred outside of formal cemeteries.

The threshold for measuring the intensity of an impact on historic properties was based on 36 CFR Part 800, which is the implementing regulation for Section 106 of the NHPA.

Impacts and Mitigation Measures

Impact CR-1 Potential to result in a substantial adverse change in the significance of a historical, archaeological or paleontological resource.

Alternative 1 (Medium Service Alternative), Alternative 2 (No Reclamation Funding Alternative), and Alternative 3 (Small Service Alternative)

Project and Program Elements. Although the proposed Project would not affect any known historical, archaeological or paleontological resources, construction could result in the substantial adverse change in the significance of a buried archaeological or paleontological resource. Neither the pedestrian survey, existing records, consultation with tribal representatives, nor a review of the records held by the Native American Heritage Commission yielded any information concerning potential archaeological sites, features, traditional use areas, or Sacred Land listings within or adjacent to the Project site at the SRWTP or in the pipeline corridor.

Historic and archaeological resources could be impacted in the event of an inadvertent resource discovery during Project construction. Once the buried pipeline is built, there is no reasonable possibility of adversely impacting the significance of a historic resource. However, the potential for disturbance during the construction phase is considered a potentially significant impact. There is also the potential for the discovery of paleontological resources or human remains during construction. The destruction or disturbance of these resources would result in a significant impact. With implementation of **Mitigation Measures CR-1a through CR-1c**, potential impacts to historical, archaeological, and paleontological resources would be reduced to a less-than-significant level. If previously undiscovered resources are found, these resources would be evaluated and mitigation would be required that would result in the recording, protecting, and/or preserving these resources

Alternative 4 (No Project Alternative)

Under the No Project Alternative, no facilities would be constructed. Therefore, no impacts to historical resources would occur.

Significance Determination before Mitigation

Potentially significant for all action alternatives. No impact for Alternative 4 (No Project Alternative).

Mitigation Measures

Mitigation Measure CR-1a: Discovery of Previously Unknown Historic or Archaeological Resources during Construction (All Action Alternatives)

If during excavation or earth moving activities, potential historic or archaeological resources are encountered, the County or local jurisdiction shall be notified and a professional archaeologist meeting the minimum qualifications in archaeology as set forth in the Secretary of the Interior's Standards and Guidelines shall be contracted by Regional San and dispatched to assess the nature and significance of the find in the following manner:

- All excavation and/or grading within 20 meters of the discovery area shall cease immediately. The responding archaeologist may, after analyzing the discovery, authorize an alternate (or reduced) buffer around the materials to ensure adequate evaluation and protection of potential historic and/or archaeological resource(s) during continued construction operations.
- Additional evaluation of the historic and/or archaeological resource(s) shall be conducted and significance of the materials determined. If the discovery is considered significant, the archaeologist shall develop and implement a late-discovery mitigation strategy in conjunction with Regional San, to minimize and/or avoid the impact through preparation and implementation of an avoidance, evaluation, or recovery plan that Regional San will implement. Such a plan may involve resource avoidance (preservation in place), or could include recovery and archival research (e.g., excavation, documentation, curation, data recovery, or other appropriate measures).

Mitigation Measure CR-1b: Note on Construction Plans (All Action Alternatives)

Regional San shall require the inclusion of a note on all construction plans specifying that construction, excavation, and earthwork shall cease immediately if historical, archaeological, or paleontological resources are discovered to enable a professional archaeologist to assess, evaluate, and mitigate or avoid the potential impacts to resources as appropriate.

Mitigation Measure CR-1c: Discovery of Paleontological Resources During Construction (All Action Alternatives)

If paleontological resources are discovered during earth moving activities, the construction crew shall immediately cease work near the find. A qualified paleontologist shall assess the nature and importance of the find and if the resource is determined to be significant, prepare an avoidance, evaluation, or recovery plan, which Regional San will implement. Such a plan may involve resource avoidance (preservation in place), or could include recovery and archival research, (e.g., excavation, documentation, curation, data recovery, or other appropriate measures) as well as additional monitoring.

Significance after Mitigation

Less than significant for all action alternatives.

Impact CR-2 Development of the Project and the off-site infrastructure has the potential to disturb human remains, including those interred outside of formal cemeteries.

Alternative 1 (Medium Service Alternative), Alternative 2 (No Reclamation Funding Alternative), and Alternative 3 (Small Service Alternative)

Project and Program Elements. While the proposed Project has the potential to disturb human remains, this impact is not anticipated as no cemeteries are known to occur within or in proximity to the Project site or off-site infrastructure alignment. Further, no evidence of a cemetery or burial area was identified during the data research and field work. In the event excavation and digging associated with construction activities result in the inadvertent exposure of human remains, **Mitigation Measure CR-2** would reduce impacts to a less-than-significant level.

Alternative 4 (No Project Alternative)

Under the No Project Alternative, no facilities would be constructed. Therefore, no impacts related to the potential to disturb human remains would occur.

Significance Determination before Mitigation

Potentially significant for all action alternatives. No impact for Alternative 4 (No Project Alternative).

Mitigation Measure

Mitigation Measure CR-2: Discovery of Human Remains (All Action Alternatives)

If human remains are encountered during the construction of the Project site or the off-site infrastructure corridor, California Health and Safety Code Section 7050.5 requires that all disturbance at the site cease immediately within a 100 foot radius of the discovery, the County Coroner be notified, and a determination of origin and disposition provided by the Coroner pursuant to Public Resource Code Section 5097.98. If the remains are determined to be prehistoric, the Coroner shall notify the Native American Heritage Commission (NAHC), which will determine and notify a Most Likely Descendant (MLD). With the permission of the landowner or his/her authorized representative, the MLD may inspect the site of the discovery. The MLD shall complete the inspection within 24 hours of notification by the NAHC. The MLD may recommend scientific removal and nondestructive analysis of human remains and items associated with Native American burials.

Significance Determination after Mitigation

Less than significant for all action alternatives.

Cumulative Impact Analysis

Cumulative development anticipated in Sacramento County, including growth projected by adopted general plans, may result in the discovery and removal of cultural resources, including archaeological, paleontological, historical, and Native American resources and human remains. As discussed in this section, there are no known cultural or historic resources present on the Project site. **Mitigation Measures CR-1a, CR-1b, CR-1c, and CR-2** would require any

unknown cultural resources which are discovered during development of the Project to be preserved, either through preservation in place, excavation, documentation, curation, data recovery, or other appropriate measures. With implementation of mitigation measures, the proposed Project is not anticipated to considerably contribute to a significant reduction in cultural resources. Therefore, the Project would have a less than cumulatively considerable contribution to impacts to cultural resources.

Significance Determination before Mitigation

Potentially significant.

Mitigation Measures

See **Mitigation Measures CR-1a, CR-1b, CR-1c, and CR-2.**

Significance Determination after Mitigation

Less than significant.

3.6.5 References

- Ascent Environmental. 2014. *Final Environmental Impact Report for the Sacramento Regional County Sanitation District EchoWater Project*. September 12, 2014.
- California Geological Survey. 1981. Regional Geologic Map No. 1A, 1:250,000 scale, Compilation by: D. L. Wagner, C.W. Jennings, T.L. Bedrossian, and E.J. Bortugno, available on line at: <http://www.quake.ca.gov/gmaps/RGM/sacramento/sacramento.html>
- Caltrans. 2014. *Structure Maintenance & Investigations: Historical Significance – Local Agency Bridges*. Available at: http://www.dot.ca.gov/hq/structur/strmaint/hs_local.pdf. Accessed June 19, 2015.
- CH2M HILL. 2016. *Draft Cultural Resources Inventory Report for the South Sacramento County Agriculture and Habitat Lands Recycled Water Project, Sacramento County, California*.
- County of Sacramento. 2011. *General Plan: Conservation Element Section VIII Cultural Resources*. Available at: <http://www.per.sacounty.net/PlansandProjectsIn-Progress/Documents/General%20Plan%202030/GP%20Elements/Conservation%20Element.pdf>. Accessed July 15, 2015.
- Elk Grove, City of. 2015. *Elk Grove General Plan: Historic Resources Element*. Available at: http://www.elkgrovecity.org/UserFiles/Servers/Server_109585/File/Departments/Planning/Projects/General%20Plan/09_HistoricResources.pdf. Accessed July 15, 2015

ESA. 2014. Sacramento Regional County Sanitation District Wastewater Treatment Facility
Cultural Resources Inventory – Confidential – Not For Public Distribution, October
2014.

3.7 Energy Resources

This section presents the physical and regulatory setting for energy resources and evaluates the potential impacts related to energy consumption associated with implementation of the proposed Project.

3.7.1 Environmental Setting

California Setting

In 2014, California generated approximately 200,000 gigawatt hours (GWh) of electricity every year, transporting that electricity over 32,000 miles of transmission lines throughout the state (California Energy Commission [CEC] 2015a). In 2014, California imported approximately 30 percent of the electricity needed to serve California from the Pacific Northwest and the U.S. Southwest. Natural gas provides 61 percent of the in-state electric generation and is the main source for electricity generation within California. In 2014, the California electricity mix (inclusive of in-state generation and imports) included natural gas (44.5 percent), nuclear (8.5 percent), large hydroelectric plants (5.5 percent), and coal (6.4 percent). The remaining 35.1 percent was supplied from renewable resources such as wind, solar, geothermal, biomass, small hydroelectric facilities, and other unspecified sources of power (CEC 2015a). In-state hydroelectricity generation continued its multiyear decline due to ongoing drought conditions, dropping 32 percent from 2013 generation levels, and 61 percent since 2011, the last 'wet' year in California (CEC 2015a). The deficit in hydroelectric generation was made up by renewable energy, specifically utility-scale solar photovoltaic, solar thermal, and wind generation (CEC 2015a).

The CEC estimates that California's energy consumption between 2014 and 2026 will grow between 0.54 and 1.27 percent per year, with peak demand growing between -0.32 and 0.97 percent over the same period (CEC 2015b). Further, additional energy efficiency measures are needed to meet the Assembly Bill (AB) 32 greenhouse gas (GHG) reduction goal of reducing statewide GHG emissions to 1990 levels by 2020. Information on AB 32 is presented in *Section 3.4, Air Quality and Greenhouse Gas Emissions*. California has a renewable energy target based on the Senate Bill 350 signed by Governor Brown in 2015, which specifies that the amount of electricity generated and sold to retail customers per year from renewable energy resources be increased to 50 percent by 2030.

Regional Setting

SMUD is the nation's sixth-largest community-owned electric service provider. It serves a population of 1.4 million in a 900-square-mile service area in Sacramento County and small portions of Placer and Yolo Counties. Power from non-carbon-emitting (renewable) resources is 50 percent of total power distributed by SMUD (SMUD 2015a). SMUD's power comes from various sources including hydropower, natural-gas-fired generators, solar and wind power, and power purchased on the wholesale market (SMUD 2015b).

Pacific Gas and Electric Company (PG&E) is one of the largest combination natural gas and electric utilities in the country. PG&E's service area covers Eureka in the north down to Bakersfield in the south and is bound by the Pacific Ocean to the west and Sierra Nevada to the east. It covers a total of 70,000 square miles and serves approximately 16 million people (PG&E 2015a).

Approximately half of the electricity it delivers to its customers is renewable and from greenhouse gas-free resources. In 2012, the power mix provided to customers consisted of non-emitting nuclear generation (21 percent), hydroelectric facilities (11 percent), renewable resources (19 percent), natural gas (27 percent), and unspecified power (21 percent) which is power that is not traceable to specific generation sources. PG&E is adding more renewable resources such as solar, wind, geothermal, biomass, and small hydroelectric to its power mix and is on track to achieving 33 percent renewables by 2020 (PG&E 2015b).

Project Vicinity

SRWTP

Biogas is created from the digestion of solids at the SRWTP. Since 1995, this gas has been captured and diverted to a SMUD-owned cogeneration facility located next to the plant, referred to as the Carson Ice-Gen Project. Up to 100 megawatts (MW) of power is generated by the facility. SMUD delivers the power to the local power grid, but can also send it directly to the SRWTP to power all onsite facilities, acting as an emergency backup power supply system, allowing for system operation if the local power grid fails.

In 2012, SMUD began compressing the digester gas for injection into a SMUD-owned, natural gas utility pipeline for delivery to the Cosumnes Power Plant (CPP) in Rancho Seco, approximately 20 miles southeast of the SRWTP. The CPP generates up to 1,110 MW using a combination of SRWTP biogas and natural gas (Ascent 2014).

As described in *Chapter 2, Alternatives and Proposed Project*, there is currently no recycled water delivery to irrigation customers in South County, the Stone Lakes NWR, or to a recharge area. According to the Feasibility Study prepared for the proposed Project and action alternatives, the SRWTP currently discharges to the Sacramento River via a 1.7-mile-long, 102-inch-diameter outfall pipeline. The discharge occurs by gravity approximately 20 percent of the time, and is pumped the remaining 80 percent, for an energy usage of approximately 630 kW (RMC Water and Environment 2014). Irrigation in the project area is currently implemented through groundwater pumping, which consumes energy at each individual pump.

City of Elk Grove and South County

Electricity and natural gas are provided to Elk Grove by SMUD. Elk Grove is also served by PG&E and Suburban Propane, which operates a distribution facility in Elk Grove. SMUD and PG&E both operate programs and offer rebates to encourage energy efficiency and conservation (City of Elk Grove 2015). South County receives electricity from SMUD and gas from PG&E (Sacramento County 2011).

3.7.2 Regulatory Framework

This section describes laws and regulations at the federal, state, and local level that may apply to the proposed Project.

Federal Policies and Regulations

National Energy Conservation Policy Act

The National Energy Conservation Policy Act serves as the underlying authority for federal energy management goals and requirements. Signed into law in 1978, it is regularly updated and amended by subsequent laws and regulations. This act is the foundation of most federal energy requirements.

State Policies and Regulations

California Energy Action Plan

California's Energy Action Plan II is the state's principal energy planning and policy document (CPUC and CEC 2005). The plan describes a coordinated implementation plan for state energy policies and refines and strengthens California's original Energy Action Plan I published in 2003. California Energy Action Plan II identifies specific action areas to ensure that California's energy is adequate, affordable, technologically advanced, and environmentally sound. It adopts a loading order of preferred energy resources to meet the state's needs and reduce reliance on natural gas and other fossil fuels, also important for achieving GHG emission reductions from the electricity sector.

Energy efficiency and demand response¹ are considered the first ways to meet the energy needs of California's growing population. Renewable energy and distributed generation are considered the best ways on the supply side. To the extent that energy efficiency, demand response, renewable resources, and distributed generation are unable to satisfy increasing energy and capacity needs, CEC supports clean and efficient fossil fuel-fired generation to meet California's energy needs. The 2008 Energy Action Plan Update provides a status update to the 2005 Energy Action Plan II and continues the goals of the original California Energy Action Plan (CPUC and CEC 2008).

State Alternatives Fuel Plan

The State Alternatives Fuel Plan (California Air Resources Board [CARB] and CEC 2007) presents strategies and steps that California must take to increase the use of alternative fuels without adversely affecting air quality, water quality, or causing negative health effects. The plan recommends alternative fuel targets of 9 percent in 2012, 11 percent in 2017, and 26 percent by 2022. The plan also presents a 2050 Vision that extends the plan outcomes and presents a transportation future that greatly reduces the energy needed for transportation, provides energy through a diverse set of transportation fuels, eliminates over-dependency on oil, and achieves an 80 percent reduction in GHG emissions. With these goals, more than 4 billion gasoline gallon equivalents (20 percent) would be displaced by alternative fuels in 2020. CEC estimates that by

¹ Demand response is the reduction of customer energy usage during peak periods in order to address system reliability and support the best use of energy infrastructure.

2050, alternative fuels could provide more than half of the energy needed to power California's transportation system.

Title 24

In 1978, the Title 24 energy standards referred to as the Energy Efficiency Standards for Residential and Nonresidential Buildings, were enacted by the California legislature with the goal of reducing energy use. These standards, as described Title 24, part 6 of the California Code of Regulations, were last updated in 2008 by the California Energy Commission. The new standards which went into effect January 1, 2010 require a 15 percent increase in energy savings compared with the 2005 Building Efficiency Standards, on average.

Local Policies and Regulations

Sacramento County General Plan

The Sacramento County General Plan has the following goals related to energy use (Sacramento County 2011):

- Reverse the historical trend of increasing per capita energy consumption.
- Shift toward using more renewable energy sources.

City of Elk Grove General Plan

There are no relevant goals or policies in the City of Elk Grove General Plan relating to energy resources.

3.7.3 Impact Analysis

Methodology for Analysis

This section evaluates whether construction and operation of the proposed Project alternatives would result in significant impacts related to energy resources. Energy consumption as it relates to greenhouse gas emissions is evaluated in *Section 3.4, Air Quality and Greenhouse Gas Emissions*.

Thresholds of Significance

Per Appendix F of the CEQA Guidelines, an impact to energy resources would be significant if the proposed Project would:

- Result in inefficient, wasteful, or unnecessary consumption of fuels or other energy resources, especially fossil fuels such as coal, natural gas, and oil.

Impacts and Mitigation Measures

Impact ENE-1 Inefficient, Wasteful, or Unnecessary Use of Energy Resources.

Alternative 1 (Medium Service Area Alternative) and Alternative 2 (No Reclamation Funding Alternative)

Project Elements. Construction of the proposed pump station and transmission pipeline would require the use of fuels (primarily gas, diesel, and motor oil) for a variety of construction activities, including excavation, grading, and vehicle travel. During these activities, fuel for construction worker commute trips would be minor in comparison to the fuel used by construction equipment. While the precise amount of construction and operation-related energy consumption is uncertain, use of these fuels would not be wasteful or unnecessary because their use is necessary to contribute to the long-term distribution, use, and reliability of water resources within the Project area.

However, excessive idling and other inefficient site operations during construction could result in the inefficient use of fuels. Fuels would not be used wastefully during construction because doing so would not be economically sustainable for contractors. In addition, implementing the Sacramento Metropolitan Air Quality Management District's (SMAQMD) required emission control practices (see *Section 3.4, Air Quality and Greenhouse Gas Emissions*), would reduce air pollutant emissions by a variety of methods including limiting idling, would also reduce inefficient use of fuels. The implementation of this measure would reduce impacts associated with the inefficient use of construction-related fuels to less than significant. The Feasibility Study for the proposed Project determined that the proposed project would decrease energy consumption in two areas: (1) avoided groundwater pumping energy and (2) avoided wastewater discharge energy (RMC 2014).² The avoided cost of groundwater pumping would translate to a reduction in energy consumption by approximately 5,000 MWh per year.³ Because less water would be discharged into the Sacramento River, the proposed Project would also reduce energy consumption from avoided wastewater discharge by 750 MWh per year.

The proposed pump station's energy usage would be approximately 8,870 MWh/year to convey 32,500 AFY of recycled water from the SRWTP to users. The energy reduction from avoiding groundwater pumping and wastewater discharge would not completely offset the proposed Project's pump station energy. However the estimates from the Feasibility Study did not quantify the energy use of the 12 pumps at Stone Lakes NWR currently used to fill the wetland units, which would be reduced with the proposed Project's pressurized delivery of recycled water.

The pump station would be designed to operate as efficiently as feasible. Water would be distributed at the lowest possible pressure to minimize friction losses, which would reduce the energy need for pumping. The pump station would use high efficiency pumps employing variable frequency drives, which reduce energy demand. Pumping could occur 24-hours a day during periods of peak irrigation demand. There would be no pumping during the rainy season when there is no demand for water.

² The Feasibility Study evaluated three alternatives. The proposed Project, which would deliver an estimated 32,572 AFY of recycled water, is slightly larger than the approximately 29,000 AFY Medium Program Alternative evaluated in the Feasibility Study. Estimates for the proposed Project are scaled up from the Medium Program Alternative evaluated in the Feasibility Study.

³ As estimated in the Feasibility Study, avoided energy use for groundwater pumping would be approximately 0.154 MWh/AF. Providing 32,572 AFY of recycled water would avoid 5,016 MWh of energy use for pumping.

The SRWTP operations require substantial levels of energy, which would increase with the proposed Project. Regional San currently maintains several programs at the SRWTP that reduce overall energy consumption; which would continue to be maintained with Project implementation. These programs include water, methane, and biosolids recycling programs (Ascent 2014). In addition, biogas reduced in the anaerobic digesters is provided to SMUD as a renewable energy resource for use at its cogeneration plant and at its Cosumnes power plant (Ascent 2014). Implementation of these programs, the reduction in energy consumption from avoiding groundwater pumping and wastewater discharge, and reducing the need to use pumps at Stone Lakes NWR would ensure that the increased energy use as a result of the proposed Project would not be inefficient, wasteful, or unnecessary.

Program Elements. Construction and operational impacts associated with pipeline implementation for the program elements would be similar to those described above. Construction would result in fuel and energy consumption and the potential inefficient use of fuel. However, Regional San would be required to implement SMAQMD's emission control practices, which would reduce inefficient use of fuels. Impacts during construction would be less than significant. Consumption of operational energy would increase as additional recycled water is pumped to irrigation users, but these increases would be offset by further reductions in energy for wastewater discharge and for groundwater pumping.

Alternative 3 (Small Service Area Alternative)

Project and Program Elements. The construction and operational impacts of both project and program components for Alternative 3 (Small Service Area Alternative) would be similar to those identified for Alternative 1 (Medium Service Area Alternative), except that the intensity of the effects would be less for construction- and operation-related effects. Because there would be fewer miles of pipelines compared to Alternative 1 (Medium Service Area Alternative), this alternative is expected to result in less energy consumption. Regional San would still be required to implement SMAQMD's emission control practices to ensure efficient use of fuels.

Similar to Alternative 1 (Medium Service Area Alternative), operation of the alternative would require power to operate the pump station to convey recycled water from the SRWTP to users; this energy use would not be inefficient, wasteful, or unnecessary.

Alternative 4 (No Project Alternative)

Under this alternative, no facilities would be constructed. Therefore, no impacts on energy resources would occur during construction. Energy would still be required to obtain irrigation water from other sources.

Significance Determination before Mitigation

Less than significant for all action alternatives. No impact for Alternative 4 (No Project Alternative).

Mitigation Measures

No mitigation measures are required.

Cumulative Impact Analysis

Short-term construction energy use would be minimized through measures that would ensure efficient use of fuels, and operational energy use would offset existing energy requirements for obtaining irrigation water. The proposed Project is thus not expected to contribute to cumulative energy impacts.

Significance Determination before Mitigation

Less than significant.

Mitigation Measures

No mitigation measures are required.

3.7.4 References

- Ascent Environmental. 2014. *Final Environmental Impact Report for the Sacramento Regional County Sanitation District EchoWater Project*. September 12, 2014.
- California Air Resources Board (CARB) and California Energy Commission (CEC). 2007. State Alternatives Fuels Plan Commission Report. December, 2007. Available at: <http://www.energy.ca.gov/2007publications/CEC-600-2007-011/CEC-600-2007-011-CMF.PDF>
- California Energy Commission (CEC). 2015a. Total Electricity System Power, 2014 Total System Power: Changes from 2013. Accessed May 24, 2016.
- _____. 2015b. 2015 Integrated Energy Policy Report. Available at: http://www.energy.ca.gov/2015_energypolicy/index.html
- California Public Utilities Commission (CPUC) and California Energy Commission (CEC). 2005. State of California Energy Action Plan II. September 21, 2005. Available at: http://www.energy.ca.gov/energy_action_plan/2005-09-21_EAP2_FINAL.PDF
- _____. 2008. 2008 Update Energy Action Plan. February, 2008. Available at: <http://www.energy.ca.gov/2008publications/CEC-100-2008-001/CEC-100-2008-001.PDF>
- Elk Grove, City of. 2015. *The City of Elk Grove General Plan*. Reflects Amendments through March 2015.
- Kleinschmidt Associates. 2008. *Cosumnes River Preserve Management Plan*. March 2008.
- Pacific Gas & Electric (PG&E). 2015a. *Company Profile*. Available at: <http://www.pge.com/en/about/company/profile/index.page>. Accessed March 30, 2015.

_____. 2015b. *Clean Energy Solutions*. Available at:
<http://www.pge.com/en/about/environment/pge/cleanenergy/index.page>. Accessed March 30, 2015.

RMC Water and Environment. 2015. *Sacramento Regional County Sanitation District South County Recycled Water Feasibility Study*. January 2015.

Sacramento County. 2011. *Sacramento County General Plan of 2005-2030*. Amended November 9, 2011.

Sacramento Municipal Utility District (SMUD). 2015a. *Company Profile*. Available at:
<https://www.smud.org/en/about-smud/company-information/company-profile.htm>.
Accessed March 3, 2015.

_____. 2015b. *Power Sources*. Available at: <https://www.smud.org/en/about-smud/company-information/power-sources.htm>. Accessed March 3, 2015.

3.8 Geology and Soils

This section presents the physical and regulatory setting for geology and soils in the area of the proposed Project and evaluates the potential impact from its implementation.

3.8.1 Environmental Setting

Regional Setting

There are eleven geomorphic provinces in California, each consisting of a naturally defined geologic region with distinct landscape and unique features based on geology, faults, topographic relief, and climate. The Project area falls within the Great Valley geomorphic province, an alluvial plain approximately 50 miles wide and 400 miles long in the central part of California. The Sacramento Valley, drained by the Sacramento River, forms the northern part of the province and the San Joaquin Valley, drained by the San Joaquin River, forms the southern portion. Sediments have been deposited in the Great Valley geomorphic province almost continuously since the Jurassic era, approximately 160 million years ago (California Geological Survey [CGS] 2002). The Great Valley largely consists of Quaternary deposits from the Pleistocene and Holocene epochs. These deposits are primarily non-marine consolidated and unconsolidated alluvium, lake, playa, and terrace deposits that have been accumulating over millions of years (CGS 2010).

Seismicity

Earthquake Fault

The Project area is not located within a Fault-Rupture Hazard Zone designated by the Alquist-Priolo Earthquake Fault Zoning Act of 1972 and Special Publication 42. There are no active faults zoned under the Alquist-Priolo Earthquake Fault Zoning Act in or near the Project area (CGS 2007). While not mapped under the Alquist-Priolo Earthquake Fault Zoning Act, the closest fault is the Vaca fault, a potentially active fault, approximately 20 miles west of the Project area. A potentially active fault is a fault that has shown evidence of surface displacement within the last 1.6 million years. Due to its location in relation to active faults, Sacramento County is less affected by seismic activity and other related geologic hazards than other locations throughout California. However, historically, there has been seismic-related damage in the County, usually from large seismic events in the San Francisco Bay area. The greatest amount of seismicity in the County was in 1892 when an earthquake occurred in Yolo County. The damage in Sacramento County was limited to cracks in chimneys and statuary falling from buildings. The 1906 San Francisco earthquake and the 1989 Loma Prieta earthquake did not result in significant damage in Sacramento County (Sacramento County 2011).

Liquefaction

Areas in the County most susceptible to seismic and geologic hazards are areas that are subject to liquefaction (Sacramento County 2011). Liquefaction typically occurs in loose, saturated sediments of primarily sandy composition in the presence of ground accelerations caused by earthquakes. When liquefaction occurs, the sediments involved have a total or substantial loss of

shear strength and behave like a liquid or semi-viscous substance. Three general conditions must be met for liquefaction to occur: (1) strong seismic ground-shaking of relatively long duration; (2) loose, or unconsolidated, recently deposited sediments consisting primarily of silty-sand and sand; and (3) water-saturated sediments within about 50 feet of the surface. There are no areas susceptible to liquefaction within the project area.

Landslides

The Project/Area consists of flat terrain. The potential for landslides in the County is limited to the eastern portion of the County from the Placer County line to the Cosumnes River, outside of the Project area (Sacramento County 2011).

Mineral Resources

In Sacramento County, mineral resources include natural gas, petroleum, sand, gravel, clay, gold, silver, peat, topsoil, and lignite. The County's sand and gravel deposits are located primarily in the Old American River channel, south of Rancho Cordova, outside of the Project area. Peat and lignite are not currently commercially mined. There are no known gas regions or mineral deposits in the Project area (Sacramento County 2011).

Soils

Soil Types

Soils in the Project area are capable of supporting a variety of crops, which has made the area valuable for agricultural purposes. Soils in the Project area include alluvium, which is flood basin soil rich with organic and mineral compounds, and bench soils, which lack the high percentage of organic material found in the flood basin soils. The soils and their characteristics are included in **Table 3.8-1** based on information from the Natural Resources Conservation Service (NRCS). Soils in Sacramento County are classified by their suitability for crop use based on the U.S. Soil Conservation Service (SCS) system. Classes I and II are considered prime soil in which almost all crops can be grown successfully, while limited agricultural soils are classified as III and IV. Classes V, VI, and VII are soils that are more suited for rangeland, woodland, or wildlife habitat. Soils not suitable for agricultural use are classified as VIII (Sacramento County 2011).

Table 3.8-1: Soils in the Project Area

Soil	Description
Bruella Sandy Loam (111)	Very deep, well and moderately well drained soils formed in alluvium from granitic rock sources. Bruella soils are on low terraces and fans and have slopes of 0 to 5 percent. Slow runoff, moderately slow permeability.
Clear Lake Clay (114 and 115)	Very deep, poorly drained soils that formed in fine textured alluvium derived from sandstone and shale. Clear Lake soils are in basins and in swales of drainageways. Slopes are 0 to 2 percent. Negligible to high runoff, slow to very slow permeability.
Galt Clay (151 and 152)	Moderately deep, moderately well drained soils that formed in fine textured alluvium from mixed but dominantly granitic rock sources. Galt soils are on low terraces, basins and basin rims and have slopes of 0 to 5 percent. Medium to very high runoff, slow permeability.
San Joaquin Series (213, 214, 216, 217, 218, 219 Durixeralfs Complex, Galt Complex, Urban Land Complex)	Moderately deep to a duripan, well and moderately well drained soils that formed in alluvium derived from mixed but dominantly granitic rock sources. They are on undulating low terraces with slopes of 0 to 9 percent. Medium to very high runoff, very slow permeability.

Source: NRCS 2013, 2015

Potential for Expansive Soils and Subsidence

Expansive soils are soils capable of absorbing high amounts of water. As more water is absorbed by the soil, it begins to expand, thus potentially damaging structures, including pipelines. When soil is dried, it shrinks. Soil in the Project area is characterized as clay with little or no swelling potential (United States Geological Survey [USGS] 1989).

Sacramento County experiences five different kinds of subsidence, or the gradual settling of the earth's surface with little or no horizontal motion:

1. Compaction of unconsolidated soils by earthquakes;
2. Compaction by heavy structures;
3. Erosion of peat soils;
4. Peat oxidation; and
5. Fluid withdrawal.

Items 3 and 4 are specific to the Delta and occur outside the Project area. Groundwater pumping (i.e. fluid withdrawal) for residential, commercial, and agricultural uses causes the most significant subsidence in the County, which is known to occur primarily within the southwestern portion of the County. There are potential subsidence areas in the Project area (Sacramento County 2011).

3.8.2 Regulatory Framework

This section describes the laws and regulations that may apply to the proposed Project. The applicable state and local laws, regulations, and policies related to geology and soils for the proposed Project are described as follows.

Federal Policies and Regulations

There are no federal policies or regulations associated with geology and soils that apply to the proposed Project.

State Policies and Regulations

Alquist-Priolo Earthquake Fault Zoning Act

The Alquist-Priolo Earthquake Fault Zoning Act was adopted in 1972, and is designed to restrict certain development along active faults. The Act requires that the State Geologist delineate earthquake fault zones around the surface traces of active faults and to maintain maps outlining these zones. The CGS defines active faults as those that have been active within the last 11,000 years. The purpose of these zones is to prevent the construction of buildings used for human occupancy within an earthquake fault zone. In addition to delineating earthquake fault zones, the Act requires disclosure of properties located within an earthquake fault zone when buying or selling a property. The Act was first designated as the Alquist-Priolo Geologic Hazard Zones Act, but was later changed to the Alquist-Priolo Special Studies Zones Act in 1975 and changed again in 1994 to the Alquist-Priolo Earthquake Fault Zoning Act (CGS 2007).

Seismic Hazard Mapping Act

The California Seismic Hazard Mapping Act (Public Resources Code [PRC] Sections 2690-2699.6) was passed in 1990, following the Loma Prieta earthquake, to reduce threats to public health and safety and to minimize property damage caused by earthquakes. The act directs the California Department of Conservation to identify and map areas prone to the earthquake hazards of liquefaction, earthquake-induced landslides, and amplified ground shaking. It requires site-specific geotechnical investigations to identify potential seismic hazards and formulate mitigation measures before permitting most developments designed for human occupancy in the Zones of Required Investigation.

California Building Code

The California Building Code (CBC), which is codified in California Code of Regulations (CCR) Title 24, Part 2, was promulgated to safeguard the public health, safety, and general welfare by establishing minimum standards related to structural strength, egress facilities, and general building stability. The purpose of the CBC is to regulate and control the design, construction, quality of materials, use/occupancy, location, and maintenance of all building and structures within its jurisdiction. Title 24 is administered by the California Building Standards Commission, which, by law, is responsible for coordinating all building standards. Under state law, all building standards must be centralized in Title 24 or they are not enforceable.

The CBC is based on the International Building Code. The 2007 CBC is based on the 2006 International Building Code published by the International Code Conference. In addition, the CBC contains necessary California amendments that are based on the American Society of Civil Engineers (ASCE) Minimum Design Standards 7-05. ASCE 7-05 provides requirements for general structural design and includes means for determining earthquake loads as well as other loads (e.g. flood, snow, wind) for inclusion in building codes. The provisions of the CBC apply to the construction, alteration, movement, replacement, and demolition of every building or

structure or any appurtenances connected or attached to such buildings or structures throughout California.

The earthquake design requirements take into account the occupancy category of the structure, site class, soil classifications, and various seismic coefficients, all of which are used to determine a Seismic Design Category (SDC) for a project. The SDC is a classification system that combines the occupancy categories with the level of expected ground motions at the site and ranges from SDC A (very small seismic vulnerability) to SDC E/F (very high seismic vulnerability and near a major fault). Design specifications are then determined according to the SDC.

Local Policies and Regulations

Sacramento County General Plan

Agricultural Element

The Sacramento County General Plan (Sacramento County 2011) Agricultural Element contains the following objective and policy that may be applicable to the proposed Project:

- Objective: Reduce soil erosion
 - Policy AG-28: The County shall actively encourage conservation of soil resources.

Conservation Element

The Conservation Element includes the following goal that may be relevant to the proposed Project and geology and soils:

- **GOAL:** Preserve and protect long-term health and resource value of agricultural soils.

City of Elk Grove and Sacramento County Land Grading and Erosion Control Ordinance

The City's Land Grading and Erosion Control Ordinance (Title 16 Chapter 16.44 of the City Code) and County's Land Grading and Erosion Control Ordinance (Title 16 Chapter 16.44 of the County Code) both establish administrative procedures, minimum standards of review, and implementation and enforcement procedures for controlling erosion, sedimentation and other pollutant runoff, including construction debris and hazardous substances used on construction sites, and disruption of existing drainage and related environmental damage caused by land clearing and grubbing, grading, filling, and land excavation activities. This ordinance requires a grading and erosion control permit for grading, filling, excavating, storing, or disposing of, or clearing and grubbing over 350 cubic yards of soil, or clearing and grubbing more than one acre of land within the City or unincorporated area of the County (City of Elk Grove 2015a, Sacramento County 2015).

The intent of the ordinance is to minimize damage to surrounding properties and public rights-of-way, the degradation of the water quality of water courses, and the disruption of natural or City or County authorized drainage flows caused by construction activities, and to comply with the

provisions of their respective National Pollutant Discharge Elimination System (NPDES) Permits (City of Elk Grove 2015a, Sacramento County 2015).

Sections 16.44.060 of both City and County ordinances do not require a grading and erosion control permit for underground utilities.

City of Elk Grove General Plan

Conservation and Air Quality Element

The Conservation and Air Quality Element includes the following relevant policy (City of Elk Grove 2015b):

- Policy CAQ-5: Roads and structures shall be designed, built and landscaped so as to minimize erosion during and after construction.

Safety Element

The City of Elk Grove General Plan Safety Element identifies the following goals and policies that may be relevant to the proposed Project (City of Elk Grove 2015b):

- Policy SA-26: The City shall seek to ensure that new structures are protected from damage caused by geologic and/or soil conditions.

3.8.3 Impact Analysis

Methodology for Analysis

This section evaluates whether construction and operation of the proposed Project and alternatives would result in significant impacts related to geology and soils. It is based on the review of available geologic maps and literature in consideration of seismic and geologic risks with potential to affect the proposed Project facilities and the potential for operation of the facilities to affect the public.

Thresholds of Significance

Consistent with the thresholds of significance identified in Sacramento County's Initial Study Checklist, an impact would be considered significant if the proposed Project would:

- Result in substantial soil erosion, siltation or loss of topsoil;
- Exacerbate existing environmental hazards or conditions, resulting in a substantial risk of loss, injury, or death;
- Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available; or
- Result in a substantial loss of an important mineral resource.

Criteria Requiring No Further Evaluation

Criteria listed above that are not applicable to actions associated with the proposed Project are identified below along with a supporting rationale as to why further consideration is unnecessary and a no-impact determination is appropriate.

- *Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available* – the proposed Project would not generate wastewater and would not include the installation of septic tanks or alternative wastewater disposal systems. Therefore, there would be no impacts associated with soils supporting septic tanks or alternative wastewater disposal systems and no further evaluation is warranted.
- *Result in a substantial loss of an important mineral resource* – The Project area is not located within any areas of mineral resources or significant mineral deposits (Sacramento County 2011). Thus, no impact to mineral resources would occur and no further evaluation is warranted.

Impacts and Mitigation Measures

Impact GEO-1 Result in Substantial Soil Erosion, Siltation or Loss of Topsoil.

Alternative 1 (Medium Service Area Alternative) and Alternative 2 (No Reclamation Funding Alternative)

Project and Program Elements. Construction activities involving ground disturbance, such as excavation, stockpiling, and grading could result in increased erosion, sedimentation and siltation to surface waters. A review of soil data shows that soils within the proposed Project area have a range of slow to high runoff potential (see **Table 3.8-1**), indicating potentially significant impacts from soil erosion. Construction activities associated with Alternative 1 (Medium Service Area Alternative) and Alternative 2 (No Reclamation Funding Alternative) are anticipated to disturb more than 1.0 acre of soil. Therefore, construction of these alternatives would be required to comply with the Construction General Permit (Order No. 2009-0009-DWQ), which is issued by the SWRCB. The Construction General Permit requires development and implementation of a Stormwater Pollution Prevention Plan (SWPPP). The SWPPP must include a site map(s) showing the construction site perimeter, existing and proposed buildings, lots, roadways, stormwater collection and discharge points, general topography both before and after construction, and drainage patterns across the site. The SWPPP must include Best Management Practices (BMPs) the discharger would use to protect stormwater runoff; a visual monitoring program; and a chemical monitoring program for "non-visible" pollutants to be implemented if there is a failure of BMPs. Compliance with the Construction General Permit would ensure construction of facilities implements the mandated BMPs, and therefore would not result in substantial soil erosion, siltation, or the loss of topsoil. Impacts would be less than significant.

Alternative 3 (Small Service Area Alternative)

Project and Program Elements. The construction and operational impacts of both project and program components for Alternative 3 (Small Service Area Alternative) would be similar to those identified for Alternative 1 (Medium Service Area Alternative), except that the intensity of the effects would be less for construction-related effects. A SWPPP would be prepared as required to comply with the Construction General Permit, reducing potential soil erosion, siltation and the loss of topsoil impacts to a less-than-significant level.

Alternative 4 (No Project Alternative)

Under the No Project Alternative, no facilities would be constructed. Therefore, no impacts related to soil erosion, siltation, or loss of topsoil would occur.

Significance Determination before Mitigation

Less than significant for all action alternatives. No impact for Alternative 4 (No Project Alternative).

Mitigation Measures

No mitigation measures are required.

Impact GEO-2 Exacerbates existing environmental hazards or conditions, resulting in a substantial risk of loss, injury, or death.

Alternative 1 (Medium Size Service Alternative) and Alternative 2 (No Reclamation Funding Alternative)

Project and Program Elements. A project that places development in an existing or future hazard area is not considered under CEQA to have a significant impact on the environment, unless the project would exacerbate the environmental hazard or condition. This analysis therefore focuses on whether seismic impacts could cause the proposed Project's facility to fail, and if that failure would cause a secondary impact that could exacerbate an environmental hazard.

The Project area consists of flat terrain and is not in an area subject to landslides. The Project area is also underlain by soils characterized as clay with little or no swelling potential. Therefore, the proposed Project would have no impact related to landslides or expansive soil conditions.

As described above, Sacramento County is less affected by seismic activity and other related geologic hazards than other locations throughout California. However, seismic events could still result in secondary seismic impacts associated with unstable soils such as lateral spreading, liquefaction, and subsidence. Lateral spreading is the lateral movement of saturated soils due to earthquake induced liquefaction. If not designed correctly, the proposed Project's facilities could be subject to misalignment of pipelines, failure of joints, and recycled water leakage from pipelines after a seismic event. Leakage from pipelines could saturate soils, contributing to conditions for liquefaction, lateral spreading, and subsidence. Structural failures could thus result in increased risk to safety. However, the geotechnical analysis required as part of the California Building Standards Code would incorporate appropriate standard engineering practices and specifications in facility design to minimize risk of structural failure in a seismic event, and would reduce secondary impacts that may occur as a result.. Therefore, impacts would be less than significant.

Alternative 3 (Small Service Area Alternative)

Project and Program Elements. The construction and operational impacts of both project and program components for Alternative 3 (Small Service Area Alternative) would be similar to those identified for Alternative 1 (Medium Service Area Alternative), except that the intensity of the effects would be less for construction-related effects. Similar to Alternative 1 (Medium Service Area Alternative), through incorporation of standard engineering practices and specifications in the facility design, impacts would be less than significant.

Alternative 4 (No Project Alternative)

Under the No Project Alternative, no facilities would be constructed. Therefore, impacts associated with unstable soils would not occur.

Significance Determination before Mitigation

Less than significant for all action alternatives. No impact for Alternative 4 (No Project Alternative).

Mitigation Measure

No mitigation measures are required.

Cumulative Impacts

The geographic scope of potential cumulative impacts related to geology and soils encompasses the proposed Project component sites and immediate vicinity. There are three cumulative projects in the immediate vicinity of the proposed pump station and transmission pipeline. Cumulative projects could have geologic and soils impacts similar to the proposed Project, however geologic and soils impacts are generally site-specific and depend on local geologic and soil conditions. All cumulative development projects are required to individually meet NPDES requirements and implement grading and erosion control plans, conduct geotechnical evaluations, incorporate appropriate standard engineering practices, and comply with stringent building requirements. Cumulative utilities projects and associated structures are also required to be designed to withstand seismic forces to the maximum extent possible. The proposed Project would comply with the Construction General Permit during construction and also incorporate appropriate standard engineering practices to ensure seismic stability during operations. Therefore, the proposed Project would not contribute to cumulative geologic, soils, or seismic impacts.

Significance Determination before Mitigation

Less than significant.

Mitigation Measures

No mitigation measures are required.

3.8.4 References

Ascent Environmental. 2014. *Final Environmental Impact Report for the Sacramento Regional County Sanitation District EchoWater Project*. September 12, 2014.

- California Geological Survey (CGS). 2002. California Geomorphic Provinces Note 36. Available at: http://www.conservation.ca.gov/cgs/information/publications/cgs_notes/note_36/Documents/note_36.pdf. Accessed April 15, 2015.
- _____. 2007. Fault-Rupture Hazard Zones in California, Alquist-Priolo Earthquake Fault Zoning Act with Index to Earthquake Fault Zones Maps, Special Publication 42 Interim Revision 2007. Available at: <ftp://ftp.consrv.ca.gov/pub/dmg/pubs/sp/Sp42.pdf>. Accessed April 14, 2015.
- _____. 2010. 2010 Geologic Map of California, Map No. 2. Available at: <http://www.quake.ca.gov/gmaps/GMC/stategeologicmap.html>. Accessed April 15, 2015.
- Elk Grove, City of. 2015a. *Elk Grove Municipal Code Title 16, Chapter 16.44 Land Grading and Erosion Control*. Reflects Amendments through September 9, 2015.
- _____. 2015b. *The City of Elk Grove General Plan*. Reflects Amendments through March 2015.
- Natural Resources Conservation Service (NRCS). 2013. *Simplified Guide to Soil Taxonomy*. September 1, 2013.
- _____. 2015. Web Soil Survey. Available at: <http://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm>. Accessed September 24, 2015.
- Sacramento County. 2011. *Sacramento County General Plan of 2005-2030*. Amended November 9, 2011.
- _____. 2015. *Sacramento County Code Title 16, Chapter 16.44 Land Grading and Erosion Control*. Reflects Amendments through September 9, 2015.
- United States Geological Survey (USGS). 1989. Swelling clays map of the conterminous United States. Available at: http://ngmdb.usgs.gov/Prodesc/proddesc_10014.htm. Accessed April 15, 2015.

3.9 Hazards and Hazardous Materials

This section presents the physical and regulatory setting for hazards and hazardous materials surrounding the proposed Project and analyzes the potential for impacts related to hazards and hazardous materials associated with implementation of the proposed Project.

3.9.1 Environmental Setting

Regional Setting

Given its setting and projected rate of urban growth, Sacramento County is at risk of several hazards. Hazards can be caused by nature (e.g., earthquakes or floods), can be man-made (e.g., fires caused by arson or carelessness), or result from a combination of both natural and man-made causes (Sacramento County 2011).

Potential hazards within the Project area include potential release of toxic or hazardous substances used by commercial and industrial businesses, or from accidents on truck routes and/or railroad lines passing through the area. I-5 and other major routes traverse the project area, and are used by vehicles carrying hazardous substances (City of Elk Grove 2015).

Known Contamination Sites

Two online databases, the California Department of Toxic Substances Control (DTSC) EnviroStor Hazardous Waste and Substances Site List and the SWRCB GeoTracker database, were searched for known contamination sites within and surrounding the Project area, defined as within 1,000 feet of the proposed project components.

The EnviroStor database identifies sites that have known contamination or sites for which there may be reasons for further investigation. Specifically, it lists the following site types: Federal Superfund sites (National Priority List (NPL)); State Response, including Military Facilities and State Superfund; Voluntary Cleanup; and School sites. Sites that are in the Hazardous Waste and Substances Site List - Site Cleanup (Cortese List) are also identified.

GeoTracker is an online tool that provides regulatory data regarding sites that impact groundwater, particularly those that require groundwater cleanup, as well as permitted facilities such as those operating underground storage tanks and land disposal sites.

A search of the EnviroStor database (DTSC 2015a) shows three known contamination sites within 1,000 feet of the proposed project facilities, while the GeoTracker database (SWRCB 2015) search shows ten contamination sites. Two of the sites identified using EnviroStor consisted of a sites where a Phase 1 Environmental Site Assessment identified no contaminants, and a site where inspection indicated that no further action was needed. Of the ten sites identified using GeoTracker, all but two are considered case closed; one is inactive and the other is open. These sites are summarized in **Table 3.9-1** and **Table 3.9-2**. Additionally, a search of the Hazardous Waste and Substances Sites list was conducted. There are no Cortese sites in the Project area (DTSC 2015b).

Table 3.9-1: Contamination Sites Identified by EnviroStor within and Surrounding the Project Area (within 1,000 feet of Project Components)

Site Name	Location	Site Type	Description	Status
Franklin Auxiliary Field #6 (J09CA0809) (80000567)	South of Lambert Road, east of Franklin Boulevard, West of Bruceville Road, north of Twin Cities Rd	Military Evaluation	The 640-acre site consists of four runways, and abandoned hangars and barracks. Two of the runways are still in commercial and private airport use. The site is now occupied by the county correctional facility and a large solid waste landfill. Potential contaminants of concern include lead, radioactive isotopes potentially left by airfield operations, vehicle storage and refueling, and the landfill. In 2010, DTSC determined no further action is required.	No further action

Source: DTSC 2015a

Table 3.9-2: Contamination Sites Identified by GeoTracker within and Surrounding the Project Area (within 1,000 feet of Project Components)

Site Name	Location	Site Type	Description	Status
Wastewater Treatment Plant Site (T0606700040)	8521 Laguna Station Road, Elk Grove, CA 95624	Leaking Underground Storage Tank (LUST) Cleanup Site	A potential leak was discovered and reported in 1986. The case was closed that year. Gasoline was a potential contaminant of concern at the Regional San SRWTP. A "No Further Action" letter was sent to Regional San in 1998 from the Sacramento County Environmental Management Department, as required by the CA Underground Storage Tank Regulations.	Completed; Case Closed
Biosolids/Solids Disposal Facility (L10007002783)	8521 Laguna Station Road, Elk Grove, CA 95758	Land Disposal Site	Regional San sent a letter to the Compliance and Enforcement Section of the RWQCB in August 2014 to provide notification that a monitoring well at the SRWTP had been abandoned. The cleanup status has been open since January 1965.	Open
Gil's Garage (T0606701001)	10413 Franklin Boulevard, Elk Grove, CA 95624	LUST Cleanup Site	A potential leak was discovered in November 1997 during a site assessment. The case was closed in March 2000.	Completed; Case Closed
Govan Property (T0606700723)	10434 Franklin Boulevard, Elk Grove, CA 95758	LUST Cleanup Site	A site assessment was conducted in September 1992 in which a leak was identified. The case was closed in March 1996.	Completed; Case Closed
Private Residence (SL0606790171)	East of Highway 99, south of Kammerer Road	Cleanup Program Site	A diesel leak was discovered in February 2006. In July 2006 a site assessment was conducted and the case was then closed in December. The site is listed as a private residence with a future land use of commercial. SWRCB must be notified prior to subsurface work, development, or a change a land use. Excavation of	Completed; Case Closed

Site Name	Location	Site Type	Description	Status
			contaminated soils is not allowed without agency review and approval.	
Elk Grove Milling Inc (T0606701014)	8320 Eschinger Road, Elk Grove, CA 95624	LUST Cleanup Site	In April 1998 a gasoline leak was discovered. The case was closed in October 2000.	Completed; Case Closed
RCCC-Sheriff's Station (T0606700173)	12500 Bruceville Road, Elk Grove, CA 95624	LUST Cleanup Site	The case began in February 1986 when a gasoline leak was discovered and reported. A site assessment was conducted in May 1986. The case has been closed since June 1998.	Completed; Case Closed
Franklin Field (SLT5S4763729)	South of Lambert Road, east of Franklin Boulevard, west of Bruceville Road, north of Twin Cities Road	Cleanup Program Site	In January 1981 a site assessment was conducted, the site was made inactive, and the case was ultimately closed.	Completed; Case Closed
Franklin Field Airport (SL1851182899)	Near the intersection of Bruceville Road and Twin Cities Road, north of Twin Cities Road	Cleanup Program Site	The potential contaminants of concern include 4,4-DDD, 4,4-DDE, aldrin, DDD / DDE / DDT, pesticides/herbicides, and toxaphene. In 1993 a site assessment was completed and remediation (excavation of contaminated soil) took place in 2001. The case was closed in 2003. In 2008, Sacramento County sent the RWQCB a letter describing the land use covenant for the site. The site is precluded from being used for residential property	Completed; Case Closed
Flint Ranch/Cosumnes River Preserve (SL606739825)	8210 Twin Cities Road, Galt, CA 95632	Cleanup Program Site	A leak was discovered and reported in November 2006. The case was closed that same month. .	Inactive

Source: SWRCB 2015

Grit and Screening Landfill at SRWTP

An existing grit and screenings landfill area is located adjacent to the area that is being considered for the proposed pump station. The landfill occupies 23 acres, of which about eight acres were historically used for waste disposal. The landfill was operated as an unlined Class III solid waste disposal site that accepted waste from December 1982 to January 1993. The landfill is permitted under RWQCB WDR No. R5-2003-0076. The California Department of Resources Recycling and Recovery (CalRecycle) references the landfill by its solid waste information system (SWIS) number: 34-AA-0029. During operation, trenches were excavated into native soils, filled with waste, and then covered with soil. The landfill was officially closed in 1994 by the installation of a final soil cover. The landfill is currently in the post-closure maintenance and monitoring phase. The EIR for the EchoWater Project evaluated removal of the landfill to provide adequate space for proposed facilities. (Ascent Environmental 2014)

Airports

Of the five airports operated by the County of Sacramento, only one is within the Project area – the Franklin Field Airport – located a mile northeast of the intersection of Twin Cities Road and Franklin Boulevard in south Sacramento County in the recycled water service area. It is a small public use airport that has approximately 36,000 flights each year, most of which are flight training activities. It does not have an air traffic control tower or staff as it serves the general aviation community exclusively (Sacramento County Airport System 2015).

The airport has two perpendicular runways. There are no fueling, service, or repair facilities on site. The sole use of the airport is by general aviation aircraft for training and touch-and-go activity, as well as crop dusters during the planting and spraying season. The airport is surrounded by agricultural use and, on the east side, the Rio Cosumnes Correctional Center.

3.9.2 Regulatory Framework

Hazardous materials and wastes can result in public health hazards if released to soil, groundwater, or air. Hazardous materials as defined in Section 25501(o) of the California Health and Safety Code are materials that, because of their “quantity, concentration, or physical or chemical characteristics, pose a significant present or potential hazard to human health and safety or to the environment if released to the workplace or environment.” Hazardous materials have been and are commonly used in commercial, agricultural, and industrial applications, as well as to a limited extent in residential areas.

A waste is any material that is relinquished, recycled, or inherently waste-like. CCR Title 22 Section 66261.1, et seq. contains regulations for the classification of hazardous wastes. Article 3 criteria classify waste as hazardous if it is toxic (causes human health effects), ignitable (has the ability to burn), corrosive (causes severe burns or damage to materials), or reactive (causes explosions or generates toxic gases). Article 4 also lists specific hazardous wastes, while Article 5 identifies specific waste categories, including Resource Conservation and Recovery Act (RCRA) hazardous wastes, non-RCRA hazardous wastes, extremely hazardous wastes, and special wastes. If improperly handled and released to soil, groundwater, or air (in the form of vapors, fumes, or dust), hazardous materials and wastes can result in public health hazards.

This section describes laws and regulations that may apply to the proposed Project.

Federal Policies and Regulations

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)

CERCLA, also referred to as the Superfund law, regulates the potential for liability for cleanup of hazardous substances, provides for defense against liability, identification of contaminated sites, defines hazardous substances, petroleum products, and petroleum exclusions. The Superfund Amendments and Reauthorization Act (SARA), includes emergency planning and community right-to-know. Under CERCLA, facilities must report where toxic chemicals are transferred, chemical-specific information, and supplemental information, along with identification information for their facility to the U.S. Environmental Protection Agency (USEPA). Hazardous substances must be reported, and releases to the environment accounted for.

Resource Conservation and Recovery Act (RCRA)

RCRA regulates potential health and environmental problems associated with solid waste hazards and nonhazardous waste. RCRA defines solid waste as garbage or refuse, sludge from a wastewater treatment plant, water supply treatment plant, or air pollution control facility, and other discarded materials. Solid waste can be either hazardous or non-hazardous. Hazardous waste is waste that burns readily, is corrosive, or reactive, or if it contains certain amounts of toxic chemicals or has been included on the USEPA's list of hazardous wastes. RCRA regulates the disposal of waste and aims to reduce waste generation. It restricts which facilities can receive hazardous wastes and regulates facilities to ensure proper handling of materials.

Emergency Planning and Community Right-To-Know Act (EPCRA)

EPCRA was passed in 1986 and requires federal, state, and local governments to create chemical emergency response plans for releases of hazardous substances. It also requires reporting on hazardous and toxic chemicals to increase awareness and access to information on chemicals and individual facilities. It requires that facilities report accidental releases of certain chemicals and hazardous substances, and provide such information to the public. Facilities must create and make available Material Safety Data Sheets (MSDS) that describe the chemicals in question and health effects associated with them. Chemical inventories must also be reported if they require an MSDS.

Hazardous Materials Worker Safety Requirements

The federal Occupational Safety and Health Administration (OSHA) is the federal agency responsible for ensuring worker safety. The federal regulations for worker safety are contained in Code of Federal Regulations (CFR) Title 29, as authorized in the Occupational Safety and Health Act of 1970; these regulations provide standards for safe workplaces and work practices, including those relating to hazardous materials handling.

Preliminary Remediation Goals

USEPA has published screening levels, referred to as Regional Screening Levels (RSLs), for the evaluation of chemicals commonly found in soil or groundwater where a release of hazardous materials has occurred (USEPA 2016). For an industrial worker, these screening levels are conservative estimates of safe levels of a chemical that a worker could be exposed to in soil and groundwater. If the concentration of a chemical in the soil or groundwater is below the RSL, then it can be assumed that the chemical would not pose a health risk to the worker. Screening levels would generally be lower for industrial workers than construction workers because the industrial worker would be exposed to the hazard over a lifetime while the construction worker would only be exposed for the duration of construction. Therefore, safe levels of chemicals in soil and groundwater would generally be higher for construction workers than industrial workers.

U.S. Department of Transportation Hazardous Materials Transportation Act

The U.S. Department of Transportation (USDOT) and USEPA enforce and implement federal laws and regulations related to the transportation of hazardous materials. The Hazardous Materials Transportation Act directs the USDOT to establish regulations for the safe storage and transportation of hazardous materials. CFR 49, 171-180 defines the types of materials that are defined as hazardous, the required marking of vehicles transporting the hazardous materials, and regulates the transportation of hazardous materials.

State Policies and Regulations

California Environmental Protection Agency

The California Environmental Protection Agency (CalEPA) is authorized by the EPA to enforce and implement federal hazardous materials laws and regulations. CalEPA consists of the Air Resources Board (ARB), Department of Pesticide Regulation (DPR), Department of Resources Recycling and Recovery (CalRecycle), Department of Toxic Substances Control (DTSC), Office of Environmental Health Hazard Assessment (OEHHA), and the State Water Resources Control Board (SWRCB). CalEPA's DTSC protects California and Californians from exposure to hazardous waste, primarily under the authority of RCRA and the California Health and Safety Code. DTSC requirements include preparation of written programs and response plans, such as Hazardous Materials Business Plans (HMBPs). DTSC programs also include dealing with aftermath clean-ups of improper hazardous waste management, evaluation of samples taken from sites, enforcement of regulations regarding use, storage and disposal of hazardous materials, and encouragement of pollution prevention.

California Health and Safety Code

The California Health and Safety Code contains statewide regulations designed to protect public health and safety. Sections of the state code relevant to the proposed project include the Hazardous Materials and the Hazardous Waste and Substances Site List (Cortese List), which is developed under Section 65962.5 of the California Government Code. The list is compiled and maintained by the DTSC under the California EPA. The Cortese List is a list of all sites identified as having hazardous waste releases.

Facilities that handle, store, use, treat, dispose of, or generate hazardous materials are required to create hazardous-waste management programs under Division 20, Chapter 6.5, section 25100 et seq. Facilities that generate hazardous wastes in excess of 26,400 pounds per year, or extremely hazardous wastes in excess of 26.4 pounds per year, must adhere to California Health and Safety Code Section 25244.12 et seq. This section of the code requires facilities to determine the types and amounts of wastes generated, identify procedures to reduce waste generation, develop written documentation that addresses waste reduction, develop a source-reduction evaluation review and plan, prepare a plan summary and hazardous waste management report, and a report summary. Hazardous materials handling, reporting requirements, and local agency surveillance programs are regulated under the California Health and Safety Code, Section 25500 et seq.

California Department of Forestry and Fire Protection (CAL FIRE): State Responsibility Areas (SRAs) System

Fire hazards were initially characterized according to a number of systems including the California Department of Housing and Urban Development (HUD) Study System of 1973 which combined fuel loading, slope, and fire weather information to determine the Fire Hazard Severity of an area. Non-federal areas identified as having a fire hazard are referred to as SRAs because the State has the primary financial responsibility of preventing and suppressing fires. The agency responsible for suppressing fires in SRAs is the California Department of Forestry. Local fire agencies are responsible for suppressing fires in private property within City limits. Legislative mandates passed in 1981 (Senate Bill 81, Ayala, 1981) and 1982 (Senate Bill 1916, Ayala, 1982) that became effective on July 1, 1986, required CAL FIRE to develop and implement a system to

rank the fire hazards in California. Areas were rated as moderate, high or very high based primarily on fuel types. Thirteen different fuel types were considered using the 7.5-minute quadrangle maps by the U.S. Geological Survey as base maps. SRAs include all lands regardless of ownership, except for cities and federal lands.

Local Policies and Regulations

Franklin Field Airport Comprehensive Land Use Plan

A Comprehensive Land Use Plan was prepared by the Airport Land Use Commission (ALUC 1992). The primary goals of the plan are:

- To protect the airport from encroachment by incompatible land uses.
- To safeguard the general welfare of the inhabitants within the vicinity of the airport and the public in general by protecting them from the adverse effects of aircraft noise and reducing the number of people exposed to airport-related hazards.
- To ensure that no structures affect navigable airspace.

The plan outlines height restrictions for new structures surrounding the airport, noise restrictions, and safety restrictions (ALUC 1992).

Sacramento County Multi-Hazard Mitigation Plan

In 2004, the Sacramento County Multi-Hazard Mitigation Plan was prepared to meet the requirements of the Disaster Mitigation Act of 2000 with the purpose of reducing or eliminating long-term risk to people and property from natural hazards in the County (AMEC 2004). During preparation of the Plan, the Hazard Mitigation Planning Committee (HMPC) established the following goals and objectives:

- GOAL #1: Reduce exposure to hazard related losses.
 - Objective 1.2: Protect critical facilities, utilities, and infrastructure.
- GOAL #2: Promote awareness of hazards and vulnerability among citizens, business, industry and government.
 - Objective 2.1: Develop a seasonal multi-hazard public education campaign to be implemented annually.

In order to achieve the goals, a series of recommended action items were identified. The plan was adopted by the governing boards of the participating agencies (AMEC 2004).

Sacramento County General Plan

The Sacramento County General Plan (Sacramento County 2011) contains the Safety Element with the goal of reducing the potential risk of death, injuries, property damage, or economic/social dislocation as a result of fires, flood, earthquakes, landslides and other hazards, and the Hazardous Materials Element which describes the proper use, handling, and disposal of hazardous materials to minimize impacts on humans and the environment.

Safety Element

The Safety Element of the General Plan identified the following goal and policy that may be related to the proposed project (Sacramento County 2011):

- **GOAL:** Minimize the loss of life, injury, and property damage due to fire hazards.

Hazardous Materials Element

The Hazardous Materials Element identifies the following objectives and policies that may be relevant to the proposed Project (Sacramento County 2011):

- **Objective:** Protect the residents of Sacramento County from the effects of a hazardous material incident via the implementation of various public health and safety programs.
 - Policy HM-4: The handling, storage, and transport of hazardous materials shall be conducted in a manner so as not to compromise public health and safety standards.
 - Policy HM-8: Continue the effort to prevent groundwater and soil contamination.
 - Policy HM09: Continue the effort to prevent surface water contamination.

City of Elk Grove General Plan

Guiding Goal and Focused Goal

The City of Elk Grove has identified the following guiding goal and focused goal related to hazards and hazardous materials (City of Elk Grove 2015):

- Guiding Goal 1: A high quality of life for all residents.
 - Focused Goal 1-1: A safe community, free from manmade and natural hazards.

Safety Element

The Safety Element of the General Plan contains the following policies that are relevant to hazards and the proposed Project (City of Elk Grove 2015):

- Policy SA-1: The City will seek to maintain acceptable levels of risk of injury, death, and property damage resulting from reasonably foreseeable safety hazards in Elk Grove.
- Policy SA-8: Storage of hazardous materials and waste shall be strictly regulated, consistent with state and federal law.
- Policy SA-9: The City shall seek to ensure that all industrial facilities are constructed and operates in accordance with up-to-date safety and environmental protection standards.
- Policy SA-32: Cooperate with the Elk Grove Community Services District (EGCSD) Fire Department to reduce fire hazards, assist in fire suppression, and promote fire safety in Elk Grove.

Sacramento County Code

Title 6, Chapter 6.96 of the Sacramento County Code establishes standards and procedures regarding the reporting of the location, type, quantity, and health risks of hazardous materials handled, used, stored or disposed of within the unincorporated area of Sacramento County, and

within the incorporated territory of each municipality within Sacramento County. Chapter 6.96.095 includes two lists of hazardous materials that are exempt from the inventory provisions: substances that would not pose a present and potential danger to the environment or to human health and safety if released into the environment; and hazardous materials under stated circumstances that would not pose a present or potential danger to the environment or to human health and safety if released into the environment. In addition, hazardous materials at temporary construction job sites stored no more than 90 days and in quantities of 55 gallons or more for liquid, 500 pounds or more for solid and 200 cubic feet or more for compressed gas at standard temperature and pressure, are exempt from the requirements of the code. If hazardous materials are stored in reportable quantity and/or hazardous waste is generated at any laydown area along the pipeline, separate hazardous materials and/or hazardous waste permits may be required for each location. Permits are business and owner specific and may not be transferred to other owners or locations. Because construction of the transmission pipeline is anticipated to last more than 90 days, the construction exemption outlined in Sacramento County Code 6.96.095 may not apply.

SRWTP Emergency Response Plans and Requirements

The SRWTP has site specific plans for emergency response, as well as procedural requirements.

Emergency Response and SRWTP's Emergency Response Program

General emergency response for the SRWTP is provided by the Cosumnes Fire Department as the first responder for fire and other emergency services. Hazardous materials/waste spills are managed via a contract with a licensed hazardous waste hauler (Ascent 2014).

Spill Prevention, Control, and Countermeasure Plan (SPCC)

The SPCC, last updated in 2013, documents, defines, and describes the practices, procedures, structures, and equipment used to prevent, control, and/or mitigate releases of petroleum, oil, and lubricant products to the environment. The plan provides general information about existing petroleum usage and storage onsite, and provides standard procedures and other requirements for the loading, unloading, containment, and use of petroleum onsite. The SPCC also provides for emergency spill response, notification, and reporting; and implements requirements for training, inspections, and record keeping in accordance with federal requirements. The SPCC is on file at the SRWTP site (Ascent 2014).

Other Related Planning Efforts

County of Sacramento Emergency Operations Plan

The County of Sacramento Emergency Operations Plan was prepared and adopted to provide a basis for coordinated response before, during, and after a disaster affecting the County. It identified the following operations goals for agencies in Sacramento County that would be implementing the Plan (Sacramento County 2012):

- Mitigate hazards.
- Meet basic human needs.
- Address needs of the People with Access and Functional Needs.
- Restore essential services.

- Support community and economic recovery.

The operational priorities are to save lives, protect healthy and safety, protect property, and preserve the environment. To achieve the goals and priorities, the plan established the organization framework of the California Standardized Emergency Management System (SEMS) and National Incident Management System (NIMS) (Sacramento County 2012).

Sacramento County Evacuation Plan

The Sacramento County Evacuation Plan was prepared to document the strategy for the County's response to emergencies involving evacuation of persons from an impacted area to a safe area. It incorporates the Incident Command System and principles of the SEMS and NIMS. The Plan achieves the following (James Lee Witt Associates 2008):

- Supports activation of the Sacramento County Emergency Operations Center and other County Departmental Operations Centers;
- Provides overall operational guidance for public alert and warning, movement of evacuees, and care and shelter;
- Provides a concept of operations for a medium or large-scale evacuation event;
- Provides the roles of key departments and agencies during an evacuation.

3.9.3 Impact Analysis

Methodology for Analysis

This section evaluates whether construction and operation of the proposed facilities would result in significant impacts related to hazards or hazardous materials. Impacts are evaluated based on the known potentially hazardous materials that would be used or stored on site during construction and operation, potential for accidental hazardous substance release, and presence of other health-threatening factors in the proposed project vicinity.

Thresholds of Significance

Consistent with Sacramento County Initial Study, a hazard or hazardous materials impact would be considered significant if the project would:

- Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials;
- Expose the public or the environment to a substantial hazard through reasonably foreseeable upset conditions involving the release of hazardous materials;
- Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school;
- Be located on a site which is included on a list of hazardous materials site compiled pursuant to Government Code Section 65962.5 and, resulting in a substantial hazard to the public or the environment;
- Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan;

- Result in a safety hazard for people residing or working in the vicinity of an airport/airstrip;
- Expose people residing or working in the project area to aircraft noise levels in excess of applicable standards;
- Result in a substantial adverse effect upon the safe and efficient use of navigable airspace by aircraft; or
- 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.

Criteria Requiring No Further Evaluation

Criteria listed above that are not applicable to the proposed Project are identified below along with a supporting rationale as to why further consideration is unnecessary and a no-impact determination is appropriate.

- *Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials* – The proposed Project would not involve the routine transport, use or disposal of hazardous materials as it consists of operation of pipelines, a pump station, diluent wells (driven by electricity), and a potential recharge pond. Thus, the proposed Project would not create any significant hazards to the public or the environment associated with the transport, use or disposal of hazardous materials. No impact would occur and no further discussion is warranted.
- *Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school* – Construction would involve the use of fuels, lubricants, paints, solvents, and other construction materials that are considered hazardous. Use and storage of these materials could result in exposure of workers or the public through spills or improper handling, and construction would occur within one quarter mile of Marion Mix Elementary School. However, all use of hazardous materials during construction would be subject to compliance with federal, State and local hazardous materials regulations. It is thus expected that routine use of these materials in accordance with these laws and regulations would not result in adverse effects on the public or the environment. No impact would occur and no further discussion is warranted.
- *Be located on a site which is included on a list of hazardous materials site compiled pursuant to Government Code Section 65962.5 and, as a result, create a significant hazard to the public or the environment* – The proposed Project is not located on a site included on a list of hazardous materials site compiled pursuant to Government Code Section 65962.5 (Cortese List). As such, the proposed project is not located on a Cortese List site and would not create a significant hazard to the public or the environment.
- *Expose people residing or working in the project area to aircraft noise levels in excess of applicable standards* – The project would not generate aircraft noise, and would not introduce new residents or workers into the area exposed to noise from Franklin Field.
- *Result in a substantial adverse effect upon the safe and efficient use of navigable airspace by aircraft or 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* – The proposed Project is a recycled water project where proposed facilities are located on or

below ground. None of the above-ground structure would encroach upon Franklin Field or its airspace, and the proposed Project would not change the air traffic patterns of the nearby airport. Thus, no impact would occur and no further discussion is warranted.

Impacts and Mitigation Measures

Impact HAZ-1 Expose the Public or Environment to a Substantial Hazard through Reasonably Foreseeable Upset Conditions Involving the Release of Hazardous Materials into the Environment.

Alternative 1 (Medium Service Area Alternative) and Alternative 2 (No Reclamation Funding Alternative)

Project Elements. During construction the contractor would use limited quantities of fuels, oils, lubricants, solvents and other materials that are classified as hazardous. All materials would be stored, handled and used in accordance with applicable laws.

Some excavated materials would be hauled off site and disposed of as required by state and federal regulations, and waste would be classified and disposed of properly.

There is the potential to encounter unknown contaminated soils as well as hazardous sites as identified by EnviroStor and Geotracker. As described in the *Known Contamination Sites* section, the three hazardous sites identified by EnviroStor require no further action and nine of the 10 sites identified by Geotracker are either closed or inactive; the remaining site is open and located at the SRWTP. There would be no impact associated with hazardous materials resulting from construction of the transmission pipeline near the sites identified as “no further action required” and the “closed” or “inactive” sites. Construction within the SRWTP would avoid known contaminated sites. In addition, the existing closed Grit and Screenings Landfill site would be avoided, if feasible, unless the landfill has been fully or partially removed as part of the EchoWater Project. Other unidentified areas of contaminated soils may be present at the SRWTP or along the pipeline alignment, and construction of the proposed pump station and pipeline could result in the exposure of construction workers to potentially contaminated soils due to improper removal of existing hazardous materials on site or from other historic releases of hazardous materials to soil or groundwater in the area. Thus, construction of the proposed pump station and pipeline could result in potentially significant impacts related to hazardous materials. Implementation of **Mitigation Measure HAZ-1**, which would require studies to assess the presence of soil and/or groundwater contamination and identify disposal methods, would reduce potential impacts related to exposure to hazardous materials to a less-than-significant level.

Program Elements. The pipelines, potential recharge area, and diluent wells are not on or near any identified hazardous sites. However, similar to construction of the project elements, there is the potential to encounter previously unidentified areas of contamination. Implementation of **Mitigation Measure HAZ-1** would reduce impacts related to exposure to hazardous materials to a less-than-significant level.

Alternative 3 (Small Service Area Alternative)

Project and Program Elements. The construction and operational impacts of both project and program components for Alternative 3 (Small Service Area Alternative) would be similar to those identified for Alternative 1 (Medium Service Area Alternative), and would result in the same potential for release of hazardous materials. The difference is that the area of impact under Alternative 3 (Small Service Area Alternative) would be smaller because the extent of improvements would be less. Potential impacts related to exposure to hazardous materials would be reduced to a less-than-significant level with the implementation of **Mitigation Measure HAZ-1**.

Alternative 4 (No Project Alternative)

Under the No Project Alternative, no facilities would be constructed. Therefore, no hazardous materials impacts would occur.

Significance Determination before Mitigation

Potentially significant for all action alternatives. No impact for Alternative 4 (No Project Alternative).

Mitigation Measure

Mitigation Measure HAZ-1: Conduct Phase I Study along Transmission Pipeline (All Action Alternatives)

Prior to the start of construction, a Phase I hazardous waste/hazardous materials study for soil and groundwater contamination shall be completed for the transmission pipeline. The recommendations set forth in the Phase I assessment shall be implemented to the satisfaction of applicable agencies before construction begins. If Phase I assessments indicate the potential for contamination within the construction zone of the pipelines, Phase II studies shall be completed before construction begins. Phase II studies will include soil and groundwater sampling and analysis for anticipated contaminants. The Phase II sampling is intended to identify how to dispose of any potentially harmful material from excavations, and to determine if construction workers need specialized personal protective equipment while constructing the pipeline through that area. If soil or groundwater contaminated by potentially hazardous materials is exposed or encountered during construction that was not identified in the Phase I assessment, the appropriate hazardous materials agencies shall be notified. Any contaminated soil that is encountered during construction shall be disposed of in accordance with applicable regulations, at an approved landfill.

Significance Determination after Mitigation

Less than significant for all action alternatives.

Impact HAZ-2 Result in a Safety Hazard for People Residing or Working in the Project Area within Two miles of a Public Use Airport.

Alternative 1 (Medium Service Area Alternative) and Alternative 2 (No Reclamation Funding Alternative)

Project Elements. The Franklin Field Airport is located in the southern portion of the recycled water service area within a quarter mile of the recycled water distribution mains located on Bruceville Road and Franklin Boulevard between Lambert Road and Twin Cities Road. As described above, the Comprehensive Land Use Plan for Franklin Field Airport was prepared by the Airport Land Use Commission in 1992, which identified height restrictions, noise restrictions, and safety restrictions for areas surrounding the airport. Because the proposed pump station is approximately 10 miles north-northwest of the airport, restrictions identified in the plan would not be applicable. The project facilities in close proximity to the airport include pipelines. However, because the proposed pump station would be 25-feet-tall and the transmission pipelines would be below ground facilities, they would not be considered an obstruction to air navigation by the Federal Aviation Administration (FAA) or penetrate the height notification limits of FAA Part 77 (ALUC 1992). Additionally, pipelines would not interfere with the operating compatibility of the airport, or endanger pilots or passengers of aircraft.

As discussed in the Comprehensive Land Use Plan, the area surrounding the airport is exposed to the potential for aircraft accidents, which resulted in the establishment of safety areas in order to minimize the number of people exposed to aircraft crash hazards. Because the pipelines would be underground and would not require above ground facilities that exceed height restrictions, the potential hazard for people residing or working in the project area within two miles of the Franklin Field Airport is considered less than significant.

Program Elements. There are no public airports in the vicinity of the program elements. There would be no impacts related to a safety hazard for these elements.

Alternative 3 (Small Service Area Alternative)

Project and Program Elements. The recycled water service area for Alternative 3 (Small Service Area Alternative) is smaller than that of Alternative 1 (Medium Service Area Alternative) and does not extend as far south. The pipelines associated with Alternative 3 (Small Service Area Alternative) are within 2 miles of the Franklin Field Airport. Because the pipelines would be underground, the potential safety hazard for people residing or working in the project area is considered to be less than significant.

Alternative 4 (No Project Alternative)

Under the No Project Alternative, no facilities would be constructed. Therefore, no safety hazard impacts related to airports would occur.

Significance Determination before Mitigation

Less than significant for all action alternatives. No impact for Alternative 4 (No Project Alternative).

Mitigation Measures

No mitigation measures are required.

**Impact HAZ-3 Impair Implementation of or Physically Interfere with an Adopted
Emergency Response Plan or Emergency Evacuation Plan.**

*Alternative 1 (Medium Service Area Alternative) and Alternative 2 (No Reclamation Funding
Alternative)*

Project and Program Elements. The proposed Project would not conflict with the goals and objectives identified in the Sacramento County Multi-Hazard Mitigation Plan (AMEC 2004). Construction would not increase exposure of the public to natural hazards.

Long-term operation of the proposed Project would not result in any hazards that would conflict with the Multi-Hazard Mitigation Plan because the Project would only involve conveying recycled water to agricultural and environmental users. In addition, operations would adhere to the SRWTP Emergency Response Plan.

Refer to *Section 3.14, Transportation*, Impact TR-4, for a discussion of impacts associated with the potential for construction to interfere with the accessibility of roadways to emergency vehicles. Implementation of **Mitigation Measure TR-1** would require the preparation and implementation of a traffic management plan, which would reduce impacts associated with interference with emergency response, emergency access and circulation to a less-than-significant.

Alternative 3 (Small Service Area Alternative)

Project and Program Elements. The construction and operational impacts of both project and program components for Alternative 3 (Small Service Area Alternative) would be similar to those identified for Alternative 1 (Medium Service Area Alternative). Similar to Alternative 1 (Medium Service Area Alternative), this alternative would involve conveying recycled water to agricultural and environmental users, and would adhere to the SRWTP Emergency Response Plan. Impacts from construction would be the similar to those identified for Alternative 1 (Medium Service Area Alternative) and would be reduced to less than significant with implementation of **Mitigation Measure TR-1**.

Alternative 4 (No Project Alternative)

Under the No Project Alternative, no facilities would be constructed. Therefore, there would be no emergency response plan conflicts.

Significance Determination before Mitigation

Potentially significant for all action alternatives. No impact for Alternative 4 (No Project Alternative).

Mitigation Measures

See **Mitigation Measure TR-1**.

Significance after Mitigation

Less than significant for all action alternatives.

Cumulative Impact Analysis

The geographic scope of potential cumulative impacts related to hazards and hazardous materials is the proposed pump station and transmission pipeline and their immediate surrounding area. With respect to the use of hazardous materials and hazardous materials in the environment, effects are generally limited to site-specific conditions. For cumulative effects on emergency response plans, the effects can extend to regional roadways that could be affected by construction-related traffic.

Two cumulative projects, EchoWater and rehabilitation of digesters 6 and 7 projects at the SRWTP, would be in the immediate vicinity of the proposed pump station. The Capital Southeast Connector would be in the immediate vicinity of the proposed transmission pipeline at Hood Franklin Road. The cumulative projects would entail the use of fuels, motor oil and lubricants during construction, which may be considered hazardous materials. The improper use, handling, and storage of these materials could pose a risk to the public and the environment, resulting in a potentially significant, cumulative impact. However, hazardous material use for the construction and operation of the proposed Project and cumulative projects would be managed in accordance with federal, state, and local hazardous materials regulations. These regulations would apply equally to cumulative projects, would be site-specific, and minimize the risk of hazardous materials exposure.

Compliance with applicable laws and regulations and implementation of **Mitigation Measure HAZ-1** would reduce the potential hazardous materials impact to a less-than-significant level. Therefore the proposed Project's contribution to the risk of hazardous materials exposure would not be cumulatively considerable.

Cumulative impacts related to interference with implementation of an adopted emergency response plan or emergency evacuation plan could result if the proposed Project in combination with the projects listed in **Table 3.0-1** obstructed or caused unacceptable traffic delays on an adopted emergency evacuation or response route. The proposed pump station would be within the existing fenceline of the SRWTP and the transmission pipeline would be underground. The proposed Project would not cause unacceptable delays because as discussed in *Section 3.14, Transportation and Traffic*, because there would be no increased traffic associated with the operations, and implementation of **Mitigation Measure TR-1** during construction would reduce the potential to conflict with emergency vehicle access to a less-than-significant level. Thus, the proposed Project would not result in a cumulatively considerable contribution to emergency response plans.

Significance Determination before Mitigation

Potentially significant.

Mitigation Measures

See **Mitigation Measures HAZ-1** and **TR-1**.

Significance Determination after Mitigation

Less than significant.

3.9.4 References

Airport Land Use Commission (ALUC). 1992. *Franklin Field Comprehensive Land Use Plan*. December 1988, Amended December 1992.

AMEC. 2004. *Sacramento County, California Multi-Hazard Mitigation Plan*. December 2004.

Ascent Environmental. 2014. *Final Environmental Impact Report for the Sacramento Regional County Sanitation District EchoWater Project*. September 12, 2014.

California Department of Forestry and Fire Protection (CAL FIRE). 2007. *Sacramento County Fire Hazard Severity Zone (FHSZ) Map*. November 6. Available at: http://www.fire.ca.gov/fire_prevention/fire_prevention_wildland_zones_maps.php. Accessed March 9, 2015.

California Department of Toxic Substances Control (DTSC). 2015a. EnviroStor Database Map. Accessed March 5, 2015. Available here: <http://www.envirostor.dtsc.ca.gov/public/>

_____. 2015b. EnviroStor Hazardous Waste and Substances Site List (Cortese List). Available at: http://www.envirostor.dtsc.ca.gov/public/search.asp?PAGE=8&CMD=search&ocierp=False&business_name=&main_street_number=&main_street_name=&city=&zip=&county=&branch=&status=ACT%2CBKLG%2CCOM&site_type=CSITES%2COPEN%2CFU DS%2CCLOSE&cleanup_type=&npl=&funding=&reporttype=CORTESE&reporttitle=HAZARDOUS+WASTE+AND+SUBSTANCES+SITE+LIST&federal_superfund=&state_response=&voluntary_cleanup=&school_cleanup=&operating=&post_closure=&non_operating=&corrective_action=&tiered_permit=&evaluation=&spec_prog=&national_priority_list=&senate=&congress=&assembly=&critical_pol=&business_type=&case_type=&display_results=&pub=&hwmp=False&permitted=&pc_permitted=&inspections=&complaints=&ORDERBY=county&next=Next+50. Accessed March 6, 2015.

Elk Grove, City of. 2015. *The City of Elk Grove General Plan*. Reflects Amendments through March 2015.

James Lee Witt Associates. 2008. *Sacramento County Evacuation Plan, An Annex to the County Emergency Operations Plan*. November 2008.

Sacramento County Airport System. 2015. *Franklin Field Airport – About*. Available at: <http://www.sacramento.aero/f72/about/>. Accessed April 2, 2015.

Sacramento County. 2011. *Sacramento County General Plan of 2005-2030*. Amended November 9, 2011.

_____. 2012. *County of Sacramento Emergency Operations Plan*. December 2012.

State Water Resources Control Board (SWRCB). 2015. GeoTracker Map. Available at: <http://geotracker.waterboards.ca.gov/>. Accessed March 5, 2015.

United State Environmental Protection Agency (USEPA). 2016. *Regional Screening Levels (Formerly PRGs)*. May 2016.

3.10 Hydrology and Water Quality

The Hydrology and Water Quality section describes the environmental setting for hydrology and water quality in the Project area, as well as potential impacts from the proposed Project.

3.10.1 Environmental Setting

Regional Hydrology

The Project is located in the southern portion of Sacramento County. The Sacramento River and Cosumnes Rivers are within close proximity, to the west and east, respectively. The American River flows through Sacramento County, but is approximately nine miles north of the most northern Project facility – the pump station at the SRWTP. The proposed Project location and regional water bodies are shown in **Figure 3.10-1**. The Project area is in the Lower Sacramento watershed. The Sacramento River watershed encompasses approximately 23,500 square miles and produces an average annual runoff of approximately 17 million acre-feet (AF) (Water Forum and SCWA 2006).

The entire Project area is within the Sacramento Valley Groundwater Basin, and overlies a portion of the South American Subbasin, which is a groundwater subbasin defined by the Department of Water Resources (DWR, Bulletin 118) as extending from the Sierra Nevada to the Sacramento River, bounded on the north by the American River and on the south by the Cosumnes and Mokelumne Rivers.

As shown in **Figure 3.10-1**, the proposed pump station, portions of the transmission pipeline, the potential recharge area, and Stone Lakes NWR are within the 100-year floodplain (Zones A and AE). The Federal Emergency Management Agency (FEMA) identifies geographic areas with varying levels of flood risk defined as flood hazard zones. These zones are then depicted on Flood Insurance Rate Maps (FIRMs) or Flood Hazard Boundary Maps. The Project area is within Zones X, A, and AE, each of which is described as follows (Sacramento County 2011):

- Zone X: areas outside the 100-year floodplain. Mandatory purchase requirements for flood insurance and minimum building standards do not apply to this zone.
- Zone A: corresponds to the 100-year floodplain for requiring federal backed mortgages to purchase flood insurance.
- Zone AE: corresponds to the 100-year floodplain for requiring federal backed mortgages to purchase flood insurance. New buildings constructed in this zone must be elevated to the Base Flood Elevations identified by FEMA (i.e. the 1 percent annual chance flood level).

The existing SRWTP is contained within a perimeter levee system, which is designed to provide protection from 200-year flood flows.

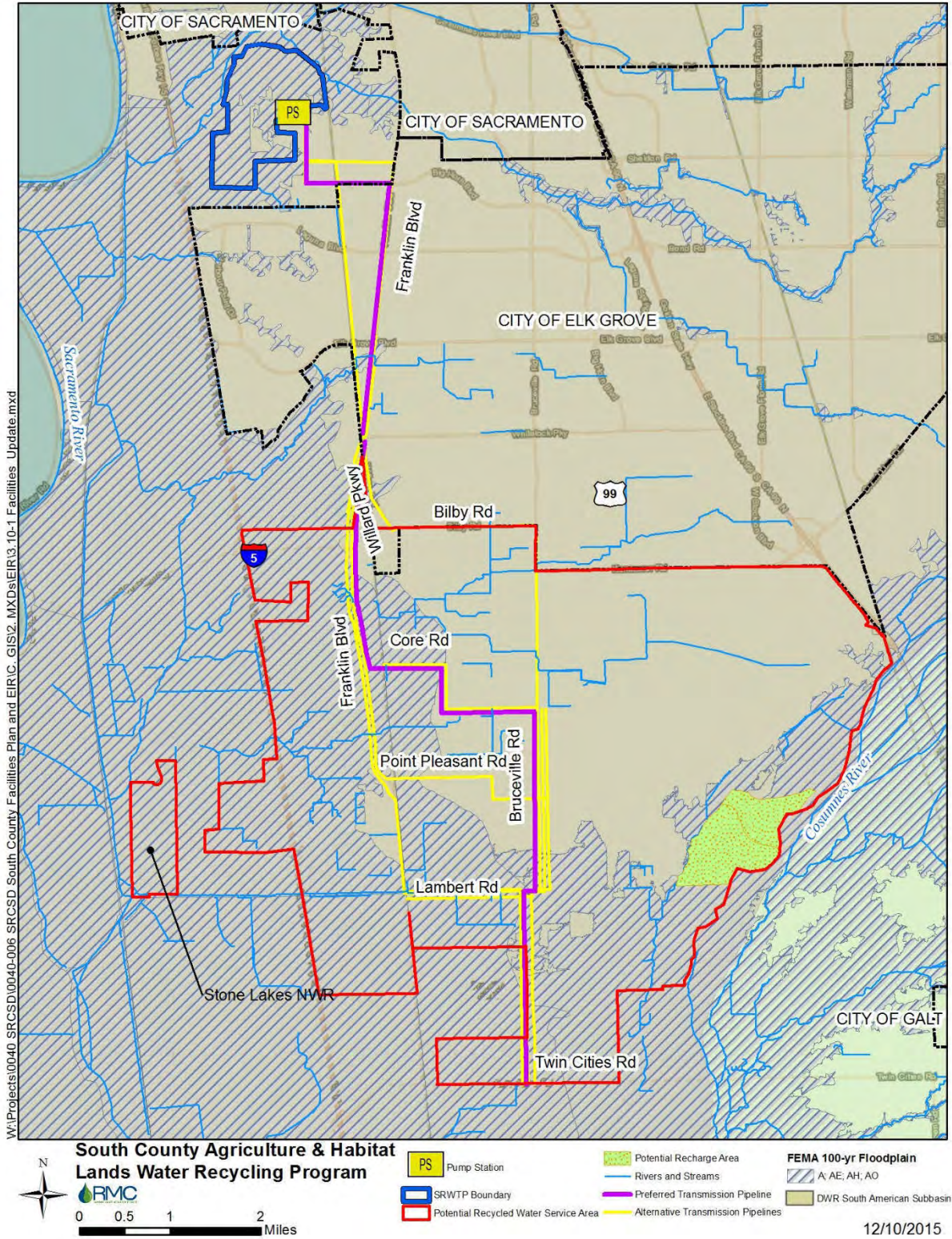


Figure 3.10-1: Regional Hydrology Within and Surrounding the Project Area

Surface Water

Water Features

Sacramento River

The Sacramento River is located approximately 1.8 miles west of the proposed Project area (at the nearest point from the proposed pump station). The river drains a 26,146-square-mile basin that spans the entire northern Central Valley of California. The portion of the Sacramento River to the west of the Project area falls within the Delta Waterways (Eastern Portion and Northern Portion) which is on the federal Clean Water Act Section 303 (d) Impaired Water Bodies list for chlorpyrifos, dichloro-diphenyl-trichloroethane (DDT), diazinon, dieldrin, Group A pesticides, invasive species, mercury, chlordane, PCBs and unknown toxicity (SWRCB 2010).

As discussed in *Chapter 1, Introduction*, the SRWTP treats wastewater and then discharges the treated effluent into the Sacramento River near the town of Freeport. The SRWTP is permitted to discharge up to 181-mgd of Average Dry Weather Flows. On December 9, 2010, the Central Valley Regional Water Quality Control Board adopted a new National Pollutant Discharge Elimination System (NPDES) permit for the SRWTP which requires treatment equivalent to disinfected tertiary treated recycled water to be produced for discharge to the Sacramento River. The WDRs have been amended since then several times. The NPDES permit was renewed in April 2016.

The Sacramento River and associated Delta are the main water supply sources for the Central Valley Project (CVP), and are major contributors to the State Water Project (SWP). The Shasta Dam and Reservoir were constructed as an integral element of the CVP, with Shasta Reservoir representing about 41 percent of the total reservoir storage capacity of the CVP. Operations of Shasta Reservoir are affected by numerous regulatory conditions and demands on the system, including agricultural and urban water supply, as well as biological requirements for flows and water temperature. Timing, duration, and depth of releases (deeper water for colder releases) vary with existing environmental conditions (flow levels and water temperature) and time of year (biological seasonality). Long-term average and average by water year type flows for the Sacramento River at Freeport (near the SRWTP discharge location) are shown in **Table 3.10-1**. Values “Without Project” reflect the modeled existing conditions based on an 82-year period of record from 1922 through 2003.

Table 3.10-1: Sacramento River Average Monthly Flow at Freeport by Water Year Type

Analysis Period	Monthly Flow (CFS)											
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Long-term												
Full Simulation Period¹												
No Project	11,273	16,029	22,691	31,180	37,745	32,288	23,451	19,088	16,320	19,065	14,126	17,971
Proposed Project (50,000 AFY ³)	11,246	15,977	22,635	31,096	37,668	32,222	23,409	18,986	16,243	18,991	14,058	17,921
Difference	-27	-52	-56	-84	-77	-66	-43	-102	-77	-73	-69	-50
Percent Difference ⁴	-0.2%	-0.3%	-0.2%	-0.3%	-0.2%	-0.2%	-0.2%	-0.5%	-0.5%	-0.4%	-0.5%	-0.3%
Water Year Types²												
Wet (32%)												
No Project Alternative	13,806	21,069	25,080	50,180	57,509	49,768	38,203	31,557	23,356	20,095	16,218	28,461
Proposed Project (50,000 AFY)	13,764	21,009	25,005	50,112	57,443	49,698	38,166	31,453	23,254	20,028	16,155	28,431
Difference	-43	-60	-74	-68	-66	-70	-37	-103	-103	-67	-63	-31
Percent Difference	-0.3%	-0.3%	-0.3%	-0.1%	-0.1%	-0.1%	-0.1%	-0.3%	-0.4%	-0.3%	-0.4%	-0.1%
Above Normal (15%)												
No Project Alternative	12,461	19,357	23,429	37,712	45,441	42,526	25,988	20,631	16,382	22,210	16,610	22,005
Proposed Project (50,000 AFY)	12,438	19,293	23,358	37,645	45,358	42,469	25,943	20,523	16,306	22,131	16,563	21,978
Difference	-24	-65	-71	-67	-83	-57	-45	-108	-76	-79	-47	-27
Percent Difference	-0.2%	-0.3%	-0.3%	-0.2%	-0.2%	-0.1%	-0.2%	-0.5%	-0.5%	-0.4%	-0.3%	-0.1%
Below Normal (17%)												
No Project Alternative	12,722	15,894	27,232	22,548	31,621	22,917	17,946	14,501	13,828	21,313	15,986	13,827
Proposed Project (50,000 AFY)	12,659	15,827	27,163	22,480	31,538	22,845	17,903	14,393	13,765	21,248	15,925	13,750
Difference	-62	-67	-70	-68	-83	-72	-43	-109	-63	-64	-61	-77
Percent Difference	-0.5%	-0.4%	-0.3%	-0.3%	-0.3%	-0.3%	-0.2%	-0.8%	-0.5%	-0.3%	-0.4%	-0.6%

EIR

Draft

Analysis Period	Monthly Flow (CFS)											
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Dry (22%)												
No Project Alternative	8,642	12,231	21,869	17,115	23,066	20,189	13,358	10,980	12,613	18,491	11,600	10,476
Proposed Project (50,000 AFY)	8,620	12,167	21,802	17,056	22,964	20,122	13,315	10,888	12,555	18,411	11,530	10,391
Difference	-22	-65	-67	-59	-101	-67	-42	-91	-58	-81	-70	-86
Percent Difference	-0.3%	-0.5%	-0.3%	-0.3%	-0.4%	-0.3%	-0.3%	-0.8%	-0.5%	-0.4%	-0.6%	-0.8%
Critical (15%)												
No Project Alternative	6,851	7,637	12,713	14,648	16,394	13,261	10,517	8,041	9,478	11,923	8,730	7,286
Proposed Project (50,000 AFY)	6,889	7,650	12,747	14,458	16,344	13,200	10,464	7,941	9,410	11,843	8,620	7,255
Difference	38	13	34	-190	-51	-61	-53	-100	-67	-80	-111	-31
Percent Difference	0.6%	0.2%	0.3%	-1.3%	-0.3%	-0.5%	-0.5%	-1.2%	-0.7%	-0.7%	-1.3%	-0.4%

Source: CH2MHILL 2016.

Notes:

1. Based on the 82-year simulation period
2. As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999)
3. AFY= acre-feet per year. The proposed Project was assumed to divert 50,000 AFY at ultimate implementation of all program elements, including wintertime irrigation
4. Relative difference of the monthly average

Cosumnes River

The Cosumnes River is located immediately adjacent to the recycled water service area and potential recharge pond. The Cosumnes River watershed encompasses the southern portion of El Dorado County, the northwestern portion of Amador County and much of southern and eastern Sacramento County. The river empties into the lower reaches of the Mokelumne River and ultimately the Sacramento-San Joaquin Delta. The Cosumnes River, which is the only river in the western Sierra Nevada with no major dams, relies principally on groundwater to provide base flows for fish and wildlife (RMC 2014b). The portion of the Cosumnes River immediately east of the recycled water service area is on the 303(d) Impaired Water Bodies list for E. coli, invasive species, and sediment toxicity.

Other Water Features

A number of drainages occur within the Project area, including Franklin Creek (approximately 1,500 feet north of Franklin Boulevard and Bilby Road) and a drainage approximately 800 feet south of Franklin Boulevard and Elk Grove Boulevard. A number of irrigation ditches are located throughout the Project area along roadways.

Water Quality

Beneficial Uses

The Central Valley Regional Water Quality Control Board (CVRWQCB) prepared the Water Quality Control Plan (or Basin Plan) for the Sacramento and San Joaquin River drainage basins; the Basin Plan was last updated in October 2011. The basins are bound by the Sierra Nevada to the east, the Coast Range and Klamath Mountains to the west, the California-Oregon border to the north, and the San Joaquin River to the south. The basins cover approximately 25 percent of the total area of the State, over 30 percent of the State's irrigable land, and provide approximately 51 percent of the State's water supply. Surface waters from both river basins meet to form the Sacramento-San Joaquin Delta, which ultimately drains to San Francisco Bay.

The Basin Plan designates the beneficial uses for the drainages within the Project area and also establishes water quality objectives in order to prevent degradation of waters in the basin and protect the identified beneficial uses. Beneficial uses of waterways surrounding the Project area, including the lower Cosumnes River and Sacramento River include the following (CVRWQCB 2011):

- Municipal and Domestic Supply (MUN) – use of water for drinking water supply.
- Agriculture (AGR) – use of water for farming, horticulture, or ranching.
- Industry (IND) – use of water for industrial activities that do not depend on water quality, such as mining, cooling water supply, and gravel washing.
- Recreation – Contact (REC-1) – use of water for recreational activities involving bodily contact with water, where ingestion of water is possible (e.g., swimming, surfing, fishing).

- Recreation – Non-contact (REC-2) – use of water for recreational activities involving proximity to water, but no bodily contact with or possibility of ingestion of water (e.g., picnicking, boating, camping, sightseeing).
- Warm Freshwater Habitat (WARM) – use of water for warm water ecosystems, such as the preservation or enhancement of aquatic habitats, vegetation, fish, and wildlife.
- Cold Freshwater Habitat (COLD) – use of water for cold water ecosystems, such as the preservation or enhancement of aquatic habitats, vegetation, fish, and wildlife.
- Fish Migration (MIGR) – use of water that supports habitats necessary for migration of aquatic organisms, such as anadromous fish.
- Fish Spawning, Reproduction and/or Early Development (SPWN) – use of water that supports high quality aquatic habitats suitable for reproduction and early development of fish.
- Wildlife Habitat (WILD) – use of water that supports terrestrial or wetland ecosystems.

Most of these beneficial uses are dependent upon water quality. Sacramento River water quality data indicates that the Sacramento River supports these beneficial uses, most of the time (Ascent 2014). Waters of the Sacramento River are generally of high quality with moderate amounts of alkalinity and minerals present and low levels of disinfection by-product precursors. Turbidity levels tend to be higher in the winter months than spring months, and are usually associated with reservoir releases or stormwater runoff (Water Forum and SCWA 2006).

Water quality concerns along the lower Cosumnes River are elevated levels of nitrogen, phosphorus, suspended sediments, and mercury. CVRWQCB has developed Total Maximum Daily Loads (TMDLs) for total mercury and methyl mercury and a Basin Plan Amendment for mercury in the Delta (Kleinschmidt Associates 2008).

SRWTP Effluent Sources

Wastewater flows to the SRWTP originate as municipal water supplies, which come from both surface and groundwater sources. About 40- to 50 percent of the effluent originates as groundwater (Regional San 2015).

SRWTP Water Quality

The Regional San SRWTP currently treats wastewater to secondary treatment levels and discharges the treated effluent to Sacramento River near the town of Freeport. The treated discharge adds 165 TAF to the Sacramento River annually. In December 2010, and amended in 2011, 2012, and 2013, the CVRWQCB issued Regional San a new NPDES permit that requires the entire effluent flow from the SRWTP to attain a Title 22 tertiary equivalent quality and to provide nutrient removal. The NPDES permit was renewed in April 2016. In adopting the permit, the CVRWQCB cited as justification for the requirement to implement tertiary treatment, including filtration, the need to develop and use recycled water, including Basin Plan policy requiring that dischargers evaluate how reuse or land disposal of wastewater can be optimized.

Regional San is implementing the EchoWater Project to achieve compliance with the new permit requirements. As part of that project a pilot study was conducted to select the appropriate treatment technology. **Table 3.10-2** provides the projected recycled water quality based on the

pilot study results. Improvements being constructed as part of the EchoWater Project include new tertiary treatment processes for ammonia and nitrate removal, filtration, and enhanced disinfection.

Table 3.10-2: Projected Recycled Water Quality

Parameter	Units	Projected Regional San Recycled Water
Ammonia	mg-N/L	Below detection limit (<0.04)
Nitrate	mg-N/L	10 ¹
Salinity (TDS)	mg/L	510
Arsenic	ug/L	1.6
Boron	mg/L	0.25
Cadmium	ug/L	0.017
Calcium	mg/L	24
Chloride	mg/L	94
Copper	ug/L	3.1
Lead	ug/L	0.054
Magnesium	mg/L	11
Nickel	ug/L	2.6
Potassium	mg/L	14
Adjusted sodium adsorption ratio	--	4.1
Selenium	ug/L	0.8
Sodium	mg/L	97
Total Alkalinity	mg/L as CaCO ₃	76
Total Coliform	MPN/100 mL	<2 ²
Total Phosphorous	mg-P/L	4.8
Turbidity	NTU	<2 ²
TSS	mg/L	Below Detection Limit (<3)
Zinc	ug/L	59

Source: Brown and Caldwell 2013.

Notes:

1. Pilot test result was 12 mg/L, but permit limit is 10 mg/L. External carbon addition or acetic acid would be implemented at full scale to comply with permit limitations.
2. Not tested during the pilot project. Values are based on Title 22 tertiary filtration and disinfection requirements

Stone Lakes NWR

The Stone Lakes NWR is managed by USFWS to support migratory waterfowl through habitat creation and protection. USFWS evaluates potential supplemental water supplies to determine if water quality is appropriate for use in a National Wildlife Refuge, using a tool known as the Rapid Assessment. The Rapid Assessment process is intended to provide Refuge Managers and Applicants with an effective and efficient basis for determining if water, treated wastewater, stormwater, sediment, soil, biosolids, or other materials are appropriate for placement on National Wildlife Refuges. The assessments evaluates water quality parameters including alkalinity, fecal coliform, hardness, pH, temperature, total suspended solids, nutrients and metals to determine suitability for use in a refuge.

Flooding

Many of the farmlands in South County are prone to flooding. To help reduce flood damage to these areas, an extensive system of levees and pumps has been developed and implemented. Urbanization in Sacramento County has increased the amount of impervious surfaces and

channelization of natural streams, thus increasing runoff and channelization. This results in higher peak flows and more flooding (Sacramento County 2011).

To help manage floods and increase flood protection in the County, an extensive system of dams, levels, weirs, and pump stations was developed on the Sacramento and American Rivers, as well as multiple creeks (Sacramento County 2011).

Groundwater

Groundwater Basin

The Project area is entirely within the DWR South American Subbasin. For purposes of groundwater management, groundwater in Sacramento County is divided into three basins – North, Central, and South Basins (see **Figure 3.10-2**). The Project area overlies a portion of the Central Sacramento Groundwater Basin, which is under the jurisdiction of the Sacramento Central Groundwater Authority (SCGA) (see **Figure 3.10-3**). The Central Sacramento Groundwater Basin overlies most of the DWR South American Subbasin (DWR Bulletin 118-2003). The Board of Directors of the Sacramento Central Groundwater Authority (SCGA) consists of sixteen members, including Regional San. Groundwater is contained in a shallow aquifer (the Modesto Formation) and a deep aquifer (the Mehrten Formation). The shallow and deep aquifers are separated by a discontinuous clay layer that serves as a semi-confining layer. The Mehrten formation outcrops near the Sierra Nevada foothills and is typically characterized by fine black sands. The shallow aquifer extends approximately 200 to 300 feet below the ground surface. The base of the potable water portion of the deep aquifer is approximately 1,400 feet below ground surface (Water Forum and SCWA 2006).

Groundwater is located approximately 10 to 30 feet below mean sea level depending on the exact location in the Project area. The groundwater elevations within the Central Basin are shown in **Figure 3.10-3** and **Figure 3.10-4** (RMC 2014). The basin currently supplies water for several agencies within the Sacramento region and is the primary source of water in the Project area. Landowners that would receive recycled water from the proposed Project currently pump groundwater from private wells for crop irrigation.

Groundwater levels in the basin declined during the middle to late part of the twentieth century, mainly as a result of pumping to meet agricultural and municipal water demands in the basin. From the 1950s and 60s to the 80s, groundwater elevations declined by 20 to 30 feet. Water levels stabilized and recovered by about 10 feet, until the drought began in 1987. From 1987 to 2003, water levels declined by 15 feet. After 2003, water levels recovered once again (Water Forum and SCWA 2006). Proactive water supply management activities over the past two decades have resulted in more stable conditions in the groundwater basin. However, the South American Subbasin continues to be classified as a high priority basin under the California Statewide Groundwater Elevation Monitoring (CASGEM) Basin Prioritization. Lowered groundwater levels have also resulted in a reduction of river base flows in the Cosumnes River during certain times of the year (see **Figure 2-6** in *Chapter 2*).

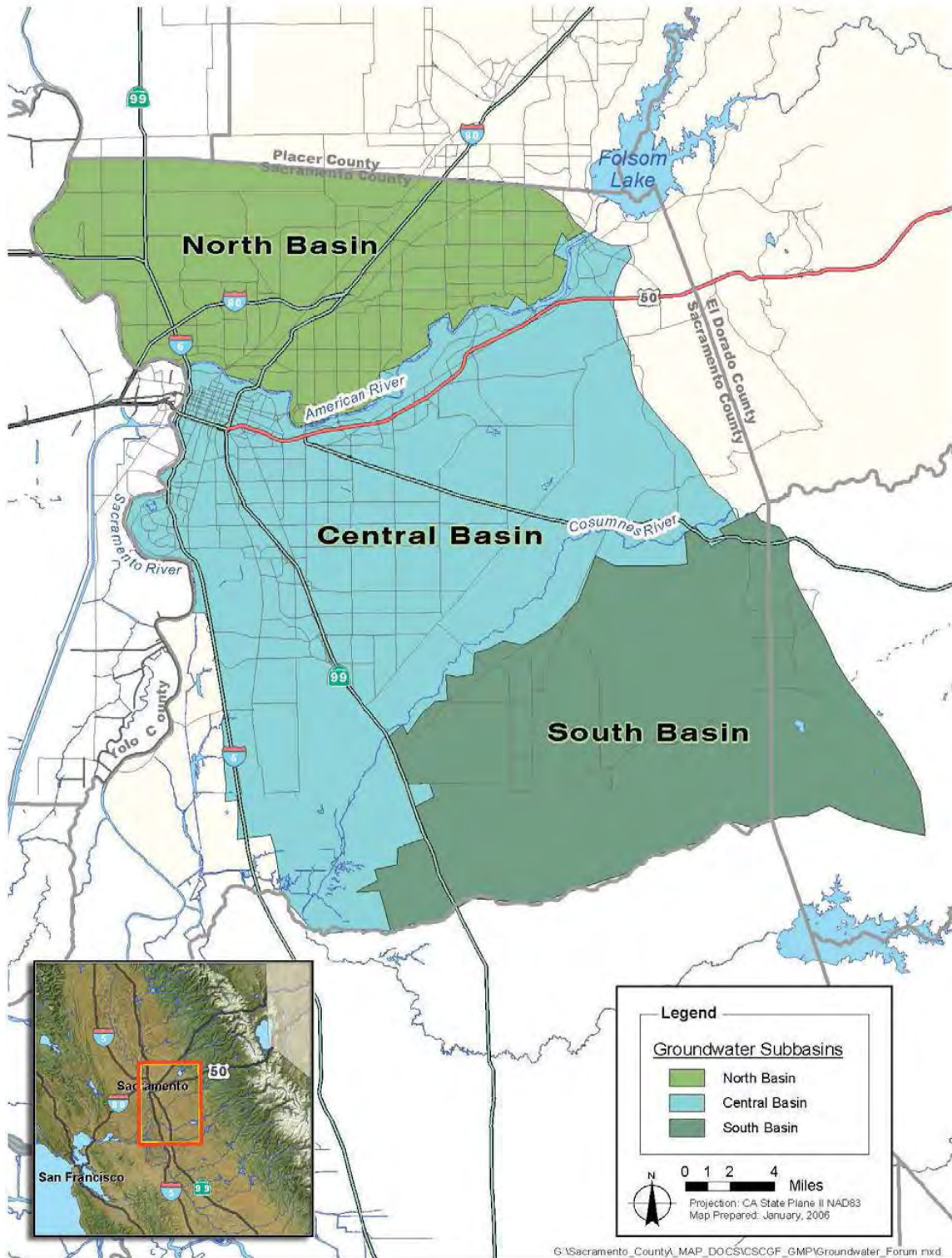


Figure 3.10-2: Groundwater Basins in Sacramento County

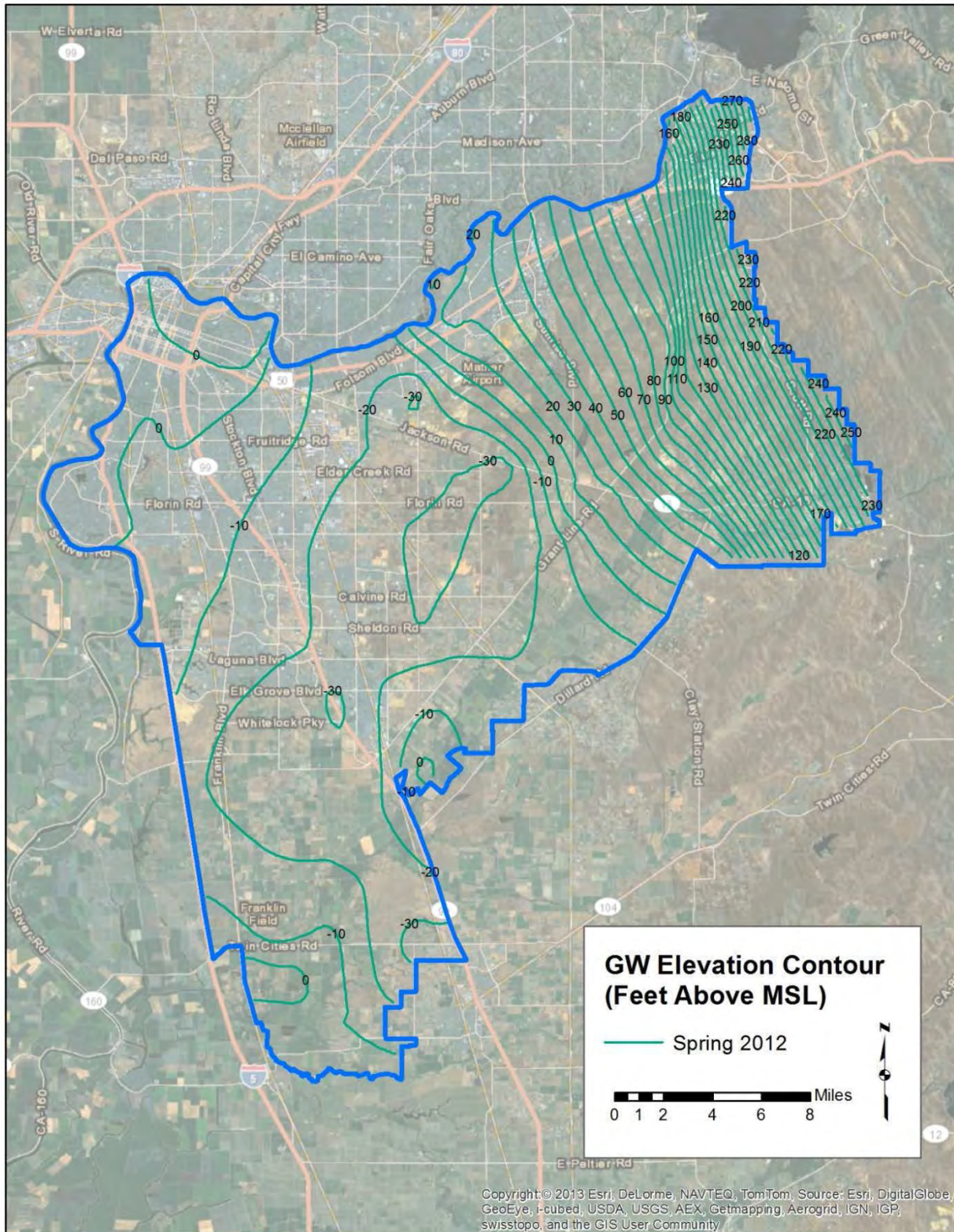


Figure 3.10-3: Spring 2012 Groundwater Contour Elevation Map

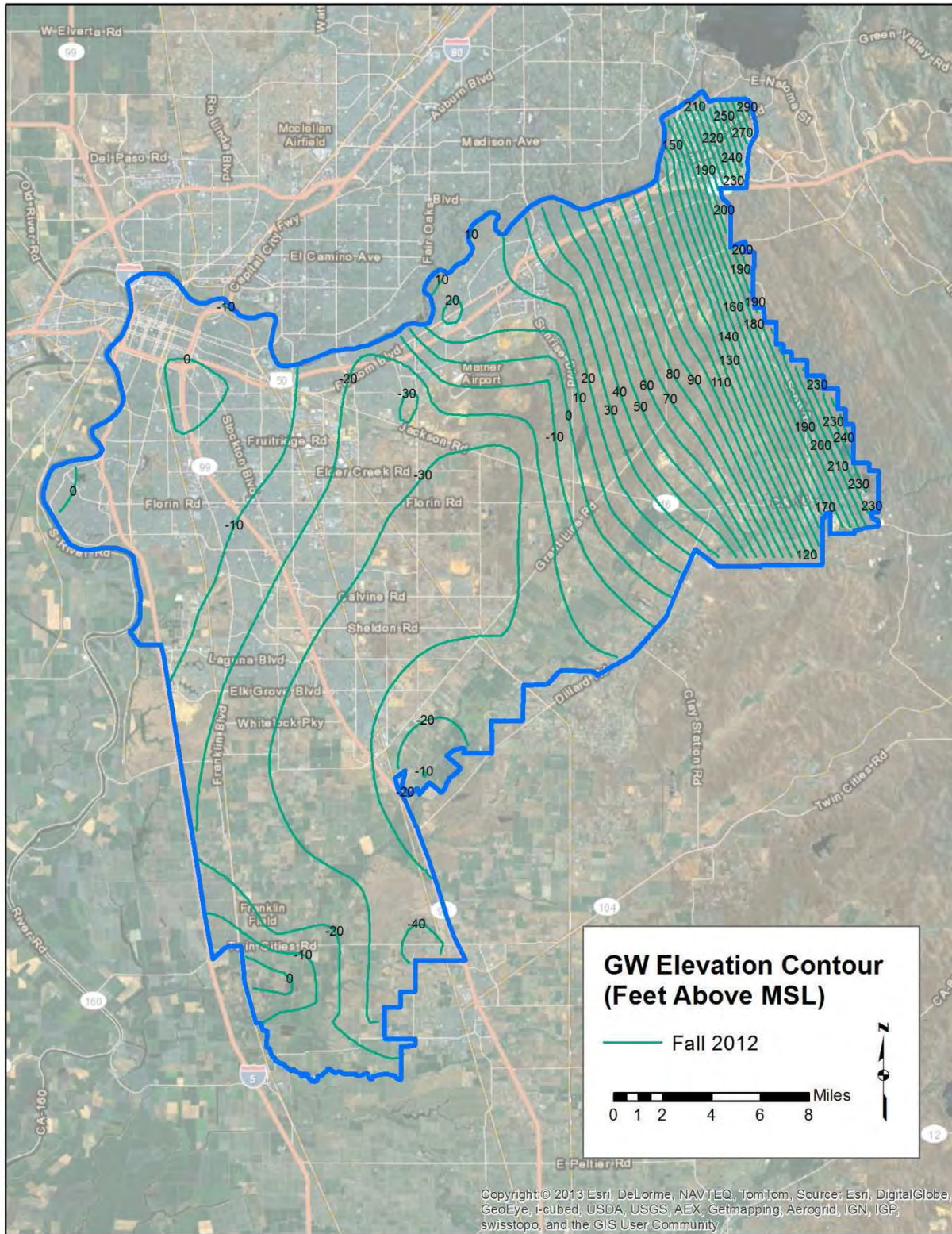


Figure 3.10-4: Fall 2012 Groundwater Elevation Contour Map

Groundwater Quality

Water quality analysis of the groundwater in the Central Basin has revealed that the shallow aquifer system has higher quality than the deep aquifer system. According to the Central Sacramento County Groundwater Management Plan, in addition to iron and manganese, the deep aquifer system also has higher concentrations of total dissolved solids (TDS), but groundwater typically meets the drinking water quality standards for TDS. However, at depths greater than 1,400 feet, TDS concentrations exceed 2,000 milligrams per liter (mg/L); therefore, the groundwater is not potable unless treated by reverse osmosis (RO). TDS concentrations in most municipal wells comply with the secondary drinking water standards. Iron and manganese concentrations range from nondetect levels to 16,000 mg/L, while most wells have average concentrations 200 mg/L or less. Manganese concentrations range from nondetect levels to 1,700 mg/L, with most wells averaging at 50 mg/L. While there are known contaminant plumes in the groundwater basin (e.g. from sources such as Mather Field or Aerojet), none are within the Project area (Water Forum and SCWA 2006).

Typically, the shallow aquifer is used for private domestic wells and requires no treatment (other than disinfection for public drinking water systems), while the deep aquifer requires treatment for iron and manganese (Water Forum and SCWA 2006). **Table 3.10-3** shows existing groundwater quality in the Project area.

Table 3.10-3: Groundwater Quality

Parameter	Units	Existing South Sacramento County Groundwater ¹
Ammonia	mg-N/L	0.6
Nitrate	mg-N/L	3.1
Salinity (TDS)	mg/L	128
Arsenic	ug/L	2.1
Boron	mg/L	0.18
Calcium	mg/L	14
Chloride	mg/L	9.1
Magnesium	mg/L	7.9
Nickel	ug/L	Below detection limit
Selenium	ug/L	Below detection limit
Sodium	mg/L	13.7
Total Alkalinity	mg/L as CaCO ₃	72
Total Phosphorous	mg-P/L	0.14
Turbidity	NTU	17.7
Zinc	ug/L	44.3

Notes:

1. Data represents average of existing water quality data from 7 wells in South Sacramento County, with multiple samples from each between 2000 and 2014 (RMC 2015b)

3.10.2 Regulatory Framework

This section describes laws and regulations at the federal, state, and local level that may apply to the proposed Project.

Federal Policies and Regulations

Clean Water Act

The federal Clean Water Act (CWA) is the primary surface water protection legislation throughout the country, administered by the USEPA. By employing a variety of regulatory and nonregulatory tools, including establishing water quality standards, issuing permits, monitoring discharges, and managing polluted runoff, the CWA aims to restore and maintain the chemical, physical, and biological integrity of surface waters to support “the protection and propagation of fish, shellfish, and wildlife and recreation in and on the water.” The CWA regulates both the pollutant content of point-source discharges and addresses polluted runoff (EPA 2003a).

The proposed Project is subject to regulations governing discharge from point sources and “wet-weather point sources,” such as urban storm sewer systems and construction sites, as defined in Sections 1311–1330 of the CWA (Title 33, Chapter 26, Subchapter III of the United States Code [USC]).

Section 303(d)

CWA Section 303(d) requires states to develop lists of water bodies that will not attain water quality standards after implementation of technology-based effluent limitations by point-source dischargers. Section 303(d) further requires states to develop a Total Maximum Daily Load (TMDL) for each of the listed pollutants and water bodies. A TMDL is the amount of pollutant loading that the water body can receive and still meet water quality standards.

In 2011, the USEPA gave final approval to a revised list of impaired water bodies (hereinafter referred to as the 303(d) list) prepared by the State. As previously described, the Sacramento and Cosumnes Rivers are listed for several constituents. TMDLs have been approved for some of the constituents (SWRCB 2010).

Section 401

Section 401 of the CWA requires that state water quality standards be met and that construction, dredging, and disposal activities not cause concentrations of chemicals in the water column that exceed state standards. Section 401 requires water quality certification from a RWQCB for issuance of a 404 permit (typically if construction affects a wetland or water of the U.S.). If a Section 404 permit were required for the proposed Project, then a 401 certification from the RWQCB would also be required.

Section 402

Section 402 of the CWA states that discharge of pollutants to “waters of the U.S.” is unlawful unless the discharge is authorized and in compliance with an NPDES permit. The USEPA has granted the State primacy in administering and enforcing the provisions of the CWA and the NPDES permit program. The NPDES permit program is the primary federal program that regulates point-source and non-point-source discharges to the waters of the U.S. Section 402 would apply to non-point discharges that could occur during construction. In California, USEPA authorizes the State Water Resources Control Board (SWRCB) to oversee the NPDES program through the RWQCBs. There are several types of NPDES permits relevant to the proposed Project as described in the following sections.

Individual NPDES Permits (including discharge permits for Publicly-Owned Treatment Works). All point source dischargers to waters of the U.S. not governed by a general permit are required to apply for an individual NPDES permit with the Regional Board, unless a specific exemption or waiver is provided. The RWQCB then issues an individual NPDES permit and waste discharge requirements (for any requirements specific to discharges into waters of the State), along with monitoring provisions to ensure compliance. The Regional San SRWTP operates under its existing individual NPDES permit (Order R5-2010-0114). Regional San is in the process of implementing treatment facilities to meet the requirements of the NPDES permit (Title 22 equivalent) and would continue to discharge to the Sacramento River, in accordance with its NPDES permit. The proposed Project would reduce the amount of recycled water discharged to the River with the primary new point of discharge being agricultural customers. Regional San would maintain its NPDES permit and comply with the General Order for Recycled Water Use (see section below) to provide recycled water to agricultural and environmental users as part of the proposed Project.

General Order for Recycled Water Use. On June 7, 2016, the SWRCB adopted Water Reclamation Requirements for Recycled Water Use with an effective date of August 6, 2016. This permit replaces the previous statewide Waste Discharge Requirements for Recycled Water Use (2014-0090-DWQ), which were adopted in 2014 to streamline permitting for recycled water in response to the Governor's January 17, 2014 proclamation of a Drought State of Emergency. Coverage under the General Order is limited to treated municipal wastewater for non-potable uses. All uses of recycled water must be consistent with Salt and Nutrient Management Plans approved by the RWQCB (SWRCB 2014). Additionally, recycled water projects permitted under this General Order must be in compliance with all applicable Title 17 and 22 requirements, WDRs or NPDES permits for recycled water production facilities, applicable Water Recycling Use Permit issued by the recycled water Administrator, applicable CEQA mitigation measures, California Water Code section 1211, and other prohibitions, specifications, requirements, and provisions laid out in the General Order.

The proposed Project would be covered under the Water Reclamation Requirements for Recycled Water Use. Regional San would serve as the Administrator under the order by submitting a Notice of Intent (NOI) and application fee to the Regional Water Board for authorization.

General Permit for Discharges of Storm Water Associated with Construction Activity. In 2009, the SWRCB adopted an amended General Permit for Discharges of Storm Water Associated with Construction Activity, NPDES Order No. CAS000002, Order No. 2009-0009-DWQ (Construction General Permit). Effective July 1, 2010, the amended General Construction Permit requires the development and implementation of a Storm Water Pollution Prevention Plan (SWPPP). The SWPPP must include a site map(s) showing the construction site perimeter, existing and proposed buildings, lots, roadways, stormwater collection and discharge points, general topography both before and after construction, and drainage patterns across the site. The SWPPP must list Best Management Practices (BMPs) the discharger will use to protect stormwater runoff; a visual monitoring program; a chemical monitoring program for "non-visible" pollutants to be implemented if there is a failure of

BMPs; and a sediment monitoring plan if the site discharges directly to a water body listed on the 303(d) list for sediment. Because the proposed Project would disturb more than one acre, coverage under the General Construction Permit and development of a SWPPP would be required.

Waste Discharge Requirements for Dewatering and Other Low Threat Discharges to Surface Waters. On May 31, 2013, the CVRWQCB adopted Waste Discharge Requirements for Dewatering and Other Low Threat Discharges to Surface Waters, Order R5-2013-0074 NDPES No. CAG995001 (General Order for Dewatering). Individuals, public agencies, private businesses, and other legal entities discharging relatively pollutant-free wastewaters that pose little or no threat to the quality of surface waters, for a duration of either 4 months or less in duration or have an average dry weather flow less than 0.25 mgd, may obtain authorization under this General Order to discharge. As discussed in Chapter 2, Alternatives Description and Proposed Project, dewatering will likely sometimes be employed in the pipeline trenches. It is expected that dewatering would not exceed 0.25 mgd and that the proposed Project would be eligible for coverage under the General Order. If dewatering were to exceed 0.25 mgd, an alternative NPDES permit would be needed in order to discharge water from dewatering operations. This same permit would be expected to cover discharges that would be required for hydrostatic testing of the pipeline at the completion of construction.

Section 404

Section 404 of the CWA regulates the discharge of dredged material, placement of fill material, or excavation within “waters of the U.S.” The U.S. Army Corps of Engineers (USACE) is given the principal authority to regulate discharges of dredged or fill material, under oversight by the U.S. EPA. “Waters of the U.S.” are defined by the CWA as “rivers, creeks, streams, and lakes extending to their headwaters and any associated wetlands.” Wetlands are defined by the CWA as “areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support a prevalence of vegetation typically adapted for life in saturated soil conditions.” Under Section 404, USACE is responsible for issuing permits (typically called Section 404 permits) authorizing the placement of dredged or fill materials into jurisdictional waters, which would be required if construction affected a wetland or water of the U.S.

National Flood Insurance Program (NFIP)

NFIP was created to promote flood awareness and reduce flood losses of properties within Special Flood Hazard Areas. Drainage and related flooding hazards are managed in response to requirements established by the National Flood Insurance Act of 1986 and the Flood Disaster Protection Act of 1973, as amended. In implementing NFIP, FEMA requires that new construction in a flood hazard area meet minimum design standards to place occupied structures above flood hazard areas.

State Policies and Regulations

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act is contained in the California Water Code, Division 7, §13000 et seq. It is the principal law governing water quality (surface and

groundwater) regulation in California. It is the policy of the state, as set forth in Porter-Cologne, that the quality of all the waters of the state shall be protected, that all activities and factors affecting the quality of water shall be regulated to attain the highest water quality within reason, and that the state must be prepared to exercise its full power and jurisdiction to protect the quality of water in the state from degradation. Porter-Cologne directs the SWRCB to formulate and adopt state policies for controlling water quality and designates the SWRCB as the state water pollution control agency for all purposes stated in the CWA. Porter-Cologne establishes the policies that are to be implemented and authorities that are to be used in achieving the goals of the CWA.

SWRCB and RWQCB

The SWRCB and RWQCBs are responsible for preserving, enhancing, and restoring “the quality of California’s water resources and ensuring their proper allocation and efficient use for the benefit of present and future generations.” The SWRCB develops statewide regulations governing water use and point-source and nonpoint-source pollutant discharge, while the RWQCBs work in smaller regions throughout the state to implement SWRCB policies and regulations. RWQCBs also establish additional region- and area-specific regulations and policies to achieve water quality goals under the CWA and Porter-Cologne Water Quality Control Act. The Project area lies within the jurisdiction of the Central Valley RWQCB.

Water Quality Control Plan (Basin Plan)

The Basin Plan for the Sacramento and San Joaquin River drainage basins is designed to preserve and enhance water quality and protect the beneficial uses of all regional waters. Specifically, the Basin Plan:

- Designates beneficial uses for surface and ground waters;
- Sets narrative and numerical objectives that must be attained or maintained to protect the designated beneficial uses and conform to the state's antidegradation policy;
- Describes implementation programs to protect the beneficial uses of all waters in the Region;
- Encourages the reuse of treated wastewater and requires that dischargers evaluate how reuse can be optimized; and
- Describes surveillance and monitoring activities to evaluate the effectiveness of the Basin Plan [California Water Code Sections 13240 thru 13244, Section 13050(j)].

The Basin Plan is used as the regulatory authority for water quality standards established in local NPDES permits and other RWQCB decisions.

San Francisco Bay/Sacramento-San Joaquin Delta Water Quality Control Plan (Bay-Delta WQCP)

The Bay-Delta WQCP establishes water quality control measures that contribute to the protection of the beneficial uses of the Delta (State Water Board 2006). As with other State water quality control plans, the Bay-Delta WQCP identifies the beneficial uses to be protected, the water quality objectives for reasonable protection of the beneficial uses, and a program of implementation for achieving the water quality objectives. The 2006 Bay-Delta WQCP adoption

did not involve substantial changes to the prior 1995 WQCP. The 1995 WQCP was developed as a result of the December 15, 1994, Bay Delta Accord, which committed the SWP and CVP operations to new Delta habitat objectives. The new objectives were adopted by the State Water Board in 1999 through a water rights decision (D-1641) for SWP and CVP operations. One key feature of the 1995 WQCP is the estuarine habitat objectives (“X2”) for Suisun Bay and the western Delta. The X2 standard refers to the position at which 2 parts per thousand salinity occurs in the Delta estuary; it is designed to improve shallow-water fish habitat in the spring of each year. Other elements of the WQCP include export-to-inflow ratios intended to reduce entrainment of fish at the export pumps, Delta Cross Channel gate closures, minimum Delta outflow requirements, and San Joaquin River salinity and flow standards. The Bay-Delta WQCP contains specific numeric standards for Delta inflow and outflow, chloride, and EC at various locations in the Delta. EC standards in the Delta exist for agricultural, fish, and wildlife beneficial uses. EC is a measure of water’s ability to conduct an electric current, and is an indirect measure of the concentration of dissolved salts in water.

Recycled Water Policy

The Statewide Recycled Water Policy was originally approved on May 14, 2009. An amendment to the Policy was approved on April 25, 2013. The Policy specifies the following goals for California regarding recycled water:

- Increase the use of recycled water over 2002 levels by at least one million AFY by 2020 and by at least two million AFY by 2030.
- Increase the use of stormwater over use in 2007 by at least 500,000 AFY by 2020 and by at least one million AFY by 2030.
- Increase the amount of water conserved in urban and industrial uses by comparison to 2007 by at least 20 percent by 2020.
- Included in these goals is the substitution of as much recycled water for potable water as possible by 2030.

In the Policy, the State Water Board acknowledges the potential for salts and nitrogen compounds to be of concern relative to the use of recycled water and the potential impacts on groundwater quality because high levels of salts and nutrients can make groundwater unsuitable for drinking. The policy therefore calls for the preparation of Salt/Nutrient Management Plans (SNMPs) to aid in management of these compounds relative to groundwater quality when evaluating and approving recycled water projects.

In April 2013, the SWRCB adopted an amendment to the Recycled Water Policy that provided monitoring requirements for Constituents of Emerging Concern (CECs) for groundwater recharge projects using recycled water. There are eight CECs for which the Recycled Water Policy requires monitoring, at least in the initial assessment phase of projects that include surface application of recycled water for groundwater recharge of a groundwater basin designated for municipal use. For four of these CECs, monitoring trigger levels have been developed (**Table 3.10-4**). The recycled water policy specifies different monitoring scenarios depending on the ratio of the detected levels of the CEC in the recycled water to the monitoring trigger level.

Table 3.10-4: CECs to be included in Baseline Monitoring for Groundwater Recharge Project Including Surface Application of Recycled Water (Not for Irrigation)

Constituent	Constituent Group	Relevance/ Indicator Type	Monitoring Trigger Level (µg/L)
17β-estradiol	Steroid hormones	Health	0.009
Caffeine	Stimulant	Health & Performance	0.35
N-Nitrosodimethylamine (NDMA)	Disinfection byproduct	Health	0.01
Triclosan	Antimicrobial	Health	0.35

California Code of Regulations Water Recycling Criteria

Title 22 of the CCR, Division 4, Environmental Health, Chapters 1 through 3 outline California’s health laws related to recycled water. The intent of these regulations is to ensure protection of public health associated with the use of recycled water. The regulations establish acceptable levels of constituents in recycled water for a range of uses and assurance of reliability in the production of recycled water. The SWRCB has jurisdiction over the distribution of recycled wastewater and the enforcement of Title 22 regulations.

The existing Title 22 Water Recycling Criteria address treatment requirements for three types of recycled water uses: Landscape Irrigation, Recreational Impoundments, and Industrial Uses. The treatment requirements are intended to protect public health based on the expected degree of human contact with recycled water under each type of use. Treatment requirements are expressed as treatment process requirements (e.g., bio-oxidation, coagulation) as well as performance standards (e.g., disinfection standards and contaminant reduction).

As described in *Chapter 2, Alternatives Description and Proposed Project*, the proposed Project would deliver Title 22 disinfected tertiary treated recycled water to irrigated lands in South County. Title 22 disinfected tertiary treated recycled water qualifies for “unrestricted reuse,” which allows the highest allowable uses, including landscape irrigation, use in recreational impoundments, and cooling towers. To be used as a source supply for this designation, the recycled water shall be at all times adequately oxidized, coagulated, clarified, filtered, and disinfected water. To be considered adequately disinfected, the median number of coliform organisms in the recycled water may not exceed a Most Probable Number (MPN) of 2.2 per 100 milliliters over a seven-day period and recycled water must meet certain turbidity requirements (CCR Section 60304).

Specifically, Chapter 3, Article 3 of Title 22 indicates that disinfected tertiary recycled water can be used for surface irrigation of food crops (including edible root crops, where the recycled water comes into contact with the edible portion of the crop), parks and playgrounds, school yards, residential landscaping, and unrestricted-access golf courses. Orchards and vineyards where the recycled water does not come into contact with the edible portion of the crop must be treated at least to undisinfected secondary level for surface irrigation (CCR Section 60304).

In addition to uses of recycled water, Chapter 3 of Title 22 also specifies use area requirements. A regulation applicable to the Project includes limitations on irrigation in the vicinity of water supply wells. The regulations state that within 50 feet of any domestic water supply well,

irrigation with disinfected tertiary recycled water cannot take place unless five criteria are met, including but not limited to demonstration in a geological investigation that an aquitard exists at the well between the uppermost aquifer being draw from and the ground surface, and that the ground surface immediately around the wellhead is contoured to allow surface water to drain away from the well (CCR Section 60310[a]).

Other requirements related to use areas that are applicable to the proposed Project include:

- Posting signs to inform the public in areas where recycled water is in use;
- Confining recycled water to authorized use areas;
- Restricting irrigation of disinfected tertiary recycled water within 50 feet of any domestic water supply well;
- Use of purple recycled water distribution and transmission system piping to indicate that it contains recycled water;
- Prohibition of the over-application or any direct runoff of applied recycled water (recycled water would be applied to landscaped areas at agronomic rates to meet the evapotranspiration requirements, which minimizes surface runoff); and
- Other requirements designed to ensure that recycled water use does not adversely affect public health.

Sustainable Groundwater Management Act

The Sustainable Groundwater Management Act (SGMA) is a package of bills, specifically Senate Bill 1168, Assembly Bill 1739, and Senate Bill 1319, passed and enacted in California in 2014. SGMA requires the formation of locally controlled Groundwater Sustainability Agencies (GSAs), which must develop and implement Groundwater Sustainability Plans (GSPs) in groundwater basins or subbasins that DWR designates as medium or high priority to achieve “sustainable groundwater management.” SGMA defines sustainable groundwater management as “the management and use of groundwater in a manner that can be maintained during the planning and implementation horizon without causing undesirable results.” As stated previously, the Project is located in the DWR South American Subbasin, which is designated as a high priority basin. The proposed Project is expected to increase groundwater levels in the basin. SCGA is considering developing a groundwater banking project in the future.

Antidegradation Policy

SWRCB Resolution No. 68-16 established a state policy requiring that discharges to both surface and groundwater shall be regulated to achieve “the highest water quality consistent with maximum benefit to the people of the State”. The intent of the resolution is that where waters of the State are of higher quality than required by state policies (as established by RWQCBs in the water quality objectives in the Water Quality Control Plan for each basin), any discharges that would degrade that quality are prohibited unless they can be shown to meet the following conditions:

1. The discharge must be consistent with maximum benefit to the people of the state.
2. The discharge must not unreasonably affect present and anticipated beneficial use of such water.

3. The discharge must not result in water quality less than that prescribed in state policies (i.e. water quality objectives in Water Quality Control Plans).

Discharges to high quality waters are required to use the best practicable treatment or control of the discharge to maintain the highest water quality consistent with the maximum benefit to the people of the State.

Local Policies and Regulations

The discussion of existing local policies and regulations focuses on Sacramento County, which is the location for all construction of new physical facilities associated with the proposed Project.

Sacramento County General Plan

Conservation Element

The Sacramento County General Plan (Sacramento County 2011) guides development for the County with a 20-year planning horizon. The following goals/policies in the Sacramento County General Plan, Conservation Element would apply to the proposed Project:

- **GOAL:** Ensure that a safe, reliable water supply is available for existing and planned urban development and agriculture while protecting beneficial uses of Waters of the state of California, including important associated environmental resources.
 - Objective: Manage groundwater to preserve sustainable yield.
 - CO-10: Support local watershed initiatives that enhance groundwater recharge.
 - Objective: Ensure the most efficient use of water in urban and agricultural areas.
 - CO-14: Support the use of recycled wastewater to meet non-potable water demands where financially feasible.
 - CO-15: Support effective agricultural water conservation practices, including the use of recycled wastewater where financially feasible.
 - Objective: Manage water supply to protect valuable water-supported ecosystems.
 - CO-20: Support preservation and restoration of the Cosumnes River riparian ecosystem.
 - CO-22: Support water management practices that are responsive to the impacts of Global Climate Change such as groundwater banking and other water storage projects.
- **GOAL:** Preserve, protect, and enhance natural open space function of riparian, stream and river corridors.
 - Objective: Maintain the natural character of the 100-year floodplain by limiting fill and excavation.
 - Objective: Conserve and protect the Sacramento, Cosumnes, Mokelumne and American Rivers to preserve natural habitat and recreational opportunities.

City of Elk Grove General Plan

Conservation and Air Quality Element

The following goals and policies from the Conservation and Air Quality Element of the City of Elk Grove General Plan are relevant to hydrology and water quality and the proposed Project (City of Elk Grove 2015):

- Policy CAQ-12: The City shall seek to ensure that the quality of groundwater and surface water is protected to the extent possible.
- Policy CAQ-15: The City shall encourage water supply service providers and County Sanitation District 1 to design water supply and recycled water supply facilities in a manner that avoids and/or minimizes significant environmental effects. The City shall specifically encourage the Sacramento County Water Agency to design well facilities and operation to minimize surface flow effects to the Cosumnes River.
- Policy CAQ-20: Fill may not be placed in any 100-year floodplain as delineated by currently effected FEMA Flood Insurance Rate Maps or subsequent comprehensive drainage plans unless specifically approved by the City. No fill shall be permitted in wetland areas unless approved by the City and appropriate state and federal agencies.

SRWTP NPDES Order

In December 2010, the CVRWQCB issued Regional San a new NPDES (Order No. R5-2010-0114, NPDES No. CA0077682) that require the entire effluent flow from the SRWTP to attain a Title 22 tertiary equivalent quality. It was then amended in 2011 (Order No. R5-2011-0083), 2012 (Order No. WQ 2012-0013), 2013 (Order No. R5-2013-0124), 2014 (Order Nos. R5-2014-0102, R5-2014-0103 and R5-2014-0122) and 2015 (Order No. R5-2015-0097). The current facilities at the SRWTP are not able to meet the adopted NPDES permit requirements. Regional San's previous NPDES permit for the SRWTP, which was in effect through December 2010 (Order No. 5-00-188), required secondary treatment and disinfection. To achieve compliance with the new, adopted NPDES permit, Regional San is implementing its EchoWater Project. The adopted NPDES permit allows a discharge flow of 181 mgd of average dry weather flow (ADWF). It requires Regional San to reduce total nitrogen and ammonia levels in its effluent, install tertiary filtration treatment for pathogen removal (consistent with Title 22 Standards). Nitrate and ammonia removal is required by May 2021, while Title 22 compliance is required by May 2023 (Ascent 2014).

Other Related Planning Efforts

Other planning documents relevant to the proposed Project and hydrology and water quality are described below.

SCGA Basin Management Report, 2011-2012

In 2014, SCGA prepared its Biennial Basin Management Report to document management activities and basin-wide hydrologic conditions to help ensure long-term sustainability of the region's groundwater resources. Basin Management Objectives were identified to manage and monitor the basin to benefit all groundwater users in the Central Basin of the Sacramento Groundwater Basin. The five objectives include (RMC 2014):

- Maintain the long-term average groundwater extraction rate at or below 273,000 acre-feet/year;
- Maintain specific groundwater elevations within all areas of the basin consistent with the Water Forum “solution”;
- Protect against any potential inelastic land surface subsidence by limiting subsidence to no more than 0.007 feet per one foot of drawdown in the groundwater basin;
- Protect against any adverse impacts to surface water flows in the American, Cosumnes, and Sacramento Rivers; and
- Meet water quality objectives including:
 - Total Dissolved Solids (TDS) concentration of less than 1,000 mg/l,
 - Nitrate concentration of less than 45 mg/l, and
 - Volatile Organic Compounds (VOC).

Cosumnes River Preserve Management Plan

The Cosumnes River Preserve Management Plan is described in *Chapter 3.2, Land Use and Agriculture*.

Water Forum Agreement

The Water Forum Agreement is described in *Chapter 1, Introduction*.

Central Sacramento County Groundwater Management Plan

After the Water Forum Agreement was signed, the Water Forum Successor Effort was formed to continue work outlined in the agreement, including the development of a governance structure for the Central Sacramento Groundwater Basin. The Central Sacramento County Groundwater Forum (CSCGF) was established and a recommendation to prepare the Central Sacramento County GWMP was made. The purpose of the GWMP is to ensure a long-term reliable groundwater supply for beneficial use within the Central Basin. The GWMP identified the following Basin Management Objectives (Water Forum and SCWA 2006):

- Maintain a long-term average groundwater extraction rate of 273,000 acre-feet/year (AFY).
- Establish specific minimum groundwater elevations within all areas of the basin consistent with the Water Forum “solution.”
- Protect against any potential inelastic land surface subsidence.
- Protect against any adverse impacts to surface water flows.
- Develop specific water quality objectives for several constituents of concern.

Central Valley Flood Management Planning (CVFMP)

The CVFMP was launched in 2008 to guide, manage, and implement integrated flood management actions for the Sacramento and San Joaquin valleys and resulted in the development of the 2012 Central Valley Flood Protection Plan (CVFPP) (DWR 2012). The purpose of the CVFPP is to guide the management of flood risk along the Sacramento and San Joaquin River systems. It was prepared in coordination with local flood management agencies, SWRCB, the USACE, FEMA, and Reclamation. The CVFPP identified the primary goal of improving flood

risk management to reduce the chance of flooding and damages once flooding occurs, and improve public safety, preparedness, and emergency response through the following:

- Identifying, recommending, and implementing structural and non-structural projects and actions that benefit lands currently receiving protection from facilities of the State Plan Flood Control (SPFC).
- Formulating standards, criteria, and guidelines to facilitate implementation of structural and non-structural actions for protecting urban areas and other lands of the Sacramento and San Joaquin river basins and the Delta.

Supporting goals were to improve operations and maintenance, promote ecosystem functions, improve institutional support, and promote multi-benefit projects (DWR 2012).

Central Valley Salinity Alternatives for Long-Term Sustainability (CV-SALTS)

The CV-SALTS effort began in 2006 by the CVRWQCB and SWRCB to address salinity and nitrate problems in California's Central Valley and to adopt long-term solutions to lead to enhanced water quality and economic sustainability. CV-SALTS is the process SWRCB requires to develop scientific and regulatory tools to manage salinity and nutrients in the Central Valley. The tools developed through this planning process will help to prepare a Basin Plan Amendment resulting in changes to the objectives and implementation program for salt and nutrient management and will result in completion of an SNMP.

In 2008, the Central Valley Salinity Coalition (CVSC) was formed as the working group for the CV-SALTS effort. Regional San is a member and participates on the Board of Directors. CV-SALTS participants work together to achieve the following goals (CVSC and CV-SALTS 2015):

- Sustain the Valley's lifestyle.
- Support regional economic growth.
- Retain a world-class agricultural economy.
- Maintain a reliable, high-quality urban water supply.
- Protect and enhance the environment.

To date, the Initial Conceptual Model has been completed, as well as the Strategic Salt Accumulation Land and Transport Study (SSALTS), which will be used to identify a range of alternatives for salt disposal under CV-SALTS. Work on the second phase of the conceptual model is ongoing. Procurement for the SNMP, CEQA documentation, and economic studies were completed in fall 2013. CEQA scoping meetings were conducted and other outreach efforts have been conducted. Monthly meetings were and continue to be conducted. Preparation of the CV-SALTS SNMP is underway.

3.10.3 Impact Analysis

Methodology for Analysis

This section evaluates whether construction and operation of the proposed Project and alternatives would result in significant impacts to hydrologic resources. Evaluation of impacts to

surface water and groundwater was accomplished using the SWP and CVP hydrology and system operations model, CalSim II, which was developed to simulate and evaluate changes to the complex water resources system of California under alternative conditions. The model simulates operations of the SWP, CVP, and other water districts/facilities in the Central Valley and approximates changes in storage reservoirs, river flows, and exports from the Delta that would result from a change in hydrologic conditions, water supply demands, facilities, requirements or operational policies. The model was used to evaluate potential changes in how the system would need to be operated as a result of reduction in discharges to the Sacramento River associated with the proposed Project.

Two separate scenarios were evaluated to determine Project impacts:

- Initial implementation of project-level facilities, which would focus on irrigation during the growing season and would use an average of 32,572 AFY of recycled water and up to 37,000 AFY in higher demand (drier) years; and
- Implementation of all program elements, which would use up to 50,000 AFY of recycled water for summertime irrigation, managed wetlands, a potential groundwater recharge area, and implementation of wintertime irrigation to augment groundwater recharge.

Modeling using CalSim II was conducted to evaluate the effect of the maximum 50,000 AFY annual reduction in discharge, which would occur when all program elements are implemented; modeling assumed a maximum rate reduction of 108 cfs (CH2M Hill, 2016). Modeling was also conducted to estimate the effects of the initial irrigation component, when recycled water delivery would average 32,572 AFY (and a maximum of 37,000 AFY) at projected buildout. The maximum discharge reduction for this scenario is also 108 cfs because without implementation of wintertime irrigation use of recycled water is limited to the growing season. The peak use of recycled water thus occurs in June for both scenarios.

CalSim II is a regional scale, monthly time-step model that uses projected hydrologic data based on the historical distribution of hydrology in the period of record of the 1922 through 2003 water years (82-year period of record). The model evaluates CVP and SWP operations throughout the period of record as if projected conditions, population, land and water use, regulatory requirements, facilities and operating agreements were present throughout the entire period of record. The CalSim II model results are used to identify operational controls and trace the impact of flow changes through a wide range of hydrologic and operational conditions. The simulation model is valuable to consider reservoir and other dynamic responses of an alternative (e.g. Delta salinity controls, water supply allocations) (Reclamation, 2008), but because it cannot totally emulate the way the system is operated, results may be overly conservative, because actual effects could be reduced through the system operators' ability to use judgement to make real time adjustments based on actual operating data and results.

To evaluate the potential impact of the proposed Project on groundwater levels, modeling was conducted using the Sacramento Area Integrated Water Resources Model (SacIWRM), an integrated hydrologic model that includes groundwater flow simulation, surface flow simulation, and stream-aquifer interaction. Groundwater modeling was also done for the same two scenarios as described above: annual recycled water delivery of 32,572 AFY (and a maximum of 37,000

AFY) at buildout of the project-level facilities, and 50,000 AFY with inclusion of wintertime irrigation, which results in the maximum possible discharge reduction at ultimate implementation of all program-level components. The modeling is thus conservative in its estimate of the amount of recycled water that could be used. The model simulated 84 years of operation, repeating the 42-year hydrologic conditions of 1970 to 2011 two times (RMC 2016). Because this period includes an extended drought period (1986-1992), it adequately reflects conditions that have occurred during the recent drought.

The SacIWRM model was used to estimate the extent to which increased groundwater levels from use of recycled water for irrigation would result in increased flows in the Cosumnes and Sacramento Rivers. Results of the SacIWRM model were integrated with the CalSim II model to determine the overall effect on Delta outflows considering both the reduction in discharge, which reduces inputs to the surface water system, and increases in streamflows that result from higher groundwater levels.

Thresholds of Significance

Hydrology- and water quality-related impacts associated with the proposed Project were analyzed in accordance with Appendix G of the CEQA Guidelines, along with an additional consideration relevant to projects that have the potential to affect surface flows in the Sacramento River. For the purposes of this analysis, an impact to hydrology and water quality would be significant if the Project would:

- Violate any water quality standards or waste discharge requirements;
- Substantially deplete groundwater supplies or substantially interfere with groundwater recharge;
- Substantially alter the existing drainage pattern of the project area and/or increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;
- Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems;
- Create substantial sources of polluted runoff or otherwise substantially degrade water quality;
- Develop within a 100-year floodplain as mapped on a federal Flood Insurance Rate Map or within a local flood hazard area;
- Place structures that would impede or redirect flood flows within a 100-year floodplain;
or
- Expose people or structures to a substantial risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam.
- Interfere with or cause changes to CVP or SWP system operations.

Criteria Requiring No Further Evaluation

Criteria listed above that are not applicable to actions associated with the proposed Project are identified below along with a supporting rationale as to why further consideration is unnecessary and a no impact determination is appropriate.

- *Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or create flooding on or off site* – The proposed Project, which consists of pipelines and a pump station, would contribute minimal runoff water. The proposed pipelines would be buried underground within public road rights-of-way and would not create or contribute runoff. The proposed pump station would create minimal to no new impervious surfaces, and runoff would be accommodated by the existing storm drainage system at the SRWTP. Thus, the proposed Project would not create or contribute substantial runoff water that would exceed the capacity of existing or planned stormwater drainage systems. Thus, no impact would occur and no further evaluation is required. Further, the recycled water irrigation program would be operated in a manner to minimize off-site runoff, both because recycled water would be subject to volumetric charges, which provide incentives not to waste water, and because the Statewide Recycled Water Order, under which the project would operate, prohibits excess runoff.
- *Develop within a 100-year floodplain as mapped on a federal Flood Insurance Rate Map or within a local flood hazard area* – The proposed Project would not involve construction of residential housing, and therefore would not place new housing within a flood hazard area or areas that could be exposed to sea level rise. No impact would occur and no further evaluation is required.
- *Place structures that would impede or redirect flood flows within a 100-year floodplain* – Portions of the pipeline, the pump station at the SRWTP, Stone Lakes NWR, and the potential recharge area would be located within a 100-year flood hazard zone (generally in areas near the Sacramento and Cosumnes Rivers, see **Figure 3.10-1**). However, no occupied structure would be constructed as part of the proposed Project. Pipelines would be buried and would not affect flood flows. Above-ground facilities would be limited to air valves along the new pipelines, the new pump station at the SRWTP, diluent wells at the potential recharge area (if needed), and small berms (three feet high or less) to keep wintertime water on site. The pump station would be integrated within the EchoWater Project facilities and would be located within the existing SRWTP perimeter levee system, which is designed to provide protection from 200-year flood flows. Therefore, the construction of the new pump station would not increase the level of existing encroachment of the SRWTP site on the floodplains of the Sacramento River or the Laguna-Morrison Creek channels. None of the above-ground facilities would impede or redirect flood flows. Thus, the proposed Project would not impede or redirect flood flows in areas of 100-year flood hazards, and no further evaluation is required.
- *Expose people or structures to a substantial risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam* – The proposed Project would include very limited above ground structures and would not appreciably impact flood flows or runoff volumes. The proposed Project would have no impact on any levees or dams and would not increase the risk of failure of any levee or dam. The proposed Project would redirect 50 TAF of recycled water from the SRWTP from discharge to the Sacramento River to existing customers for irrigation of crops and managed wetlands. Thus, the proposed Project would not expose people or structures to a risk of loss, injury or death involving flooding. No impacts would occur and no further evaluation is required.

Impacts and Mitigation Measures

Impact HYD-1 Violate Water Quality Standards or Waste Discharge Requirements, Create Substantial Sources of Polluted Runoff or Otherwise Substantially Degrade Water Quality

Alternative 1 (Medium Service Alternative) and Alternative 2 (No Reclamation Funding Alternative)

Project Elements. Construction activities involving soil disturbance, excavation, cutting/filling, stockpiling, dewatering and grading activities could result in increased erosion and sedimentation to surface waters during construction of the proposed Project. If precautions are not taken to contain contaminants, construction could produce contaminated stormwater runoff (nonpoint source pollution), a contributor to the degradation of water quality. In addition, hazardous materials associated with construction equipment could adversely affect surface and groundwater quality if spilled or stored improperly. In accordance with the Construction General Permit, a SWPPP would be developed for the proposed Project that would detail Best Management Practices for all Project construction activities including excavation, dewatering, and stockpiling. During construction of the proposed Project, dewatering would be conducted to remove excess groundwater from excavations created for installation of the pipeline and the proposed pump station. Dewatering operations would be conducted in accordance with the General Order for Dewatering or other appropriate NPDES permit. The discharge from the dewatering operations would be evaluated and made part of the Project SWPPP.

Once the pipeline is constructed, hydrostatic testing would need to be conducted, and water from the testing would also need to be discharged. Water from testing would be discharged in accordance with the General Order for Dewatering or other appropriate NPDES permit.

The Construction General Permit and the General Order for Dewatering are well established regulatory processes that effectively limit threats to water quality from construction activities such as those that would be conducted as part of the proposed Project. With implementation of **Mitigation Measures HYD-1a, HYD-1b, and HYD-1c**, potential impacts would be reduced to less than significant.

Operation of the proposed Project would result in an additional point of discharge of Regional San's recycled water, providing water to agricultural customers with a reduction in the amount of discharge to Sacramento River. Regional San would continue to discharge recycled water to the Sacramento River, in accordance with its NPDES permit (Order R5-2011-0114). Regional San would maintain its NPDES permit and comply with the General Order for Recycled Water Use to provide recycled water to agricultural and urban irrigation users as part of the proposed Project, therefore not violating related water quality standards or waste discharge requirements. The Project would implement Basin Plan policy to optimize reuse and land disposal of wastewater. All uses of recycled water would also be required to be consistent with a Salt and Nutrient Management Plan, which would need to be approved by the RWQCB (SWRCB 2014). The Project area is anticipated to be covered programmatically by the CV-SALTS SNMP.

Program Elements.

Construction of All Facilities. Potential impacts from construction activities for the program elements would be similar to those for the Project elements. **Mitigation Measures HYD-1a, HYD-1b, and HYD-1c** would reduce the construction-related impacts to less than significant.

Operation of Stone Lakes Managed Wetland. Suitability of recycled water for use at the Stone Lakes Refuge has been evaluated using the USFWS Rapid Assessment tool. Recycled water quality was projected based on pilot treatment studies because Regional San is in the process of constructing advanced treatment facilities at the SRWTP, and those facilities are not yet operational. Levels of constituents in recycled water from the pilot studies are acceptable for use at the refuge for all parameters except for phosphorus, which would require additional evaluation. The acceptance level for phosphorus is 0.047 mg/L¹, and the level of phosphorus in the recycled water from the pilot study was 4.8 mg/L, which is substantially higher than the acceptance level.

The phosphorus criterion used in the USFWS Rapid Assessment tool is extremely low, and may not be warranted for Stone Lakes, given that existing source water (stormwater runoff into Stone Lakes) has phosphorus concentrations above 0.5 mg/l and appears to cause no water quality concerns. The criterion for phosphorus is conservative because it is based on reference conditions and not on levels determined to affect water quality. Phosphorus would only rise to a level of concern if it were a nutrient limiting biological production in this environment, which is likely nitrogen-limited. Higher phosphorus concentrations are likely still safe for use in wildlife refuges, and EPA (2001) has indicated that their acceptance levels are appropriate as a starting point for development of water quality criteria that consider the characteristics of the specific receiving water.

There is also uncertainty that the reported phosphorus concentration from the pilot facility reflects the quality of recycled water that would be produced by the EchoWater facility because the current mean phosphorus concentration in SRWTP effluent is 2.28 mg/L without filtration (Ascent Environmental 2014). Prior to any final agreements with USFWS to deliver recycled water to the Stone Lakes NWR, additional studies of EchoWater effluent would be performed to demonstrate that water quality is acceptable. **Mitigation Measure HYD-1d** would be implemented to ensure that recycled water of suitable quality is provided to the Stone Lakes NWR and that impacts would be less than significant.

Operation of Potential Recharge Area. Use of recycled water for groundwater recharge in the potential recharge area would be permitted under a WDR obtained by Regional San. Operation of the potential recharge area would comply with the Division of Drinking Water recycled water regulations as described in Title 22, Division 4, Chapter 3 of the CCR. As described in *Chapter 2, Alternatives Description and Proposed Project*, recycled water would need to be diluted as part of the recharge component. Three diluent wells would be installed to provide groundwater as diluent water unless project-specific regulations are developed, which would be Regional San's intent in order to maximize the benefits of the recharge and minimize the potential adverse

¹ Acceptance level is based on USEPA reference conditions for Ecoregion I, which includes the Central Valley.

effects. The exact locations of the wells have not yet been determined, but the wells would be sited to meet all Title 22 requirements, including retention time of the recycled water underground. Impacts to water quality from the potential recharge area and diluent wells are potentially significant. Impacts could include, for example, the potential for mobilization of contaminants in groundwater from changing groundwater levels in the Central Sacramento Groundwater Basin, water quality impacts to the groundwater basin or to the Cosumnes River. Because the details of the potential recharge area are not yet available, **Mitigation Measure HYD-1e** would be implemented.

One common concern with the use of recycled water involves CECs, which include classes of chemicals such as pharmaceuticals, pesticides, and industrial chemicals. Many CECs are potentially present in recycled water, surface waters, and groundwater, but the ability to detect many of these chemicals at low concentrations is so recent that a robust framework for interpreting their potential human or ecosystem health effects is unavailable. Although there is currently no applicable regulatory guidance regarding CECs in recycled water used as part of a project such as the proposed Project, in California, the most well-established regulations and policies related to CECs in recycled water are associated with the Recycled Water Policy. A Blue Ribbon Panel with extensive knowledge developed next step recommendations by prioritizing which CECs to monitor and evaluate. The SWRCB adopted the Recycled Water Policy in May 2009 and in April 2013, based on the recommendations of the Blue Ribbon Panel, adopted an amendment to the Recycled Water Policy that provided CEC monitoring requirements for surface application of recycled water for groundwater recharge of a groundwater basin designated for municipal use. The proposed Project would comply with the Recycled Water Policy.

Alternative 3 (Small Service Area Alternative)

Project and Program Elements. The construction and operational impacts of both project and program components of Alternative 3 (Small Service Area Alternative) would be similar to those identified for Alternative 1 (Medium Service Area Alternative), except that the intensity of the effects would be less for construction-related effects. Potential construction-related impacts would be reduced to less than significant with the implementation of **Mitigation Measures HYD-1a through 1c**. Implementation of **Mitigation Measures HYD-1d and HYD-1e** would ensure that recycled water of suitable quality is provided to the Stone Lakes NWR and impacts to water quality from the potential recharge area and diluent wells, if needed, are less than significant.

Alternative 4 (No Project Alternative)

Under the No Project Alternative, no facilities would be constructed. Therefore, no water quality impacts or erosion/sedimentation associated with construction of these facilities would occur.

Significance Determination before Mitigation

Potentially significant for all action alternatives. No impact for Alternative 4 (No Project Alternative).

Mitigation Measures

Mitigation Measure HYD-1a: Comply with the Construction General Permit (All Action Alternatives)

To minimize the impacts to water quality from construction activities, the proposed Project shall implement measures contained in the Construction General Permit including the development of a SWPPP.

Mitigation Measure HYD-1b: Implement BMPs to Control Erosion and Sediment During Construction (All Action Alternatives)

The SWPPP shall specify that all construction activities shall implement multiple BMPs to provide effective erosion and sediment control. These BMPs shall be selected to achieve maximum sediment removal and represent the best available technology that is economically achievable. BMPs to be implemented as part of this mitigation measure shall include, but are not limited to, the following measures:

- Temporary erosion control measures, such as silt fences, staked straw bales/wattles, silt/sediment basins and traps, check dams, geofabric, sandbag dikes, and temporary revegetation or other ground cover, shall be employed for disturbed areas;
- Dirt and debris shall be swept from paved streets in the construction zone on a regular basis, particularly before predicted rainfall events;
- Grass or other vegetative cover will be re-established on unpaved areas of the construction site as soon as possible after disturbance. In paved areas, any removed paving will be replaced as soon as possible; and
- Soil stockpiling sites will be located such that they do not drain directly into nearby surface water bodies.

Multiple BMPs used in combination, properly installed and maintained, can achieve significant sediment removal. BMPs proposed by the project contractor shall be subject to approval Regional San, who shall require that all parties performing construction under the proposed Project incorporate into contract specifications the requirement that the contractor(s) comply with and implement these provisions. The contractor shall also include provisions for monitoring during and after construction activities to verify that these standards are met.

Mitigation Measure HYD-1c: Comply with the General Order for Dewatering or Other Appropriate NPDES Permit (All Action Alternatives)

To minimize the impacts to water quality from dewatering activities, the Regional San shall implement measures contained in the General Order for Dewatering or other appropriate NPDES permit or Waste Discharge Requirement.

Mitigation Measure HYD-1d: Ensure Adequate Water Quality for Stone Lakes NWR (All Action Alternatives)

To avoid adverse impacts to Stone Lakes NWR, Regional San shall work with USFWS to ensure that recycled water is of suitable quality before water is provided to the Refuge. Recycled water shall not be supplied to the Refuge until water quality concerns are addressed. If needed and desired by USFWS, water quality enhancement could be provided through a treatment wetland (a constructed wetland designed to remove nutrients from recycled water before discharge to the Refuge), which would be located in the Refuge.

Mitigation Measure HYD-1e: Perform Detailed Analysis of Groundwater Impacts from Recharge Area and Diluent Wells (All Action Alternatives)

As established by SWRCB Resolution No. 68-16, Regional San would complete a two-step process to comply with the policy. The first step would be to determine if the discharge (groundwater recharge with recycled water) would degrade high quality water. If there is no degradation, then the project is allowed. If there is an anticipated degradation, the discharge may be allowed if any change in water quality (1) will be consistent with maximum benefit to the people of the State, (2) will not unreasonably affect present and anticipated beneficial use of such water, and (3) will not result in water quality less than that prescribed in state policies (e.g. water quality objectives in Water Quality Control Plans). The second step of the anti-degradation analysis would be to document any activities that result in discharges to such high quality waters and demonstrate that these discharges utilize the best practicable treatment or control of the discharge necessary to avoid a pollution or nuisance and to maintain the highest water quality consistent with the maximum benefit to the people of the State. The antidegradation analysis and groundwater evaluation would be conducted at the time the recharge element is defined, and the groundwater recharge element would only be implemented if recharge can be accomplished without substantially degrading groundwater quality.

Significance Determination after Mitigation

Less than significant for all action alternatives.

Impact HYD-2 Substantially Deplete Groundwater Supplies or Substantially Interfere with Groundwater Recharge

Alternative 1 (Medium Service Alternative) and Alternative 2 (No Reclamation Funding Alternative)

Project Elements. Construction and operation of the proposed Project would not deplete groundwater supplies as neither would involve extraction of groundwater. The existing source of water supply in the Project area is primarily groundwater pumped from private wells. Use of tertiary recycled water for agricultural irrigation in South County would offset groundwater pumping and as such reduce dependence on the Central Sacramento Groundwater Basin. Specifically, the proposed Project would provide recycled water to meet 2/3 of the maximum month demand during peak use periods and 100 percent of the demand in off-peak months (September through May), thus conserving groundwater. The proposed Project would not deplete groundwater supplies; instead, it would benefit the groundwater basin and would result in no adverse impacts related to groundwater supply depletion. Because supplying recycled water for irrigation would allow reductions in groundwater pumping, the proposed Project would result in substantial increases in groundwater storage in the Central Basin.

Results of groundwater modeling using SacIWRM show that the proposed Project would produce measureable increases in groundwater elevations in and near the Project area. After 10 years, with implementation of irrigation during the growing season, groundwater storage is expected to increase by 200,000 AF, as compared to the baseline condition without the proposed Project. Over the long term, groundwater levels in the Central Basin are projected to increase by

approximately 20 to 25 feet in the center of the proposed irrigation area, and groundwater storage would increase by 379,000 AF as shown by the lower, blue line in **Figure 3.10-5**.

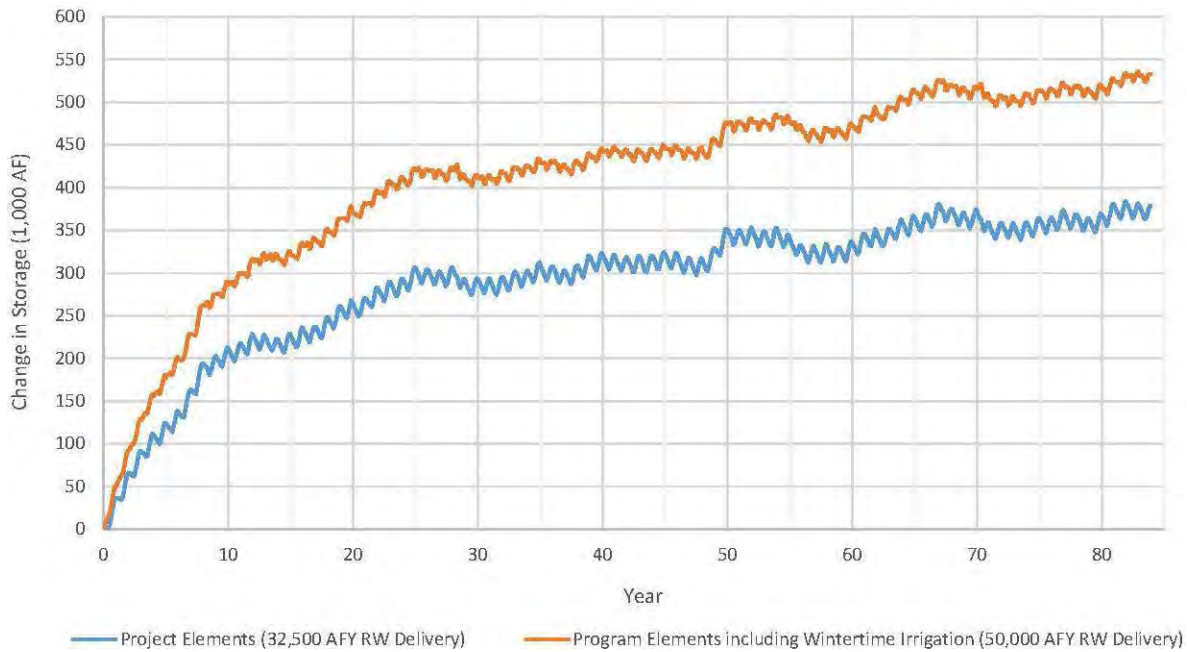


Figure 3.10-5: Increase in Groundwater Storage with Project and Program Implementation

Figure 3.10-6 shows increases in groundwater levels in the Central Basin with implementation of Project Elements. Increases depict groundwater levels at the end of the modeling simulation period when storage has approached its maximum levels.

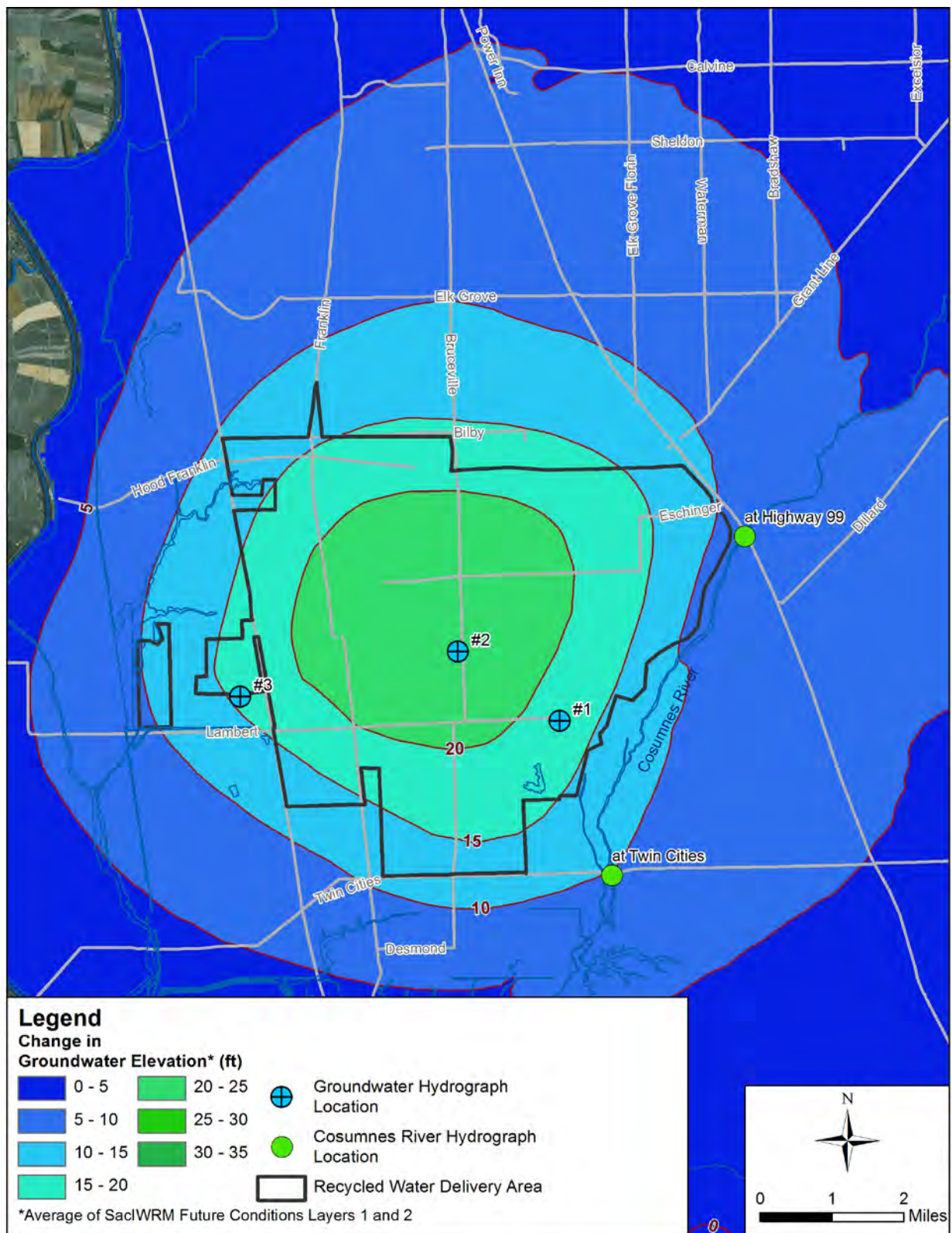


Figure 3.10-6: Changes in Groundwater Elevation due to Project Implementation, as Compared to Baseline without Project

Program Elements.

Operation of Stone Lakes Managed Wetland. The proposed Project would provide recycled water to Stone Lakes NWR, offsetting its current source of water, surface water. Therefore, this component of the Project would have no effect on groundwater supplies or recharge other than the beneficial effects on groundwater levels discussed above.

Operation of Potential Recharge Area and Wintertime Irrigation. The proposed Project would potentially include a recharge pond and implementation of wintertime irrigation, both of which would allow for the recharge of the groundwater basin (using recycled water) during certain seasons. This component would increase groundwater recharge and thus would benefit the Central Sacramento Groundwater Basin and increase Cosumnes River base flow. With full implementation of all program elements, including wintertime irrigation, groundwater storage in the Central Basin is projected to increase by 533,000 AF, as shown by the upper, orange line in **Figure 3.10-5**. The increase in storage would occur over time and the full benefits would only be realized as program elements are implemented, but if all program elements are in place within 20 years, an increase in groundwater storage of 300,000 AF or more could be realized, with gradual increases continuing as shown above. The proposed Project would provide a benefit to the groundwater basin and would result in no adverse effects related to groundwater recharge.

Operation of Diluent Wells. The diluent wells that may be required for the recharge pond, if project specific requirements that would obviate the need for diluent wells are not adopted, would not substantially deplete groundwater supplies as they would extract an amount that would then be used directly for groundwater recharge with the recycled water generated from the proposed Project. Overall impact of the program elements would be an increase in groundwater storage in the Project area, which is a beneficial impact.

Alternative 3 (Small Service Area Alternative)

Project and Program Elements. The construction and operational impacts of both Project and program components of Alternative 3 (Small Service Area Alternative) would be similar to those identified for Alternative 1 (Medium Service Area Alternative), except that the intensity of the effects would be less for construction-related effects.

Alternative 4 (No Project Alternative)

Under the No Project Alternative, no facilities would be constructed. Therefore, no impacts to groundwater recharge would occur. However, agricultural users would continue to pump groundwater to meet water supply needs, which could contribute to depleting groundwater supplies in the Central Sacramento Groundwater Basin as supplies become limited and demands grow, resulting in a potentially significant impact.

Significance Determination before Mitigation

Beneficial for all action alternatives. Potentially significant for Alternative 4 (No Project Alternative).

Impact HYD-3 Substantially Alter the Existing Drainage Pattern of the Project Area and/or Increase the Rate or Amount of Surface Runoff in a Manner which would Result in Flooding On or Off Site

Alternative 1 (Medium Service Alternative) and Alternative 2 (No Reclamation Funding Alternative)

Project Elements. The proposed Project would add very little impervious surface to the landscape as the aboveground facilities are limited to air valves along the new pipelines and the new pump station at the SRWTP. The pump station would be integrated within the EchoWater Project facilities. The above-ground facilities are too small to have any appreciable impact on surface runoff or existing drainage patterns.

The proposed Project has the potential to temporarily alter the existing drainage patterns of creeks or waterways during construction as pipeline crossings would be necessary. Pipelines would cross Franklin Creek and several unnamed drainages. However, as described in *Chapter 2, Alternatives Description and Proposed Project*, the transmission pipeline would use trenchless technology for all creek/drainage crossings (see **Table 2-3**). Therefore, construction would not alter the existing drainage pattern in the Project area. Once the pipelines are installed, there would be no potential for alteration of drainage patterns or generation of runoff. Impact of construction and operation are thus expected to be less than significant. The proposed Project would be operated in a manner to minimize off-site runoff, both because recycled water would be subject to volumetric charges, which provide incentives not to waste water, and because the Statewide Recycled Water Order, under which the project would operate, prohibits excess runoff.

Program Elements. Similar to the Project elements, the program elements do not consist of above-ground facilities, other than the diluent wells. Therefore, the amount of impervious surfaces and the amount or rate of surface runoff would not increase. Distribution mains and service collection laterals that would be constructed in future phases are also assumed to use trenchless technology for crossing of streams and drainages. Potential impacts are therefore expected to be less than significant.

Alternative 3 (Small Service Area Alternative)

Project and Program Elements. Construction- and operation-related water quality impacts from the Small Service Area Alternative (both Project and program elements) would be similar to those described for the Proposed Project. Impacts are expected to be less than significant.

Alternative 4 (No Project Alternative)

Under the No Project Alternative, no facilities would be constructed. Therefore, no impacts on drainage patterns or surface runoff would occur.

Significance Determination before Mitigation

Less than significant for all action alternatives. No impact for Alternative 4 (No Project Alternative).

Mitigation Measures

No mitigation measures are required.

Impact HYD-4 Interfere with or Require Changes to CVP or SWP Operations

Alternative 1 (Medium Service Alternative) and Alternative 2 (No Reclamation Funding Alternative)

Project Elements. The proposed Project would result in calculable reductions in flows in the Sacramento River, although decreases in flows at Freeport would almost always be less than 1 percent of the total river flow. Changes in flows were estimated using CalSim II, which was used to project changes in flows due to reduction in discharge and due to increases in groundwater –induced streamflows that would increase as a result of the Project. (Potential biological impacts associated with reductions in flows in the Sacramento River are discussed in *Section 3.5, Biological Resources.*)

Effects of the Project’s reduction in discharge vary depending on the water year type. When there are “excess” conditions, and there is sufficient flow in the Delta such that CVP and SWP reservoirs are not releasing stored water (which occurs about 70 percent of the time when considering all months and all years), Project-related reductions in discharges have minimal effect on the system. Under “balanced” conditions, when the CVP and SWP reservoirs are releasing stored water, modeling provides projections that the reduction in discharge that would occur under the proposed Project would reduce flows in the Sacramento River at Freeport. As previously noted in Section 3.5, Biological Resources, discharge reductions would result in reduced Sacramento River flows at Freeport. Reductions in discharge represent decreases in river flow of, on average: -0.4 percent in April, -1.1 percent in May, -0.9 percent in June, -0.6 percent in July, -0.8 percent in August, -0.3 percent in September, and -0.2 percent in October, considering the 82-year period of record from 1922 to 2003 at Freeport using the CalSim II model. Sacramento River flows are unchanged in February, March, and December, and are decreased by -0.5 percent in January. During balanced conditions, the model predicts that water project operations would respond to these nominal reductions in flows by making reservoir releases, resulting in no net change in Sacramento River flows below Freeport.

The potential effects would be reduced by increased streamflows to the Delta resulting from changes in the interaction of groundwater and surface water as a result of the Project. The higher groundwater levels due to in-lieu recharge result in reduced groundwater recharge from the Cosumnes River and other tributaries to the Delta. Instead of recharging groundwater, these flows remain in the river and flow to the Delta. These streamflows increase over the life of the Project, reaching their highest as the Project approaches a new balance between the groundwater and surface water systems. As shown in **Figure 3.10-5**, groundwater levels increase rapidly for the first 10 years, and continue to increase markedly until the rate of increase levels off after about 25 years. Increases in groundwater levels continue after that, but at a slower rate. The Project also results in decreased groundwater flowing into the Central Basin from surrounding basins, because of the projected increases in groundwater levels in the Central Basin. The increase in Cosumnes River and tributary streamflows and reduced groundwater inflow from surrounding areas are a beneficial effect of the Project.

Based on groundwater modeling using SacIWRM, **Figure 3.10-7** shows the relationship between reduction in groundwater pumping (shown in blue fill) and the resultant increases in groundwater in storage (blue line), decreases in water recharging the groundwater basin from streams (orange fill) and decreases in groundwater flowing into the basin from surrounding basins outside of the model area (gray fill). Long-term results are shown by the second half of the simulation, indicating that, within the model area, out of the 32,572 AFY of recycled water used for irrigation (which provides in-lieu recharge of the groundwater basin), 28,569 AFY (88%) goes to increased streamflow, resulting in a net depletion of 4,000 AFY (RMC 2015a).

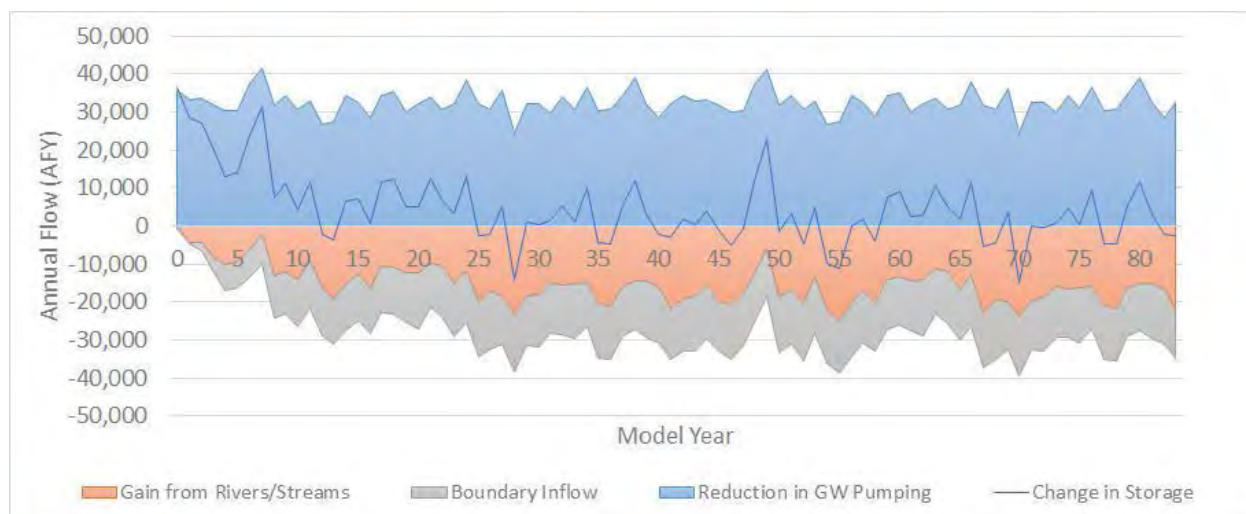


Figure 3.10-7: SacIWRM Simulated Reduction in Groundwater Pumping and Associated Benefits to Groundwater and Surface Water

Because these flows enter the system downstream of the SRWTP discharge location, there would still be lower flows in the stretch of the Sacramento River below Freeport, but the overall effect of the project on Delta outflows is substantially reduced by the groundwater-induced increased streamflows that result from the Project. Although flows increase gradually as groundwater storage increases (as shown in **Figure 3.10-5**), at the end of the simulation period the discharge reduction of 32,572 AFY is balanced by increased groundwater-induced streamflow of about 28,569 AFY. **Table 3.10-5** shows Delta outflows with and without the implementation of the project-level elements, assuming a discharge reduction of 32,572 AFY, and demonstrates the effects of both the reduction of wastewater discharge and the increase in groundwater-induced streamflows. The net effect is that there is no meaningful reduction in total Delta outflow, and long-term average Delta outflows actually increase in eight out of twelve months with Project implementation. Even during critical dry years the magnitude of changes is less than 1.5 percent, with increased flows in several months.

Table 3.10-5: Sacramento/San Joaquin River Delta Monthly Outflow by Water Year Type with Implementation of Project Elements

Analysis Period	Monthly Flow (CFS)											
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Long-term												
Full Simulation Period¹												
No Project	5,942	11,480	20,871	41,889	52,430	42,330	30,953	21,902	12,373	7,887	4,343	9,712
Proposed Project (32,572 AFY ³)	5,927	11,483	20,885	41,909	52,447	42,376	30,966	21,862	12,356	7,877	4,347	9,716
Difference	-16	3	14	20	17	46	13	-41	-18	-10	4	4
Percent Difference ⁴	-0.3%	0.0%	0.1%	0.0%	0.0%	0.1%	0.0%	-0.2%	-0.1%	-0.1%	0.1%	0.0%
Water Year Types²												
Wet (32%)												
No Project Alternative	8,383	18,345	23,677	83,496	95,664	78,692	55,826	39,956	22,378	11,198	5,102	19,532
Proposed Project (32,572 AFY)	8,372	18,341	23,691	83,509	95,693	78,735	55,847	39,905	22,331	11,189	5,085	19,556
Difference	-11	-4	14	13	29	43	21	-51	-47	-9	-17	24
Percent Difference	-0.1%	0.0%	0.1%	0.0%	0.0%	0.1%	0.0%	-0.1%	-0.2%	-0.1%	-0.3%	0.1%
Above Normal (15%)												
No Project Alternative	5,906	13,276	18,127	46,359	60,552	50,948	32,946	23,526	11,314	9,573	4,000	11,784
Proposed Project (32,572 AFY)	5,919	13,255	18,138	46,389	60,592	51,018	32,957	23,475	11,305	9,556	4,000	11,784
Difference	13	-21	11	30	40	70	11	-50	-9	-16	0	0
Percent Difference	0.2%	-0.2%	0.1%	0.1%	0.1%	0.1%	0.0%	-0.2%	-0.1%	-0.2%	0.0%	0.0%
Below Normal (17%)												
No Project Alternative	5,697	9,387	26,091	21,862	35,993	22,818	22,817	15,836	7,908	7,205	4,017	3,885
Proposed Project (32,572 AFY)	5,679	9,366	26,104	21,901	36,006	22,864	22,825	15,816	7,906	7,202	4,017	3,875
Difference	-18	-21	13	39	13	46	9	-20	-2	-3	0	-10
Percent Difference	-0.3%	-0.2%	0.1%	0.2%	0.0%	0.2%	0.0%	-0.1%	0.0%	0.0%	0.0%	-0.3%

Analysis Period	Monthly Flow (CFS)											
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Dry (22%)												
No Project Alternative	4,182	6,919	23,293	14,390	22,702	19,624	14,602	10,063	6,772	5,071	4,002	3,155
Proposed Project (32,572 AFY)	4,167	6,923	23,290	14,432	22,707	19,672	14,615	10,027	6,769	5,059	4,016	3,145
Difference	-15	4	-3	42	5	48	13	-37	-3	-13	13	-10
Percent Difference	-0.4%	0.1%	0.0%	0.3%	0.0%	0.2%	0.1%	-0.4%	0.0%	-0.2%	0.3%	-0.3%
Critical (15%)												
No Project Alternative	3,617	4,092	7,813	11,886	14,407	11,750	9,089	5,997	5,368	4,046	3,937	3,000
Proposed Project (32,572 AFY)	3,566	4,161	7,853	11,857	14,394	11,778	9,089	5,959	5,364	4,039	3,978	3,000
Difference	-51	68	40	-29	-12	28	0	-38	-3	-7	41	0
Percent Difference	-1.4%	1.7%	0.5%	-0.2%	-0.1%	0.2%	0.0%	-0.6%	-0.1%	-0.2%	1.0%	0.0%

Source: CH2MHILL 2016.

Notes:

1. Based on the 82-year simulation period
2. As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999)
3. AFY= acre-feet per year. The proposed Project was assumed to divert 32,572 AFY with implementation of all project elements
4. Relative difference of the monthly average

To determine the effects these changes would have on other facilities in the Sacramento River basin, a range of parameters were modeled and reviewed. Over the 82-year period of record from 1922 to 2003, sequential drought years during the periods 1929-1934 and 1986-1992 created circumstances in the CalSim II model simulation where the proposed Project is predicted to reduce CVP storage (Lake Shasta, Trinity Lake and Folsom Lake) by up to 45,000 AF over a worst-case 6-year drought period. Depletion levels are relative to worst-case storage levels of 1,500,000 AF in Trinity, Shasta and Folsom Lakes combined (a 3 percent reduction). If the sequential drought years occurred soon after the start of operations, the model predicts the proposed Project would reduce combined CVP storage by up to 63,000 AF over a worst-case 6-year drought period (a 4 percent reduction). This is a conservative conclusion because the use of recycled water will likely take 10 to 20 years to ramp up to use of 32,572 AFY, and initial discharge reductions would likely be substantially less than this. The following summarizes the specific changes that were observed. Results are provided for the end of the modeling simulation period, when effects of discharge reductions are reduced by the groundwater-induced increased streamflows that result from the Project. Changes at the start of operations are generally larger than at the end of the simulation period because over time the increase in groundwater levels resulting from the project increases river flows, thereby reducing the net effect of the project.

- Shasta Lake storage – reduced storage on average in Critically Dry years (D1641 40-30-30 year type); month-over-month reductions coincide with the pattern and magnitude of discharge reductions coordinated with other CVP storage (Trinity Lake and Folsom Lake). The proposed Project would reduce Shasta storage by about 35,000 AF over a worst-case 6-year drought period (as compared to a storage level of 750,000 AF without the Project); CVP storage (Shasta Trinity and Folsom Lakes combined) would be reduced by up to 45,000 AF in a worst-case 6-year drought. Without operational changes to retain storage, the majority (80 to 90 percent) of this impact would be to storage and associated cold water pool conditions at Shasta Lake
- Trinity Lake storage – reduced storage on average in Critically Dry years (D1641 40-30-30 year type); month-over-month reductions coincide with the pattern and magnitude of discharge reductions coordinated with other CVP storage (Shasta Lake and Folsom Lake)
- Sacramento River below Keswick Dam flows – some increased flow releases in Dry and Critically Dry years (D1641 40-30-30 year type) in late Spring and Summer months (increased releases to replace the flow from discharge reductions)
- Lake Oroville storage – reduced storage less than one percent; month-over-month reductions coincide with the pattern of discharge reductions
- Feather River below Thermalito Dam flows – some increased flow releases in Dry and Critically Dry years (D1641 40-30-30 year types) in summer and fall months
- Folsom Lake storage – reduced storage in Dry and Critically Dry years (D1641 40-30-30 year type); month-over-month reductions coincide with the pattern and magnitude of discharge reductions coordinated with other CVP storage (Shasta Lake and Trinity Lake)
- Delta outflow – reduced outflows generally less than one percent; some reductions in October of Critically Dry years (D1641 40-30-30 year type), as mentioned above.

- CVP and SWP contract deliveries – reduced CVP deliveries on average by 2,000 AFY in Below Normal, Dry and Critically Dry years (D1641 40-30-30 year types); reduced SWP deliveries on average by 2,000 AFY in Dry years (D1641 40-30-30 year type). Effects at the start of operations (year 0) are potentially greater with total deliveries reduced by up to 9,000 AFY. At start of operations, SWP exports would be reduced by 4,000 AFY (0.2 percent of the 2,600,000 AFY exports that would occur without the Project); CVP exports would be reduced by 5,000 AFY (0.2 percent of the 2,300,000 AFY exports that would occur without the proposed Project). The worst-case reduction would be for south-of-Delta CVP agricultural contracts, which would be reduced by 0.4 percent (a 5,000 AFY reduction from the 1,170,000 AFY deliveries without the proposed Project).

Although impacts of the discharge reduction are balanced by increases in streamflows that result from higher groundwater levels produced by the Project, there is a potential that the Project would require adjustments in CVP and SWP operations, and the potential for reduction in Shasta storage is considered to be a significant impact, because the reduction in storage, without operational adjustments, could create thermal effects in the Sacramento River downstream of CVP reservoirs. Generally, storage impacts that occur when Lake Shasta is below 2,400,000 AF in summer lead to temperature impacts downstream. Management of temperature is important for maintenance of appropriate conditions for fisheries, and Reclamation is required to manage Shasta release temperatures to not exceed 56° F at specified compliance locations that are chosen in consultation with the Sacramento River Temperature Task Group. Implementation of **Mitigation Measure HYD-4** would reduce the impact to less than significant. During a prolonged drought, Project operations could be modified to discharge more water to the Sacramento River, while irrigation demands are met through increased groundwater pumping. Additional groundwater would be available for irrigation due to the increase in groundwater storage that would be achieved through in-lieu recharge resulting from the use of recycled water.

It should be noted that CVP and SWP Delta exports, and by connection CVP and SWP upstream reservoir releases for Delta inflows to support Delta outflow requirements and Delta export objectives, are under the discretion of the operators of these two projects, who can reduce allocations to contractors. While it is observed through the model results that Regional San discharge reductions could potentially impact the CVP and SWP project operations, it is up to the operators of these two projects to control how any such impact is manifested. In any event, the predicted worst-case reduction in exports would be extremely small, and not substantial, and as such would have a less than significant impact on the water supply aspect of CVP and SWP operations.

Program Elements. Modeling and analysis for the program elements assumes the full 50,000 AFY reduction in discharge from the Project and incorporates the additional groundwater recharge that would result from wintertime irrigation. Changes described above for CVP facilities are similar, but generally somewhat larger than for the Project elements, consistent with the increased magnitude of discharge reduction. **Table 3.10-1** shows projected changes in monthly flows in the Sacramento River at Freeport when all Project and program elements are implemented, resulting in a discharge reduction of 50,000 AFY (effect on flows at Freeport is very similar for the Project elements, which would reduce discharge by 32,572 AFY). **Table**

3.10-6 shows Delta outflows with and without full implementation of all Project and program-level elements (including wintertime irrigation), assuming a discharge reduction of 50,000 AFY, and demonstrates the effects of both the reduction of wastewater discharge and the increase in groundwater-induced streamflows. The net effect is that there is no meaningful reduction in total Delta outflow, and long-term average Delta outflows actually increase in six out of twelve months with implementation of program elements. Even during critical dry years the magnitude of changes is typically less than 1.5 percent, with increased flows in several months. For the same reasons stated for the Project elements, impacts to the water supply aspect of CVP and SWP operations would not be significant.

With implementation of **Mitigation Measure HYD-4**, potential impacts to CVP storage in Shasta would be reduced to less than significant, because discharge reductions would be reduced in critical years as needed to ensure that adverse effects to the Sacramento River are avoided.

Table 3.10-6: Sacramento/San Joaquin River Delta Monthly Outflow by Water Year Type with Implementation of Program Elements

Analysis Period	Monthly Flow (CFS)											
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Long-term												
Full Simulation Period¹												
No Project	5,942	11,480	20,871	41,889	52,430	42,330	30,953	21,902	12,373	7,887	4,343	9,712
Proposed Project (50,000 AFY ³)	5,930	11,481	20,867	41,893	52,428	42,356	30,995	21,877	12,363	7,880	4,346	9,713
Difference	-12	1	-4	4	-2	26	41	-26	-10	-7	3	1
Percent Difference ⁴	-0.2%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%	-0.1%	-0.1%	-0.1%	0.1%	0.0%
Water Year Types²												
Wet (32%)												
No Project Alternative	8,383	18,345	23,677	83,496	95,664	78,692	55,826	39,956	22,378	11,198	5,102	19,532
Proposed Project (50,000 AFY)	8,379	18,338	23,674	83,497	95,676	78,714	55,882	39,934	22,349	11,191	5,089	19,545
Difference	-4	-7	-2	0.2	12	22	56	-22	-28	-7	-13	13
Percent Difference	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	-0.1%	-0.1%	-0.1%	-0.3%	0.1%
Above Normal (15%)												
No Project Alternative	5,906	13,276	18,127	46,359	60,552	50,948	32,946	23,526	11,314	9,573	4,000	11,784
Proposed Project (50,000 AFY)	5,906	13,269	18,120	46,365	60,564	50,997	32,992	23,500	11,312	9,559	4,000	11,784
Difference	0	-7	-7	6	12	49	46	-25	-2	-14	0	0
Percent Difference	0.0%	-0.1%	0.0%	0.0%	0.0%	0.1%	0.1%	-0.1%	0.0%	-0.1%	0.0%	0.0%
Below Normal (17%)												
No Project Alternative	5,697	9,387	26,091	21,862	35,993	22,818	22,817	15,836	7,908	7,205	4,017	3,885
Proposed Project (50,000 AFY)	5,686	9,372	26,089	21,878	35,993	22,842	22,856	15,801	7,909	7,200	4,017	3,878
Difference	-10	-16	-2	16	0	24	39	-35	1	-5	0	-7
Percent Difference	-0.2%	-0.2%	0.0%	0.1%	0.0%	0.1%	0.2%	-0.2%	0.0%	-0.1%	0.0%	-0.2%

EIR

Draft

Analysis Period	Monthly Flow (CFS)											
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Dry (22%)												
No Project Alternative	4,182	6,919	23,293	14,390	22,702	19,624	14,602	10,063	6,772	5,071	4,002	3,155
Proposed Project (50,000 AFY)	4,173	6,908	23,272	14,409	22,680	19,653	14,640	10,042	6,770	5,069	4,007	3,146
Difference	-9	-11	-21	20	-22	29	38	-21	-2	-3	5	-9
Percent Difference	-0.2%	-0.2%	-0.1%	0.1%	-0.1%	0.1%	0.3%	-0.2%	0.0%	-0.1%	0.1%	-0.3%
Critical (15%)												
No Project Alternative	3,617	4,092	7,813	11,886	14,407	11,750	9,089	5,997	5,368	4,046	3,937	3,000
Proposed Project (50,000 AFY)	3,567	4,157	7,832	11,857	14,385	11,761	9,103	5,968	5,365	4,038	3,978	3,000
Difference	-50	65	19	-29	-21	12	14	-29	-3	-8	42	0
Percent Difference	-1.4%	1.6%	0.2%	-0.2%	-0.1%	0.1%	0.1%	-0.5%	0.0%	-0.2%	1.1%	0.0%

Source: CH2MHILL 2016.

Notes:

1. Based on the 82-year simulation period
2. As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999)
3. AFY= acre-feet per year. The proposed Project was assumed to divert 50,000 AFY at ultimate implementation of all program elements, including wintertime irrigation
4. Relative difference of the monthly average

Alternative 3 (Small Service Area Alternative)

Project and Program Elements. Construction- and operation-related Sacramento River flow impacts from the Small Service Area Alternative (both Project and program elements) could be similar to those described for the Proposed Project. As such, implementation of **Mitigation Measure HYD-4** would result in less than significant impacts. However, due to the smaller scale of discharge reductions under this Project alternative, more detailed analysis and modeling of this scenario may reveal less than significant impacts to Sacramento River flows. If such results are determined, **Mitigation Measure HYD-4** would not be necessary.

No Project Alternative

Under the No Project Alternative, no facilities would be constructed and discharges from SWRCB to the Sacramento River would continue to occur, although the water would be treated to tertiary treatment levels. Therefore, no impacts on reduction in flows would occur.

Significance Determination before Mitigation

Potentially significant for all action alternatives. No Impact for Alternative 4 (No Project Alternative).

Mitigation Measure

Mitigation Measure HYD-4: Coordinate Operations with Relevant Resource Agencies (All Action Alternatives).

To minimize potential thermal impacts to the Sacramento River downstream of Lake Shasta during critically dry years due to losses of cold water storage from reduced treated wastewater discharges, Regional San shall work with the Bureau of Reclamation and other relevant resource agencies to make appropriate operational changes in recycled water use and timing of discharge reductions in the spring months when the cold water pool in Shasta is critical. In critically dry years when storage in Lake Shasta falls below 2,400,000 AF in April, Regional San will coordinate with Central Valley Operations staff to reduce deliveries of recycled water to farmers in April and May if needed to avoid thermal impacts to the Sacramento River below Lake Shasta, as determined by the Sacramento River Temperature Model being utilized by Reclamation in the given year.

Significance Determination after Mitigation

Less than significant for all action alternatives.

Cumulative Impacts

The geographic scope for construction impacts is limited to the area in which the pump station and pipelines would be constructed. Other projects that would be constructed within the SRWTP and vicinity would all be required to comply with the Construction General Permit and to implement erosion control BMPs during construction. Cumulative construction-period water quality impacts are thus expected to be less than significant.

The geographic scope of potential operational impacts extends to the entire Sacramento River watershed. Evaluation of Project impacts used the SWP and CVP hydrology and system operations model, CalSim II, which was developed to simulate and evaluate changes to the complex water resources system of California under alternative conditions. The model simulates operations of the SWP, CVP, and other water districts/facilities in the Central Valley and

EIR

Draft

approximates changes in storage reservoirs, river flows, and exports from the Delta that would result from a change in hydrologic conditions, water supply demands, facilities, requirements or operational policies. Modeling of Project impacts was done in the context of ongoing operations of other projects that divert water from the system, and thus considers cumulative effects. Because the CalSim II model would not have considered effects of other recycled water projects that might reduce discharges to the Sacramento River system, the evaluation of impacts has also considered reasonably foreseeable future discharge reductions as reflected in the State Water Resources Control Board web page that provides notices of Wastewater Change Petitions (SWRCB 2015). The communities of Colusa, Woodland and Biggs are all proposing recycled water projects that would reduce discharges in the Sacramento River watershed (see **Table 3.0-1** in *Section 3.0*). Total discharge reduction would be 1.86 cfs, which would be in addition to the maximum 108 cfs reduction associated with the proposed Project during peak periods at full implementation. The additional discharge reductions are minimal as compared to the flows in the Sacramento River at Freeport, where average flows range from about 19,000 to 14,000 cfs during the May to August time period when the demand for recycled water is highest and flows in the river are lowest.

Cumulative Effects of California WaterFix

Sacramento River flows could also be affected if the California WaterFix is implemented. The California Department of Water Resources and Bureau of Reclamation are currently considering a project to provide more reliable delivery of water exports from the Delta through the State Water Project and the Central Valley Project. Originally developed as the Bay Delta Conservation Plan (BDCP), Alternative 4A, California WaterFix, has been identified as the preferred alternative, but environmental documentation for this option has not been completed, and a final decision regarding project implementation has not been made. Timing for implementation, if approved, is thus uncertain.

Evaluation of effects of the proposed Project depends on the timing of balanced and excess conditions, which dictates whether CVP and SWP reservoirs release stored water. These conditions would be expected to change under the California WaterFix, which could result in the following conditions:

- Export operations would be more dependent on excess flow conditions and conveyance of these excess flow through the North Delta Diversion intake
- Frequency of balanced conditions would likely increase in the Spring due to higher outflow requirements and upstream releases required to meet those requirements
- Ability to operationally respond and recover from a storage deficit (regardless of cause) would likely decrease with the increase in balanced conditions frequency

CalSim II modeling has shown that the Project's individual effects on CVP and SWP operations would be minimal, because reductions in discharge are almost entirely offset by increases in surface water flows due to higher groundwater conditions, which would benefit the Delta as a whole. The Cal WaterFix Alternative 4A could exacerbate potential Shasta storage impacts of the proposed Project. However, since the Project's impacts to storage can be fully mitigated, the Project would not contribute considerably to a cumulative impact to storage. Modeling has projected that CVP and SWP water service contractor deliveries would be reduced by 5,000 AFY at ultimate program implementation (a reduction of 4,000 AFY for Delta exports and a

EIR

Draft

reduction of 1,000 AFY for deliveries to water users upstream of the discharge location on the Sacramento River). Reclamation staff have expressed concern about the effect of any Project-related reductions in deliveries in light of the curtailment of deliveries to contractors during recent drought conditions. However, the Project's contribution to the cumulative impact to CVP/SWP water supply deliveries is not considered to be cumulatively considerable. Year to year changes in hydrology affect export allocations on the order of millions of AFY (allocations can vary from 100 percent to 0 percent of contracted amounts in the worst case), and the minor changes associated with the project (a reduction of 0.2 percent) are not expected to result in a cumulative considerable change in deliveries to CVP or SWP contractors.

With implementation of **Mitigation Measure HYD-4**, the cumulative impacts of the discharge reduction are expected to be less than significant).

Significance Determination before Mitigation

Potentially significant.

Mitigation Measure

See **Mitigation Measure HYD-4**.

Significance Determination after Mitigation

Less than significant.

3.10.4 References

Ascent Environmental. 2014. *Final Environmental Impact Report for the Sacramento Regional County Sanitation District EchoWater Project*. September 12, 2014.

Brown and Caldwell. 2013. *Advanced Treatment Technology Pilot Project Report*.

California Department of Water Resources (DWR). 2012. *Central Valley Flood Protection Plan*. June 2012.

Central Valley Regional Water Quality Control Board (CVRWQCB). 2011. *The Water Quality Control Plan (Basin Plan) for the California Regional Water Quality Control Board, Central Valley Region, Fourth Edition, the Sacramento River Basin and the San Joaquin River Basin*. Revised October 2011.

Central Valley Salinity Coalition (CVSC) and CV-SALTS. 2015. Central Valley Salinity Alternatives for Long-Term Sustainability (CV-SALTS) webpage. Available at: <http://cvsalinity.org/>. Accessed March 11, 2015.

CH2M Hill. 2016. *Regional San South Sacramento County Agriculture and Habitat Lands Recycled Water Program – CalSim-II Modeling and Results*. June 2016

Elk Grove, City of. 2015. *The City of Elk Grove General Plan*. Reflects Amendments through March 2015.

- Kleinschmidt Associates. 2008. *Cosumnes River Preserve Management Plan*. March 2008.
- Water Forum and SCWA. 2006. *Central Sacramento County Groundwater Management Plan*. February 2006.
- Reclamation. 2008. *Central Valley Project and State Water Project Operations Criteria and Plan Biological Assessment, Appendix D CALSIM-II Model*. May 2008. Available at: http://www.usbr.gov/mp/cvo/OCAP/sep08_docs/Appendix_D.pdf.
- Regional San. 2015. *Sacramento Regional Wastewater Treatment Plant's Submittal of the Annual Water Supply Characterization Report for 2013*.
- RMC Water and Environment (RMC). 2016. *Technical Memorandum, Integrated Groundwater and Surface Water Modeling for the South County Ag Program*.
- _____. 2015a. *Technical Memorandum, Mitigating Impacts of Groundwater/Surface Water Interaction on CALSIM Modeling Performed for the South County Ag Program*.
- _____. 2015b. *Sacramento Regional County Sanitation District South County Recycled Water Feasibility Study*. January 2015.
- _____. 2014. *SCGA Basin Management Report, 2011-2012*. August 2014.
- Sacramento County. 2011. *Sacramento County General Plan of 2005-2030*. Amended November 9, 2011.
- State Water Resources Control Board (SWRCB). 2010. *2010 Integrated Report (Clean Water Act Section 303(d) List/305(b) Report) – Statewide*. Available at: http://www.waterboards.ca.gov/water_issues/programs/tmdl/integrated2010.shtml?wbid=CAR5440000020021002100850. Accessed April 9, 2015.
- _____. 2014. *General Order for Recycled Water Use Fact Sheet*. Available at: http://www.waterboards.ca.gov/water_issues/programs/land_disposal/docs/wd/042914fs_recwtr_genodr.pdf. Accessed April 9, 2015.
- _____. 2015. *Notices of Petitions 2015*. Available at: (http://www.waterboards.ca.gov/waterrights/water_issues/programs/applications/petitions/2015.shtml). Accessed December 7, 2015.
- United States Environmental Protection Agency (USEPA), 2001. *Ambient Water Quality Criteria Recommendations – Information Supporting the development of State and Tribal Nutrient Criteria. River and Streams in Nutrient Ecoregion I*. EPA 922-B-01-012. December 2001.

This page intentionally left blank

3.11 Indian Trust Assets

This section presents the physical and regulatory setting related to Indian Trust Assets (ITAs) in the vicinity of the proposed Project. The impact analysis considers whether the proposed Project would have potential impacts to ITAs.

3.11.1 Environmental Setting

The study area for the analysis is Sacramento County. An examination of records held by the Bureau of Indian Affairs and Reclamation was conducted by the Regional ITA Coordinator with a search radius of 15 miles from the proposed Project area. This search determined that the nearest ITA is the Wilton Rancheria approximately 10 miles northeast of the project area. No reservations or rancherias are located within the boundaries of the proposed Project area (Stevenson 2015) because the nearest ITA is 10 miles away and is thus outside the Project area. There are thus no ITAs in the study area.

3.11.2 Regulatory Framework

This section describes laws and regulations that may apply to the proposed project.

Federal Policies and Regulations

ITAs are legal interests in property held in trust by the United States (U.S.) for federally-recognized Indian tribes or individuals. An Indian trust has three components: (1) the trustee, (2) the beneficiary, and (3) the trust asset. ITAs can include land, minerals, federally-reserved hunting and fishing rights, federally-reserved water rights, and in-stream flows associated with trust land. Beneficiaries of the Indian trust relationship are federally-recognized Indian tribes with trust land of which the U.S. is the trustee. By definition, ITAs cannot be sold, leased, or otherwise encumbered without approval of the U.S. The characterization and application of the U.S. trust relationship has been defined by case law that interprets Congressional acts, executive orders, and historic treaty provisions. In some cases, ITAs may be located off trust land.

It is the general policy of Reclamation to perform its activities and programs in such a way as to protect ITAs and avoid adverse effects whenever possible (Reclamation 2000). Reclamation shares with all other agencies of the Executive Branch the responsibility to protect and maintain Indian Trust assets reserved by or granted to Indian tribes, or Indian individuals by treaty, statute, or Executive Order.

3.11.3 Impact Analysis

Potential impacts on Indian Trust Assets are analyzed based on the potential for the proposed Project to affect such assets.

Thresholds of Significance

CEQA does not require the evaluation of ITAs. NEPA requires the evaluation of project effects on ITAs. An impact to Indian Trust Assets would be considered significant if the proposed Project would:

- Adversely affect (modify or alter) an Indian Trust Asset.

Criterion Requiring No Further Evaluation

The criterion listed above that is not applicable to actions associated with the proposed Project is identified below along with a supporting rationale as to why further consideration is unnecessary and a no-impact determination is appropriate.

- *Affect Indian Trust Assets* – The proposed Project does not have a potential to affect Indian Trust Assets. The nearest Indian Trust Asset is the Wilton Rancheria, approximately 10 miles northeast of the project area.

The action alternatives are not anticipated to have impacts on ITAs as a result of the proposed Project (Stevenson 2015).

3.11.4 References

Stevenson, Richard. Native American Affairs Program Manager, Bureau of Reclamation. 2015. Department of the Interior. Email communication regarding the South County Ag Water Recycling Program Activity. July 31.

U.S. Department of the Interior Bureau of Reclamation (Reclamation). 2000. *Principles for the Discharge of the Secretary's Trust Responsibility Order No. 3215*. April 28. Available at: <http://www.usbr.gov/native/naao/policies/3215.html>. Accessed August 27, 2015.

3.12 Noise

This section describes the existing noise environment in the Project area, provides the relevant regulatory framework, and evaluates potential impacts related to noise from implementation of the proposed Project.

3.12.1 Environmental Setting

Project Area

For the purposes of this section, the Project area is the area surrounding the construction work areas required for the transmission pipeline installation and the area near the pump station at the SRWTP.

Noise Fundamentals

Sound Properties and the Human Ear

Noise is generally defined as sound that is loud, disagreeable, unexpected, or unwanted. Sound, as described in more detail below, is mechanical energy resulting from a disturbance or vibration transmitted in the form of a wave.

A sound wave is introduced into a medium (air) by a vibrating object. The particles of the medium through which the sound moves vibrate back-and-forth at a given frequency or pitch. The frequency of a wave refers to how often the particles vibrate when a wave passes through the medium. If a particle of air undergoes 300 longitudinal vibrations in one second, then the frequency of the wave would be 300 vibrations per second. Commonly, frequency is measured in hertz (Hz) which is defined as one cycle per second. The audible sound spectrum consists of a range of frequency spanning 20 to 20,000 Hz. The sound pressure level, therefore, constitutes the additive force exerted by a sound corresponding to the sound frequency/sound power level spectrum.

Due to the ability of the human ear to detect a wide range of sound pressure fluctuations, sound pressure levels are expressed in logarithmic units called decibels (dB), with zero dB corresponding roughly to the threshold of human hearing and 120 to 140 dB corresponding to the threshold of pain. Sound pressure (in dB) is calculated by taking the log of the ratio between the actual sound pressure and the reference sound pressure squared. The reference sound pressure is considered the absolute hearing threshold (Caltrans 1998). Since the human ear is not equally sensitive to all sound frequencies of the audible sound spectrum (20 to 20,000 Hz), a frequency-dependent rating scale called the A-weighted dB (dBA) scale was devised to relate noise to human sensitivity. The A-weighted scale is used by most authorities to regulate environmental noise. Some representative noise sources and their corresponding dBA levels are shown in **Table 3.12-1**. All of the noise levels reported herein are A-weighted unless otherwise stated.

Table 3.12-1: Typical A-Weighted Sound Levels

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
	— 110 —	Rock band
Jet fly-over at 1,000 feet	— 100 —	
Gas lawn mower at 3 feet	— 90 —	
Diesel truck at 50 feet at 50 mph	— 80 —	Food blender at 3 feet Garbage disposal at 3 feet
Noisy urban area, daytime Gas lawn mower, 100 feet	— 70 —	Vacuum cleaner at 10 feet Normal speech at 3 feet
Commercial area Heavy traffic at 300 feet	— 60 —	
Quiet urban daytime	— 50 —	Large business office Dishwasher next room
Quiet urban nighttime	— 40 —	Theater, large conference room (background)
Quiet suburban nighttime	— 30 —	Library Bedroom at night, concert
Quiet rural nighttime	— 20 —	
	— 10 —	Broadcast/recording studio
Lowest threshold of human hearing	— 0 —	Lowest threshold of human hearing

Source: Caltrans 1998

Characteristics of Noise

With respect to how humans perceive and react to changes in noise levels, a 1 dBA increase is imperceptible, a 3 dBA increase is barely perceptible, a 6 dBA increase is clearly noticeable, and a 10 dBA increase is subjectively perceived as approximately twice as loud (Caltrans 1988).

As sound propagates from the source to the receptor, attenuation (i.e., noise reduction in relation to distance) depends on factors such as the inverse square law, surface characteristics, atmospheric conditions, and the presence of physical barriers. The inverse square law describes the attenuation due to the pattern in which sound travels uniformly outward from a point source in a spherical pattern with an attenuation rate of approximately 50 percent (6 dBA) per doubling of distance. From a line source (e.g., a road), sound travels uniformly outward in a cylindrical pattern, with an attenuation rate of 3 dBA per doubling of distance. Surface characteristics between the source and receptor can result in additional sound absorption and/or reflection. Atmospheric conditions, including wind speed, temperature, and humidity, may also affect noise levels. Lastly, the presence of a barrier, either natural or manmade (e.g., a hill, tree, or building), between the source and the receptor may attenuate noise levels.

Noise Descriptors

The selection of a proper noise descriptor for a specific source is dependent upon the spatial and temporal distribution, duration, and fluctuation of the noise. The noise descriptors most often encountered when dealing with traffic, community, and environmental noise are defined below.

- L_{max} (Maximum Noise Level): The maximum instantaneous noise level during a specific period of time, sometimes referred to as the peak (noise) level.
- L_{min} (Minimum Noise Level): The minimum instantaneous noise level during a specific period of time.
- L_x (Statistical Descriptor): The noise level exceeded X percent of a specific period of time.
- L_{eq} (Equivalent Noise Level): Used to describe noise over a specified period of time, typically one hour, in terms of a single numerical value. The L_{eq} is the constant sound level that would contain the same acoustic energy as the varying sound level, during the same time period (i.e., the average noise exposure level for the given time period).
- L_{dn} (Day-Night Noise Level): The 24-hour L_{eq} with a 10-dBA “penalty” for the noise-sensitive hours between 10:00 p.m. and 6:00 a.m. The L_{dn} accounts for the fact that noise during this period of time is a potential source of sleep disturbance.
- CNEL (Community Noise Equivalent Level): The CNEL is similar to the L_{dn} described above, but with an additional 5 dBA “penalty” for the noise-sensitive hours between 7:00 p.m. to 10:00 p.m., which are typically reserved for relaxation, conversation, reading, and television. If using the same 24-hour noise data, the CNEL is typically about 0.5 dBA higher than the L_{dn} .
- SEL (Single-Event [Impulsive] Noise Level): The SEL describes a receiver’s cumulative noise exposure from a single impulsive noise event, which is defined as an acoustical event of short duration and involves a change in sound pressure above some reference value (approximately 40 dB).

Negative Effects of Noise

Exposure to noise can result in physical damage to the auditory system, which can result in gradual or traumatic hearing loss. In addition, noise can interfere with or interrupt sleep, relaxation, recreation, and communication. Noise can also contribute to diseases associated with stress, such as hypertension, anxiety, and heart disease. The degree to which noise contributes to these negative effects depends on the noise frequency, band width, level, and exposure time (Caltrans 1998). More commonly, noise is characterized as a health problem in terms of inhibiting general well-being and contributing to undue stress and annoyance, rather than in terms of actual physiological damages such as hearing impairment (Sacramento County 2011).

Vibration

Groundborne vibration consists of rapidly fluctuating motions or waves, also measured in decibels. Construction activities and street traffic are some of the most common external sources of vibration that can be perceptible inside nearby residences. As groundborne vibrations travel outward from the source, they excite the particles of rock and soil through which they pass and cause them to oscillate by a few ten-thousandths to a few thousandths of an inch. The frequency of a vibrating object describes how rapidly it is oscillating, measured in Hz. Most environmental vibrations consist of a composite, or “spectrum” of many frequencies. The normal frequency range of most groundborne vibrations that can be felt generally starts from a low frequency of less than 1 Hz to a high of about 200 Hz. Vibration information for this analysis has been described in terms of the peak particle velocity (PPV), measured in inches per second, or vibration level measured with respect to Root Mean Square (RMS) vibration velocity in decibels

(VdB), with a reference quantity of 1 micro inch per second. Subsurface geologic conditions and distances from the source to the receptor result in different vibration levels characterized by different frequencies and intensities. Vibration amplitudes decrease as the distance from the source increases. High frequency vibrations attenuate faster than low frequencies, resulting in low frequencies dominating the spectrum at large distances from the source.

Groundborne vibration generally is limited to areas within a few hundred feet of certain types of industrial operations and construction/demolition activities, such as pile driving. Road vehicles rarely create enough groundborne vibration amplitude to be perceptible to humans unless the receiver is in immediate proximity to the source or the road surface is poorly maintained and has potholes or bumps. Human response to vibration is difficult to quantify. Typically, as duration and frequency increase, the potential for adverse human response increases. While people have varying sensitivities to vibrations at different frequencies, in general they are more sensitive to low-frequency vibrations.

Noise Setting

Existing Sources of Noise

Noise in the Project area is primarily from local vehicular and truck traffic. Other less prevalent noise sources in the Project area are associated with local agricultural activities, landscape activities, and regional roadway traffic. Additionally, railroad noise affects many residential areas in the City of Elk Grove (City of Elk Grove 2015). A railroad goes through the City of Elk Grove and traverses the recycled water service area of the proposed Project, somewhat parallel to Franklin Boulevard.

Ambient noise levels in the Project area are shown in **Table 3.12-2**, and are based on available data from the Regional San EchoWater Project and General Plan background report prepared for the City of Elk Grove. Noise measurements conducted as part of the EchoWater project (which encompasses the proposed pump station area of the project) showed the ambient noise levels at the SWRTP at 59 dBA L_{eq}/L_{dn} at the center of the SWRTP site, and 51 dBA at the eastern border of the site (Ascent 2014).

Roadway traffic noise levels using the Federal Highway Administration (FHWA) Traffic Noise Prediction Model (preferred method of FHWA, Caltrans, and most county and city governments) showed the noise levels 100 feet from centerline of Franklin Boulevard for the City of Elk Grove General Plan Background Report. The proposed transmission pipeline would be located along Franklin Boulevard between Dwight Road and Core Road. Based on the modeled traffic noise data, noise levels along Franklin Road between Calvine Road and Hood Franklin Road would range between 54.4 to 65.2 dBA L_{eq}/L_{dn} (City of Elk Grove 2003). The area south of Hood Franklin Road is agricultural and rural in nature. Although the proposed transmission pipeline would extend south along Bruceville Road (east of, and parallel to Franklin Boulevard), the noise modeling conducted for Franklin Boulevard south of Hood Franklin Road is representative of the noise environment in this area.

Overall, much of the Project area is agricultural land, which may have rural residential areas. As noted in the Sacramento County General Plan, because rural residential areas may experience

very low noise levels, residents may express concern about the loss of “peace and quiet” resulting from the introduction of a sound not previously audible.

Table 3.12-2: Existing Noise Levels

Location or Roadway	Roadway Segment	Existing CNEL at 100 feet from Roadway Centerline	L _{dn} at Source (dBA)
SWRTP (on east border of site) ¹	N/A	N/A	51
SWRTP (center of site) ¹	N/A	N/A	59
Franklin Boulevard ²	Calvine Road to Laguna Boulevard	65.2	N/A
Franklin Boulevard ²	Laguna Boulevard to Elk Grove Boulevard	62.3	N/A
Franklin Boulevard ²	Elk Grove Boulevard to Hood Franklin Road	54.4	N/A
Franklin Boulevard ²	Hood Franklin Road to South of Hood Franklin	50.6	N/A

Sources:

1. Ascent 2014
2. City of Elk Grove 2003

Sensitive Receptors

Noise-sensitive land uses generally include those in which exposure to noise would result in adverse effects, as well as where quiet is an essential element of their intended purpose. Residential dwellings are of primary concern because of the potential for increased and prolonged exposure of individuals to both interior and exterior noise levels. Other noise sensitive land uses are those that include care facilities, schools, churches, transient lodging, hospitals, health care facilities, libraries, museums, cultural facilities, and passive recreational sites. Construction and operation of the proposed Project would occur within 50 feet of multiple sensitive receptors. Sensitive receptors in the vicinity of the proposed transmission pipeline alignment include residences along Franklin Boulevard, generally within the City of Elk Grove. Potential sensitive receptors are distributed throughout the Project area. As described in *Chapter 3.2, Land Use and Agriculture*, there are no hospitals or schools located in the immediate vicinity of the Project area.

3.12.2 Regulatory Framework

Federal Policies and Regulations

The federal Noise Control Act of 1972 (Public Law 92-574) directed EPA to promote an environment that reduces noise pollution to protect health and welfare.

The Federal Transit Administration (FTA) has identified vibration criteria/guidelines/recommendations for ground-borne vibration based on the building types that neighbor roadway/transit corridors. Based on the FTA’s document *Transit Noise and Vibration Impacts Assessments* (FTA 2006), construction-period vibration levels of 0.2 in/sec peak particle velocity (PPV) should be considered as the damage threshold criterion for “non-engineered timber and masonry buildings” and 0.12 in/sec PPV for “buildings extremely susceptible to vibration damage”. These vibration threshold criteria are stated in PPV, which is most applicable to construction-related vibration sources (i.e., machinery and equipment).

State Policies and Regulations

The State of California has adopted noise compatibility guidelines for general land use planning. The level of acceptability of the noise environment is dependent upon the activity associated with the particular land use. As described by the State of California in their land use compatibility guidelines for a community noise environment, an exterior noise environment up to 60 dBA CNEL and 65 dBA CNEL is normally acceptable for single-family and multi-family residential, respectively, without special noise insulation requirements. A noise environment up to 70 dBA CNEL is considered “conditionally acceptable” for single-family and multi-family residential uses, while 75 dBA CNEL is identified as a “clearly unacceptable” noise level for all residential uses (State of California, 1998).

The State has synthesized vibration criteria and standards that have been developed over the years by researchers, organizations, and governmental agencies to provide guidelines for threshold criteria for vibration damage. Based on Caltrans’ *Transportation and Construction Vibration Guidance Manual* (September 2013), the vibration damage potential threshold criterion for “fragile buildings” is 0.2 in/sec for transient sources and 0.1 in/sec PPV for continuous sources¹. The vibration damage potential threshold criterion for older residential structures is 0.5 in/sec PPV for transient sources and 0.3 in/sec PPV for continuous sources.

Local Policies and Regulations

Local regulation of noise involves implementation of General Plan policies and Noise Ordinance standards included in municipal codes. Local General Plans provide a basis for comprehensive local policies to control and abate environmental noise and protect citizens from excessive noise exposure, and Noise Ordinances set forth the specific standards and procedures for addressing particular noise sources and activities.

Noise regulations and standards that apply to the land uses within the unincorporated portions of Sacramento County and within the Elk Grove city limits are provided below.

Sacramento County General Plan

Noise Element

The Sacramento County General Plan Noise Element (Sacramento County 2011) includes the following goals, objectives, and policies relevant to the proposed Project:

- **GOAL 1:** To protect the existing and future citizens of Sacramento County from the harmful effects of exposure to excessive noise. More specifically, to protect existing noise-sensitive land uses from new uses that would generate noise levels which are incompatible with those uses, and to discourage new noise-sensitive land uses from being developed near sources of high noise levels.

¹ Transient sources create a single isolated vibration event, such as 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.

- Policy NO-8: Noise associated with construction activities shall adhere to the County Code requirements. Specifically, Section 6.68.090(e) addresses construction noise within the County.
- Policy NO-12: All noise analyses prepared to determine compliance with the noise level standards contained within the Noise Element shall be prepared in accordance with Table 3 (of the Noise Element).
- Policy NO-13: Where noise mitigation measures are required to satisfy the noise level standards of the Noise Element, emphasis shall be placed on the use of setbacks and site design to the extent feasible, prior to consideration of the use of noise barriers.

In addition, the Noise Element includes Table 2: Non-Transportation Noise Standards, which summarizes the maximum noise levels for a variety of land uses (e.g. residential, hospitals, office buildings). However, there is no land use that correlates to the SRWTP, which is classified as public/quasi-public land use and zoned as AG-80, permanent agricultural extensive land use zone (Sacramento County 2015). Because the SRWTP, which is the location for the proposed pump station, includes existing wastewater treatment facilities it is considered an industrial use. The maximum daytime, outdoor area noise standard is 80 dB for Industry. The table notes that outdoor activity areas in industrial zones are not typically used at night and therefore does not have a nighttime maximum noise standard (Sacramento County 2011).

City of Elk Grove General Plan

Guiding and Focused Goals

The following guiding and focused goals from the City of Elk Grove General Plan are relevant to the proposed Project (City of Elk Grove 2015):

- Guiding Goal 1: A High Quality of Life for All Residents
 - Focused Goal 1-1: A safe community, free from manmade and natural hazards.

Noise Element

The following goals and policies from the Noise Element of the City of Elk Grove General Plan (City of Elk Grove 2015) are relevant to noise and the proposed Project:

- Policy NO-3: Noise created by new proposed non-transportation noise sources shall be mitigated so as not to exceed the noise level standards of Table NO-A as measured immediately within the property line of lands designated for noise-sensitive uses.
 - NO-3-Action 1: Limit construction activity to the hours of 7 a.m. and 7 p.m. whenever such activity is adjacent to residential uses.
 - NO-3-Action 3: The City shall require that stationary construction equipment and construction staging areas be set back from existing noise-sensitive land uses.

Table 3.12-3: Noise Level Performance Standards for New Projects Affected by or Including Non-Transportation Noise Sources¹

Noise Source	Hourly L _{eq} , from 7 a.m. to 10 p.m. (dB)	Hourly L _{eq} from 10 p.m. to 7 a.m. (dB)
Typical Stationary Noise Sources ²	55	45
Stationary Noise Sources which are Tonal, Impulsive, Repetitive, or Consist Primarily of Speech or Music ³	50	40

Source: Adapted from Table NO-A from the Noise Element of the Elk Grove General Plan (City of Elk Grove 2015).

- Types of uses which may typically produce noise sources addressed in the table include, but are not limited to: industrial facilities including pump stations, trucking operations, public works projects, sand and gravel operations, and athletic fields.
- Typical noise sources in this category would include HVAC systems, cooling towers, fans, blowers, etc.
- This category includes noises which are tonal in nature, impulsive or repetitive, or which consist primarily of speech or music including pile drivers, punch presses, steam valves, and transformer stations.

Sacramento County Noise Ordinance

The Sacramento County Noise Ordinance (Title 6 Chapter 6.68 Noise Control) established exterior noise standards for operation shown in **Table 3.12-3** (Sacramento County 2014). The only above ground project facility included in the proposed Project that would generate noise, the proposed pump station, would be located at the SRWTP which is zoned as AG-80 (Sacramento County 2015). As shown in footnote 2 below the table, AG-80 is not within the zoning areas specified and therefore these exterior noise level standards are not applicable to the proposed Project.

Table 3.12-4: Exterior Noise Level Standards¹

Time Period	Exterior Noise Standard
7 a.m. to 10 p.m. ²	55 dBA
10 p.m. to 7 a.m.	50 dBA

Source: Sacramento County Code, Section 6.68.070 (Sacramento County 2014).

- Applies to Noise Area 1, County Zoning Districts RE-1, RD-1, RE-2, RD-2, RE-3, RD-3, RD-4, R-1-A-, RD-5, R-2, RD-10, R-2A, RD-20, R-3, R-D-30, RD-40, RM-1, RM-2, A-1-B, AR-1, A-2, AR-2, A-5, AR-5.
- Noise sources associated with construction are exempt from these standards if the activities do not take place during nighttime hours (between 8 p.m. and 6 a.m. on weekdays, Fridays and Saturdays after 8 p.m. through and including 7 a.m. the next day, or on Sunday nights after 8 p.m.).

However, it is important to note that noise sources associated with construction are exempt from these exterior noise standards if the activities do not take place during nighttime hours (between 8 p.m. and 6 a.m. on weekdays, Fridays and Saturdays after 8 p.m. through and including 7 a.m. the next day, or on Sunday nights after 8 p.m.). In other words, these noise standards only apply to construction during nighttime hours. Construction can be allowed during nighttime hours when an unforeseen or unavoidable condition occurs necessitating such work (Sacramento County 2014).

City of Elk Grove Municipal Code

Chapter 6.32, Noise Control of the City of Elk Grove municipal code also established exterior noise standards. The standards apply to agricultural and residential zoning districts in the City. Between the hours of 7 a.m. and 10 p.m., there is an exterior noise standard of 55 dBA and from 10 p.m. to 7 a.m., the noise standard is 45 dBA. The City uses the same exemptions as Sacramento County, including noise sources associated with construction if the activities do not take place during nighttime or weekend hours (i.e. these standards only apply to construction during nighttime hours). Construction noise from operating tools or equipment on private property between the hours of 7 p.m. and 7 a.m., so that the sound creates a noise disturbance across a residential property line, is prohibited (City of Elk Grove 2014).

3.12.3 Impact Analysis

Methodology for Analysis

Noise

This section evaluates whether construction and operation of the proposed Project and alternatives would result in significant impacts related to noise. This analysis assumes typical construction equipment noise levels to estimate corresponding noise levels at sensitive receptor locations and determines project significance based on local noise regulations and the CEQA Guidelines.

The introduction of virtually any change in local activities can result in an increase in noise levels. Audibility of a new noise source and/or increases in noise levels within recognized acceptable limits are not considered to be significant impacts (Sacramento County 2011).

Construction of the project components would include the use of a variety of heavy equipment and other machinery. Project-generated construction source noise levels were determined based on methodologies, reference emission levels, and usage factors from FTA's Transit Noise and Vibration Impact Assessment (FTA 2006). Reference levels are noise and vibration emissions for specific equipment or activity types that are well documented and the usage thereof common practice in the field of acoustics. For purposes of the construction noise analysis, it is assumed that the pump station and transmission pipeline construction activities would include the operation of an excavator, front end loader, and movable crane at the same time. Repaving roadways would include the operation of a roller and paver at the same time.

Using these assumptions, the noise levels at specific distances from the combined use of construction equipment can be obtained using the equations provided in the FTA guidance (FTA 2006). The estimated noise levels are compared to the noise emission limits established by Sacramento County and the City of Elk Grove. While the calculations apply to construction equipment, truck traffic to and from the construction sites could also create additional noise for residences and commercial establishments located along haul routes.

Vibration

Construction activity associated with the operation of heavy equipment may generate localized groundborne vibration and noise. However, vibration from ground-disturbing construction

activity is typically below the threshold of perception when the activity is more than 50 feet from the receiver. Based on methods and equations described by FTA (FTA 2006), the vibration levels in terms of PPV at specific distances can be obtained. Caltrans's recommended threshold of 0.2 in/sec PPV for structural damage is used in the analysis for vibration impacts.

Thresholds of Significance

Consistent with the Sacramento County Initial Study and Appendix G of the CEQA Guidelines an impact on noise would be considered significant if the Project would:

- Result in exposure of persons to, or generation of, noise levels in excess of standards established by the local general plan, noise ordinance or applicable standards of other agencies;
- Result in a substantial temporary increase in ambient noise levels in the project vicinity;
- Expose people to generation of excessive groundborne vibration or groundborne noise levels; or
- Expose people residing or working in the project area to aircraft noise levels in excess of applicable standards.

Criterion Requiring No Further Evaluation

The criterion listed above that is not applicable to actions associated with the proposed Project is identified below along with a supporting rationale as to why further consideration is unnecessary and a no-impact determination is appropriate.

- *Expose people residing or working in the project area to aircraft noise in excess of applicable standards.* A portion of the transmission pipeline in the recycled water service area would be near the Franklin Field Airport, however, the proposed Project does not include inhabited structures or facilities within any airports and therefore the proposed Project would not expose people (residents or workers) to excess noise near a public use airport. Further, the proposed Project is consistent with applicable General Plans, which are themselves consistent with the Franklin Field CLUP that addresses noise. Thus, no impact would occur and no further evaluation is warranted.

Impacts and Mitigation Measures

Impact NOI-1 Result in Exposure of Persons to, or Generation of, Noise Levels in Excess of Standards Established by the Local General Plan, Noise Ordinance or Applicable Standards of Other Agencies and Result in a Substantial Temporary Increase in Ambient Noise Levels in the Project Vicinity (Construction)

Alternative 1 (Medium Service Area Alternative) and Alternative 2 (No Reclamation Funding Alternative)

Project Elements. Construction activities would result in temporary noise increases at sensitive receptors located primarily along the transmission pipeline alignment. Construction noise levels would vary at the receptors depending on the type of construction activity, construction phase, equipment type, duration, distance between the noise source and receptor, and the presence or absence of barriers between the noise source and receptor. Typical construction equipment

generates noise levels ranging from approximately 74 dBA to 88 dBA at a distance of 50 feet from the source, with higher levels of about 86 dBA to 98 dBA for certain types of earthmoving and impact equipment (e.g., jack hammers, pavement breakers, rock drills). The rate of attenuation or reduction is about 6 dBA for every doubling of distance from a point source. Typical noise levels for construction equipment are shown in **Table 3.12-5**.

Table 3.12-5: Typical Noise Levels for Construction Equipment

Equipment	Typical Noise Levels at 50 feet from Source (dBA)
Front end loaders	80
Backhoes, excavators	80-85
Tractors, dozers	84-85
Graders, scrapers	85-89
Concrete pumps, mixers	82-85
Cranes (movable)	83
Cranes (derrick)	88
Truck	88
Jack Hammer	88
Pile driver (sonic)	96
Shovel	82
Pumps	76
Generators	81
Compressors	81
Pneumatic tools	85
Pavers	89
Compactors	82
Drill rigs	84
Roller	74
Pile driver (impact)	101
Saw	76

Source: FHWA 2006; FTA 2006.

For purposes of the analysis, it is assumed that the transmission pipeline excavation and installation construction activities would include the operation of an excavator, front end loader, and movable crane at the same time. Repaving roadways would require the operation of a roller and paver at the same time. The combined noise level of the equipment during excavation and installation could be up to 87.9 dBA L_{eq} and up to 89.1 dBA L_{eq} , during the repaving of the roadway at 50 feet from the source. Because daytime construction noise is exempt from exterior noise standards; these noise levels do not violate standards, as long as construction does not occur at night. The closest sensitive receptors to the proposed project facilities would vary in distance along the proposed transmission pipeline alignment. Sensitive receptors include residences within 50 feet of the transmission pipeline alignment as it traverses the City of Elk Grove generally between Dwight Road and Hood Franklin Boulevard, and homes within 25 feet in some areas in South County where scattered residences are located.

The noise levels at the sensitive receptors could reach up to 95.1 dBA L_{eq} at 25 feet and up to 89.1 dBA L_{eq} on one day. The County of Sacramento and City of Elk Grove noise ordinances both exempt construction noise from established exterior noise standards between 6 a.m. and 8 p.m. on weekdays. Construction of the proposed Project would generally be conducted between 7 a.m. and 7 p.m., and thus consistent with the noise standards. The noise levels at the sensitive receptors (e.g., residences) during daytime hours near the construction activity could result in

annoyance and thus noise generated by construction could be a potentially significant impact. As described in *Section 2.4.1, Construction Timing*, nighttime and weekend construction may take place if needed. If construction activities were to occur before 6 a.m. or after 8 p.m., construction noise would exceed the nighttime standard of 50 dBA for Sacramento County and the 45 dBA standard for the City of Elk Grove.

Construction generated noises would be temporary and intermittent with construction taking place primarily during daytime hours. In addition, the construction would progress at a rate of approximately 150 linear feet per day along various portions of the pipeline alignment as previous portions are completed. Noise levels would decrease noticeably as the construction progresses and would generally be back to ambient roadway noise levels after one day. Therefore, construction generated noise would be short-term and temporary as the pipeline installation takes place.

Construction noise would thus not violate local noise standards, but the substantial temporary increase in noise during construction could cause annoyance to residences along the construction corridor. To address short-term noise annoyance and potential nighttime construction noise levels that sensitive receptors and residents may experience, **Mitigation Measure NOI-1** would be implemented. While it is not possible to quantify noise reduction associated with all of the mitigation measure components, this mitigation measure would reduce noise levels. For example, the use of mufflers on construction equipment typically can reduce noise levels by 5 to 10 dBA (USEPA 1971) and additional reductions would occur with the use of sound barriers or other buffers around stationary noise sources. With implementation of **Mitigation Measure NOI-1**, noise levels after mitigation would be considered less than significant.

Program Elements. The program elements would be located in an area that is primarily agricultural in use with scattered rural residences in some areas. Similar to the project elements, construction of the program elements would generate noise. However, the noise would be intermittent and short-term as construction of the program elements is expected to occur in phases between 2020 and 2041. There would be construction-related noise generated from the construction of the pipeline to Stone Lakes NWR, the construction of the potential recharge area, and the drilling and installation of the diluent wells, if needed. Implementation of **Mitigation Measure NOI-1** would reduce the exposure of persons to, or generation of, noise levels in excess of standards established by Sacramento County General Plan and Noise Ordinance; impacts would be less than significant.

Alternative 3 (Small Service Area Alternative)

Project and Program Elements. The construction impacts of both project and program components for Alternative 3 (Small Service Area Alternative) would be similar to those identified for Alternative 1 (Medium Service Area Alternative), except that the intensity of the effects would be less for construction-related effects. Because there would be fewer miles of pipelines compared to Alternative 1 (Medium Service Area Alternative), this alternative is expected to result in a shorter construction duration. Similar to Alternative 1 (Medium Service Area Alternative), construction activities would result in temporary noise increases. Thus, impacts would be less than significant with implementation of **Mitigation Measure NOI-1**.

Under Alternative 4 (No Project Alternative)

Under the No Project Alternative, no project facilities would be constructed. As such no noise-related impacts would occur.

Significance Determination before Mitigation

Potentially significant for all action alternatives. No impact for Alternative 4 (No Project Alternative)

Mitigation Measure

Mitigation Measure NOI-1: Noise Reduction Measures (All Action Alternatives)

To reduce the impact of noise from construction activities the following measures shall be implemented to the extent feasible:

- Heavy equipment and impact equipment use shall be restricted to daytime hours (7 a.m. to 7 p.m.).
- Construction staging areas shall be located as far as possible from existing residences.
- The project contractor shall be required to use impact tools (e.g., jack hammers, pavement breakers, and rock drills) that are hydraulically or electrically powered wherever possible, to avoid noise associated with compressed air exhaust from pneumatically powered tools. Where use of pneumatic tools is unavoidable, an exhaust muffler on the compressed air exhaust shall be used, along with external noise jackets on the tools, which could reduce noise levels by as much as 10 dBA.
- Construction equipment noise shall be minimized during project construction by muffling and shielding intakes and exhaust on construction equipment per the manufacturers' specifications and by shrouding or shielding impact tools. All equipment shall have sound-control devices no less effective than those provided by the manufacturer.
- All stationary noise generating construction equipment shall be placed as far away as possible from sensitive receptors in an orientation minimizing noise impacts (e.g. behind barriers or storage piles).

Significance Determination after Mitigation

Less than significant for all action alternatives.

Impact NOI-2 Result in Exposure of Persons to, or Generation of, Noise Levels in Excess of Standards Established by the Local General Plan, Noise Ordinance or Applicable Standards of Other Agencies (Operation)

Alternative 1 (Medium Service Area Alternative) and Alternative 2 (No Reclamation Funding Alternative)

Project Elements. Operation of the proposed pump station would result in the generation of noise from pump machinery. The pump station would have multiple pumps with a combined 7,000 horsepower, and would be operated continually. Based on reference noise data from a similar project with a combined 7,000-horsepower pump station, future stationary operational noise levels would be predicted to range between 89 dBA and 91 dBA at 15 feet (City of Santa Rosa 2003). The closest sensitive receptors to the SRWTP consist of residential areas located

along Franklin Boulevard generally between Hood Franklin Road and Dwight Road/Big Horn Boulevard, approximately 5,000 feet away from the proposed pump station site. Based on typical attenuation rates due to distance (without factoring in sound absorption or attenuation from objects between the source and sensitive receptors), noise levels at the nearest sensitive receptor would attenuate to approximately 41 dBA. The noise level would not exceed the City of Elk Grove's daytime or nighttime noise standards for stationary noise sources of 55 dBA Leq between 7 a.m. and 10 p.m. and 45 dBA Leq between 10 p.m. and 7 a.m. Once operational, the transmission pipeline and appurtenances would be located below ground and would not require facilities that generate noise during operations. Therefore, operational noise levels would not exceed applicable noise standards and impacts would be less than significant.

Program Elements. Although diluent wells would be operated continuously, the pumps within the wells would not generate operational noise. Submersible pumps would be used and because the pumps would be submersed in water there would not be perceptible noise above ground. Operation of the pipeline and potential recharge area would not require facilities that generate noise during operations and would not result in the generation of noise above the ambient levels without the project. Thus, there would be no impact.

Alternative 3 (Small Service Area Alternative)

Project and Program Elements. The operational impacts of both project and program components for Alternative 3 (Small Service Area Alternative) would be similar to those identified for Alternative 1 (Medium Service Area Alternative). Similar to Alternative 1 (Medium Service Area Alternative), the transmission pipeline and appurtenances, and pumps would be located below ground and would not result in operational noise levels that exceed applicable noise standards. Thus, impacts would be less than significant.

Alternative 4 (No Project Alternative)

Under the No Project Alternative, no project facilities would be constructed. As such no noise-related impacts would occur.

Significance Determination before Mitigation

Less than significant for all action alternatives. No impact for Alternative 4 (No Project Alternative).

Mitigation Measures

No mitigation measures are required.

Impact NOI-3 Expose People to Generation of Excessive Groundborne Vibration or Groundborne Noise Levels

Alternative 1 (Medium Service Area Alternative) and Alternative 2 (No Reclamation Funding Alternative)

Project and Program Elements.

Vibrational impacts from construction would mainly be associated with the use of bulldozers, loaded trucks, and jackhammers. **Table 3.12-6** below lists a variety of construction activities and vibration levels generated at 25 feet. As described previously, the closest residences would be

within 25 feet of the transmission pipeline. The vibration levels in this table indicate that operation of heavy construction equipment would not generate vibration levels that could cause threshold (cosmetic) damage to fragile buildings. Vibrations from the construction equipment would not exceed the PPV threshold of 0.2 inches per second, and therefore would have a less than significant impact. Once operational, the transmission pipeline, appurtenances, potential recharge area, and diluent wells would be located below ground and would not require facilities that generate vibration during operations. Therefore, there would be no operational vibration impacts.

Table 3.12-6: Vibration Levels for Construction Equipment

Equipment	Peak Particle Velocity (PPV) at 25 Feet
Large Bulldozer	0.089
Loaded Trucks	0.076
Jackhammer	0.035
Small Bulldozer	0.003

Source: FTA 2006

Alternative 3 (Small Service Area Alternative)

Project and Program Elements. The construction and operational impacts of both project and program components for Alternative 3 (Small Service Area Alternative) would be similar to those identified for Alternative 1 (Medium Service Area Alternative), except that the intensity of the effects would be less for construction-related effects. Similar to Alternative 1 (Medium Service Alternative), operation of this alternative would not require facilities that generation vibration. Thus, impacts would be less than significant.

Alternative 4 (No Project Alternative)

Under the No Project Alternative, no project facilities would be constructed. As such no noise-related impacts would occur.

Significance Determination Before Mitigation

Less than significant for all action alternatives. No impact for Alternative 4 (No Project Alternative).

Mitigation Measures

No mitigation measures are required.

Cumulative Impact Analysis

The geographic scope of potential cumulative noise impacts related to noise and vibration encompasses the proposed Project component sites and immediate vicinity. Construction noise from the proposed Project could overlap with construction activities associated with the EchoWater and rehabilitation of digesters 6 and 7 projects. However, because of the temporary nature of the construction activities and because noise attenuates with distance, and with **Mitigation Measure NOI-1**, the proposed Project would not have a cumulatively considerable impact. Noise impacts from operation of the facilities would be negligible and not cumulatively considerable, given that it would include operation of underground transmission pipelines, submersible pumps, and operational noise levels of the pump station would not exceed applicable noise standards.

Significance Determination before Mitigation

Potentially significant.

Mitigation Measure

See **Mitigation Measure NOI-1**.

Significance Determination after Mitigation

Less than significant.

3.12.4 References

Ascent Environmental. 2014. *Final Environmental Impact Report for the Sacramento Regional County Sanitation District EchoWater Project*. September 12, 2014.

California Department of Transportation (Caltrans). 1998. *Technical Noise Supplement – A Technical Supplement to the Traffic Noise Analysis Protocol*. October 1998.

_____. 2013. *Transportation and Construction Vibration Guidance Manual*. September 2013.

California, State of, Office of Planning and Research. 1998. *State of California General Plan Guidelines*. November. Available at: <http://ceres.ca.gov/planning/genplan/gpg.pdf>

Elk Grove, City of. 2003. *Elk Grove General Plan Background Report*.

_____. 2014. *Elk Grove Municipal Code through Ordinance 35-2014*. December 10, 2014.

_____. 2015. *The City of Elk Grove General Plan*. Reflects Amendments through March 2015.

Federal Highway Administration (FHWA). 2006. *Construction Noise Handbook*. FHWA-HEP-06-015. August. Available at: http://www.fhwa.dot.gov/environment/noise/construction_noise/handbook/. Accessed April 6, 2015.

Federal Transit Administration (FTA). 2006. *Transit Noise and Vibration Impact Assessment*. FTA-VA-90-1003-06. May.

City of Santa Rosa. 2003. *Incremental Recycled Water Program Draft EIR*, City of Santa Rosa. May 16. Prepared by Parsons.

Sacramento County. 2011. *Sacramento County General Plan of 2005-2030*. Amended November 9, 2011.

_____. 2014. *Sacramento County Code*. Current through Ordinance 1576 and the December 2014 code supplement. Available at: <http://qcode.us/codes/sacramentocounty/>. Accessed January 27, 2015:

_____. 2015. *Sacramento County Online Map*. Used to determine zoning. Available at: http://generalmap.gis.saccounty.net/JSViewer/county_portal.html#. Accessed April 8, 2015.

U.S. Environmental Protection Agency (USEPA). 1971. *Noise from Construction Equipment and Operations, Building Equipment, and Home Appliances*. December.

This page intentionally left blank

3.13 Public Services and Utilities

This section describes the existing public services and utilities in the proposed Project area and presents a summary description of the regulatory setting. This section also evaluates the potential for the proposed Project to exceed the existing capacity of public services (police protection, fire protection, schools) and utilities (water, wastewater, storm drainage).

3.13.1 Environmental Setting

Police Services

Within the project area the Elk Grove Police Department and the Sacramento County Sheriff's Department provide law enforcement services, while the California Highway Patrol (CHP) provides traffic enforcement services. The Elk Grove Police Department provides law enforcement and policing services to the City of Elk Grove, serving a population of approximately 161,000 with the support of 131 sworn officers and 77 civilian employees. The Sacramento County Sheriff's Department provides specialized law enforcement to the County and local police protection to unincorporated areas. CHP provides traffic enforcement services within the highway system.

Fire Protection

The Cosumnes Community Services District (CSD) Fire Department provides fire, rescue, and emergency medical services to an area covering over 157 square miles (including the City of Elk Grove), serving a total population of approximately 160,000. The Fire Department is divided into Operations and Administration and Support Services. Over 150 personnel work in the Operations Division supporting fire suppression, training, and emergency medical services.

Fire protection throughout the rest of Sacramento County is provided by the cities of Folsom, Galt, Isleton, and Sacramento, and seven other independent fire districts. All of the fire districts provide emergency medical rescue and fire protection services.

Schools

Schools within one mile and a quarter-mile of the proposed facilities are described in *Section 3.2, Land Use and Agriculture*.

Other Public Facilities and Services

Parks are located throughout the Project area and described in *Section 3.3, Recreation*.

Other public services provided within the Project area include public libraries. Sacramento Public Library is the fourth largest library system in California, serving a population of over 1.3 million. There are 28 locations throughout Sacramento County, a total of 280 staff members, and 870 public computers and laptops available to library visitors (Sacramento Public Library 2015). The branches closest to the Project area are the Elk Grove Library located at 8900 Elk Grove Boulevard and Franklin Community Library located at 10055 Franklin High Road, which

are located approximately 3 and 1 miles from the recycled water service area, respectively, in the City of Elk Grove.

The Rio Cosumnes Correctional Center (RCCC) is located in the recycled water service area at the address of 12500 Bruceville Road in Elk Grove. It is the custody facility for inmates sentenced to County Jail from Sacramento County Courts. It houses inmates in route to other jurisdictions, federal prisoners (under contract with the U.S. Bureau of Prisons), and reciprocal prisoners from other counties. The RCCC is staffed by over 180 Sheriff's Department employees (Sacramento County 2015).

Water Supply

The Project area is mainly outside the areas currently served by municipal water suppliers, but encompasses a small portion of the SCWA's Zone 41. SCWA Zone 41 provides wholesale water supply to Elk Gove Water Service under an agreement between SCWA and Florin Resources Conservation District/Elk Grove Water Service (2002).

The primary water supply in the majority of the Project area (in South County) is groundwater pumped from private wells. Additionally, some growers in South County divert surface water from creeks, canals, and the Sacramento River for irrigation use.

Wastewater

Regional San provides wastewater conveyance and treatment services to residential, industrial, and commercial customers throughout the Project area, including unincorporated Sacramento County and Elk Grove. Wastewater is collected from homes and businesses via sewer collection pipes operated by four local sewer agencies. The pipes connect to 169 miles of interceptor pipelines which convey the wastewater to the SRWTP, which treats approximately 141 MG of wastewater (ADWF) daily.

Solid Waste

Sacramento County has 13 active permitted solid waste facilities, including two solid waste landfills, nine processing/transfer facilities, and two compositing facilities for green waste (CalRecycle 2015). The County owns Kiefer Landfill located at Kiefer Boulevard and Grantline Road (Sacramento County 2011). Kiefer Landfill occupies 1,084 acres and has a maximum permitted capacity of over 117 million cubic yards, with a remaining capacity of 113 million cubic yards (as of September 2005) (CalRecycle 2015). It is expected to have sufficient capacity to serve the region until 2064 (Ascent 2014).

Elk Grove has an exclusive franchise agreement with Republic Services to collect all solid waste, residential recyclables, yard clippings, used motor oil, and curbside e-waste for its residents. All residents receive weekly trash collection, green waste collection, recycling collection, free e-waste pick-up, annual neighborhood cleanup, free compost and composting workshops, bulky item pick-up, and extra garbage pick-up.

Within South County solid waste (or trash) removal is provided by Sacramento County Waste Management and Recycling (SCWMR). SCWMR provides residents of unincorporated areas of Sacramento County weekly garbage collection, bi-weekly collection of recyclables, bi-weekly

collection of green waste, monthly street sweeping, and an annual bulky waste pick-up. Commercial waste and recycling services are not provided.

Storm Drainage

The County's storm drainage system, including publicly-owned storm drain inlets and a network of underground piping and manholes, open channels, and roadside ditches, conveys stormwater runoff from developed areas to local waterways to prevent flooding. The City of Elk Grove also operates and maintains its own storm drainage system which consists of approximately 400 miles of underground pipes and 60 miles of natural and constructed channels.

3.13.2 Regulatory Framework

This section describes laws and regulations at the federal, state, and local levels that may apply to the proposed Project.

Federal Policies and Regulations

Uniform Crime Reporting Program (UCR)

The Federal Bureau of Investigation currently collects information on over 14,000 law enforcement agencies across the nation through the UCR. The UCR defines law enforcement officers as individuals who ordinarily carry a firearm and a badge, have full arrest powers, and are paid from governmental funds set aside specifically for sworn law enforcement representatives. While the UCR records number of law enforcement officers per 1,000 inhabitants, there are neither national requirements nor recommendations for staffing level ratios currently.

Federal Safe Drinking Water Act (SDWA)

The SDWA, administered by the U.S. Environmental Protection Agency (USEPA), ensures the quality of drinking water. The USEPA sets standards for drinking water quality and oversees the states, localities, and water suppliers who implement those standards. The Act authorizes the USEPA to set national health-based standards for drinking water to protect against both naturally occurring and man-made contaminants that may be found in drinking water and cause harm to the public.

State Policies and Regulations

California Penal Code

All law enforcement agencies within the State of California are organized and operated in accordance with the applicable provisions of the California Penal Code. This code sets forth the authority, rules of conduct, and training for peace officers. Under State law, all sworn municipal and county officers are State Peace Officers.

California Fire Code

The California Fire Code, Article 80, includes specific requirements for the safe storage and handling of hazardous materials. These requirements reduce the potential for a release of hazardous materials and for mixing of incompatible chemicals, and specify the following design

features to reduce the potential for a release of hazardous materials that could affect public health or the environment.

The California Fire Code, Article 79, includes specific requirements for the safe storage and handling of flammable and combustible liquids. Specific requirements address fire protection; prevention and assessment of unauthorized discharges; labeling and signage; protection from sources of ignition; specifications for piping, valving, and fittings; maintenance of above ground tanks; requirements for storage vessels, vaults, and overflow protection; and requirements for dispensing, using, mixing, and handling of flammable and combustible liquids.

California Drinking Water Program (DWP)

The DWP regulates public water systems, oversees water recycling projects, permits water treatment devices, certifies drinking water treatment and distribution operators, and supports and promotes water system security.

California Department of Public Health

Recycled water regulations are administered by both San Francisco Bay RWQCB and the California Department of Public Health (CDPH). The regulations governing recycled water are found in a combination of sources, including the Health and Safety Code, Water Code, and Titles 22 and 17 of the California Code of Regulations (CCR). Issues related to the treatment and distribution of recycled water are generally under the permitting authority of RWQCB, while issues related to use and quality of recycled water are the responsibility of CDPH.

Title 22 of the CCR, Division 4, Environmental Health, Chapters 1 through 3 outline California's health laws related to recycled water. The intent of these regulations is to ensure protection of public health associated with the use of recycled water. The regulations establish acceptable levels of constituents in recycled water for a range of uses and assurance of reliability in the production of recycled water. The SWRCB has jurisdiction over the distribution of recycled wastewater and the enforcement of Title 22 regulations.

Chapter 3, Article 3 of Title 22 indicates that disinfected tertiary recycled water can be used for surface irrigation of food crops (including edible root crops, where the recycled water comes into contact with the edible portion of the crop), parks and playgrounds, school yards, residential landscaping, and unrestricted-access golf courses. Orchards and vineyards where the recycled water does not come into contact with the edible portion of the crop must be treated at least to undisinfected secondary level for surface irrigation (CCR Section 60304).

California Integrated Waste Management Act

The California Integrated Waste Management Act of 1989 (Assembly Bill 939) established an integrated waste management framework that specifies the following order of importance: source reduction, recycling, composting, and land disposal of solid waste. Each county is required to prepare and submit an Integrated Waste Management Plan for expected solid waste generation within the county to the California Integrated Waste Management Board (CIWMB). The Act also required each city to prepare a Source Reduction and Recycling Element for achieving a solid waste diversion goal of 25 percent by January 1, 1995, and 50 percent by January 1, 2000.

CalRecycle (formerly California Integrated Waste Management Board)

CalRecycle governs solid waste regulations on the state level, delegating local permitting, enforcement, and inspection responsibilities to Local Enforcement Agencies (LEA). Regulations authored by CalRecycle (Title 14) were integrated with related regulations adopted by the SWRCB pertaining to landfills (Title 23, Chapter 15) to form CCR Title 27.

Local Policies and Regulations

Sacramento County General Plan

Public Facilities Element

The Public Facilities Element of the Sacramento General Plan (Sacramento County 2011) contains the following goals and objectives relevant to the proposed Project:

- **GOAL:** Water facilities developed in an environmentally sound, economically efficient, and financially equitable manner.
- **GOAL:** Safe, efficient, and environmentally sound operation of solid waste facilities in Sacramento County.
 - Objective: Safe and environmentally sensitive transportation of solid waste.

City of Elk Grove General Plan

Public Facilities and Finance Element

The City of Elk Grove has identified the following policies in the Public Facilities and Finance Element of its General Plan that are applicable to the proposed Project (City of Elk Grove 2015):

- Policy PF-4: The City shall require new utility infrastructure for electrical, natural gas and other infrastructure services avoid sensitive resources, be located so as to not be visually obtrusive, and, if possible, be located within roadway rights-of-ways or existing utility easements.
- Policy PF-5: The City supports the use of reclaimed water for irrigation wherever feasible.

Sacramento County Integrated Waste Management Plan

The California Integrated Waste Management Act of 1989 directed counties and/or regional agencies and cities to prepare countywide integrated waste management plans. Sacramento County adopted its Integrated Waste Management Plan in March 1996, which consisted of the following elements: siting element, summary plan, source reduction and recycling elements, household hazardous waste elements, and non-disposal facility elements. These elements provide the main source for solid waste facility planning in the County. The County Department of Waste Management and Recycling prepares and administers the Siting Element and Summary Plan, while individual jurisdictions or regional agencies prepare the other elements (Sacramento County 2011).

3.13.3 Impact Analysis

Methodology for Analysis

This section evaluates whether construction and operation of the proposed Project alternatives would result in significant impacts related to public services and utilities. The analysis is based on a review of local plans to determine if the proposed Project could potentially affect the performance of existing public services or require new public services.

Thresholds of Significance

Consistent with the thresholds of significance identified in Sacramento County's Initial Study Checklist, an impact would be significant if the proposed Project would:

- Have an inadequate water supply for full buildout of the project;
- Have adequate wastewater treatment and disposal facilities for full buildout of the project;
- Be served by a landfill with insufficient permitted capacity to accommodate the project's solid waste disposal needs;
- Result in substantial adverse physical impacts associated with the construction of new water or wastewater treatment and disposal facilities or expansion of existing facilities;
- Result in substantial adverse physical impacts associated with the provision of stormwater drainage facilities; or
- Result in substantial adverse physical impacts associated with the provision of electric or natural gas service, emergency services, public school services, or park and recreation services.

Criteria Requiring No Further Evaluation

The criteria listed above that are not applicable to the proposed Project are summarized below, along with a supporting rationale as to why further consideration is unnecessary and a no-impact determination is appropriate.

- *Have an inadequate water supply for full buildout of the project* – the proposed Project itself entails construction of new facilities to augment water supply with recycled water. The environmental effects of the proposed facilities are evaluated throughout this document. The proposed Project would not require or result in the construction of new water supply facilities beyond those being analyzed within this environmental document.
- *Have adequate wastewater treatment and disposal facilities for full buildout of the project* – The proposed Project would provide recycled water from the SRWTP as a source of non-potable water for beneficial use. As a water supply project that uses recycled water, neither the proposed Project nor other alternatives would generate any additional demand for wastewater treatment or disposal. Thus, the discussion of adequacy of wastewater treatment is not applicable and no impact would occur and no further evaluation is warranted.
- *Result in substantial adverse physical impacts associated with the provision of electric or natural gas service, emergency services, public school services, or park and recreation services* – As discussed in *Section 3.17, Population and Housing*, the proposed Project

would not directly or indirectly induce growth. As such, it would not require new or expanded electric or natural gas service, emergency service, schools or park and recreation, or other public services and/or facilities. In addition, given the nature of the proposed Project (underground recycled water pipelines and a pump station), operation of the action alternatives would not affect the ability of local services and utilities to maintain acceptable service ratios, response times or other performance objectives for facilities. The proposed Project is not expected to increase the need for new staff from public service entities. Therefore, no impact would occur and this topic is not discussed further in this document.

Impacts and Mitigation Measures

Impact PUB-1 Impacts Associated with the Construction of New Water or Wastewater Treatment and Disposal Facilities or Expansion of Existing Facilities.

Alternative 1 (Medium Service Area Alternative), Alternative 2 (No Reclamation Funding Alternative), and Alternative 3 (Small Service Area Alternative)

Project and Program Elements. The action alternatives entail construction of new facilities (pipelines and pump station) to augment water supply with recycled water. The environmental effects of the proposed facilities are evaluated throughout this EIR. The existing source of water supply in the project area is primarily groundwater pumped from private wells. The proposed Project would provide tertiary recycled water for agricultural irrigation in South County, which would offset groundwater pumping and reduce dependence on the Central Sacramento Groundwater Basin. By providing recycled water for agricultural irrigation, demands on groundwater supplies and groundwater pumping would be reduced.

As described in *Chapter 2, Alternatives and Proposed Project*, the proposed Project would deliver Title 22 disinfected tertiary treated recycled water to irrigated lands in South County. As discussed in Impact HYD-1 in *Section 3.10, Hydrology and Water Quality*, a common concern with the use of recycled water is the presence of constituents of emerging concern (CECs) which could be a potentially significant impact to water supply quality. Impacts would be considered significant if new or expanded treatment facilities would be required as a result of the proposed Project (e.g., the proposed Project's application of recycled water to results in degradation of groundwater quality such that new treatment facilities are required). The proposed Project would comply with the SWRCB CEC monitoring requirements for surface application of recycled water for groundwater recharge of a groundwater basin designated for municipal use. In addition, **Mitigation Measure HYD-1e** would require an anti-degradation analysis which would determine if groundwater recharge with recycled water would degrade any high quality water, and utilize best practicable treatment or control of the recycled water discharge without degrading groundwater quality. Implementation of this mitigation measure would ensure that the recycled water would not result in adverse effects such that the current water supply and groundwater would not result in a need for new water treatment facilities and impacts would be less than significant. Refer to *Section 3.10, Hydrology and Water Quality* for a detailed discussion of recycled and groundwater quality.

The action alternatives thus would not require or result in the construction of other new water or wastewater treatment facilities beyond those being analyzed within this environmental document as discussed above. Impact associated with the need for other new water or wastewater facilities beyond those analyzed in this EIR would not occur, and impacts would be less than significant with mitigation.

Alternative 4 (No Project Alternative)

Under Alternative 4 (No Project Alternative), if groundwater is depleted due to continuing, sustained drought, then additional supply may be necessary. The actions of the individual growers may include constructing new water supply facilities (i.e., deeper wells) in the absence of recycled water or trucking in water to meet individual needs. However, it is too speculative to determine the type of actions that individual owners would take. The impacts from the installation of new wells would likely be less than significant given the small scale of groundwater wells. Because the groundwater basin is monitored, and future groundwater withdrawals would need to comply with the Sustainable Groundwater Management Act, it is expected that groundwater effects would be managed such that impacts would be less than significant. Impacts would be minimal and no further discussion is warranted.

Significance Determination before Mitigation

Potentially significant for all action alternatives. Less than significant for Alternative 4 (No Project Alternative).

Mitigation Measures

See **Mitigation Measure HYD-1e.** .

Significance Determination after Mitigation

Less than significant for all action alternatives.

Impact PUB-2 Impacts Associated with the Provision of Stormwater Drainage Facilities.

Alternative 1 (Medium Service Area Alternative), Alternative 2 (No Reclamation Funding Alternative), and Alternative 3 (Small Service Area Alternative)

Project and Program Elements. The action alternatives would generate a minimal amount of stormwater runoff as virtually all proposed elements would be either buried underground or would be constructed on presently impervious land. The proposed pump station at the SRWTP would be similar for all of the action alternatives and it would integrate with existing SRWTP facilities. Any runoff generated by the pump station would be captured by the existing storm drain system, which conveys all stormwater at the SRWTP to the treatment plant prior to discharge. Therefore, these alternatives would not generate a need for new stormwater drainage facilities or the expansion of existing facilities and the impact would be less than significant.

Alternative 4 (No Project Alternative)

The No Project Alternative would not result in any new physical changes to the environment. No impact would occur.

Significance Determination before Mitigation

Less than significant for all action alternatives. No impact for Alternative 4 (No Project Alternative).

Mitigation Measures

No mitigation measures are required.

Impact PUB-3 Served by a Landfill without Sufficient Permitted Capacity to Accommodate the Project's Solid Waste Disposal Needs.

Alternative 1 (Medium Service Area Alternative) and Alternative 2 (No Reclamation Funding Alternative)

Project and Program Elements. During construction of these alternatives, there would be minimal solid waste generated that would require disposal at a landfill. Spoil (soil and rock) excavated during construction would either be reused on site for backfill or disposed of properly. Spoil not suitable for reuse would be temporarily stored at staging areas until characterized, and then hauled away to the proper disposal site (e.g., landfill). Additional solid waste would be generated by construction crews within the Project area, which would need to be hauled off site to be disposed.

Solid waste generated during construction, including spoil that cannot be reused, is assumed to be delivered to the Kiefer Landfill. This landfill is currently sized to satisfy all county landfill disposal needs through 2064 (Ascent 2014). As such, impacts to landfill resources would be less than significant. In addition, Regional San would comply with all federal, state, and local statutes and regulations related to solid waste.

Operation of buried pipelines and the proposed pump station at the SWRTP would not generate solid waste and therefore would not generate any additional solid waste that would require disposal at a landfill. Therefore, impacts to solid waste would be less than significant.

Alternative 3 (Small Service Area Alternative)

Project and Program Elements. The construction and operational impacts of this alternative (for both project and program elements) would be similar to those identified for Alternative 1 (Medium Service Area Alternative), except that the intensity of the effects would be less for construction-related effects. Because this alternative has a smaller recycled water service area, there may be less spoil requiring disposal. Also, due to the shorter construction duration, there may be less trash and/or solid waste generated by crews during construction. Similar to Alternative 1 (Medium Service Area Alternative), Regional San would comply with all federal, state and local statutes and regulations related to solid waste, which would result in less than significant impacts.

Alternative 4 (No Project Alternative)

Under the No Project Alternative, no facilities would be constructed. Therefore, no impacts on solid waste in the Project area would occur.

Significance Determination before Mitigation

Less than significant for all action alternatives. No impact for Alternative 4 (No Project Alternative)

Mitigation Measures

No mitigation measures are required.

Cumulative Impacts

The geographic scope of potential cumulative impacts related to public services and utilities include the proposed Project area, Sacramento County, City of Elk Grove, and service areas of the agencies listed in *Section 3.13.1* above. Cumulative projects could result in increases in the generation of solid waste and increase demand for public services. Because the proposed Project is not expected to generate substantial amounts of solid waste and there is sufficient capacity at the landfill through 2064, the proposed Project would not contribute to cumulatively considerable solid waste impacts.

Significance Determination before Mitigation

Less than significant.

Mitigation Measures

No mitigation measures are required.

3.13.4 References

Ascent Environmental. 2014. *Final Environmental Impact Report for the Sacramento Regional County Sanitation District EchoWater Project*. September 12, 2014.

California Department of Resources Recycling and Recovery (CalRecycle). 2015. Solid Waste Information System (SWIS) Facility/Site Listing. Available at: <http://www.calrecycle.ca.gov/SWFacilities/Directory/SearchList/List?COUNTY=Sacramento&OPSTATUS=Active®STATUS=Permitted>. Accessed September 17, 2015.

Elk Grove, City of. 2015. *The City of Elk Grove General Plan*. Reflects Amendments through March 2015.

Sacramento County. 2011. *Sacramento County General Plan of 2005-2030*. Amended November 9, 2011.

_____. 2015. *Rio Cosumnes Correctional Center*. Available at: <http://www.sacsheriff.com/Pages/Organization/RCCC/RCCC.aspx>. Accessed April 1, 2015.

Sacramento Public Library. 2015. *Sacramento Public Library – About Us*. Available at: <http://www.saclibrary.org/About-aUs/>. Accessed April 1, 2015.

3.14 Traffic and Transportation

This section describes existing conditions and potential impacts on traffic and transportation as a result of construction, operation, and maintenance of the proposed Project. The analysis is based on a review of traffic facilities in the project vicinity and local transportation plans.

3.14.1 Environmental Setting

The Project would be located within south Sacramento County, including portions of the City of Elk Grove, unincorporated Sacramento County, and a portion of the Stone Lakes National Wildlife Refuge (NWR) managed by the United States Fish and Wildlife Service (USFWS). The Project area is shown in **Figure 2-1**.

The Project area includes the Sacramento Regional Wastewater Treatment Plant (SRWTP) site, the transmission pipeline alignment (approximately 14 miles in length) conveying recycled water from the SRWTP to the recycled water service area, and the recycled water service area itself. Land uses within and adjacent to the proposed Project area include both urban and rural uses. Urban uses are mainly located along the Franklin Boulevard corridor within the City of Elk Grove, while the unincorporated area of the County is dominated by large agricultural plots with scattered rural residential development.

The SRWTP is located at 8521 Laguna Station Road in Elk Grove on an approximately 3,200-acre site that is owned and operated by Regional San, as shown in **Figure 2-1**. The site is bordered by the future Cosumnes River Boulevard on the north, Laguna Boulevard on the south, Interstate 5 (I-5) on the west and Laguna Station Road and Franklin Boulevard on the east.

The pipeline alignment would extend approximately 14 miles from the new pump station at the SRWTP, south to Twin Cities Road (at the southern end of the recycled water service area). The preferred alignment would be located along the following roads: Big Horn Boulevard, Franklin Boulevard, Core Road, Eschinger Road, Bruceville Road, and Lambert Road, as shown in **Figure 2-2**.

The recycled water service area is generally bordered to the north by Bilby Road and Kammerer Road, to the south by Twin Cities Road, to the west by I-5 and to the east by Highway 99 and the Cosumnes River.

Existing Regional and Local Transportation Facilities

This section describes the existing regional and local road network, airports, bicycle and pedestrian facilities, public transit, and rail service in the Project area.

Roadways

The surrounding regional and local road networks are shown in **Figure 2-2**. Regional access to the site is provided from I-5 and Highway 99. The primary local roads in the Project area include Big Horn Boulevard, Laguna Boulevard, Elk Grove Boulevard, Whitelock Parkway, Core Road, Eschinger Road, Lambert Road, Twin Cities Road, Franklin Boulevard, Bruceville Road, and

Hood Franklin Road. An in-depth description of all of the roadways serving the Project area is not provided for the program level components, but these routes for the project-level can be seen on **Figure 2-2**. The primary regional and local roadways serving the Project are described below.

I-5 is the main north-south interstate highway on the West Coast, linking Mexico to the south with Canada to the north. I-5 serves some of the largest cities on the West Coast, including San Diego, Los Angeles, Sacramento, Portland, and Seattle. I-5 is west of the City of Elk Grove and generally west of the proposed Project. Within the study area, I-5 is a separated, access controlled, four- to six-lane freeway. Within Elk Grove, there are three full access interchanges at Hood Franklin Road, Elk Grove Boulevard, and Laguna Boulevard. The SRWTP is located approximately 0.5 miles east of I-5. The nearest interchange to the SRWTP is at I-5 and Laguna Boulevard.

Highway 99 is a major north-south freeway in the Project area. Highway 99 originates south of Bakersfield and terminates at State Route (SR) 36 near the City of Red Bluff to the north. Highway 99 provides a connection between all of the major cities in the Central Valley, from Sacramento and Stockton in the north to the cities of Modesto, Merced, Fresno, and Bakersfield in the south. Highway 99 is located east of the Project. Within the Project area, access to Highway 99 is provided through interchanges at Twin Cities Road, Grant Line Road, Elk Grove Boulevard, Laguna Boulevard/Bond Road, and Sheldon Road. Highway 99 varies from four to six lanes.

The City of Elk Grove, in coordination with the State of California Department of Transportation (Caltrans), is currently planning a new interchange at Whitelock Parkway and Highway 99. This project is currently in the planning phase and preliminary studies will be completed to analyze several interchange design alternatives. According to the City, construction is more than five years away, as complete construction funding has not yet been secured (City of Elk Grove 2015a).

Big Horn Boulevard is a four-lane road that extends diagonally from Franklin Boulevard in the northwest to Whitelock Parkway in the southeast. Big Horn Boulevard has curbs, gutters, sidewalks, and a Class II bike lane.

Laguna Boulevard is a major east-west arterial between I-5 on the west and Highway 99 on the east. East of Highway 99, Laguna Boulevard becomes Bond Road on the east side of Highway 99. Laguna Boulevard is six lanes from I-5 to Big Horn Boulevard and eight lanes from Big Horn Boulevard to Highway 99. Laguna Boulevard has curbs, gutters, sidewalks, and a Class II bike lane. The proposed transmission pipeline would cross under Laguna Boulevard at Franklin Boulevard.

Elk Grove Boulevard is an east-west road between I-5 to the west and Grant Line Road to the east. Elk Grove Boulevard is six lanes between I-5 and East Stockton Boulevard, four lanes to Elk Grove Florin Road, and two lanes to Grant Line Road. Elk Grove Boulevard has curbs, gutters, sidewalks, and a combination of a Class I bike path and a Class II bike lane. The proposed transmission pipeline would cross under Elk Grove Boulevard at Franklin Boulevard.

Whitelock Parkway is an east–west road extending from West Stockton Boulevard, which parallels Highway 99 to Franklin Boulevard. The parkway is improved with four travel lanes between Franklin Boulevard and Big Horn Boulevard. East of Big Horn Boulevard, Whitelock Parkway is two lanes. It is planned as a four-lane arterial with a partial access interchange at Highway 99 that will serve travel to/from the west only. Whitelock Parkway has curbs, gutters, sidewalks, and a Class I bike path along the north side of the road.

Core Road is a two-lane east-west rural road, between Franklin Boulevard and Ed Rau Road. A portion of the proposed pipeline would be located along Core Road.

Eschinger Road is a two-lane rural road, generally running east-west. Eschinger Road is located between Ed Rau Road and Highway 99. A portion of the proposed pipeline would be located along Eschinger Road.

Lambert Road is a two-lane rural road, generally running east-west. Lambert Road is located between River Road and Carroll Road. A portion of the proposed pipeline would be located along Lambert Road.

Twin Cities Road is a two-lane rural road, generally running east-west. Twin Cities Road is located between River Road and Michigan Bar Road. Twin Cities Road becomes SR-104, east of Highway 99.

Franklin Boulevard is a north-south roadway providing direct connection to downtown Sacramento. Franklin Boulevard is located between Mokelumne City to the south and downtown Sacramento to the north. The road width varies, but is generally four lanes within the Project area. Within the Project area, Franklin Boulevard has curbs, gutters, sidewalks, and a Class II bike lane. Much of the proposed transmission pipeline would be located along Franklin Boulevard.

Bruceville Road is a north-south road that extends from Valley Hi Drive in unincorporated Sacramento County to Twin Cities Road. Bruceville varies between two to six lanes. Bruceville Road generally has curbs, gutters, sidewalks, and a Class II bike lane. A portion of the proposed pipeline would be located along Bruceville Road.

Hood Franklin Road is a two-lane east-west rural road, between River Road and Franklin Boulevard.

Existing Roadway Operations

Annual Average Daily Traffic (AADT) volumes for 2014 were obtained from the Caltrans Traffic Data Branch (Caltrans 2014) for I-5 and Highway 99. Average Daily Traffic (ADT) counts were obtained from the City of Elk Grove Public Works Department for the study roadways in the City (City of Elk Grove 2015b). The City counts were collected in August 2014. Based on the existing traffic data, the volume to capacity (V/C) ratio was calculated for the roadway segments to determine existing roadway operations. The V/C ratio is an indicator of

traffic conditions, speeds, and driver maneuverability and the resulting V/C ratio is expressed using Level of Service (LOS), where LOS A represents free-flow activity and LOS F represents over capacity conditions (congestion). **Table 3.14-1** is a summary of the LOS grades and corresponding V/C ratios for multi-lane highway and local roadway segments.

Table 3.14-1: Level of Service Criteria for Multi-lane Highway and Local Roadway Segments

LOS ¹	V/C ² Ratio	Traffic Flow Characteristics
A	0.000 – 0.600	Free flow; insignificant delays
B	0.601 – 0.700	Stable operations; minimal delays
C	0.701 – 0.800	Stable operation, acceptable delays
D	0.801 – 0.900	Approaching unstable flow; queues develop rapidly but no excessive delays
E	0.901 – 1.000	Unstable operation; significant delays
F	> 1.000	Over-capacity; forced flow

Source: Highway Capacity Manual, Transportation Research Board, 2010.

Notes:

1. LOS = Level of Service
2. V/C is volume/capacity ratio, which is an indicator of traffic conditions, speeds, and driver maneuverability.

Table 3.14-2 and **Table 3.14-3** summarize the daily traffic volumes, V/C ratios, and LOS for existing roadway conditions during the AM and PM peak hours in the Project area. Traffic data from a 2013 transportation study conducted for the City of Elk Grove's Housing Element update are presented in **Table 3.14-2**. Data for Highway 99 south of Grant Line Road was obtained from Caltrans and presented in **Table 3.14-3**. Caltrans considers LOS C or better on State highway (I-5 and Highway 99) segments to be acceptable for planning purposes. The City of Elk Grove requires that all roadways and intersections in Elk Grove operate at a minimum of LOS D and the County of Sacramento's LOS standard is LOS D on rural roadways and LOS E on urban roadways. Based on the standards in the County of Sacramento and the City of Elk Grove, LOS D was used as the threshold for acceptable operations.

Several segments of Highway 99 within the Project area are operating at LOS E or LOS F south of the City of Elk Grove (indicated in bold in **Table 3.14-3**). One segment of Bruceville Road, between Elk Grove Boulevard and Bilby Road is operating at LOS F. The Caltrans, County and City LOS standards are discussed in greater detail in Section 3.14.2.

Table 3.14-2: Existing Roadway Operations

Roadways	Direction	From	To	Number of Lanes	Hourly Capacity ¹	AM			PM		
						AM Volume	AM V/C	AM LOS	PM Volume	PM V/C	PM LOS
I-5	NB	Twin Cities Road	Hood Franklin Road	2	4,400	1,610	0.37	A	1,940	0.44	A
	SB	Twin Cities Road	Hood Franklin Road	2	4,400	1,490	0.34	A	1,910	0.43	A
	NB	Hood Franklin Road	Elk Grove Boulevard	2	4,400	2,140	0.49	A	1,950	0.44	A
	SB	Hood Franklin Road	Elk Grove Boulevard	2	4,400	1,530	0.35	A	2,160	0.49	A
	NB	Elk Grove Road	Laguna Boulevard	2	4,400	2,719	0.62	B	2,475	0.56	A
	SB	Elk Grove Road	Laguna Boulevard	2	4,400	1,940	0.44	A	2,739	0.62	B
	NB	Laguna Boulevard	Pocket Road	3	6,600	3,749	0.57	A	3,413	0.52	A
	SB	Laguna Boulevard	Pocket Road	3	6,600	3,675	0.56	A	3,777	0.57	A
Highway 99	NB	Eschinger	Grant Line Road	2	4,400	2,500	0.57	A	2,470	0.56	A
	SB	Eschinger	Grant Line Road	2	4,400	2,160	0.49	A	2,700	0.61	B
	NB	Grant Line Road	Elk Grove Boulevard	2	4,400	2,110	0.48	A	2,160	0.49	A
	SB	Grant Line Road	Elk Grove Boulevard	2	4,400	1,890	0.43	A	2,290	0.52	A
	NB	Elk Grove Road	Laguna Boulevard	2 + HOV	6,600	3,220	0.49	A	3,140	0.48	A
	SB	Elk Grove Road	Laguna Boulevard	2 + HOV	6,600	2,890	0.44	A	3,640	0.55	A
	NB	Laguna Boulevard	Sheldon Road	2 + HOV	6,600	4,064	0.62	B	4,033	0.61	B
	SB	Laguna Boulevard	Sheldon Road	2 + HOV	6,600	3,602	0.55	B	4,479	0.68	B
	NB	Sheldon Road	Calvine Road	2 + HOV	6,600	4,394	0.67	B	4,360	0.66	B
	SB	Sheldon Road	Calvine Road	2 + HOV	6,600	3,895	0.59	B	4,843	0.74	C
Big Horn Boulevard	EB	Franklin Boulevard	Laguna Boulevard	2	1,980	601	0.30	A	540	0.27	A
	WB	Franklin Boulevard	Laguna Boulevard	2	1,980	673	0.34	A	602	0.30	A

Roadways	Direction	From	To	Number of Lanes	Hourly Capacity ¹	AM			PM		
						AM Volume	AM V/C	AM LOS	PM Volume	PM V/C	PM LOS
	NB	Laguna Boulevard	Elk Grove Boulevard	2	1,980	591	0.30	A	424	0.21	A
	SB	Laguna Boulevard	Elk Grove Boulevard	2	1,980	504	0.25	A	577	0.29	A
	NB	Elk Grove Boulevard	Kammerer Road	2	1,980	704	0.36	A	358	0.18	A
	SB	Elk Grove Boulevard	Kammerer Road	2	1,980	546	0.28	A	466	0.24	A
Laguna Boulevard	EB	I-5	Franklin Boulevard	3	2,970	1,178	0.40	A	2,271	0.76	C
	WB	I-5	Franklin Boulevard	3	2,970	1,456	0.49	A	1,341	0.45	A
	EB	Franklin Boulevard	Bruceville Road	3	2,970	902	0.30	A	1,775	0.60	A
	WB	Franklin Boulevard	Bruceville Road	3	2,970	957	0.32	A	1,154	0.39	A
	EB	Bruceville Road	Big Horn Boulevard	3	2,970	1,078	0.36	A	1,947	0.66	B
	WB	Bruceville Road	Big Horn Boulevard	3	2,970	1,353	0.46	A	1,475	0.50	A
	EB	Big Horn Boulevard	East Stockton Boulevard	4	3,960	1,376	0.35	A	2,677	0.68	B
	WB	Big Horn Boulevard	East Stockton Boulevard	3	2,970	2,049	0.69	B	2,103	0.71	C
Elk Grove Boulevard	EB	I-5	Franklin Boulevard	3	2,970	1,761	0.59	A	2,044	0.69	B
	WB	I-5	Franklin Boulevard	3	2,970	1,938	0.65	B	1,338	0.45	A
	EB	Franklin Boulevard	Bruceville Road	2	1,980	1,644	0.83	D	1,405	0.71	C
	WB	Franklin Boulevard	Bruceville Road	3	2,970	909	0.31	A	1,421	0.48	A
	EB	Bruceville Road	Big Horn Boulevard	3	2,970	1,670	0.56	A	1,357	0.46	A
	WB	Bruceville Road	Big Horn Boulevard	3	2,970	1,041	0.35	A	1,756	0.59	A
	EB	Big Horn Boulevard	East Stockton Boulevard	3	2,970	1,813	0.61	B	1,590	0.54	A
	WB	Big Horn Boulevard	East Stockton Boulevard	3	2,970	1,308	0.44	A	1,989	0.67	B
Grant Line Road	EB	Highway 99	East Stockton Boulevard	3	2,970	731	0.25	A	790	0.27	A

EIR

Draft

Roadways	Direction	From	To	Number of Lanes	Hourly Capacity ¹	AM			PM		
						AM Volume	AM V/C	AM LOS	PM Volume	PM V/C	PM LOS
	WB	Highway 99	East Stockton Boulevard	3	2,970	721	0.24	A	831	0.28	A
Krammerer Road	EB	Big Horn Boulevard	Promenade Parkway	1	990	360	0.36	A	201	0.2	A
	WB	Big Horn Boulevard	Promenade Parkway	1	990	200	0.20	A	380	0.38	A
Bruceville Road	NB	Jacinto Road	Sheldon Road	2	1,980	884	0.45	A	729	0.37	A
	SB	Jacinto Road	Sheldon Road	2	1,980	424	0.21	A	876	0.44	A
	NB	Sheldon Road	Laguna Boulevard	2	1,980	1,612	0.81	D	1,211	0.61	B
	SB	Sheldon Road	Laguna Boulevard	2	1,980	851	0.43	A	1,750	0.88	D
	NB	Laguna Boulevard	Elk Grove Boulevard	2	1,980	909	0.31	A	863	0.32	A
	SB	Laguna Boulevard	Elk Grove Boulevard	2	1,980	608	0.20	A	1,203	0.41	B
	NB	Elk Grove Boulevard	Bilby Road	1	990	883	0.89	D	649	0.66	B
	SB	Elk Grove Boulevard	Bilby Road	1	990	668	0.67	B	1,292	1.31	F

Notes:

NB = Northbound

SB = Southbound

- Roadway capacity information obtained from the Fehr & Peers Transportation Impact Analysis prepared for the City of Elk Grove Housing Element Update EIR, 2013.

Table 3.14-3: Existing Roadway Operations for Highway 99 south of the City of Elk Grove

Roadways	From	To	Lanes	Capacity ¹	AADT ²	V/C	LOS
Highway 99	Twin Cities Road	Mingo Road	4	80,000	91,000	1.13	F
	Mingo Road	Arno Road	4	80,000	77,000	0.96	E
	Arno Road	Dillard Road	4	80,000	70,000	0.88	D
	Dillard Road	Eschinger Road	4	80,000	71,000	0.89	D
	Eschinger Road	Grant Line Road	4	80,000	72,000	0.90	E
	Grant Line Road	Elk Grove Boulevard	4	80,000	73,000	0.91	E
	Elk Grove Road	Laguna Boulevard	6	120,000	119,000	0.99	E
	Laguna Boulevard	Sheldon Road	6	120,000	152,000	1.27	F
	Sheldon Road	Calvine Road	6	120,000	171,000	1.43	F

Notes:

1. Roadway capacity information obtained from the City of Elk Grove General Plan Background Report, 2003a.
2. AADT information obtained from the Caltrans Traffic Census Program Traffic Volumes: Annual Average Daily Traffic (AADT), 2014.

Airports

Of the five airports operated by the County of Sacramento, only one is within the Project area – the Franklin Field Airport – located a mile northeast of the intersection of Twin Cities Road and Franklin Boulevard. It is a small public use airport in Sacramento County that has approximately 36,000 flights each year, most of which are flight training activities. It does not have an air traffic control tower or staff as it serves the general aviation community exclusively (Sacramento County Airport System 2015).

The airport has two perpendicular runways. There are no fueling, service, or repair facilities on site. The sole use of the airport is by general aviation aircraft for training and touch-and-go activity, as well as crop dusters during the planting and spraying season. The airport is surrounded by agricultural use and, on the east side, the Rio Cosumnes Correctional Center.

Bicycle and Pedestrian Facilities

Sidewalks are provided along the majority of City of Elk Grove streets and the City also has an extensive bicycle network. The majority of the bike facilities in the City limits are Class II bike lanes (on-street striped lanes for one-way bicycle travel). Class II bike lanes are provided along many of the Project area study roadways, including Big Horn Boulevard, Laguna Boulevard, Elk Grove Boulevard, Whitelock Parkway, Franklin Boulevard, and Bruceville Road. Portions of Elk Grove Boulevard and Whitelock Parkway also have Class I bike paths (a separated path for the exclusive use of bikes and pedestrians).

Beyond the City limits, within the unincorporated areas of the County, most of the local roadways serving the Project area are rural two-lane roads with limited shoulders and no bicycle/pedestrian facilities.

Transit and Rail Services

Public Transit

Transit service is provided by e-Tran (City of Elk Grove), Regional Transit (Sacramento Regional Transit District), and South County Transit (City of Galt).

The City of Elk Grove's transit system is e-Tran, which includes e-Tran neighborhood shuttle service (ez-tran), limited local transit service, and commuter routes to downtown Sacramento and Rancho Cordova. Local transit service is provided on weekdays and weekends. E-Tran provides commuter routes that operate mid-week, including two reverse commuter routes.

Regional Transit provides commuter service between Sacramento and the City of Elk Grove and South County Transit (SCT) operates the Highway 99 Express route, a commuter service connecting Galt with the Lodi Transit Center, Elk Grove, and South Sacramento.

Rail

There are two sets of Union Pacific Railroad (UPRR) tracks within the Project area, both aligned north-south. One line roughly parallels Franklin Boulevard. The proposed transmission pipeline

would cross this track at Core Road (in the south) and again at Franklin Boulevard to the north. A second UPRR line, located east of the Project area, passes through the central portion of the City of Elk Grove and crosses under Highway 99 near Eschinger Road.

There is currently no rail passenger service in the Project area. The nearest passenger rail station is Amtrak, located in downtown Sacramento. Amtrak California is a partnership between Amtrak and Caltrans and provides intercity rail and bus services within California. Amtrak provides passenger rail service along its San Joaquin Route, which runs north to south linking Sacramento and Bakersfield with stops in Lodi and Stockton; connection to San Francisco is available in Stockton.

3.14.2 Regulatory Framework

The applicable federal, state, and local laws, regulations, and policies related to traffic and transportation for the proposed Project are described as follows.

Federal Policies and Regulations

There are no federal transportation policies and regulations that would apply to the proposed Project.

State Policies and Regulations

California Department of Transportation (Caltrans)

Caltrans is responsible for planning, designing, constructing, operating, and maintaining all State-owned roadways. Caltrans owns the rights-of-way (ROW) for freeways, highways, and SRs, including any on- and off-ramps that provide access to the Project area. Specifically, in the project vicinity, Caltrans operates and maintains I-5 and Highway 99.

Based on the Caltrans (2002) *Guide for the Preparation of Traffic Impact Studies*, “Caltrans endeavors to maintain a target LOS at the transition between LOS C and LOS D on state highway facilities, however, Caltrans acknowledges that this may not always be feasible and recommends that the lead agency consult with Caltrans to determine the target LOS. If an existing State highway facility is operating at less than the appropriate target LOS, the existing LOS should be maintained.” In addition, a proposed project may be deemed to have a significant transportation/ circulation effect if it will result in a safety hazard to pedestrians or motorists.

Caltrans is also the administrating agency for regulations related to traffic safety, including the licensing of drivers, weight and load limitations, transportation of hazardous and combustible materials, and the safe operation of vehicles. Transportation permits are required for any load that exceeds Caltrans weight, length, or width standards for public roadways. Federal highway standards for interstate highways are implemented in California by Caltrans.

Finally, any project-related work within state ROW requires a ministerial encroachment permit from Caltrans.

Local Policies and Regulations

The project is located in unincorporated Sacramento County and the City of Elk Grove. The local policies and regulations relevant to the Project are described below.

Sacramento County General Plan

Circulation Element

The Circulation Element provides the framework for Sacramento County decisions concerning the countywide transportation system, which includes various transportation modes and related facilities. It also provides for coordination with the cities and unincorporated communities within the county, with the Metropolitan Transportation Plan adopted by the Sacramento Area Council of Governments, and with State and Federal agencies that fund and manage transportation facilities within the county. Specifically, the Circulation Element describes the County's Transportation Plan and functional roadway classification system and establishes goals, policies and implementation programs organized into nine sub-sections: Mobility; Roadways; Transit; Bicycle and Pedestrian Facilities; Transportation System Management; Rail Transportation; Air Transportation; Smart Growth Streets; and Scenic Highways. The goal and policy relevant to the proposed Project include:

- GOAL: Provide a balanced and integrated roadway system that maximizes the mobility of people and goods in a safe and efficient manner.
 - CI-9: Plan and design the roadway system in a manner that meets Level of Service (LOS) D on rural roadways and LOS E on urban roadways, unless it is infeasible to implement project alternatives or mitigation measures that would achieve LOS D on rural roadways or LOS E on urban roadways. The urban areas are those areas within the Urban Service Boundary as shown in the Land Use Element of the Sacramento County General Plan. The areas outside the Urban Service Boundary are considered rural.

City of Elk Grove General Plan

Circulation Element

The City of Elk Grove Circulation Element provides policies, goals, and actions related to a wide variety of transportation modes. The policies relevant to the proposed Project, include the following (City of Elk Grove 2015b):

- CI-13: The City shall require that all roadways and intersections in Elk Grove operate at a minimum Level of Service D at all times. The City acknowledges that the Capital SouthEast Connector has identified higher LOS standards for certain segments. The City will strive to achieve these standards to the extent feasible and will work with the JPA as necessary.
- CI-17: The City shall regulate truck travel as appropriate for the transport of goods, consistent with circulation, air quality, congestion management, and land use goals.

3.14.3 Impact Analysis

3.14.4 Methodology for Analysis

This section assesses the traffic and transportation effects associated with the construction of the proposed Project. As identified in the *Chapter 2, Alternatives and Proposed Project*, the pump station and transmission pipeline are being evaluated at a project-specific level and the remaining project components, including the distribution mains, service connection laterals, turnouts, potential recharge area, diluent wells, and the Stones Lake NWR are being evaluated at the program-level. However, from a transportation perspective, the potential traffic impacts would be similar whether they are at the project level or the program level. The primary difference is that the construction schedule and the potential construction-related trips have been identified for the project-level activities, but are not yet known for the program-level components. However, like the project-level activities, the program-level activities, particularly the construction of approximately 25 miles of distribution mains, which would occur in the public ROW, would result in construction-related traffic and potential road closures. For this reason, the potential traffic impacts of the project and program elements are discussed together.

Construction and operational trip generation assumptions used in the analysis are described below.

Construction Trip Generation

The estimated project trip generation (truck trips + workforce trips) during project-level construction, by alternative, is presented in **Table 3.14-4**.

Table 3.14-4: Project-Level Construction Trip Generation by Alternative

	Average Truck Trips per Day ²	Average Worker Trips per Day	Approximate Duration	Total One-Way Trips Per Day ³	Total Truck Trips Through Life of Construction
Alternatives 1 and 2¹					
Open Trench Pipeline, Trenchless Pipeline, Pump Station	20	50	485 Days	140	9,620
Open Trench Pipeline, Trenchless Pipeline, Pump Station	8	50	485 Days	116	3,750

Notes:

1. The construction related trips for Alternative 2 (No Reclamation Funding Alternative) would be the same as Alternative 1 (Medium Service Area Alternative).
2. It is assumed that project-level construction would be a total of 485 days. Truck trips would be spread equally throughout the construction phase.
3. One roundtrip equals two one-way trips (one incoming + one outgoing trip).

Assuming an average of 150 feet of pipeline would be constructed per day (485 days of construction) for Alternative 1 (Medium Service Area Alternative) a maximum of 154,200 CY of material would be generated from pipeline construction during the first phase. Assuming a hauling truck capacity of 16 CY per truckload, and that none of the excavated spoil would be used for backfill, up to 9,580 truck trips (round trips) total would be generated for the pipeline

construction and another 40 truck trips for the pump station excavation (600 CY). For Alternative 3 (Small Service Area Alternative), assuming the same installation rate for the pipeline and truck capacity, a maximum of 60,300 CY of material would be generated, resulting in approximately 3,750 truck trips (round trips), and another 40 truck trips for the pump station excavation (600 CY). In addition to equipment and material delivery, an average of 50 worker trips (round trip) would be generated per day for all action alternatives assuming each individual drives separately and half of the workers travel for lunch.

The overall spoil generated during the project-level construction (associated with pump station and pipeline construction) of the proposed Project would be 154,200 CY, equivalent to about 9,620 truck trips.

Construction of the recharge pond, which could occur concurrently with a portion of the future pipeline construction or as a standalone component, would not generate any truck trips. The precise timing of the recharge pond construction has not been determined, and could occur concurrently with future phases of pipeline construction or as a standalone component.

Project Operations and Maintenance

Operation and maintenance of the proposed Project would primarily involve regular inspections of the pipelines and pump station. The pipeline would be inspected as needed in any given year, and the pump station would be inspected monthly. Existing Regional San operations and maintenance staff would conduct maintenance activities consisting of approximately 1 to 2 additional trips per week for the proposed pipeline. No additional vehicular trips would be needed for inspection of the pump station at the SRWTP because it is located on the treatment plant site, where existing staff currently maintain facilities.

Thresholds of Significance

Consistent with Sacramento County Initial Study, and Appendix G of the CEQA Guidelines, transportation and traffic impacts would be considered significant if the proposed Project would:

- Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit.
- Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways:
 - **Caltrans** - Cause a Caltrans facility operating at LOS E or better to operate at LOS F or result in an increase in traffic to a Caltrans facility that is currently operating at LOS F.
 - **City of Elk Grove** - Increase the volume-to-capacity ratio by 0.05 or more for a City of Elk Grove roadway segment operating at an unacceptable LOS (i.e., LOS E or F).

- 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.
- Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).
- Result in inadequate emergency access.
- Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.

For LOS requirements, the City of Elk Grove (LOS D), County of Sacramento (LOS D [rural areas] and E [urban areas]), and Caltrans (LOS D) requirements have been applied.

Criterion Requiring No Further Evaluation

The criterion listed above that is not applicable to actions associated with the action alternatives of the proposed Project is identified below along with a supporting rationale as to why further consideration is unnecessary and a no impact determination is appropriate:

- *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* - The proposed Project is a recycled water project where proposed facilities are located on or below ground. None of the above-ground structures would encroach upon Franklin Field or its airspace, and the proposed Project would not change the air traffic patterns of the nearby airport. Thus, no impact would occur and no further discussion is warranted.

Impacts and Mitigation Measures

Impact TR-1 Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit.

Alternative 1 (Medium Service Area Alternative) and Alternative 2 (No Reclamation Funding Alternative)

Project and Program Elements. Construction of the project-level components of Alternative 1 (Medium Service Area Alternative) and Alternative 2 (No Reclamation Funding Alternative) is anticipated to take approximately two years to complete and would result in a temporary increase in local traffic as a result of construction-related workforce traffic, equipment, and material deliveries. Construction would also occur within and/or across a number of roadways, which could temporarily disrupt existing transportation and circulation in the vicinity. Construction of the program-level components could occur somewhere between 2020 through 2041.

Traffic-generating construction activities related to the proposed Project would consist of the daily arrival and departure of construction workers to the work site; trucks hauling equipment and materials to the work site; and the hauling of excavated spoil from, and import of new fill to, the work site. Potential increases in vehicle trip generation as a result of Project construction would vary based on the construction activity, equipment needs, and other factors. The

distribution of project trips on the regional and local road network would also depend on the location of project staging areas. However, the majority of the project's construction-related trips (vehicle and truck trips) would occur on the roadways identified in **Table 3.14-2** and **Table 3.14-3**.

For the purposes of this analysis it is assumed that construction of Alternative 1 (Medium Service Area Alternative) and Alternative 2 (No Reclamation Funding Alternative) would result in up to 140 daily one-way trips. These alternatives would require up to 50 construction workers per day (resulting in 100 one-way trips) and up to 20 roundtrip truck trips per day (or 40 one-way trips).

Most construction activities would occur within the public ROW and no long-term road closures are expected. Short-term full or partial road closures would be implemented to allow for certain construction activities and could result in potential traffic impacts. With implementation of **Mitigation Measure TR-1**, impacts could be reduced to less-than-significant levels. **Mitigation Measure TR-1** would address the need for temporary traffic control and other traffic safety measures to maintain proper traffic flow during temporary construction activities.

Public transit operates in the vicinity of the Project area; and in particular, the transit routes and bus stops on Franklin Boulevard could be affected. Bicycle lanes are also located along Franklin Boulevard and could be affected by construction of the pipeline. Implementation of the TMP would minimize impacts on public transit and non-motorized travel by maintaining access to transit, bicycle, and pedestrian facilities along the project construction area or by providing an alternative route during full road closures. The TMP would include procedures for notifying and coordinating with all affected agencies, including transit operators, in advance of construction activities.

Applicable county, state, and federal regulation, ordinances, and restrictions would be identified and complied with prior to and during construction. The construction contractor would obtain all necessary road permits prior to construction and would comply with all the applicable conditions of approval. With implementation of **Mitigation Measure TR-1**, conflicts with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation, would be minimized to less than significant.

Alternative 3 (Small Service Area Alternative)

Project and Program Elements. Similar to Alternative 1 (Medium Service Area Alternative) and Alternative 2 (No Reclamation Funding Alternative), Alternative 3 (Small Service Area Alternative) would result in a temporary increase in local traffic as a result of construction-related workforce traffic, and equipment and material deliveries. Construction would also require full or partial road closures. The difference is that the area of impact would be smaller because the extent of improvements would be less and the number of construction-related trips would be fewer. For the purposes of this analysis, it is assumed that construction of Alternative 3 (Small Service Area Alternative) would generate up to 116 daily one-way trips. This alternative would also require a TMP to address the need for temporary traffic control and other traffic safety

measures to maintain proper traffic flow during temporary construction activities. With the implementation of **Mitigation Measure TR-1**, the potential traffic impacts of Alternative 3 (Small Service Area Alternative) would be less than significant.

Alternative 4 (No Project Alternative)

Under the No Project Alternative, no facilities would be constructed. Therefore, no traffic impacts would occur.

Significance Determination before Mitigation

Potentially significant for all action alternatives. No impact for Alternative 4 (No Project Alternative).

Mitigation Measure

Mitigation Measures TR-1: Traffic Management Plan (All Action Alternatives)

Implementation of the Project shall include a TMP that would minimize impacts on traffic as a result of construction activities. The TMP shall be prepared in accordance with the *California Manual of Uniform Traffic Control Devices* (California MUTCD) and all applicable requirements of Caltrans, the County of Sacramento Department of Public Works and the City of Elk Grove Department of Public Works. The TMP shall be approved by the affected jurisdictions prior to construction and complied with at all times during construction of the project. The TMP shall be prepared by a qualified transportation engineer and would include but not be limited to the following measures:

- Define location and timing of any temporary lane or roadway closures.
- Obtain permits and identify oversize and overweight load haul routes. Transport of oversized loads on state, county, and city roads will require oversize/overload permits from Caltrans, Sacramento County and the City of Elk Grove. Transporters will follow state and county regulations for transportation of oversized and overweight loads. Such regulations typically include provisions for time of day, pilot cars, law enforcement escorts, speed limits, flaggers, and warning lights, which will be detailed in the respective oversized-load permits.
- Prepare Temporary Traffic Control (TTC) Plans for each site location. The construction contractor will submit any applicable pedestrian or traffic detour plans, to the satisfaction of the City/County Engineer, for any lane or sidewalk closures. The detour plan shall comply with Part 6, Temporary Traffic Control, of the California MUTCD, and standard construction practices. The TTC Plans will identify the need for flaggers for directing traffic, temporary signage, lighting, and traffic control devices, if required.
- Identify and provide for circumstances requiring the use of temporary traffic control measures, such as flag persons, warning signs, lights, barricades, and cones to provide safe work areas in the vicinity of the project site or along the haul routes, including for narrow roadway segments, and to warn, control, protect, and expedite vehicular, bicycle, and pedestrian traffic and access by emergency responders.
- Schedule deliveries of heavy equipment and construction materials during periods of minimum traffic flow. The timing of deliveries shall be coordinated with Sacramento County and the City of Elk Grove.

- Determine the need to schedule construction workforce arrival and departure times outside peak traffic periods.
- Determine the need for construction scheduling outside of legal holidays and special events.
- Identify vehicle safety procedures for entering and exiting site access roads and staging areas.
- Notify and coordinate potential road closures with emergency responders prior to construction.
- Ensure access for emergency vehicles to and around the Project area.
- Identify procedures for construction area evacuation in the case of an emergency declared by county or other local authorities
- Maintain access to adjacent properties. The construction contractor will notify residential and commercial occupants of property adjacent to the construction site of the hours of construction activity which may impact the area. This notification will be provided one week in advance of the start of the extended construction activity.
- Notify and coordinate potential road closures with transit operators prior to construction.
- Maintain access to transit, bicycle, and pedestrian facilities along the project route(s).
- Notify and coordinate potential road closures with mail service and waste haulers prior to construction.

Significance Determination after Mitigation

Less than significant for all action alternatives.

Impact TR-2 Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways.

Alternative 1 (Medium Service Area Alternative) and Alternative 2 (No Reclamation Funding Alternative)

Project and Program Elements. As described for Impact TR-1, construction of the proposed Project would result in a temporary increase in local traffic due to construction-related workforce traffic and material deliveries, as well as construction activities occurring within the public ROW.

The majority of the roadway segments in the Project area within the City of Elk Grove are operating at an acceptable LOS. One segment of Bruceville Road, between Elk Grove Boulevard and Bilby Road, is operating at LOS F during the PM peak period. Several segments of Highway 99 south of the City of Elk Grove (unincorporated Sacramento County) are operating at LOS E or LOS F during peak hours. The proposed Project would generate an average of 20 truck trips per day and 50 worker trips per day. As the transmission pipeline construction progresses, construction truck traffic routes would also shift. Once construction of the transmission pipeline progresses to the south of Bilby Road, the segments operating at LOS E and F described above may be impacted during peak hours and may not have additional capacity to handle the small increase in traffic from construction activity. Although it is likely that the truck trips would be

distributed through the day, if all 50 (one-way) worker trips were to occur during the PM peak hour, the proposed Project would increase the V/C ratio on Bruceville Road, between Elk Grove Boulevard and Bilby Road by 0.051, which exceeds the 0.05 V/C ratio significance threshold.

Construction truck traffic and workers may use Highway 99 between Twin Cities Road and Calvin Road during peak hours to access the sites for material delivery and commute trips to the project site. The length of time in which construction traffic would affect traffic operations on these roadways would vary given that the proposed transmission pipeline would be constructed at an average of 150 feet per day. Most of the segments on Highway 99 south of the City of Elk Grove are operating at LOS E and F. The proposed Project would result in a temporary increase in traffic to a Caltrans facility that is currently operating at LOS F. Impacts at the roadway segments above would be potentially significant because the LOS standards would be exceeded. Implementation of **Mitigation Measure TR-1**, which would require the preparation and implementation of a traffic management plan (TMP), would reduce impacts to a less-than-significant level by shifting worker and truck traffic to off-peak hours.

Alternative 3 (Small Service Area Alternative)

Project and Program Elements. Construction of Alternative 3 (Small Service Area Alternative) would result in similar transportation-related impacts as described for Alternative 1 (Medium Service Area Alternative) and Alternative 2 (No Reclamation Funding Alternative), but to a lesser degree. With the implementation of **Mitigation Measure TR-1**, the potential traffic impacts of Alternative 3 (Small Service Area Alternative) would be less than significant.

Alternative 4 (No Project Alternative)

Under the No Project Alternative, no facilities would be constructed. Therefore, no traffic impacts would occur.

Significance Determination before Mitigation

Potentially significant for all action alternatives. No impact for Alternative 4 (No Project Alternative).

Mitigation Measure

See **Mitigation Measure TR-1**.

Significance Determination after Mitigation

Less than significant for all action alternatives.

Impact TR-3 Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).

Alternative 1 (Medium Service Area Alternative) and Alternative 2 (No Reclamation Funding Alternative)

Project and Program Elements. Project construction would not permanently alter any public roadways or intersections, nor would it introduce a design feature or incompatible uses to the project area. Upon completion of pipeline installation, affected roadways would be repaved per

the requirements of the affected jurisdiction. All railroad crossings would be coordinated with the UPRR and the project may need to obtain an access agreement for these crossings.

Implementation of the proposed Project has the potential to substantially increase hazards due to the anticipated road and lane closures and due to the construction activity within and along the public ROW. Construction of the proposed Project within the public ROW would require temporary, intermittent closure of lanes and the potential for full road closures along some roadways. These temporary closures would occur intermittently throughout the duration of construction. In some cases, traffic would need to be re-routed. However, implementation of **Mitigation Measure TR-1** would minimize impacts to a less-than-significant level. No other design features are proposed that would substantially increase hazards.

Alternative 3 (Small Service Area Alternative)

Project and Program Elements. The construction and operational impacts of both project and program components for Alternative 3 (Small Service Area Alternative) would be similar to those identified for Alternative 1 (Medium Service Area Alternative), except that the intensity of the effects would be less for construction-related effects. Similar to Alternative 1 (Medium Service Area Alternative), Alternative 3 (Small Service Area Alternative) has the potential to substantially increase hazards due to anticipated road or lane closures and due to work within and along the public ROW during construction. However, with implementation of **Mitigation Measure TR-1**, the potential traffic impacts of Alternative 3 (Small Service Area Alternative) would be less than significant.

Alternative 4 (No Project Alternative)

Under the No Project Alternative, no facilities would be constructed. Therefore, no traffic impacts would occur.

Significance Determination before Mitigation

Potentially significant for all action alternatives. No impact for Alternative 4 (No Project Alternative).

Mitigation Measure

See **Mitigation Measure TR-1**.

Significance Determination after Mitigation

Less than significant for all action alternatives.

Impact TR-4 Result in inadequate emergency access.

Alternative 1 (Medium Service Area Alternative) and Alternative 2 (No Reclamation Funding Alternative)

Project and Program Elements. Construction of the proposed Project has the potential to result in inadequate emergency access due to anticipated road and lane closures. However, the TMP prepared as part of **Mitigation Measure TR-1** would be implemented to minimize impacts on emergency access, including notifying emergency responders prior to construction and ensuring access for emergency vehicles to and around construction areas. All applicable local, state, and

federal traffic control measures would be implemented to ensure the safety of the local traffic and construction traffic. With implementation of **Mitigation Measure TR-1**, impacts on emergency access would be less than significant.

Alternative 3 (Small Service Area Alternative)

Project and Program Elements. Similar to Alternative 1 (Medium Service Area Alternative), Alternative 3 (Small Service Area Alternative) has the potential to result in inadequate emergency access due to anticipated road and lane closures during construction. With implementation of **Mitigation Measure TR-1**, the potential impacts to emergency access would be less than significant.

Alternative 4 (No Project Alternative)

Under the No Project Alternative, no facilities would be constructed. Therefore, no traffic impacts would occur.

Significance Determination before Mitigation

Potentially significant for all action alternatives. No impact for Alternative 4 (No Project Alternative).

Mitigation Measure

See **Mitigation Measure TR-1**.

Significance Determination after Mitigation

Less than significant for all action alternatives.

Impact TR-5 Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.

Alternative 1 (Medium Service Area Alternative) and Alternative 2 (No Reclamation Funding Alternative)

Project and Program Elements. Construction of the proposed Project has the potential to conflict with adopted policies, plans, or programs regarding public transit, bicycle, and pedestrian facilities or otherwise decrease the performance or safety of such facilities due to the anticipated lane/road closures. Sidewalks and bicycle facilities are located throughout the Project area. Public transit also operates in the vicinity of the Project area and during the construction of the pipeline, the existing transit routes and bus stops on Franklin Boulevard could be temporarily affected. Implementation of **Mitigation Measure TR-1** would minimize impacts on public transit and non-motorized travel. The construction contractor would obtain all necessary road permits prior to construction and would comply with all the applicable conditions of approval. The TMP would establish methods for minimizing construction effects on transit service, by maintaining access to such facilities along the project construction area or during potential full road closures, providing an alternative route if one is needed. The TMP would include procedures for notifying affected agencies in advance of construction activities, including transit operators. With implementation of **Mitigation Measure TR-1**, impacts on policies, plans, or programs supporting alternative transportation would be less than significant.

Alternative 3 (Small Service Area Alternative)

Project and Program Elements. The construction and operational impacts of both project and program components for Alternative 3 (Small Service Area Alternative) would be similar to those identified for Alternative 1 (Medium Service Area Alternative). Similar to Alternative 1 (Medium Service Area Alternative), Alternative 3 (Small Service Area Alternative) has the potential to conflict with adopted policies, plans, or programs regarding public transit, bicycle, and pedestrian facilities or otherwise decrease the performance or safety of such facilities due to the anticipated lane/road closures. However, with implementation of **Mitigation Measure TR-1**, the potential traffic impacts of Alternative 3 (Small Service Area Alternative) would be less than significant.

Alternative 4 (No Project Alternative)

Under the No Project Alternative, no facilities would be constructed. Therefore, no traffic impacts would occur.

Significance Determination before Mitigation

Potentially significant for all action alternatives. No impact for Alternative 4 (No Project Alternative).

Mitigation Measure

See **Mitigation Measure TR-1**.

Significance Determination after Mitigation

Less than significant for all action alternatives.

Cumulative Impact Analysis

The geographic scope of cumulative impacts related to transportation and traffic includes the project area and surrounding roadways. The proposed Project, as well as other projects listed in **Table 3.0-1**, would result in significant cumulative impacts if they collectively adversely affect the same roadways or other transportation infrastructure. Projects listed in **Table 3.0-1** that are relevant to the proposed Project and could occur within the same timeframe are the EchoWater, rehabilitation of digesters 6 and 7 at SRWTP, SPA Recycled Water Project, Capital Reserve Project, Sheldon Park Estates, Dignity Health Elk Grove Medical Campus, and Capital Southeast Connector projects. These cumulative projects combined with construction activities required to implement the proposed Project, could result in lane closures, roadway closures, and construction-related traffic along the same roadways. The proposed Project's contribution would be considerable, and this would be a potentially significant impact. **Mitigation Measure TR-1** would involve preparation of a construction management plan for traffic, which would include consideration of other projects in the development of measures to reduce the traffic impacts of the proposed project. With implementation of this mitigation measure, the contribution of the project to this cumulative impact would be reduced to a level where it would no longer be considerable.

Significance Determination before Mitigation

Potentially significant.

EIR

Draft

Mitigation Measures

See **Mitigation Measure TR-1.**

Significance Determination after Mitigation

Less than significant.

3.14.5 References

California Department of Transportation (Caltrans). 2002. Guide for the Preparation of Traffic Impact Studies. December. Available at:
http://www.dot.ca.gov/hq/tpp/offices/ocp/igr_ceqa_files/tisguide.pdf.

_____. 2014. 2014 All Traffic Volumes on CSHS. Traffic Data Branch.**Error! Hyperlink reference not valid.** Available at: <http://dot.ca.gov/trafficops/census/2014all/>.

Elk Grove Development Services, City of. 2003a. City of Elk Grove General Plan Background Report, Chapter 10, Circulation.

_____. 2003b. Elk Grove General Plan Volume 1: Draft Environmental Impact Report. August.

_____. 2014. Bicycle, Pedestrian, and Trails Master Plan. July.

_____. 2015a. Whitelock Interchange Project. Available at:
http://www.elkgrovecity.org/city_hall/departments_divisions/public_works/capital_improvements/whitelock_interchange

_____. 2015b. General Plan Circulation Element. Reflects Amendments through March 2015.

Fehr and Peers. 2013. Revised Draft Transportation Impact Analysis Housing Element Update. December. Prepared for the City of Elk Grove.

Sacramento County. 2011. *Sacramento County General Plan of 2005-2030*. Amended November 9, 2011.

Sacramento County Airport System. 2015. *Franklin Field Airport – About*. Available at:
<http://www.sacramento.aero/f72/about/>.

Transportation Research Board. 2010. Highway Capacity Manual.

3.15 Environmental Justice

This section presents the physical and regulatory setting for environmental justice for the proposed Project and evaluates the potential impacts associated with its implementation.

Environmental justice is defined as: “The fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. Fair treatment means no group of people, including racial, ethnic, or economic groups should bear a disproportionate share of the negative environmental consequences resulting from industrial, municipal, and commercial operations or the execution of Federal, state, local, and tribal programs and policies.” (USEPA 2012).

3.15.1 Environmental Setting

According to CEQA and USEPA guidelines, a study area is characterized as minority area if the minority population of the affected area exceeds 50 percent, or if the minority population percentage of the affected area is meaningfully greater than the minority population percentage in the general population or other appropriate unit of geographic analysis (USEPA 1998). Under the same guidelines, a low-income population exists if the project study area is composed of 50 percent or more people living below the poverty threshold, as defined by the U.S. Census Bureau, or if the percentage of people living below the poverty threshold in the study area is substantially greater than the poverty percentage of the general population or other appropriate unit of geographic analysis.

According to the U.S. Census Bureau, the median household income (MHI) for Sacramento County was \$55,615 in 2014 (U.S. Census Bureau 2014a). Communities with MHIs less than 80 percent of the California MHI are considered disadvantaged communities (DACs), according to the California Department of Water Resources (DWR) Integrated Regional Water Management Program. Detailed demographic information was analyzed using data from the U.S. Census Bureau’s American Community Survey (ACS), which provides estimates of demographics based on annual surveys. Data from ACS is available on a Census tract level, and this finer scale is more accurate for project analyses. The most recent set of ACS MHI data available at the Census tract level for Sacramento County is the 2010-2014 data, which correlates the data to 2014 Census tracts. The 2010-2014 ACS MHI for California is \$61,489. A DAC would therefore be a community with an MHI of \$49,191 or less. Mapping using the ACS data shows DACs north of the Project area, but none within the Project area (see **Figure 3.15-1**).

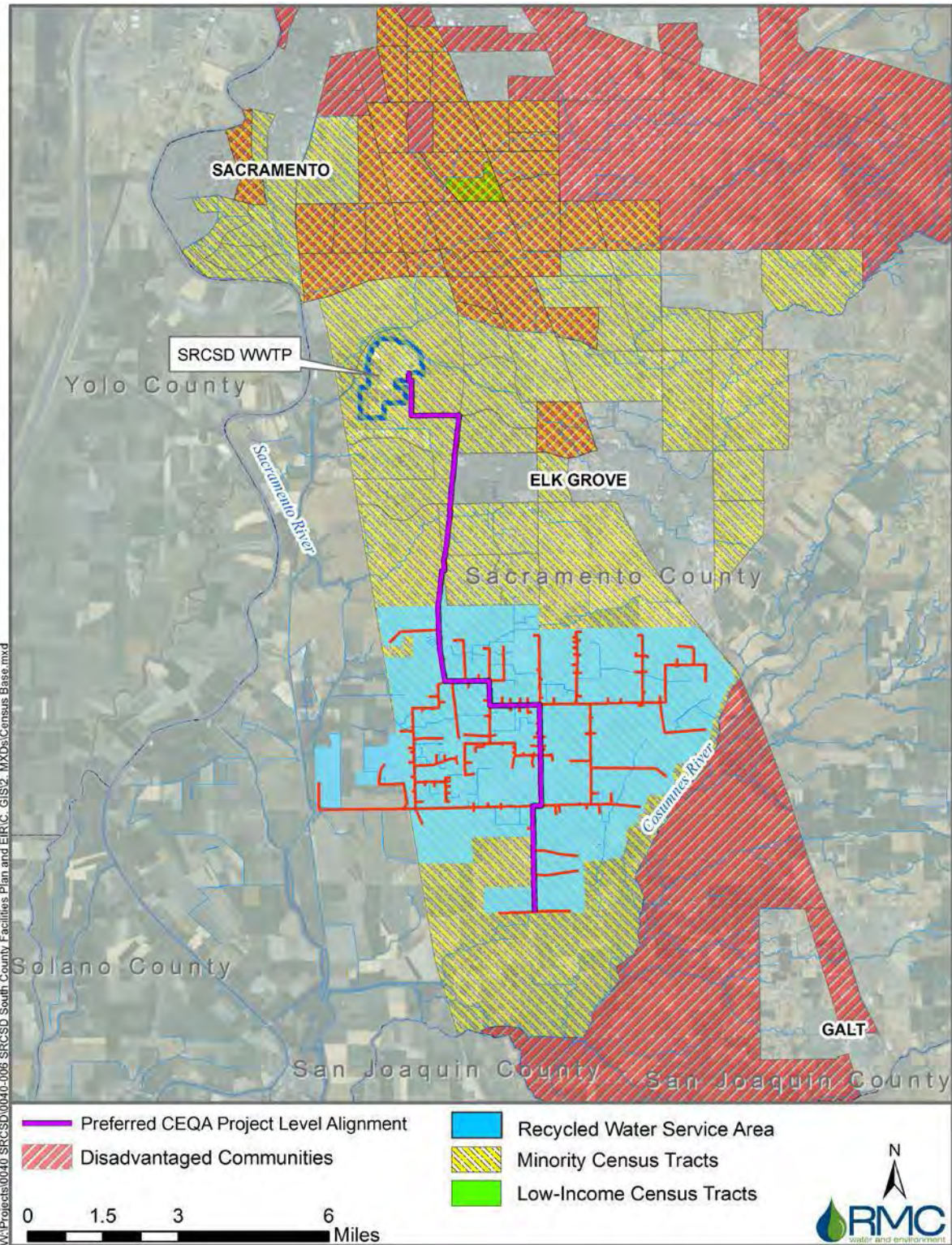


Figure 3.15-1: Minority Populations, Low-Income Populations and DACs in the Project Area

Figure 3.15-1 also shows the Census tracts that are considered low-income areas in which over half of the population is below the poverty level and census tracts with over half their populations as non-white (i.e. minorities). Low-income areas and minority areas were identified using the ACS Demographic and Housing Estimates from 2010 to 2014. An estimated 13.7 percent of families in the County have an income below poverty level (U.S. Census Bureau 2014b). As shown on **Figure 3.15-1**, a relatively short segment of the preferred project pipeline alignment crosses a portion of a Low Income Census tract. Project facilities also will be within areas where over half the populations are non-white. In Sacramento County, 60 percent of the population identify as white, while the remaining 40 percent are non-white or mixed race. The figure shows that the pipeline alignment will traverse some areas with minorities greater than 50 percent of the population (U.S. Census Bureau 2014b).

3.15.2 Regulatory Framework

Federal Policies and Regulations

The 1994 Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, prohibits discrimination against or exclusion of individuals and populations during the conduct of federal activities. It requires all federal agencies to identify and address disproportionately high and adverse human health or environmental effects of its programs and activities on minority and low-income populations. The requirements of EO 12898 apply to all Federal actions that are located on Federal lands, sponsored by a Federal agency, or funded with Federal monies, and that may affect minority or low-income populations.

Guidance under the National Environmental Policy Act (CEQ 1997) and Final Guidance for Incorporating Environmental Justice Concerns in EPA's NEPA Compliance Analysis (EPA 1998) serve as guides for incorporating environmental justice goals into preparation of environmental impact statements under NEPA. These documents provide specific guidelines for determining whether any environmental justice issues are associated with a proposed Federal action.

State Policies and Regulations

There are no state regulations related to environmental justice that are relevant to the proposed Project.

Local Policies and Regulations

There are no local regulations related to environmental justice that are relevant to the proposed Project.

3.15.3 Impact Analysis

Methodology for Analysis

Section 15131(a) of the CEQA Guidelines states that “Economic and social effects of a project shall not be treated as significant effects on the environment” and therefore, this section does not apply CEQA significance thresholds and no determinations of significance are made.

The Council of Environmental Quality NEPA regulations (40 CFR 1508.8[b]) list economic and social factors among the effects that should be analyzed in preparing an EIS. Specifically economic and social effects should be discussed when they are interrelated with natural or physical effects (40 CFR 1508.14). Disproportionate effects from project implementation on minority or low-income populations, either directly, indirectly, or cumulatively must be considered. To determine if the proposed Project alternatives could disproportionately affect a high-minority or low-income population, it must also be determined how it would affect other segments of the population. For example, if there are more high-income populations affected by a project than low-income populations, then the potential for disproportionate impacts to the low-income population, and thus the potential for environmental justice impacts, is low. If the proportion of low-income and high-minority populations impacted by a project is greater than either the middle or high-income populations or the middle- or low-minority populations, then there is more potential for an environmental justice impact. In this case, additional information would be considered to determine if there would be an adverse effect on the low-income, high-minority populations. NEPA does not require a determination of significance for social impacts and therefore, none have been made. No significance thresholds are provided and no mitigations are proposed.

Impacts

Impacts to Minority or Low-Income Populations that are Disproportionately High and Adverse, Either Directly, Indirectly, or Cumulatively

Alternative 1 (Medium Service Area Alternative) and Alternative 2 (No Reclamation Funding Alternative)

Project and Program Elements. These action alternatives would include constructing a pump station at the SRWTP and transmission pipelines in the City of Elk Grove and South County. The placement of all proposed facilities is strategic and intentionally located to maximize recycled water and benefits to existing agricultural and environmental users. Normal operation of the proposed facilities would not generate significant air quality, traffic, noise, or aesthetic impacts once in place because they would be either buried underground (pipelines) or located on previously disturbed, industrial sites (pump station at the SRWTP). The incremental long-term impact on adjacent land uses would be the low-level risk of an accidental pipe breakage with minor flooding and traffic disruption and routine maintenance activities. Because operation of the alternatives would not result in significant impacts, there is no reason to expect that any populations would be affected disproportionately by operation. Because these alternatives would provide a sustainable long-term supply for agricultural irrigation and environmental uses at Stone Lakes NWR, these alternatives would contribute permanent benefits to the community.

Construction and operation of the pump station and transmission pipeline alignments would occur in areas where minorities comprise over 50 percent of the population, and in a relatively small area of low-income census tracts, as shown in **Figure 3.15-1**. Because the project's effect on areas identified as DACs would be very small in relation to the overall project area of effect, and all adverse impacts can be reduced to a less than significant level, the project would not disproportionately affect DACs. Although the project effects would be felt in areas with greater than 50 percent minority populations, outside of the small area considered to be a DAC, the minority populations are not considered disadvantaged when paired with economic characteristics and impacts to minority populations would be similar to other affected areas where minority populations do not exceed 50 percent of the population. Thus the proposed Project would not disproportionately affect minority or DAC populations and no environmental justice impacts would occur.

Alternative 3 (Small Service Area Alternative)

Project and Program Elements. The construction and operational impacts for both the project and program components of Alternative 3 (Small Service Area Alternative) would be similar to those identified for Alternative 1 (Medium Service Area Alternative), except that the area and intensity of the effects would be less for construction-related effects. While the construction and operation of the proposed pipelines and pump station would affect minority populations, similar to the reasons described above for Alternatives 1 and 2, the effects would not be disproportionate.

Alternative 4 (No Project Alternative)

Under this alternative, no facilities would be constructed. Therefore, no impacts related to environmental justice would occur.

3.15.4 References

Council on Environmental Quality. 1997. Environmental Justice: Guidance Under the National Environmental Policy Act. Available at:
http://www.epa.gov/environmentaljustice/resources/policy/ej_guidance_nepa_ceq1297.pdf.

Elk Grove, City of. 2009. *The City of Elk Grove General Plan*. Reflects Amendments through July 22, 2009.

Sacramento County. 2011. *Sacramento County General Plan of 2005-2030*. Amended November 9, 2011.

_____. 2013. *Sacramento County Housing Element of 2013-2012*. October 2013.

U.S. Census Bureau. 2014a. *2010-2014 American Community Survey 5-Year Estimates, Income in the Past 12 Months (in 2014 Inflation-Adjusted Dollars)*. Available at:

<http://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?src=CF>.
Accessed May 24, 2016.

_____. 2014b. *2010-2014 American Community Survey 5-Year Estimates*. Available at:
<http://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?src=CF>.
Accessed May 23, 2016.

U.S. Environmental Protection Agency (USEPA). 1998. Final Guidance for Incorporating
Environmental Justice Concerns in EPA's NEPA Compliance Analyses. April.

_____. 2012. Environmental Justice: Basic Information – Background. May 24. Available at:
<http://www.epa.gov/environmentaljustice/basics/ejbackground.html>. Accessed March 11,
2015.

3.16 Socioeconomics

While CEQA does not require that socioeconomics be evaluated, this section has been included to facilitate future NEPA documentation. This section includes a description of the socioeconomic conditions in the Project Area and evaluates the potential effects on the economy from that could result from implementation of the proposed Project.

3.16.1 Environmental Setting

Employment

The American Community Survey (ACS) produces population, demographic, and housing estimates, and the U.S. Census Bureau develops the official population estimates for the nation, states, counties, cities, and towns, and housing estimates for state and counties. In 2014, according to the ACS, 646,033 people in Sacramento County were in the civilian labor force. The median household income (MHI) was \$55,615. An estimated 18.1 percent of families in the County have an income below the poverty level (U.S. Census Bureau 2014). The estimated number of people employed in various industries in Sacramento County is summarized in **Table 3.16-1**.

Table 3.16-1: Sacramento County Population and Employment by Industry Sector

Category	Population
Total Population, 16 years and over	1,161,644
Population in Labor Force	719,585
Civilian Labor Force	717,602
Employed	646,033
Unemployed	71,569
Armed Forces	1,983
Population Not in Labor Force	442,059
Industry	
Agriculture, forestry, fishing and hunting, and mining	5,733
Construction	41,336
Manufacturing	36,227
Wholesale trade	17,686
Retail trade	73,059
Transportation and warehousing, and utilities	30,947
Information	12,775
Finance and insurance, and real estate and rental and leasing	46,253
Professional, scientific, and management, and administrative and waste management services	74,520
Educational services, and health care and social assistance	143,612
Arts, entertainment, and recreation, and accommodation and food services	63,789
Public administration	65,868
Other services	34,228

Source: U.S. Census Bureau 2014

While agriculture accounts for less than 1 percent of the jobs in the County (based on **Table 3.16-1**), with a \$300 million annual production value, agricultural production in Sacramento County is a significant contributor to the local economy. In addition to the production value, it

provides hundreds of jobs tied to production and thousands more, indirectly, for production, processing, transportation, and marketing. Because of the jobs tied directly and indirectly to agricultural production, a four to one ratio is estimated for crop growth in the region, meaning a \$300 million production value is actually a \$1.2 billion impact on the local economy. Agriculture also provides benefits to quality of life, contributes to open space and helps to manage habitat and wildlife. There are areas within the County that suffer from blight, empty buildings and vacant parcels, economic stagnation, chronic unemployment, and land use and job/housing imbalances (Sacramento County 2011).

The labor market in the County is dominated by public agency employment, services, and retail/wholesale trades. The California Employment Development Department (EDD) determined that state and local governmental agencies, health care, education establishments, utilities, and insurance firms are the major employers in the Sacramento area.

Employment trends in Sacramento County from 2000 to 2010 include the following (Sacramento County 2011):

- The Sacramento County economy will continue to diversify.
- Significant job growth will continue among companies that serve markets beyond the County.
- New jobs will include higher paying professional jobs and lower paying service and retail jobs. The majority of new jobs will be in the sectors that pay salaries below the Sacramento County median income.
- Most employment growth will be centered within the incorporated areas of the County. There will be the potential for job growth in the unincorporated communities through conversion and/or reuse of older commercial and industrial sites.

Table 3.16-2 shows unemployment rates in Sacramento County, since 2004. The rate was once as low as 4.8 percent. Beginning in 2007 and consistent with the nationwide economic downturn, the unemployment rates in the County began increasing. Then, beginning in 2011, the rates began decreasing and the County had an unemployment rate of 6.0 percent in 2015.

Table 3.16-2: Unemployment Rates in Sacramento County

Year	Unemployment Rate
2015	6.0 percent
2014	7.3 percent
2013	8.9 percent
2012	10.5 percent
2011	12.1 percent
2010	12.7 percent
2009	11.3 percent
2008	7.2 percent
2007	5.4 percent
2006	4.8 percent
2005	5.0 percent
2004	5.6 percent

Source: State of California EDD 2016

Jobs/Housing Balance

The ratio of jobs per housing unit helps to describe the relationship between employment and housing, where a ratio of less than one means that an area provides more housing than jobs and a ratio greater than the number of workers per household indicates there is not enough housing in relation to employment in an area. In 2000, the ratio of jobs per housing unit countywide was 1.19 and increased to 1.22 in 2005. The countywide number of workers per household in 2001 was 1.4, indicating jobs and housing in Sacramento County are generally in balance (Sacramento County 2011). However, in 2008, unincorporated Sacramento County had a jobs per housing ratio of 0.89, less than 1, indicating there is more housing than jobs. It is projected that the ratio will remain at this level through 2020 and then increase to 0.97 by 2035 (Sacramento County 2013).

3.16.2 Regulatory Framework

This section describes laws and regulations that may apply to the proposed Project. The applicable federal, state, and local laws, regulations, and policies related to socioeconomics for the proposed Project are described as follows.

Federal Policies and Regulations

There are no federal regulations or policies relevant to socioeconomics and the proposed Project.

State Policies and Regulations

There are no state regulations or policies relevant to socioeconomics and the proposed Project.

Local Policies and Regulations

Sacramento County General Plan

The Sacramento County General Plan (Sacramento County 2011) states that taking actions to ensure a healthy local economy is of vital importance to the County. To highlight the importance of improving the economy, an Economic Development Element was included in the most recent General Plan update.

Economic Development Element

The following goal and objectives from the Economic Development Element are relevant to the proposed project Project:

- **GOAL:** Provide for continuing sound and healthy agriculture economy in the county, and encourage a productive and profitable agricultural industry through the conservation of agricultural resources and protection of agricultural lands. Promote the agri-tourism economy while encouraging public education and participation in the agriculture industry.
 - Objective: Improved economic vitality for the local agricultural industry and the individual farmer and rancher.
 - Policy ED-14: Support and promote a healthy and competitive agricultural industry whose products are recognized in local, national and international markets.

- Policy ED-15: Support ongoing efforts by the agriculture community to develop high value products and new markets for goods that can support higher paying and more steady employment opportunities in the unincorporated area.
- Policy ED-19: Support and encourage the maintenance and growth of commercial agricultural businesses in Sacramento County.

Agricultural Element

The Agricultural Element of the General Plan includes the following relevant goal and objective:

- **GOAL:** Enhanced viability of Sacramento County's agricultural economy.
 - Objective: Protect, conserve, and enhance agribusiness operations in Sacramento County for economic sustainability and viability.

Land Use Element

Lastly, the Land Use Element contains the following applicable goal and objective:

- **GOAL:** A viable rural and recreational economy in all non-metropolitan areas outside of the Urban Service Boundary.
 - Objective: important farmlands protected to ensure the continuation of agricultural production and to preserve open space.

City of Elk Grove General Plan

There are no goals or policies included in the City of Elk Grove General Plan that are relevant to the proposed Project as it relates to socioeconomics.

3.16.3 Impact Analysis

Methodology for Analysis

Section 15131(a) of the CEQA Guidelines states that "Economic and social effects of a project shall not be treated as significant effects on the environment" and therefore, this section does not apply CEQA significance thresholds and no determinations of significance are made.

Impacts

Economic Benefits and Impacts to the Project

Alternative 1 (Medium Service Area Alternative), Alternative 2 (No Reclamation Funding Alternative), and Alternative 3 (Small Service Area Alternative)

Project and Program Elements. The construction of the action alternatives would generate temporary construction jobs, the demand for which is expected to be met within the regional workforce. Spending associated with construction could benefit the local and regional economy. The action alternatives would provide recycled water for agricultural irrigation, to Stone Lakes NWR, and to a potential recharge area in South County, replacing existing groundwater and surface water sources. Because these alternatives would replace existing water sources, there would be minimal economic benefits or impacts. However, during potential future extended

drought years when the existing groundwater or surface water supplies may be limited, the recycled water would provide a reliable, drought-proof water supply. This would help to ensure adequate irrigation of crops and reduce or eliminate the need to fallow crops, thus resulting in economic benefits to the agricultural community.

Alternative 4 (No Project Alternative)

This alternative would not result in any potential economic benefits and the agricultural community in South County would be subject to the uncertainties of water supply during potential future, extended drought years. Growers would continue to use groundwater as the sole source of supply for irrigation. Because additional water supply is expected to be needed to meet municipal and industrial irrigation demands, it is expected that new surface and groundwater supplies would be developed over time, thus increasing drawdown of the groundwater basin. During times of drought, groundwater or surface water resources could become limited, resulting in the need to reduce water use. This would result in the potential fallowing of lands, deficit irrigation practices and/or irrigation with poorer quality groundwater, which would decrease crop output and revenue.

Cumulative Impacts

The geographic scope of potential cumulative impacts related to socioeconomics encompasses Sacramento County. Construction associated with all of the cumulative projects would contribute to the local and regional employment and economy. As shown in **Table 3.16-1**, approximately 43,000 people are employed in the construction industry in Sacramento County. The demand for construction jobs as a result of the cumulative projects is expected to be met within the regional workforce. In addition to employment, construction-related spending (i.e., purchase of construction materials, worker spending) of the cumulative projects could also represent an economic benefit to the local and regional economy. The proposed Project in combination with the cumulative projects would be cumulatively beneficial.

3.16.4 References

California, State of, Employment Development Department (EDD). 2016. *Historical Unemployment Rate and Labor Force Data Tables Sacramento County (March 2015 Benchmark)*. Available at: <http://www.labormarketinfo.edd.ca.gov/data/unemployment-and-labor-force.html>. Accessed May 24, 2016.

Sacramento County. 2011. *Sacramento County General Plan of 2005-2030*. Amended November 9, 2011.

_____. 2013. *Sacramento County Housing Element of 2013-2012*. October 2013.

U.S. Census Bureau. 2014. *2014 American Community Survey, Selected economic characteristics data from 2013 American Community Survey 1-year estimates*. Available at: http://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS_13_1YR_DP03&prodType=table. Accessed May 24, 2016.

This page intentionally left blank

3.17 Population and Housing

This section presents the physical and regulatory setting for population and housing in the area surrounding the proposed Project. The section also evaluates the potential population- and housing-related impacts associated with its implementation.

3.17.1 Environmental Setting

Population

The ACS has produced 5-year (from 2009 to 2013) population estimates for Sacramento County. According to this data, the total population in the County in 2013 was 1,435,207 (U.S. Census Bureau 2013). Population in 2010 was estimated to be 1,418,788 (Sacramento County 2011). The estimated increase in population from 2010 to 2013 represents a 1.16 percent increase. Between 2000 and 2010, there was an estimated population increase of 16 percent (Sacramento County 2011).

The population trends in unincorporated Sacramento County differ from those countywide. Between 2000 and 2010, population of the unincorporated area of the County decreased by 16 percent due to areas being incorporated into the Cities of Elk Grove and Rancho Cordova. Sacramento Area Council of Governments (SACOG) estimates the population in the unincorporated area will increase by 4.6 percent from 2010 to 2020 and 20 percent from 2020 to 2035 (see **Table 3.17-1**) (Sacramento County 2013).

Unincorporated Sacramento County's population has a higher percentage of Non-Hispanic White residents than the City of Sacramento or the State of California (65 percent, 45 percent, and 58 percent, respectively). Latino/Hispanic people are the second largest ethnic population group in the unincorporated area (Sacramento County 2013).

Among the incorporated cities in the County, Elk Gove had the largest population growth from 2000 to 2010. A portion of Elk Grove's growth was due to the annexations. Its growth rate from 2000 to 2010 was estimated to be 62 percent. From 2010 to 2020, the City's population is projected to increase by 14.8 percent and from 2020 to 2035, by 18.2 percent. Historic and projected populations for Unincorporated Sacramento County and Elk Grove are summarized in **Table 3.17-1**.

Table 3.17-1: Unincorporated Sacramento County and City of Elk Grove Populations

Jurisdiction	2000	2010	2020	2035
City of Elk Grove	94,293	153,015	175,680	207,740
Unincorporated Sacramento County	659,226	554,554	579,850	696,590

Source: Sacramento County 2013

Housing

Household growth trends tend to mirror the population trends in Sacramento County. The entire County saw an increase in households by 13.3 percent between 2000 and 2010. Unincorporated Sacramento County's households were reduced by approximately 9,500 from 2000 to 2010 due to the annexations into Elk Grove and Rancho Cordova, an approximate 4.5 percent reduction. Elk Grove experienced the most growth with a 60.6 percent increase in households from 2000 to 2010 (Sacramento County 2013).

The average household size in the unincorporated area of the County increased from 2.63 people per household to 2.72 from 1990 to 2012. Overall, the average household size for unincorporated Sacramento County is larger than the City of Sacramento, but smaller than the State of California average. Due to aging population, the average household size in the unincorporated area of the County is expected to decline (Sacramento County 2013).

Approximately 58 percent of the housing units in the unincorporated County were owner-occupied according to the 2010 Census, higher than the City of Sacramento and State of California rates. The unincorporated area is dominated by suburban developments and single-family homes. At the time of the 2010 Census, approximately 38 percent of the houses were more than 40 years old and in need of maintenance and other updates (Sacramento County 2013).

3.17.2 Regulatory Framework

This section describes the laws and regulations that may apply to the proposed Project and population and housing. The applicable federal, state, and local laws, regulations, and policies related to population and housing for the proposed Project are described as follows.

Federal Policies and Regulations

There are no federal policies or regulations associated with population and housing that are relevant to the proposed Project.

State Policies and Regulations

There are no State policies or regulations associated with population and housing that are relevant to the proposed Project.

Local Policies and Regulations

General Plans

The Sacramento County General Plan (Sacramento County 2011) and the City of Elk Grove General Plan (City of Elk Grove 2015) include Housing Elements that address population planning. In 2013, Sacramento County adopted an updated Housing Element for its General

Plan (Sacramento County 2013). The Housing Element covers population, economics, and housing for the unincorporated area of the County, where the primary portion of the proposed Project would be located. It also includes a Housing Needs Assessment as required by California Government Code Section 65583(a)(2), documenting the household characteristics of the County.

The proposed Project does not include the construction of or modifications to existing housing or new housing, nor would it affect existing housing or proposed development. Therefore, housing and population-related goals and objectives included in the General Plans are not relevant to the proposed Project.

3.17.3 Impact Analysis

Methodology for Analysis

This section evaluates whether construction and operation of the proposed facilities would result in significant impacts related to population and housing. Specifically, the analysis is based on consideration of whether the proposed Project would displace housing. As identified in the *Chapter 2, Alternatives and Proposed Project*, the pump station and transmission pipeline are being evaluated at a project-specific level and the remaining project components, including the distribution mains, service connection laterals, turnouts, potential recharge area, diluent wells, and the Stones Lake NWR are being evaluated at the program-level. However, from a population and housing perspective, the potential impacts would be similar whether they are at the project level or the program level. The primary difference is that the construction schedule and the potential construction-related trips have been identified for the project-level activities, but are not yet known for the program-level components. Like the project-level activities, the program-level activities would consist of similar impacts. For this reason, the population and housing impacts of the project and program elements are discussed together.

Thresholds of Significance

Consistent with the thresholds of significance identified in Sacramento County's Initial Study Checklist, an impact would be considered significant if the project would:

- Displace substantial amounts of existing housing, necessitating the construction of replacement housing elsewhere.

Criterion Requiring No Further Evaluation

The criterion listed above that is not applicable to actions associated with the proposed Project include the following and the supporting rationale as to why further consideration is unnecessary and a no impact determination is appropriate are summarized:

- *Displace substantial amounts of existing housing, necessitating the construction of replacement housing elsewhere:* The action alternatives of the proposed Project include construction of buried pipelines primarily within existing roadways, a pump station at the SRWTP, and a potential recharge pond located within agricultural lands. These areas are not inhabited by people. As such, the proposed Project would not displace any existing housing units and would not necessitate the construction of replacement housing. The No

Project Alternative would not result in construction of any facilities. No impacts would occur and no further discussion is warranted.

Cumulative Impact Analysis

The proposed Project would have no impact on population and housing, and therefore would have no potential to contribute to any cumulative impacts related to population and housing. No impact would occur.

3.17.4 References

Elk Grove, City of. 2015. *The City of Elk Grove General Plan*. Reflects Amendments through March 2015.

Sacramento County. 2011. *Sacramento County General Plan of 2005-2030*. Amended November 9, 2011.

_____. 2013. *Sacramento County Housing Element of 2013-2012*. October 2013.

U.S. Census Bureau. 2013. *ACS Demographic and Housing Estimates. 2009-2013 American Community Survey 5-Year Estimates*. Available at:
<http://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?src=CF>.
Accessed February 12, 2015.

Chapter 4 Other CEQA Considerations

This chapter provides an overview of the impacts of the proposed Project based on the analyses presented in Chapter 3 of this Draft EIR. The topics covered in this chapter include significant and unavoidable impacts, irreversible and irretrievable commitments of resources, and growth inducement.

4.0 Significant and Unavoidable Impacts

As described in *Chapter 3, Environmental Setting, Impact Analysis*, there would be no significant and unavoidable impacts from the Regional San South Sacramento County Agriculture and Habitat Lands Recycled Water Program. As such, while Regional San would be required to adopt Findings as part of its approval of the EIR, it would not prepare a Statement of Overriding Considerations for unavoidable, adverse impacts. There would be a number of potential impacts resulting from the proposed Project; however, the standard project requirements and mitigation measures described in *Chapter 3, Environmental Setting, Impact Analysis* would reduce any potentially significant impacts to less-than-significant levels.

4.1 Irreversible Commitments of Resources

The State CEQA Guidelines (Section 15126(c)) require that an EIR include a discussion of the significant irreversible environmental changes that would be caused by a project should it be implemented.

Irreversible commitment of resources occurs as a result of the use or destruction of a specific resource (e.g., minerals extraction, destruction of cultural resources) which cannot be replaced or, at a minimum, restored over a long period of time. Irretrievable commitment of resources refers to actions resulting in the loss of production or use of natural resources. It represents the effects that the use of nonrenewable resources could have on future generations (e.g., land conversion to new uses; construction of levees preventing the natural flooding of flood plains).

The action alternatives would result in the irreversible and irretrievable commitment of the following resources during construction, operation, and maintenance:

- Construction materials such as asphalt, concrete, steel, sand, and rocks (project and program level);
- Energy resources such as electricity, fuel, oil, natural gas for equipment (project and program level);
- Nonrenewable materials such as gravel, petroleum products, steel (project and program level); and

- Labor (project and program level).

Activities under all action alternatives would commit material resources to the construction of new facilities. However, the material and energy resources consumption for construction would not result in long-term depletion of nonrenewable resources. No other irreversible permanent changes such as those that might result from construction of a large-scale mining project, a hydroelectric dam, or other industrial project would result from development of the action alternatives. Construction of the pump station would occur within the footprint of the existing SRWTP and transmission pipelines would be underground, and would not result in irreversible or irretrievable commitment of the project area as a land resource.

Operation of any of the action alternatives would result in further commitment of energy resources, however the use of recycled water in place of groundwater or imported, potable water supplies, both of which would require energy for pumping, would offset the energy requirements to deliver the same amount of water from other sources.

4.2 Growth Inducing Impacts

CEQA requires the Lead Agency to evaluate whether a proposed project would directly or indirectly induce growth of population, economic development, or housing construction. Specifically, CEQA Guidelines Section 15126.2(d) states the need to evaluate the potential for a project to “foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment. Included in this are projects which would remove obstacles to population growth (a major expansion of a waste water treatment plant might, for example, allow for more construction in service areas).” Directly induced growth is associated with residential or commercial development projects that would result in a population increase or in an increase in the number of employees. Indirectly induced growth is associated with reducing or removing barriers to growth, or creating a condition that encourages additional population or economic activity. Ultimately, both types of growth induction result in population increase, which “may tax existing community service facilities, requiring construction of new facilities that could cause significant environmental effects” (CEQA Guidelines Section 15126.2[d]). Other potential environmental impacts related to growth include increased traffic, air emissions, and noise; degradation of water quality; loss of sensitive biological and cultural resources; increased demand on public services and infrastructure; and changes in land use and conversion of agricultural or open space to accommodate development.

Under CEQA, growth inducement is not considered necessarily detrimental, beneficial, or of little significance to the environment.

Projects are considered to have growth-inducing implications when economic, housing, or population growth would be stimulated, either directly or indirectly. Local land use plans (e.g., general plans and specific plans) provide for development patterns and growth policies that allow for the planned and orderly expansion of urban development (i.e., residential, commercial and industrial uses) supported by adequate urban public services, such as water supply, roadway

infrastructure, sewer service, and solid waste service. A project that would induce growth (i.e., conflict with local land use plans) could indirectly cause adverse environmental impacts not previously envisioned. Thus, to assess whether a project has the potential to induce growth and result in adverse secondary effects beyond what is anticipated by local jurisdictions, it is important to assess the degree to which the growth associated with a project would or would not be consistent with applicable land use plans.

Implementation of any of the action alternatives would provide recycled water for non-potable uses (e.g., irrigation of landscapes), thus conserving existing water supplies for potable uses (e.g., to meet future, approved growth).

As described in *Chapter 2, Alternatives and Proposed Project*, the proposed Project would provide recycled water to existing customers for agricultural irrigation, wetlands at the Stone Lakes NWR, and potentially to a recharge pond, which would offset the use of groundwater.

Construction of the action alternatives would not directly induce population growth, as no new residential or commercial development projects would be served by the proposed Project and the project would not require new permanent employees who would generate a demand for new housing. Growers in this region rely on groundwater to meet their irrigation needs. The action alternatives would offset a portion of existing groundwater use; during peak periods, farmers would rely on existing wells to pump groundwater to meet demand. Recycled water would be used beneficially for irrigation purposes for existing growers and habitat purposes in lieu of being discharged into the Sacramento River and being exported out of the region. In addition, recycled water would be used to recharge the groundwater, elevating groundwater levels and base flows in the Cosumnes River, which would benefit habitat and associated aquatic, plant and wildlife species. In evaluating whether the Project would remove an obstacle to population growth, the Zone 41 Urban Water Management Plan (UWMP) was reviewed (Sacramento County Water Agency 2010). The UWMP discusses the "South County Ag" project, which is the proposed Project, as part of the overall water supply for the region. The proposed Project would thus be expected to meet existing demands and is not expected to remove an obstacle to growth.

As such, potential indirect growth-inducing effects facilitated by the proposed Project would be less than significant and no mitigation is required.

4.3 Environmentally Superior Alternative

CEQA requires that an EIR identify an environmentally superior alternative (Guidelines Section 15126.2).

Alternative 4 (No Project Alternative) would not result in any of the physical impacts identified for the proposed Project in *Chapter 3, Environmental Setting, Impact Analysis*, most of which are short-term construction impacts. However, Alternative 4 (No Project Alternative) could have long-term adverse effects on Cosumnes River base flows. Over the long term and with continued drought, which could lead to restrictions in groundwater pumping, the lack of a reliable water supply could also result in conversion of agricultural land to non-agricultural use, which would

be an adverse impact. Without the proposed Project, Regional San would continue to discharge the large majority of its Title 22 treated recycled water to the Sacramento River. Thus, while the No Project Alternative avoids construction impacts, given the long term potential effects on the groundwater basin, Cosumnes River base flows and agriculture, it is not considered to be clearly environmentally superior to the proposed Project. Additionally, Alternative 4 (No Project Alternative) would not meet any of the Project objectives.

In CEQA, the evaluation of alternatives focuses on identifying alternatives that could minimize environmental impacts. CEQA requires evaluation of alternatives that “feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project” (CEQA Guidelines, Section 15126.6(a)). In developing alternatives, Regional San evaluated three options: Alternative 1 (Medium Service Area Alternative), Alternative 2 (No Reclamation Funding Alternative), and Alternative 3 (Small Service Area Alternative). In evaluating impacts of the three action alternatives, it was determined that most operational impacts were negligible, and the primary operational impact of concern is associated with the reduction in discharge to the Sacramento River. The majority of impacts are associated with construction, and all construction impacts were determined to be less than significant with implementation of mitigation. Alternative 1 (Medium Service Area Alternative) and 2 (No Reclamation Funding Alternative) would have the same physical impacts associated with both construction and operation. The only difference between Alternatives 1 and 2 is that under the latter, Reclamation would not provide any funding.

Comparison of alternatives shows that Alternative 3 (Small Service Area Alternative) would have impacts similar to Alternatives 1 and 2, but the intensity of the construction-related effects would be somewhat less for Alternative 3. Because there would be fewer miles of pipelines compared to Alternative 1 (Medium Service Area Alternative), Alternative 3 is expected to result in a shorter construction duration, and thus slightly reduced short-term construction impacts. However, construction impacts associated with all action alternatives can be mitigated to a less-than-significant level.

Operational impacts of all of the action alternatives are also similar, but Alternative 3 would provide less recycled water, and would thus maintain a higher level of discharge to the Sacramento River than would Alternatives 1 and 2. However, with less use of recycled water, benefits to the groundwater basin would be less with Alternative 3. Because Regional San is committed to implementation of **Mitigation Measure HYD-4**, project operation would be coordinated with relevant resource agencies, so as to make appropriate operational changes in recycled water use and timing of discharge reductions. This would decrease potential impacts of reduced discharge to less than significant. Thus because of its benefits to groundwater and surface water both locally and regionally, Alternative 1 (Medium Service Area Alternative) is thus considered environmentally superior under CEQA.

4.4 References

Sacramento County Water Agency. 2011. *2010 Zone 41 Urban Water Management Plan*, prepared by Brown and Caldwell

This page intentionally left blank

Chapter 5 Consultation, Coordination, and Compliance

This chapter summarizes public and agency involvement activities undertaken for the proposed Project by Regional San.

5.0 Scoping

The CEQA Notice of Preparation (NOP) was sent to the public on January 30, 2014 and included an invitation to the public to attend a scoping meeting on February 18, 2015. The NOP was distributed to a total of 158 recipients, including agencies, organizations, and property owners. The NOP was also made available online on the South County Ag Program website. The release of the NOP, along with postings of these notices on the South County Ag Program website, began the public review period, which ended on March 23. The public scoping meeting for the EIR was held at on February 18, 2015 at the Sacramento County Farm Bureau (8970 Elk Grove Boulevard, Elk Grove). The Scoping Report is included in **Appendix B**.

5.1 EIR Distribution

Upon completion of this Draft EIR, Regional San filed a Notice of Completion (NOC) with the State Office of Planning and Research to begin a 45-day public review period, as required by CEQA (Public Resources Code, Section 21161). Concurrent with issuance of the NOC, this Draft EIR was distributed to responsible and trustee agencies, other affected agencies, surrounding cities, and interested parties, as well as all parties requesting a copy of the EIR in accordance with Public Resources Code 21092(b)(3). During the public review period, the Draft EIR is available for review at the following locations:

Regional San
10060 Goethe Road
Sacramento, CA 95827

Franklin Community Library
10055 Franklin High Road
Elk Grove, CA 95757

The Draft EIR is also available on the following websites where it may be viewed or downloaded:

<http://www.regionalsan.com/south-county-ag-program>

<https://planningdocuments.saccounty.net/ViewProjectDetails.aspx?ControlNum=PLER2014-00102>

Appendix A presents the distribution list, which identifies the entities receiving a NOA of the Draft EIR. Agencies, organizations, and interested parties, including those not previously contacted, or who did not respond to the NOP, currently have the opportunity to comment on the Draft EIR during the public review period.

5.2 Future Public Involvement

In accordance with CEQA public review requirements, the Draft EIR has been circulated for public and agency review and comment for a 45-day review period, starting July 8, 2016. During the public review period, a meeting will be held on July 25, 2016, at Sacramento County Farm Bureau, 8970 Elk Grove Boulevard, Elk Grove, CA to receive comments on the Draft EIR. Comments made at that meeting, along with any written comments received by Regional San, will be addressed in the Final EIR, which will be prepared and circulated in accordance with CEQA requirements. Regional San will hold a public hearing to consider certification of the EIR. If the proposed Project or another alternative is approved, Regional San will make CEQA findings and issue a Notice of Determination.

5.3 Compliance with Federal Statutes and Regulations

This section describes the status of compliance with relevant federal laws, executive orders, and policies, and the consultation that has occurred to date or will occur in the near future. The topics are based in part, on the SWRCB's Clean Water State Revolving Fund Program Federal Cross-cutting Environmental Regulations Evaluation Form for Environmental Review and Federal Coordination. The information in this section is intended to allow for applicable entities to conduct environmental review of the EIR to determine compliance with environmental regulations associated with the National Environmental Policy Act. A detailed analysis of the proposed Project as it relates to environmental justice issues is included in *Section 3.15, Environmental Justice*.

5.3.1 Federal Endangered Species Act

Section 7 of the Federal Endangered Species Act (FESA) (16 U.S.C. § 1531 et seq.) requires federal agencies, in consultation with and with the assistance of the Secretary of the Interior and or Commerce, to ensure that their actions do not jeopardize the continued existence of endangered or threatened species, or result in the destruction or adverse modification of the critical habitat of these species. Under section 7, if a project could result in incidental take of a listed threatened or endangered species, federal agencies must consult with the United States Fish and Wildlife Service (USFWS) and the NOAA's National Marine Fisheries Service (NMFS) to obtain a Biological Opinion (BO). Because this project is expected to be covered by the SSHCP, if the HCP is completed before the start of construction of facilities coverage under the HCP may be used for FESA compliance.

Section 3.5, Biological Resources, describes the sensitive species that have the potential to occur in the area, and potential effects to federal endangered and threatened species. Impacts to species

will be avoided through the implementation of Mitigation Measures, or through measures established in the BO. This EIR will support section 7 consultation with USFWS and NMFS, if needed. Federal actions, including funding, that would affect a species federally listed cannot be initiated without first completing the appropriate consultation(s) with USFWS or NMFS and receiving formal notice that the action would not jeopardize the continued existence of the listed species or adversely modify designated critical habitat.

5.3.2 National Historic Preservation Act, Section 106

The purpose of the National Historic Preservation Act (NHPA) (16 U.S. Code § 470) is to protect, preserve, rehabilitate, or restore significant historical, archeological, and cultural resources. Section 106 of the act requires Federal agencies to take into account effects on historic properties. Once an undertaking has been established, the Section 106 review involves a step-by-step procedure described in detail in the implementing regulations (36 CFR Part 800). As described in *Section 3.6, Cultural Resources*, a Cultural Resources Inventory Report was prepared for the proposed Project. This analysis includes a Section 106 evaluation for the proposed Project. Completion of the cultural resources report and concurrence by SHPO would ensure compliance with the NHPA.

5.3.3 Clean Air Act

The U.S. Congress adopted general conformity requirements as part of the Clean Air Act (CAA) Amendments in 1990 and the USEPA implemented those requirements in 1993 (Sec. 176 of the CAA (42 U.S.C. § 7506) and 40 CFR Part 93, Subpart B). General conformity requires that all federal actions “conform” with the State Implementation Plan (SIP) as approved or promulgated by USEPA. The purpose of the general conformity program is to ensure that actions taken by the federal government do not undermine state or local efforts to achieve and maintain the national ambient air quality standards. Before a federal action is taken, it must be evaluated for conformity with the SIP. All “reasonably foreseeable” emissions predicted to result from the action are taken into consideration. These include direct and indirect emissions, and must be identified as to location and quantity. If it is found that the action would create emissions above *de minimis* threshold levels specified in USEPA regulations (40 CFR § 93.153(b)), or if the activity is considered “regionally significant” because its emissions exceed 10 percent of an area’s total emissions, the action cannot proceed unless mitigation measures are specified that would bring the proposed Project into conformance. As described in *Section 3.4, Air Quality and Greenhouse Gas Emissions*, the study area lies within the Sacramento Valley Air Basin. The results of the air quality modeling showed that pollutant emissions would not exceed Federal General Conformity significance thresholds. Thus, the project is in compliance with this Act.

5.3.4 Coastal Zone Management Act

The Coastal Zone Management Act (CZMA) (16 U.S.C. § 1451 *et seq.*), passed by Congress in 1972 and managed by the National Oceanic and Atmospheric Administration’s (NOAA) Office of Ocean and Coastal Resource Management, is designed to balance completing land and water issues in coastal zones. It also aims to “preserve, protect, develop, and where possible, to restore or enhance the resources of the nation’s coastal zone.” Within California, the CZMA is administered by the Bay Conservation and Development Commission, the California Coastal Conservancy, and the California Coastal Commission. No portion of the proposed Project is

within the coastal zone, as the study area is located approximately 80 miles east of the coast. Therefore the CZMA does not apply to the proposed Project.

5.3.5 Farmland Protection Policy Act

The Farmland Protection Policy Act (FPPA) (7 U.S.C. § 4201 *et seq.*) requires a federal agency to consider the effects of its actions and programs on the nation's farmlands. The FPPA is intended to minimize the impact of federal programs with respect to the conversion of farmland to nonagricultural uses. It assures that, to the extent possible, federal programs are administered to be compatible with state, local, and private programs and policies to protect farmland. As described in *Section 3.2, Land Use and Agriculture*, no long term conversion of farmland to non-agricultural use would occur. There could be temporary impacts to soil resources during construction where activities would occur within agricultural land, but such effects would be mitigated to less-than-significant levels with implementation of **Mitigation Measure AG-1**. Thus, the project would be in compliance with this Act.

5.3.6 Executive Order 11988 – Floodplain Management

Executive Order (EO) 11988 requires federal agencies to recognize the values of floodplains and to consider the public benefits from restoring and preserving floodplains. Portions of the pipeline, the pump station at the SRWTP, Stone Lakes NWR, and the potential recharge area would be located within a 100-year flood hazard zone - generally in areas near the Sacramento and Cosumnes Rivers. Above-ground facilities would be limited to air valves along the new pipelines, the new pump station at the SRWTP, and the diluent wells at the potential recharge area. However, these facilities would not increase flood hazards or interfere with floodplain management. Regional San has considered Executive Order 11988 in their development of this EIR and have complied with this order.

5.3.7 Federal Migratory Bird Treaty Act, Bald and Golden Eagle Protection Act, Executive Order 13168

The Migratory Bird Treaty Act (16 U.S.C. §§ 703-712) and the Bald and Golden Eagle Protection Act (16 U.S.C. §§ 668-668c) prohibit the take of migratory birds (or any part, nest, or eggs of any such bird) and the take and commerce of eagles. EO 13168 requires that any project with federal involvement address impacts of federal actions on migratory birds. As described in *Section 3.5, Biological Resources*, the proposed Project could have potential to impact Swainson's hawk and White-tailed Kite. However, with **Mitigation Measure BIO-1c**, impacts would be reduced to less than significant. *Section 3.5* also evaluated the impacts on golden eagle and bald eagle and determined that the potential for their occurrence in the Project area is unlikely and potential impacts on these species would be less than significant. Thus, the lead agency would be in compliance with this EO.

5.3.8 Executive Order 13112: Invasive Species

EO 13112 directs all federal agencies to prevent and control introductions of invasive non-native species in a cost-effective and environmentally sound manner to minimize their economic, ecological, and human health impacts. As directed by this EO, a national invasive species management plan guides federal actions to prevent, control, and minimize invasive species and their impacts (NISC 2008). To support implementation of this plan, the U.S. Army Corps of

Engineers (USACE) has recently released a memorandum describing the U.S. Army Corps of Engineers Invasive Species Policy (USACE 2009). This policy includes addressing invasive species effects in impact analysis for civil works projects. Invasive species that warrant removal have been identified in the study area. In areas where revegetation is required, use of native species will be required so as to insure that invasive non-native plant species are not introduced to the area. Discharge of recycled water would not entail any risk of introducing invasive aquatic species to the Sacramento River. The project would thus be in compliance with this EO.

5.3.9 Executive Order 11990 – Protection of Wetlands

The purpose of EO 11990 is to “minimize the destruction, loss or degradation of wetlands and to preserve and enhance the natural and beneficial values of wetlands”. Under EO 11990, federal agencies must avoid affecting wetlands unless it is determined that no practicable alternative is available. The EO directs federal agencies to provide leadership and take action to minimize the destruction, loss, or degradation of wetlands, and to preserve and enhance the natural and beneficial values of wetlands in implementing civil works. As described in *Section 3.5, Biological Resources*, a wetland delineation study was completed for the proposed Project area. The delineation will be submitted to USACE for verification. Mitigation measures have been identified to reduce potentially significant impacts to less than significant levels. These include avoidance of federally protected wetlands to the extent possible through alignment adjustments, and compensatory mitigation for losses of aquatic resources. Thus, the lead agency would be in compliance with EO 11990.

5.3.10 Wild and Scenic Rivers Act

The Wild and Scenic Rivers Act (6 U.S.C. § 1271 *et seq.*) was passed in 1968 to preserve and protect designated rivers for their natural, cultural, and recreational value. There are no designated Wild and Scenic Rivers within the study area, nor will any designated rivers be adversely affected by the proposed Project. As such, the Wild and Scenic Rivers Act does not apply to the proposed Project.

5.3.11 Safe Drinking Water Act – Source Water Protection

Section 1424(e) of the Safe Drinking Water Act (42 U.S.C. § 300f *et seq.*) established the USEPA’s Sole Source Aquifer Program. This program protects communities that have no alternative source of water from groundwater contamination from federally-funded projects. Within USEPA’s Region 9, which includes California, there are nine sole source aquifers. None of these sole source aquifers are located within the proposed project study area (USEPA 2014), therefore the Sole Source Aquifer Program does not apply to the proposed Project, and the lead agency is in compliance with Section 1424(e) of the Safe Drinking Water Act.

5.3.12 Executive Order on Trails for American in the 21st Century

The EO on Trails for America requires federal agencies to protect, connect, promote, and assist trails of all types throughout the United States. The proposed Project would not result in any impacts on trails. Thus, no adverse effects on trails would occur and the lead agency is in compliance with this EO.

5.3.13 Executive Order 13007 – Indian Sacred Sites

Sacred sites are defined in EO 13007 (May 24, 1996) as "any specific, discrete, narrowly delineated location on Federal land that is identified by an Indian tribe, or Indian individual determined to be an appropriately authoritative representative of an Indian religion, as sacred by virtue of its established religious significance to, or ceremonial use by, an Indian religion; provided that the tribe or appropriately authoritative representative of an Indian religion has informed the agency of the existence of such a site." The proposed Project would not be located on or impact any Federal lands and therefore would not affect any Indian sacred sites.

5.3.14 Executive Order 12898 – Environmental Justice

EO 12898 requires all Federal agencies to conduct programs, policies, and activities that substantially affect human health or the environment, in a manner that ensures that such programs, policies, and activities do not have the effect of excluding persons (including populations) from participation in, denying persons the benefits of, or subjecting persons to discrimination because of their race, color or national origin. EO 12898 requires Federal agencies to identify and address, as appropriate, disproportionately high and adverse human health or environmental effects of programs on minority and low-income populations. *Section 3.15, Environmental Justice* in this Draft EIR has identified and described the proposed Project's potential to result in disproportionately high and adverse human health or environmental effects on minority and low-income populations, as required by this order.

5.4 References

United States Environmental Protection Agency (EPA). 2014. Pacific Southwest, Region 9. 2014. Ground Water – Sole Source Aquifer. Last updated September 25, 2013. Available at: <http://epa.gov/Region9/water/groundwater/ssa.html>

Chapter 6 EIR Preparers

6.0 Regional San (CEQA Lead Agency)

Reviewers:

Jose R. Ramirez, P.E.	Senior Civil Engineer
Bryan Young	Natural Resource Supervisor
Terrie Mitchell	Manager, Legislative & Regulatory Affairs
Yadira Lewis	Assistant Engineer
Kelly Taber	Attorney (Somach Simmons & Dunn)

6.1 EIR Preparation Team

Name	Qualifications	Project Role
RMC Water and Environment		
Robin Cort	B.S. Biology, Ph.D. Ecology; over 30 years of experience in water resources planning, environmental documentation and permitting	Manager of EIR/EIS preparation
Dave Richardson	M.S. Civil and Environmental Engineering; Over 34 years of experience in environmental and water resources engineering	Project Manager and Technical Reviewer
Carrie Del Boccio	M.S. Environmental Engineering, B.S., Civil Engineering, Education Abroad; Over 10 years of experience in water planning and treatment design, pipeline design	Project Engineer
Sue Chau	B.A. Environmental Science; over 15 years of experience in water resources including water/wastewater treatment, storage, conveyance, and water supply, CEQA and NEPA compliance and water planning	Technical Reviewer
Susan Yogi	B.A. Urban Studies and Planning; over 14 years of experience in CEQA and NEPA compliance	Review and QA/QC: all sections
Ryan Doyle	B.S. Civil and Environmental Engineering; Over 1 year experience water resources planning and design to groundwater modeling and remediation	GIS
Lindsey Wilcox	B.S. Environmental Resources and Forest Engineering; Over 9 years of experience in water resources planning and permitting	Aesthetics, Energy, Geology, Hazards, Hydrology, Land Use, Noise, Public Services and Utilities, Population and Housing, Environmental Justice, Socioeconomics; Document Formatting
Simon Kobayashi	M.S. Environmental Engineering, B.S. Civil Engineering; Over 1 year experience in air quality engineering and water engineering	Air Quality, Greenhouse Gas Emissions

EIR

Draft

Name	Qualifications	Project Role
CH2M Hill		
Loren Bloomberg	M.E. Civil Engineering; Over 20 years of experience in traffic engineering and traffic simulation	Transportation/Traffic
Gloriella Cardenas	M.A. Anthropology; Over 12 years of experience conducting archaeological investigations	Cultural Resources
Matt Franck	B.S. Environmental Policy Analysis and Planning; Over 25 years of experience in environmental impact assessment	Technical Reviewer
Clint Helton	M.A. Anthropology; Over 18 years of experience preparing cultural resources studies to meet National Historic Preservation Act, as well as NEPA and CEQA; Requirements with specific expertise in linear utility and transportation projects	Cultural Resources
Robert Leaf	M.S. Civil Engineering; Over 20 years of experience developing a wide range of computer model applications for use in complex hydrologic and operational water resources studies	Water Resources, Biological Resources
Victor Leighton	Over 14 years of experience conducting wetland delineations, rare plant surveys, and fish and wildlife studies	Biological Resources
Kimberly Richardson	B.A. Geography and GIS Systems; Over 8 years of experience in GIS analysis, including database organization and mapping techniques	GIS Support
Jeff Tupen	B.S. Environmental and Systematic Biology; Over 26 years of experience in natural resources management and terrestrial and aquatic species impact assessment	Biological Resources
Lisa Valdez	M.S. City and Regional Planning; Over 18 years of experience managing and preparing transportation and environmental analyses in accordance with NEPA and CEQA	Transportation/Traffic

Appendix A – Distribution List

This page intentionally left blank

FIRST	LAND OWNER	LAND OWNER ADDRESS	LAND OWNER ADDRESS
Joe, Manuel, Tony and Sebastian Frank	Alves	10510 Bruceville Rd	ELK GROVE, CA 95758
	Loretz	10632 Franklin Blvd	ELK GROVE, CA 95757
	Griffith Family Trust	10646 Rau Rd	ELK GROVE, CA 95757
(Patricia, Alan, Howard, Michael)	Wackman Revocable Trust/Etal	10686 W Stockton Blvd	ELK GROVE, CA 95757
Ruben, Leslie, and Norberto	Valim	10710 Rau Rd	ELK GROVE, CA 95757
Betty A.	Wilkinson	10731 Rau Rd	ELK GROVE, CA 95757
Thomas J.	Darrington	10731 Rau Rd	ELK GROVE, CA 95757
(Joe & Mary)	Mendes Family Trust	10764 Rau Rd	ELK GROVE, CA 95757
Diane & Manuel	Carmo	10775 Franklin Blvd	ELK GROVE, CA 95757
Walter William & Ricky Dean	Were	10821 Rau Rd	ELK GROVE, CA 95757
	Machado Living Trust	10837 Franklin Blvd	ELK GROVE, CA 95757
(Gerald & Eleanor A.)	Narwold Revocable Trust	10854 Rau Rd	ELK GROVE, CA 95757
	Wilkinson Family Trust	10861 Bruceville Rd	ELK GROVE, CA 95757
Patricia, Eric, and Frank	Loretz	10884 Franklin Blvd	ELK GROVE, CA 95757
	Gabriella S Lewis Revocable Living Trust	10900 W Stockton Bl	ELK GROVE, CA 95758
	Long Beach Construction Co	10945 South St 301	CERRITOS CA 90701
Donna E.	Clark	110 46Th St	SACRAMENTO, CA 95819
Martin L.	Feletto	110 46Th St	SACRAMENTO, CA 95819
Barbara Evelyn	Morse	11040 Bruceville Rd	ELK GROVE, CA 95757
Kevin, Tim and Kristi	Morse	11051 Bruceville Rd	ELK GROVE, CA 95757
Linda & Anthony	Van Steyn	11146 Ed Rau Rd	ELK GROVE, CA 95757
Ilene & Wallace	Giesser Bypass Trust	11281 Bruceville Rd	ELK GROVE, CA 95757
	Mccormack Thomas/Etal	113 Main St	RIO VISTA CA 94571
(Teri and Larry)	Lawrence 2004 Revocable Trust	11318 Franklin Bl	ELK GROVE, CA 95758
	Larrybell/Son Dairy	11322 Franklin Bl	ELK GROVE, CA 95758
(Dolores, Gabina and Balbina)	Lawrence 1989 Living Trust	11322 Franklin Rd	ELK GROVE, CA 95757
(Edward and Luis)	Pimentel Trust	11375 Bruceville Rd	ELK GROVE, CA 95757
(Helena and Jose)	Oliveira	11396 Carroll Rd	ELK GROVE, CA 95757
	Da Silva Family Trust	11426 Bruceville Rd	ELK GROVE, CA 95757
	Tollenaar 1999 Trust	11450 Carroll Rd	ELK GROVE, CA 95757
George	Simunich 1990 Trust	11479 Fogg Rd	ELK GROVE, CA 95757
George	Popescu	11480 Fogg Rd	ELK GROVE, CA 95757
(Robert and Dorothy)	Yuhre Revocable Living Trust	11480 Franklin Blvd	ELK GROVE, CA 95757
Greggory Loren	Leonard	11520 Bruceville Rd	ELK GROVE, CA 95757
Arthur & Rachel	Fingerle	11525 Bruceville Rd	ELK GROVE, CA 95757
Elisabeth and Thomas	Spencer	11555 Hein Rd	ELK GROVE, CA 95757
Irma Jean	Backer Revocable Trust	11631 Bruceville Rd	ELK GROVE, CA 95757
	Duarte Family Trust	11711 Bruceville Rd	ELK GROVE, CA 95757
	Machado Living Trust	11735 Carroll Rd	ELK GROVE, CA 95757
Daniel and Darla Kneppel	Da Silva	11770 Franklin Blvd	ELK GROVE, CA 95757
	Ragsdale Family Trust	11800 Franklin Bl	ELK GROVE, CA 95758
(Ronald & Emily)	Davis Revocable Trust	11836 Franklin Blvd	ELK GROVE, CA 95757
	Schmidt 2002 Family Trust	11948 Franklin Blvd	ELK GROVE, CA 95757
Joe and Leslie	Simoes	12055 Bruceville Rd	ELK GROVE, CA 95759
	Simoes Farms	12055 Bruceville Rd	ELK GROVE, CA 95757
Elias and Rosa	Silveira	12200 Bruceville Rd	ELK GROVE, CA 95757
(Annika & Thomas)	Anderson Living Trust	12269 Bruceville Rd	ELK GROVE, CA 95757
James E.	Hardesty	12606 Hardesty Ln	GALT, CA 95632
(Ben & Gladys)	Howard Family Revocable Trust	12675 Bruceville Rd	ELK GROVE, CA 95757
Frank and Grace	Machado	12698 Bruceville Rd	ELK GROVE, CA 95758
Case and Christine	Van Steyn	13039 Pellandini Rd	GALT, CA 95632
Kathy J.	Wilder	1340 33Rd St	SACRAMENTO, CA 95816
Jesse	Roserman	13501 Frankline Blvd	GALT, CA 95632
	Lingenfelter Family Trust	14 Yuba River Cr	SACRAMENTO, CA 95831
	Western Pacific Railroad Co	1400 Douglas St 1640	OMAHA , NE 68179
L. C.	Luh	1575 Pasqualito Dr	SAN MARINO CA 91108
Bart and Beatrix Treiterer	McDermott	1624 Hood-Franklin Rd	ELK GROVE, CA 95757
	Delta Breeze Partners Llc	1776 2Nd St	NAPA CA 94559
Frank G.	Stathos	1792 Tribute Rd 450	SACRAMENTO, CA 95815
Pablo Garza, Maurice Hall and Leo Wintermitz		2015 J Street Suite 103	SACRAMENTO, CA 95811
	Elk GROVE, Farms Llc	2150 Professional Dr 150	ROSEVILLE CA 95661
	United States Of America	2233 Watt Av 375	SACRAMENTO, CA 95825
	Premiere Partners Iii Limited Partnership	2407 S Neil St	CHAMPAIGN IL 61820
George	Popescu	2648 Watt Av 103	SACRAMENTO, CA 95821
Delmar & Juanita	Cockrill	2648 Watt Av 103	SACRAMENTO, CA 95821
Philip	Carter	2729 Prospect Park Dr Suite 220	Rancho Cordova, CA 95670
Beverly and Darrell	Schmidt	2909 Korn Rd	ELK GROVE, CA 95757
John G.	Belcher	3069 Alamo Dr	VACAVILLE, CA 95687
Jim	Well	3074 Gold Canal Drive	Rancho Cordova, CA 95670
Carleen, John and Celia	Greber	3206 Hood-Franklin Rd	ELK GROVE, CA 95624
Chac Sang & Lieng Tran & Phat Dong Tham		3221 E Pintail Way	ELK GROVE, CA 95757
	Albertini Family Trust/Etal	3800 Point Pleasant Rd	ELK GROVE, CA 95757
David and Dorothy	Tucker	3877 E Woodward Av	MANTECA CA 95337
(Harry J.)	Kneppel Family Trust	4001 Lambert Rd	ELK GROVE, CA 95757
Liz	Bellas	4040 Bradshaw Rd	SACRAMENTO, CA 95827
George	Popescu	4125 Levendi Ln	SACRAMENTO, CA 95821

	Avis Family Trust	4400 Point Pleasant Rd	ELK GROVE, CA 95757
	De Wit Farms Llc	44718 S El Macero Dr	EL MACERO, CA 95618
Arlene	Hein 1994 Revocable Trust	4610 Pt Pleasant Rd	ELK GROVE, CA 95758
John & Regina	Bozich	495 Bret Harte Rd	SACRAMENTO, CA 95864
Ge and Pai Her	Xiong	5200 Pt Pleasant Rd	ELK GROVE, CA 95758
Jesse L.	Beeson	5411 Lambert Rd	ELK GROVE, CA 95758
Mike	Eaton	555 Capitol Mall Suite 675	SACRAMENTO, CA 95814
David and Julia	Martin	5601 Lambert Rd	ELK GROVE, CA 95757
	Martin Revocable Living Trust	5609 Lambert Rd	ELK GROVE, CA 95757
Joe & Joanne	Herren	5751 Pt Pleasant Rd	ELK GROVE, CA 95758
Lamoin V.	Schulz	5800 Pt Pleasant Rd	ELK GROVE, CA 95758
Dale W.	Sassman	5800 Pt Pleasant Rd	ELK GROVE, CA 95758
	Weaver Family Trust	5801 Lambert Rd	ELK GROVE, CA 95757
Jose & Manuela	Corria	5955 Pt Pleasant Rd	ELK GROVE, CA 95758
Evelyn J.	Gentner	5970 Pt Pleasant Rd	ELK GROVE, CA 95758
Joseph M.	Rau	6000 Eschinger Rd	ELK GROVE, CA 95757
Cindy L.	Rau	6000 Eschinger Rd	ELK GROVE, CA 95757
	White Family Living Trust	6001 Lambert Rd	ELK GROVE, CA 95757
Marina & Ilya Oselsky	Oselskaya	6101 Lambert Rd	ELK GROVE, CA 95757
	Jacobs Family Trust	6200 Lambert Rd	ELK GROVE, CA 95757
Harbans Ujagar, Joginder and Kuljit Bhutta		6201 Ventura St	SACRAMENTO, CA 95822
Mary and John	Mello Family Trust	6225 Eschinger Rd	ELK GROVE, CA 95757
Frank and Grace	Machado	6241 E Catlett Rd	LINCOLN CA 95648
Soo H and Ben Au Yeung	Tse	6311 Point Pleasant Rd	ELK GROVE, CA 95757
	Unzueta Revocable Living Trust	6323 Point Pleasant Rd	ELK GROVE, CA 95758
Edward & Ethel	Keema Family Trust	6401 Eschinger Rd	ELK GROVE, CA 95757
Jennie and Richard	Hardesty	6594 Pt Pleasant Rd	ELK GROVE, CA 95758
Charles & Susan Elizabeth	Baker	6596 Point Pleasant Rd	ELK GROVE, CA 95757
	Mathew 2001 Family Trust	6633 Palm Dr	CARMICHAEL, CA 95608
John R.	Didion	6811 Pt Pleasant Rd	ELK GROVE, CA 95758
(Thomas and Lila)	Backer Trust	7024 Point Pleasant Rd	ELK GROVE, CA 95757
	Smith Living Trust	7037 Columbine Dr	CARLSBAD, CA 92009
	Lila Backer Trust	7200 Point Pleasant Rd	ELK GROVE, CA 95758
	Piccolo Family Trust	7227 Pt Pleasant Rd	ELK GROVE, CA 95758
	Simoes Family Trust	7290 Lambert Rd	ELK GROVE, CA 95757
Catherine Nancy & Michael Gerard	Hospenthal	7624 Lambert Sta Rd	ELK GROVE, CA 95758
Binh and Thuy	Nguyen	7701 Elsie Ave	SACRAMENTO, CA 95828
	Kneppel Family Trust A & B	7816 Camp Rd	ELK GROVE, CA 95757
Karen	Buhr	801 K St. Suite 1415	SACRAMENTO, CA 95814
Judy & John	Semas Family Trust	8123 Camp Rd	ELK GROVE, CA 95757
	Simoes Bros	815 Corvey Cir	GALT, CA 95632
Laura & Michael	Johnson	8180 Twin Cities Rd	GALT, CA 95632
Theresa J.	Van Santen Trust	8225 Camp Rd	ELK GROVE, CA 95757
Hedy	Rau Family Trust	8250 Kammerer Rd	ELK GROVE, CA 95757
Randy & Cheryle	Johnson	8310 Lambert Rd	ELK GROVE, CA 95757
Audrey Pauline & Alfred Victor Johnson		8310 Lambert Rd	ELK GROVE, CA 95757
(Betty & Paul)	Hardesty Revocable Trust	8320 Camp Rd	ELK GROVE, CA 95757
Chris and James	Anderson	8327 Twin Cities Rd	GALT, CA 95632
Lisa T. & William K.	Chan	8372 Trimmer Wy	SACRAMENTO, CA 95828
Patrick, Taro Echiburu and Gerald P	Blacklock	8401 Laguna Palms Way	ELK GROVE, CA 95758
Elizabeth & James E.	Grundman	8430 Eschinger Rd	ELK GROVE, CA 95757
(C. Eric & Roberta A.)	Johnson Revocable Living Trust	8452 Lambert Rd	ELK GROVE, CA 95757
	Dumas Ventures	9307 Woodward Lake Ct	OAKDALE, CA 95361
Christian and Angela	Andersen	9500 Snowy Springs Cir	ELK GROVE, CA 95758
	Millers 2000 Family Trust	9501 Mccoy Av	SACRAMENTO, CA 95829
	Wagemann Living Trust	9656 Gage St	ELK GROVE, CA 95624
	Morse Family Trust	9681 Melrose Av	ELK GROVE, CA 95624
Victor and Patricia	Guzman	9766 Waterman Rd L3	ELK GROVE, CA 95624
	Reynen/Bardis (Sweet) LP	9848 Business Park Dr	SACRAMENTO, CA 95827
	Reynen/Bardis Communities Inc	9848 Business Park Dr H	SACRAMENTO, CA 95827
Satpal and Vidya	Shergill	P O Bx 250	ELK GROVE, CA 95759
	Acres Of Orchids Llc/Etal	P O Bx 70	INDEPENDENCE, OR 97351
	State Of California	P O Bx 911	MARYSVILLE, CA 95901
	Katz Family Trust	P O Bx 912	PORT ANGELES, WA 98362
	M/T Bright Revocable Trust	Po Box 154	LINCOLN, CA 95648
John Colin Campbell and Jean Campbell-Roman		Po Box 194490	SAN FRANCISCO, CA 94119
	Jeffery J Raulien Revocable Trust	Po Box 2131	ELK GROVE, CA 95759
William and Carol	Allen	Po Box 2134	ELK GROVE, CA 95759
Anne, Michael and Debora	Goehring	Po Box 2323	ELK GROVE, CA 95759
Debora D.	Goehring	Po Box 2323	ELK GROVE, CA 95759
	Unique Family Housing Llc	Po Box 2758	ELK GROVE, CA 95759
Susanne and David Scheuner	Rappillus	Po Box 581328	ELK GROVE, CA 95758

Stone Lakes NWR	Bart	McDermott	bart_mcdermott@fws.gov	Refuge Manager
SFCWA	Byron	Buck	BBuck@sfcwa.org	Executive Director
Sacramento, City of	Bill Busath		bbusath@cityofsacramento.org	
West Sacramento, City of	Bill Kristoff		billk@cityofwestsacramento.org	
CA Urban Water Agencies	Cindy	Paulson	cwuaexec@sbcglobal.net	Executive Director
Placer County Water Agency	David Breninger		dbreninger@pcwa.net	
Woodland-Davis Clean Water Agency	Dennis Diemer		Ddiemer@WDCWA.com	
Del Paso Manor Water District	Debra Sedwick		debrasedwick@sbcglobal.net	
Rancho Murieta Community Services District	Darlene Gillum		dgillum@rmcsd.com	
CA Fish and Wildlife	Charlton	Bonham	Director@wildlife.ca.gov	Director
Lincoln, City of	Dane Schilling		dschilling@ci.lincoln.ca.us	
Sac Suburban Water District	Robert	Roscoe	feedback@sswd.org	General Manager
Dept. Water Resources	Mark	Cowin	Janiene.friend@water.ca.gov	Director
El Dorado Irrigation District	Jim Abercrombie		jmabercrombie@eid.org	
Westlands Water District	Jason	Peltier	jpeltier@westlandswater.org	Chief Deputy General Manager
Regional Water Authority	John	Woodling	jwoodling@rwah2o.org	Executive Director
Sacramento Regional Parks	Jeff	Leatherman	leathermani@saccounty.net	Director
Rio Linda / Elverta Community Water District	Mary Henrici		mhenrici@rlcwd.com	
Elk Grove Water District	Mark Madison		mmadison@egwd.org	
Folsom, City of	Marcus Yasutake		myasutake@folsom.ca.us	
Delta Stewardship Council	Randy	Fiorini	pat.rogers@deltacouncil.ca.gov	Chair
CVRWQCB	Pamela	Creedon	pcreedon@waterboards.ca.gov	Executive Officer
Sacramento County Water Agency	Michael Peterson		petersonmi@SacCounty.net	
Golden State Water Company	Paul Schubert		pschubert@gswater.com	
Citrus Heights Water District	Bob Churchill		rchurch@chwd.org	
Metropolitan Water District	Roger	Patterson	rpatterson@mwah2o.com	Assistant General Manager
Roseville, City of	Rich Plecker		rplecker@roseville.ca.us	
Sacramento Suburban Water District	Rob Roscoe		rroscoe@sswd.org	
San Juan Water District	Shauna Lorange		SLorange@sjwd.org	
California American Water	Stephen "Audie" Foster		Stephen.Foster@amwater.com	
Carmichael Water District	Steve Nugent		steve@carmichaelwd.org	
Orange Vale Water Company	Sharon Wilcox		swilcox@orangevalewater.com	
State Water Contractors	Terry	Erlwine	terlwine@swc.org	General Manager
Fair Oaks Water District	Tom Gray		tgray@fowd.com	
State Water Board	Thomas	Howard	thomas.howard@waterboards.ca.gov	Executive Director
Regional San	Bryan	Young	youngb@sacsewer.com	Natural Resource Supervisor

This page intentionally left blank

Appendix B – Scoping Report

This page intentionally left blank

Memorandum



South Sacramento County Agriculture & Habitat Lands Recycled Water Program

Subject: DRAFT Scoping Report
Prepared For: Regional San Staff
Prepared by: Christy Nelson/Sue Chau
Reviewed by: Dave Richardson/Robin Cort
Date: December 14, 2015

This Scoping Report has been prepared to summarize the scoping process completed for the South Sacramento County Agriculture & Habitat Lands Recycled Water Project Environmental Impact Report/Environmental Impact Statement (EIR/EIS). It provides an overview of the scoping process completed for both the National Environmental Policy Act (NEPA) and California Environmental Quality Act (CEQA) and summarizes the comments received during scoping.

1 CEQA Scoping Process

The Sacramento Regional County Sanitation District (Regional San), the CEQA Lead Agency, circulated a Notice of Preparation (NOP) on February 19, 2015. The NOP began a 30-day public review period, which ended March 23, 2015. The NOP was mailed to the State Clearinghouse, responsible and trustee agencies, organizations and the public who are interested in the project, including landowners who will be affected by the project. Attachment A to this report includes the NOP

Regional San held a publicly advertised scoping meeting on February 18, 2015 at the location below:

Sacramento County Farm Bureau
8970 Elk Grove Boulevard, Elk Grove, CA 95624

The information meeting was held in an open house format, and comment cards were provided for those attending the meeting to facilitate submittal of written comments. Because of the format of the meeting there were no verbal comments.

During the scoping period, Regional San received eight comment letters.

2 NEPA Scoping Process

In accordance with 40 CFR 1508.22, a Notice of Intent (NOI) was published by Reclamation in the Federal Register on October 30, 2015. During the NOI public review period, which ended on November 30, 2015 Reclamation received one written comment letter.

3 Comment Summary

A total of eight comment submittals were received. Comment submittals are included in Attachment B. Table 1 provides a summary of the comments received during the public scoping process, and identifies the commenter, affiliation, date and comment format, summary of comments, and disposition of each comment.

Table 1: NOP/NOI Scoping Summary

Committer, Affiliation	Format/Date	Comments	Response
California Department of Fish and Wildlife	Letter, March 9, 2015	<ul style="list-style-type: none"> The Project description in the EIR should include the whole action and should include appropriate detailed exhibits disclosing the Project area including temporary impacted areas such as access roads and staging areas 	<ul style="list-style-type: none"> The EIR/EIS will describe the whole of the proposed action and disclose potential impacts of constructing and operating the project.
		<ul style="list-style-type: none"> The EIR should include a range of alternatives that consider different water discharge levels in the Sacramento River and water delivers. 	<ul style="list-style-type: none"> The EIR/EIS will evaluate a range of reasonable alternatives, including the Small Service Area Alternative (Alternative 3) that would reduce the amount of deliveries to customers and thereby result in comparatively more treated wastewater discharge remaining in Sacramento River compared to the proposed Project. The EIR/EIS will also evaluate a No Project Alternative in which recycled water would not be provided to the South County customers or the Stone Lakes Refuge and treated wastewater would continue to discharged into the Sacramento River.
		<ul style="list-style-type: none"> The EIR shall include a complete assessment of the existing biological conditions (environmental baseline) within the Project area. It is recommended that Regional San consult the California Natural Diversity Database and previous studies performed in the area, and conduct species-specific surveys. 	<ul style="list-style-type: none"> The Biological Resources section of the EIR/EIS will include incorporate the results of a database search and previous studies as environmental setting, and evaluate the impacts of implementing the proposed Project on biological resources. Surveys will be conducted for the project-level components only. As less detail is available for the Program-level components, surveys will not be conducted for program-level components. The EIR/EIS will also analyze the short-term, long-term and cumulative impacts of the proposed Project implementation on biological resources, and identify thresholds of significance and mitigation measures to reduce potential effects
		<ul style="list-style-type: none"> The EIR shall conduct a complete impacts analysis, considering short-term, long-term, permanent, and cumulative impacts. In addition, the EIR shall define the threshold of significance and identify appropriate mitigation measures. 	

Commenter, Affiliation	Format/Date	Comments	Response
		<ul style="list-style-type: none"> <li data-bbox="594 266 1226 402">• CDFW is concerned that the proposed reduction of discharge may result in direct, indirect, and cumulative adverse impacts to resources within Sacramento River. <li data-bbox="594 402 1226 539">• CDFW recommends a complete assessment of the instream flow-related needs of the Sacramento River (aquatic, riparian and terrestrial habitats) <li data-bbox="594 539 1226 1084">• CDFW recommends the EIR cover the following: project’s impact on fish and wildlife and their habitat; an assessment of the impacts of the reduced discharge on channel forming flows; and identification of flows necessary to maintain the health and perpetuation of aquatic resources and a hydrologic study to determine if the production of the Sacramento watershed is sufficient to reduce discharge at current and projected rates of flow without having direct and/or cumulative significant adverse effects; and proposal for the protection of fisheries in the Sacramento River that includes required minimum instream flows in the Sacramento River measured at or above the point of discharge for reduced discharges to occur. <li data-bbox="594 1084 1226 1354">• The EIR should include an impact analysis to anadromous fisheries populations caused by the discharge of water to the Stone Lakes NWR. CDFW recommends that during dry years water discharge flows from Stone Lakes into Snodgrass slough are maintained as natural as possible. 	<ul style="list-style-type: none"> <li data-bbox="1226 266 1902 1084">• The Hydrology/Water Quality and Biological Resources sections of the EIR/EIS will evaluate the Project’s effects of reduced wastewater discharge into the Sacramento River using the best-available tools (CalSim II modeling). Based on modeling results, we will assess associated effects on channel forming flows and biological resources (including fisheries) and identify mitigation measures that are proportionate to the project’s effect. No additional hydrologic study of the Sacramento Watershed production is contemplated above and beyond the hydrologic analysis afforded by CalSim II, which is a state-of-the-art model for analyzing flows and related hydrology of the Sacramento River and Sacramento-San Joaquin Bay Delta. <li data-bbox="1226 1084 1902 1354">• The Biological Resources section of the EIR/EIS will evaluate the effects of delivering recycled water on biological resources within Stone Lakes Refuge. Regional San anticipates that the NWR will continue to operated during dry years as it is currently, without regard to whether recycled water complements current surface water from Snodgrass Slough.

South Sacramento County Agriculture & Habitat Lands Recycled Water Project

Scoping Report

Committer, Affiliation	Format/Date	Comments	Response
		<ul style="list-style-type: none"> • CDFW recommends that Regional San provides some flexibility or maintains the ability to release water into the Sacramento River during drought periods. 	<ul style="list-style-type: none"> • The proposed Project is intended to provide a sustainable water supply to its customers and is not intended to vary the water delivered and discharged into Sacramento River during different hydrologic periods. The EIR/EIS will include a discussion of alternatives that vary the recycled water delivered to customers and wastewater that is discharged into Sacramento River on a consistent annual basis (such as the Small Project and No Project vs. the Medium-Plus Project).
		<ul style="list-style-type: none"> • Treated water that is supplied to Cosumnes River may alter the natural hydrograph enough to alter natural river temperatures, which could affect native residential fisheries or rearing salmonids in the lower portion of the river. CDFW recommends a study to evaluate the Project's impacts on river temperature.. 	<ul style="list-style-type: none"> • While the proposed Project would increase base flow in the Cosumnes through the reduction in groundwater pumping, it would not directly discharge recycled water into the Cosumnes River. Thus, this project is not expected to alter natural river temperatures. Such a study will not be conducted. The EIR/EIS will consider the effects of temperature changes from reduction in flows in the Sacramento River and the effect on aquatic resources.
		<ul style="list-style-type: none"> • CDFW would need to issue an Incidental Take Permit (ITP) if the project would result in take of any species listed by the State as threatened or endangered and encourages early coordination regarding appropriate mitigation measures with CDFW and USFWS. 	<ul style="list-style-type: none"> • The EIR/EIS will identify the potential need for an ITP from CDFW.
		<ul style="list-style-type: none"> • The EIR shall identify all the areas under CDFW's jurisdiction, identify potential impacts to these resources, and provide mitigation measures as appropriate. 	<ul style="list-style-type: none"> • The Biological Resources section of the EIR/EIS will identify biological resources within the project area and analyze the project's impacts on those resources.

South Sacramento County Agriculture & Habitat Lands Recycled Water Project

Scoping Report

Commenter, Affiliation	Format/Date	Comments	Response
		<ul style="list-style-type: none"> • If the Project will conflict with the proposed South Sacramento Habitat Conservation Plan (SSHCP), the EIR should provide a complete analysis of how the Project will be consistent with all policies, procedures, and goals of the SSHCP • The EIR shall disclose all potential impacts on birds protected by the Migratory Bird Treaty Act and identify appropriate avoidance or minimization/mitigation measures to avoid take. 	<p>The proposed Project is listed in the SHHCP already. The EIR/EIS will identify the timing of how this project will be covered by the SHHCP following our meeting with the County.</p> <ul style="list-style-type: none"> • The Biological Resources section of the EIR/EIS will address the proposed Project’s impacts on protected birds.
Central Valley Regional Water Quality Control Board	Letter, March 13, 2015	<ul style="list-style-type: none"> • Projects that disturb one or more acres of soil are subject to Construction Storm Water General Permit • New development must reduce pollutants and runoff flows using Best Management Practices in accordance with MS4 Permits • Storm water discharges from industrial sites must comply with the Industrial Storm Water General Permit • If the project will involve discharge of fill material in navigable waters or wetlands, a Section 404 Permit would be needed • If a 404 Permit is required then a Water Quality Certification would be needed from the Regional Board 	<ul style="list-style-type: none"> • The Hydrology and Water Quality section EIR/EIS will recognize the need of the proposed Project to apply for coverage under the Construction Storm Water General Permit. • The proposed pump station at the SRWTP is the only above-ground structure contemplated for development by the Project. Any runoff generated by the pump station would be captured by the existing storm drain system, which conveys all stormwater at the SRWTP to the treatment facilities prior to discharge. • Regional San captures all storm water at the SRWTP in their existing storm drain system, which conveys all stormwater at the SRWTP to the treatment facilities prior to discharge. • The EIR/EIS will recognize the need for the Project to acquire a Section 404 Permit. • The EIR/EIS will recognize the need for a Water Quality Certification from the Regional Board if a Section 404 Permit is needed.

South Sacramento County Agriculture & Habitat Lands Recycled Water Project

Scoping Report

Committer, Affiliation	Format/Date	Comments	Response
		<ul style="list-style-type: none"> • If there is fill in a non-jurisdictional water of the state the project would require Waste Discharge Requirements (WDR) 	<ul style="list-style-type: none"> • See above.
		<ul style="list-style-type: none"> • If the property will be used for commercial irrigated agriculture, regulatory cover under the Irrigated Lands Regulatory Program would be needed 	<ul style="list-style-type: none"> • The project would provide water to existing landowners and would not change the type of irrigated agriculture. As such, it will not need to obtain regulatory coverage under the Irrigated Lands Regulatory Program over and above coverage already provided currently.
		<ul style="list-style-type: none"> • Discharge of water from construction dewatering would need to be covered under the Low or Limited Threat General NPDES Permit 	<ul style="list-style-type: none"> • The EIR/EIS will recognize the need for coverage under the General Order for Dewatering and Other Low Threat Discharges to Surface Water.
City of Elk Grove	Letter, March 20, 2015	<ul style="list-style-type: none"> • Recommend the Project should be modified to provide an opportunity to connect to existing purple pipe infrastructure south of Elk Grove Boulevard (at Whitelock Parkway and Franklin Boulevard). 	<ul style="list-style-type: none"> • Regional San has modified the project to include a connection to serve the Laguna Phase II area at Whitelock Parkway and Franklin Boulevard.
California State Transportation Agency (Caltrans)	Letter, March 23, 2015	<ul style="list-style-type: none"> • Work or traffic control that encroaches onto the State Right of Way (ROW) requires an encroachment permit that is issued by Caltrans 	<ul style="list-style-type: none"> • The EIR/EIS will recognize the need for an encroachment permit if work would occur within State ROW.
		<ul style="list-style-type: none"> • Transmission mains or distribution mains must not be located within State ROW at I-5. Distribution mains, if placed under I-5, must be directionally drilled, and must be encased within a larger conduit. Pits must be located outside State ROW at I-5 	<ul style="list-style-type: none"> • The EIR/EIS will show the location of the proposed pipelines. A distribution pipeline to the Stone Lakes National Wildlife Refuge has been identified. The EIR/EIS will acknowledge that crossing under I-5 would require trenchless construction techniques and that all pits must be located outside the State ROW.
		<ul style="list-style-type: none"> • Spoils must not be placed within State ROW and may not impede or cause the redirection of drainage flows from the highway 	<ul style="list-style-type: none"> • The EIR/EIS will acknowledge that spoil must not be located such that it would impede or cause redirection of drainage flows from the highway.

South Sacramento County Agriculture & Habitat Lands Recycled Water Project

Scoping Report

Committer, Affiliation	Format/Date	Comments	Response
Sacramento County Environmental Management Department (EMD)	Letter March 23, 2015	<ul style="list-style-type: none"> If the Project involves structures within 1,000 feet of the closed landfill that accepted grit and screenings from SRCSD, then the structures must meet the construction standards of 27 CCR 21190 (g). Provide EMD with the distance of the WRF from the closed landfill and describe how the requirements of 27 CCR 21190 will be met. 	<ul style="list-style-type: none"> The EIR/EIS will address the proposed Project’s impact to the closed landfill.
		<ul style="list-style-type: none"> How will the Project address safety of the public health and environment including plan review, permitting and inspection procedures for the potential Project customers? How will future land use changes be addressed? 	<ul style="list-style-type: none"> The EIR/EIS will address public health and safety from project implementation. The analysis would not include details on plan review, permitting and inspections, but would require compliance with applicable Water Reclamation Requirements, which would ensure protection of public health consistent with recycled water use. Future land use changes will not need to be addressed because it is expected the water would be used for existing urban and agricultural irrigation, and would not induce conversion of land use.
		<ul style="list-style-type: none"> How will hazardous material storage and/or hazardous waste generation be addressed? 	<ul style="list-style-type: none"> The EIR/EIS will address hazards and hazardous materials associated with project implementation.
		<ul style="list-style-type: none"> Include the following language in the draft EIR: “If hazardous materials are stored in reportable quantity and/or hazardous waste is generated at any laydown area along the pipeline, separate hazardous materials and/or hazardous waste permits may be required for each location. Permits are business and owner specific and may not be transferred to other owners or locations. Since construction of the main pipeline is anticipated to last 13 months the construction exemption outlined in Sacramento County Code 6.96.095 may not apply.” 	<ul style="list-style-type: none"> The Hazards and Hazardous Materials section of the EIR/EIS will recognize the requirements under Sacramento County Code 6.96.095. The proposed Project is not anticipated to store or generate reportable quantities of hazardous waste.

South Sacramento County Agriculture & Habitat Lands Recycled Water Project

Scoping Report

Commenter, Affiliation	Format/Date	Comments	Response
		<ul style="list-style-type: none"> For permanent structures add the following: “If hazardous materials are stored in reportable quantity and/or hazardous waste is generated at any appurtenant facilities along the pipeline, a separate hazardous materials and/or hazardous waste permit may be required for each location. Permits are business and owner specific and may not be transferred to other owners or locations.” 	<ul style="list-style-type: none"> As the proposed Project would not require the storage, use, or handling of hazardous materials for permanent facilities, the suggested text will not be incorporated into the EIR/EIS.
		<ul style="list-style-type: none"> The construction of new wells is permitted through EMD’s Well Program. 	<ul style="list-style-type: none"> The EIR/EIS will recognize the need for a Well Permit from Sacramento County.
Sacramento County Water Agency	Letter March 23, 2015	<ul style="list-style-type: none"> The Project Background statement and EIR should correct the following statement: The Project “overlies a portion of the Central Basin” 	<ul style="list-style-type: none"> The text will be clarified in the EIR/EIS.
		<ul style="list-style-type: none"> The NOP indicates that recycled water will be available during all hydrologic years. If there are any other additional operational constraints or variations the EIR should reflect this. 	<ul style="list-style-type: none"> The EIR/EIS will describe the operations of the project. Recycled water will be available during all hydrologic years as it is a sustainable, alternative supply. No other operational constraints are proposed aside from the provision of up to 2/3 maximum month demand. The recharge pond will have its own operations, in terms of the timing of recharge vs. use for crop production.
		<ul style="list-style-type: none"> Update the EIR to describe in more detail what “regional water needs” means. 	<ul style="list-style-type: none"> The project is focused on water supply reliability (i.e. improving groundwater conditions), rather than meeting an identified water need.
		<ul style="list-style-type: none"> Update EIR to indicate what other sources of diluent water are available proximate to the proposed location of the recharge area and identify the volume of water necessary to meet state requirements for dilution. 	<ul style="list-style-type: none"> The EIR/EIS will describe the volume of water needed to meet state requirements for dilution for the proposed recharge pond. The EIR/EIS is not anticipated to evaluate other sources of diluent water, however, the Facilities Planning effort may identify alternative sources, building on the 2014 Feasibility Study prepared for this project

South Sacramento County Agriculture & Habitat Lands Recycled Water Project

Scoping Report

Commenter, Affiliation	Format/Date	Comments	Response
		<ul style="list-style-type: none"> • The EIR should identify recycled water delivery to the Phase 2 portion of SCWA’s recycled water pilot project as a component of the Project. 	<ul style="list-style-type: none"> • The EIR/EIS will address this project element.
The Nature Conservancy	Letter March 23, 2015	<ul style="list-style-type: none"> • Explore and potentially mitigate the Project from driving conversion of wildlife friendly crops to permanent crops (vineyards, walnuts). 	<ul style="list-style-type: none"> • The EIR/EIS will evaluate the impacts of the proposed Project on agriculture. Groundwater has historically been reliable; recycled water is a reliable and sustainable supply that is expected to be available even during droughts. While it is the individual landowner who decides the types of crops to grow, we do not expect that the proposed Project would change the crop types or patterns.
		<ul style="list-style-type: none"> • Requests consideration of alternative designs of the recharge basin area that may provide water management and habitat benefits. Regional San should consider the following in the analysis: <ul style="list-style-type: none"> ○ ownership and maintenance of the recharge basin and ○ effects and feasibility of blending with diluent water. ○ Effects of removal of agricultural habitat on lands that are placed in the recharge basin. 	<ul style="list-style-type: none"> • The EIR/EIS will describe the current proposal for the potential recharge pond, which will consist in part use as recharge pond and in part for agricultural production. Details of the potential recharge basin will needed to be developed by Regional San (with input from TNC) over the course of this project. Follow up environmental review will be necessary in the future when such details have been determined.
		<ul style="list-style-type: none"> • The EIR should include potential benefits of the Project for a full range of habitats from closed-canopy forest to completely open grasslands. Explore a Project component in which irrigated lands closest to the Cosumnes River have highest priority and/or greatest incentives for receipt of Project water. 	<ul style="list-style-type: none"> • The EIR/EIS will describe the potential benefit of the project to biological resources, and will differentiate the potential benefits to individual habitat where such detail is available The area where recycled water will be provided will be shown in the EIR/EIS and includes a portion of land along the west bank of the Cosumnes River. Irrigation and recharge of recycled water for these lands will be prioritized because of the environmental benefits associated with such use.

South Sacramento County Agriculture & Habitat Lands Recycled Water Project

Scoping Report

Commenter, Affiliation	Format/Date	Comments	Response
		<ul style="list-style-type: none"> Request a robust groundwater monitoring component to track groundwater levels and habitat health in the basin to inform adaptive management of the Project to maintain ecological benefits. 	<ul style="list-style-type: none"> The project would include groundwater monitoring and some mechanism for evaluating habitat benefits on an ongoing basis would be developed.
		<ul style="list-style-type: none"> Request incorporation of the best available science when determining what levels of groundwater recharge are most beneficial for a riparian forest response. This information could be used for assessment of project benefits and adaptive management of the Project, particularly in potential future groundwater banking scenarios. 	<ul style="list-style-type: none"> The EIR/EIS will describe the potential benefit of recharge to biological resources. The potential recharge basin will be evaluated at a program-level of detail in the EIR/EIS; further work, using the best available science, would be needed to develop this component for implementation.
		<ul style="list-style-type: none"> The Project analysis should assess Project benefits for species that depend on in-stream flows. Any potential subsequent withdrawals of added water through a groundwater banking program should be designed, fully studied, and adaptively managed to maintain Project benefits. 	<ul style="list-style-type: none"> The EIR/EIS will describe the potential benefit to biological resources. A precise groundwater banking program is outside the scope of this EIR/EIS, however groundwater recharge associated with this project is anticipated to create the opportunity for groundwater banking.
		<ul style="list-style-type: none"> Request Regional San to consider expanding the Project footprint in the area between Highway 99 and Wilton Road, and the Cosumnes River on the south and Grant Line Road on the north. 	<ul style="list-style-type: none"> Regional San has received a specific proposal from TNC for this concept and is currently evaluating it. Because this concept is still in development and the area is not included in the HCP it is not expected to be included in the EIR/EIS.
		<ul style="list-style-type: none"> The Project should include pre-wetting the Cosumnes channel to benefit anadromous fish (e.g., by swapping recycled water entering the Sacramento River for flows that could be introduced into Cosumnes through the Freeport Project). 	<ul style="list-style-type: none"> While one of the project objectives is to enhance the riparian corridor along the Cosumnes River, pre-wetting the Cosumnes channel is outside the scope of this EIR/EIS. Regional San will continue discussions of this concept with TNC and other potential partners.

South Sacramento County Agriculture & Habitat Lands Recycled Water Project

Scoping Report

Commenter, Affiliation	Format/Date	Comments	Response
		<ul style="list-style-type: none"> • Make sure that ecological benefits of the Project are not put at risk through the development of a water bank or withdrawal component 	<ul style="list-style-type: none"> • As discussed above, a precise groundwater banking program is outside the scope of this EIR/EIS but the ongoing development of a Groundwater Accounting Framework by the SCGA will be acknowledged.
		<ul style="list-style-type: none"> • Project should include explicit target groundwater levels and an appropriate monitoring and response plan to ensure that the Project is managed to sustain the ecological benefits of the Project. 	<ul style="list-style-type: none"> • As the project does not include a development of details regarding a groundwater banking program, inclusion of target groundwater levels is outside the scope of this EIR/EIS, but will be evaluated to the extent specific banking elements are available to Regional San.
		<ul style="list-style-type: none"> • The EIR should consider potential impacts from constituents that are not removed during treatment 	<ul style="list-style-type: none"> • The EIR/EIS will address the impacts of recycled water on fish and wildlife.
		<ul style="list-style-type: none"> • The Project should support mitigation requirements that are part of the SSHCP and BDCP, as well as conform with the SACOG 2035 Metropolitan Plan/Sustainable Communities Strategy, the Consumnes River Preserve Management Plan, and LAFCO policies. 	<ul style="list-style-type: none"> • The EIR/EIS will consider the proposed Project’s consistency with relevant plans and policies.
United States Environmental Protection Agency	Letter, November 30, 2015	<ul style="list-style-type: none"> • The EIS for the proposed project should clearly identify the underlying purpose and need that is the basis for proposing the range of alternatives and describe Reclamation’s role in the project 	<ul style="list-style-type: none"> • The EIR/EIS will identify the purpose and need for the proposed Project.
		<ul style="list-style-type: none"> • The EIS should concisely identify why the project is being proposed, why it is being proposed now, and should focus on the specific desired outcomes of the project. 	<ul style="list-style-type: none"> • The EIR/EIS will identify the project objectives, purpose and need, and describe the background as to why it is being proposed.
		<ul style="list-style-type: none"> • The EIS should include a comprehensive description of the regulatory context of the project, describing any permits that will be required 	<ul style="list-style-type: none"> • The EIR/EIS will include a description of the regulatory context and identify anticipated permits.

South Sacramento County Agriculture & Habitat Lands Recycled Water Project

Scoping Report

Commenter, Affiliation	Format/Date	Comments	Response
		<ul style="list-style-type: none"> The Regulatory Framework of the EIS should include a discussion of the General Waste Discharge Requirements for Recycled Water Use and if the action alternatives are covered by the General Order. 	<ul style="list-style-type: none"> The Hydrology and Water Quality section of the EIR/EIS will include a discussion of the General Order for Recycled Water Use. Regional San would comply with the General Order in providing recycled water for agricultural and environmental uses.
		<ul style="list-style-type: none"> All reasonable alternatives that fulfill the project's purpose and need should be evaluated in detail, including alternatives outside the legal jurisdiction of Reclamation. The EIS should clearly describe the rationale used to determine whether impacts of an alternative are significant or not. 	<ul style="list-style-type: none"> As required by CEQA and NEPA, the analysis of alternatives has focused on alternatives that would reduce potentially significant impacts of the project. The EIR/EIS will evaluate the proposed Project/Action, and a reduced scale alternative that would reduce the primary impact of the project, which is associated with effects of reduced discharge to the Sacramento River.
		<ul style="list-style-type: none"> For alternatives that are not evaluated in detail, the EIS should provide a clear discussion of the reasons for their elimination. 	<ul style="list-style-type: none"> The EIR/EIS will describe the alternatives development process and reasons for those that were considered but rejected.
		<ul style="list-style-type: none"> The environmental impacts of the proposal and alternatives should be presented in comparative form, as to sharply define the issues and provide a clear basis for choice among options by the decision makers and the public. 	<ul style="list-style-type: none"> The EIR/EIS will include evaluation of all alternatives, including a comparison table that will be included in the Executive Summary.
		<ul style="list-style-type: none"> The No Action Alternative should clearly describe the current wastewater discharge regime at the Regional San Sacramento Regional Water Treatment Plant. This description should indicate if there are existing compliance concerns regarding any aspects of current permits and waste discharge requirements, such as volumetric or pollutant limits. 	<ul style="list-style-type: none"> The EIR/EIS will describe the current wastewater discharge operations at the Sacramento Regional Water Treatment Plant. The Hydrology and Water Quality section of the EIR/EIS includes a discussion of the existing permit requirements, which have required Regional San to construct the EchoWater Project to reduce nitrogen and ammonia levels and to provide tertiary filtration treatment for pathogen removal.

Commenter, Affiliation	Format/Date	Comments	Response
		<ul style="list-style-type: none"> The range of alternatives should explore aquifer recharging as an alternate use for the recycled wastewater. 	<ul style="list-style-type: none"> Both the Medium Service Area and Small Service Area Alternatives include the maximum of amount of recharge that was determined to be feasible, given the amount of land that is available for recharge, and the requirement for 50 percent dilution when recycled water is used for recharge.
		<ul style="list-style-type: none"> Each action alternative should identify how and where the recycled water would be used and how each of those uses would impact groundwater. 	<ul style="list-style-type: none"> The EIR/EIS will describe how and where the recycled water would be used under each action alternative.
		<ul style="list-style-type: none"> Each action alternative should describe the proposed percentage distribution of project water for irrigation, groundwater recharge, and wildlife refuges and the mechanism by which this distribution might change over time. 	<ul style="list-style-type: none"> Allocation of water to irrigation, recharge, and refuges is described in Chapter 2, Project Description. However, because the refuge and recharge elements are considered at the program level, it is not yet feasible to consider mechanisms for future changes in distribution.
		<ul style="list-style-type: none"> Each action alternative should include a robust discussion of impacts to water quality, including the impacts from reduced discharge volume to the current discharge locations and waters (such as impacts to flow of the Sacramento River), the impacts to water quality in the Bay Delta and current modeling efforts in that region. 	<ul style="list-style-type: none"> The Hydrology and Water Quality section of the EIR/EIS will discuss impacts to water quality. The proposed Project will not impact the Delta Regional Monitoring Program (RMP) because the publicly owned treatment works participating in the Delta RMP use a formula for determining their contribution based on permitted flow and level of treatment.
		<ul style="list-style-type: none"> The analysis should include a description of the Waters of the U.S. within the wildlife refuges that may receive project water and how any discharges to Waters of the U.S. will impact water quality in these locations. 	<ul style="list-style-type: none"> The Biological Resources section of the EIR/EIS identifies the fact that the Stone Lakes National Wildlife Refuge contains a variety of wetlands, including an extensive vernal pool complex. Impact HYD-1 evaluates water quality impacts associated with providing recycled water to refuges. The proposed Project would include mitigation to ensure that recycled water is of suitable quality before water is provided to the Refuge.

Committer, Affiliation	Format/Date	Comments	Response
		<ul style="list-style-type: none"> We recommend using the Council on Environmental Quality’s December 2014 revised draft guidance for Federal agencies’ consideration of GHG emissions and climate change impacts to help outline the framework for its analysis of these issues. 	<ul style="list-style-type: none"> The Greenhouse Gas Emissions section of the EIR/EIS will recognize CEQ’s revised draft guidance and consider it in the impact analysis.
		<ul style="list-style-type: none"> The EIS should include an estimate of GHG emissions associated with the project, analyze reasonable alternatives and/or practice mitigation measures to reduce project-related GHG emissions, and qualitatively describe relevant climate change impacts. 	<ul style="list-style-type: none"> The Greenhouse Gas Emissions section of the EIR/EIS will include an estimate of GHG emissions associated with the project and identify mitigation measures, if applicable.
		<ul style="list-style-type: none"> The EIS should make clear whether commitments have made made to ensure implementation of design or other measures to reduce GHG emissions or to adapt to climate change impacts. 	<ul style="list-style-type: none"> The EIR/EIS notes the measures that are included in the project to reduce operational energy requirements and resultant GHG emissions. GHG emissions were not determined to be significant, and the project would reduce GHG emissions associated with existing groundwater pumping for irrigation.
		<ul style="list-style-type: none"> The Affected Environment of the EIS should include a summary discussion of climate change and ongoing and reasonably foreseeable climate change impacts relevant to the project, based on U.S. Global Change Research Program assessments, to assist with identification of potential project impacts that may be exacerbated by climate change and to inform consideration of measures to adapt to climate change impacts. 	<ul style="list-style-type: none"> The Greenhouse Gas Emissions section of the EIR/EIS will include a summary of climate change and foreseeable climate change impacts relevant to the proposed Project/Action. The project would provide a new water supply that would benefit the project area in reducing the effect of potential reductions in water supply associated with climate change.
		<ul style="list-style-type: none"> The Affected Environment section should draw on the Reclamation’s extensive research into the expected effects of climate change to create a well-informed document for the public and decision makers. 	<ul style="list-style-type: none"> The Greenhouse Gas Emissions section of the EIR/EIS will recognize Reclamation’s research into the expected effects of climate change.

Commenter, Affiliation	Format/Date	Comments	Response
		<ul style="list-style-type: none"> In the Environmental Consequences Section, the EIS should consider practicable changes to the proposal to make it more resilient to anticipated climate change. 	<ul style="list-style-type: none"> The Greenhouse Gas Emissions section of the EIR/EIS will consider practicable changes to the proposal if a potentially significant impact is identified.
		<ul style="list-style-type: none"> The Environmental Consequences section should estimate the GHG emissions associated with the proposal and its alternatives, using tools such as NEPA.gov. For actions which are likely to have less than 25,000 metric tons of CO₂-e emissions/year, provide a qualitative estimate unless quantification is easily accomplished 	<ul style="list-style-type: none"> The Greenhouse Gas Emissions section of the EIR/EIS will estimate the GHG emissions associated with the action alternatives.
		<ul style="list-style-type: none"> The Environmental Consequences section should use estimated GHG emissions as a proxy for climate change impacts when comparing the proposal and alternatives. Consideration should be given whether and to what extent the impacts may be exacerbated by expected climate change in the action area. 	<ul style="list-style-type: none"> The Greenhouse Gas Emissions section of the EIR/EIS will consider impacts of the proposed Project/Action and the extent of impacts as a result of climate change. The project is not located in an area prone located far enough away from the California coast and San Francisco Bay and at a high enough elevation above sea level such that projected sea level rise would not affect the project location.
		<ul style="list-style-type: none"> The EIS should describe measures to reduce GHG emissions associated with the project, including reasonable alternatives or other practicable mitigation opportunities and disclose the estimated GHG reductions associated with such measures 	<ul style="list-style-type: none"> The EIR/EIS notes the measures that are included in the project to reduce operational energy requirements and resultant GHG emissions. The pump station would be designed to operate as efficiently as possible. Water would be distributed at the lowest possible pressure to minimize friction losses, which would reduce the energy need for pumping. The pump station would use high efficiency pumps employing variable frequency drives, which reduce energy demand. Because energy use for the project offsets existing energy demand associated with pumping of groundwater for irrigation, the project is not expected to substantially increase GHG emissions.

3.1 Issues Identified in Comments

Most of the comment submittals identified overall regulatory and environmental analysis requirements for the project. Issues identified during the scoping period are summarized below. Responses to each issue are identified in Table 1.

3.1.1 Alternatives / Revisions to the Project

- CDFW suggests including a range of alternatives that consider different water discharge levels in the Sacramento River.
- CDFW recommends that Regional San provides some flexibility or maintains the ability to release water into the Sacramento River during drought periods.
- TNC requests consideration of alternative designs of the recharge basin area that may provide water management and habitat benefits.
- TNC recommends exploration of a Project component in which irrigated lands closest to the Cosumnes River have highest priority and/or greatest incentives for receipt of Project water.
- TNC requests Regional San to consider expanding the Project footprint in the area between Highway 99 and Wilton Road, and the Cosumnes River on the south and Grant Line Road on the north.
- The City of Elk Grove recommends the Project should be modified to provide an opportunity to connect to existing purple pipe infrastructure south of Elk Grove Boulevard (at Whitelock Parkway and Franklin Boulevard), and SCWA offered a similar comment about connecting the South County pipeline to the Laguna Phase 2 portion of SCWA's recycled water pilot project (Phase 1 is already in place and operating with a dedicated recycled water supply pipeline).
- The EPA requests that the range of alternatives consider aquifer recharge as an alternate use for the recycled wastewater.

3.1.2 Effects on Sacramento River Resources

- CDFW expressed concern about the reduction of discharge on Sacramento River resources (direct, indirect, and cumulative).
- CDFW recommends a complete assessment of in-stream flow-related needs and expressed concern about: project impacts on fish and wildlife and their habitat; reduced discharge on channel forming flows; and whether there's enough flows to maintain the health and perpetuation of aquatic resources. CDFW also requested a proposal for the protection of fisheries in the Sacramento River that includes required minimum instream flows in the Sacramento River at or above the point of discharge for reduced discharged to occur.

3.1.3 Water Quality Impacts

- TNC suggested that the EIR should consider potential impacts from constituents that are not removed during treatment.
- The EPA requested that the water quality analysis include discussion of impacts from reduced discharge volume to the current discharge locations and waters, and impacts to the Bay Delta water quality.

3.1.4 Project Description

- CDFW specifies the need to confirm if the Project will conflict with the proposed South Sacramento Habitat Conservation Plan (SSHCP).
- CalTrans specified the limitations of working under and around I-5.
- As mentioned above, Elk Grove recommends a specific connection point to existing purple pipe network, and SCWA specifies the EIR should identify recycled water delivery to the Phase 2 portion of SCWA's recycled water pilot project as a component of the Project.

3.2 Comments Outside the Scope of the EIR/EIS

Detailed suggestions from TNC such as development of a robust groundwater monitoring component and to track groundwater levels and habitat health, pre-wetting the Cosumnes channel to benefit anadromous fish, and the extensive benefits analysis for recycled water, are outside the scope of the EIR/EIS. Benefits to the Central Sacramento Groundwater Basin, to the Cosumnes River, its riparian corridor, and its biological resources will be discussed.

This page intentionally left blank

Attachment A – Notice of Preparation

This page intentionally left blank



REGIONAL SAN

TAKING THE WASTE OUT OF WATER

Sacramento Regional County Sanitation District

Main Office

10060 Goethe Road
Sacramento, CA 95827-3553
Tel: 916.876.6000
Fax: 916.876.6160

Treatment Plant

8521 Laguna Station Road
Elk Grove, CA 95758-9550
Tel: 916.875.9000
Fax: 916.875.9068

Board of Directors

Representing:

- County of Sacramento
- County of Yolo
- City of Citrus Heights
- City of Elk Grove
- City of Folsom
- City of Rancho Cordova
- City of Sacramento
- City of West Sacramento

Prabhakar Somavarapu

District Engineer

Ruben Robles

Director of Operations

Christoph Dobson

Director of Policy & Planning

Karen Stoyanowski

Director of Internal Services

Joseph Maestretti

Chief Financial Officer

Claudia Goss

Public Affairs Manager

TO: Responsible and Trustee Agencies, Organizations, and Interested Parties

FROM: Sacramento Regional County Sanitation District (Regional San)
Administrative Offices
10060 Goethe Road
Sacramento, CA 95827

DATE: February 19, 2015

SUBJECT: Notice of Preparation (NOP) of a Draft Environmental Impact Report (EIR) for Regional San's South Sacramento County Agriculture & Habitat Lands Recycled Water Program (Project)

AGENCIES: Regional San will be the lead agency under the California Environmental Quality Act (CEQA) and will prepare a project EIR for the project identified below. Regional San requests the views of public agencies as to the scope and content of the environmental information that is germane to the agency's statutory responsibilities in connection with the proposed Project, in accordance with California Code of Regulations, Title 14, Section 15082(b), if the agency will need to use the EIR prepared by Regional San when considering any permit or other approval for the Project.

ORGANIZATIONS AND INTERESTED PARTIES: Regional San requests comments and concerns from organizations and interested parties regarding the environmental issues associated with construction and operation of the proposed Project.

PROJECT TITLE: South Sacramento County Agriculture & Habitat Lands Recycled Water Project

PROJECT LOCATION: The Project is located within Sacramento County, and includes lands located south of the City of Elk Grove in unincorporated Sacramento County, and portions of the Stone Lakes National Wildlife Refuge (NWR).

PROJECT DESCRIPTION: The Project would deliver up to 50,000 acre-feet¹ per year (AFY) of Title 22 disinfected tertiary treated recycled water to approximately 16,000 acres of irrigated lands in southern Sacramento County (South County), as shown in **Figure 1** (all figures are located at the end of the NOP). Recycled water would be generated at the Sacramento Regional Wastewater Treatment Plant (SRWTP) and conveyed to customers using a new pump station at the SRWTP and through a new network of recycled water pipelines (transmission, distribution, and laterals) located on public road rights-of-way, private roads, and agricultural land. The proposed Project would also include a potential recharge area to increase recycled water usage and benefit the local groundwater basin through increasing groundwater table levels. With the potential recharge area, the delivery of recycled water could increase by approximately 5,000 AFY². In addition, the Project includes provision of recycled water to support wetland habitat at the Stone Lakes NWR to protect the sensitive resources at the refuge during drought conditions.

¹ An acre-foot equals 325,851 gallons.

² The net increase in delivery of recycled water is calculated by the increase in recharge contributed by recycled water in the potential recharge area (6,600 AFY) minus the irrigated land that would be removed from irrigation due to the construction of the potential recharge area (1,500 AFY). Thus the net is approximately 5,000 AFY.

The Project is described in further detail in Attachment A.

Because of potential Federal grant funding opportunities, an Environmental Impact Study (EIS) will be prepared in parallel with the EIR to comply with National Environmental Policy Act (NEPA) requirements. (The proposed Project may also require other federal agency approvals or actions that are subject to NEPA.) The joint EIR/EIS would evaluate the proposed Project components at both a project and program level of detail, including potential effects of recycled water on habitat in the Cosumnes River Preserve and Stone Lakes National Wildlife Refuge.

POTENTIAL ENVIRONMENTAL EFFECTS: The following areas of potentially significant environmental impact will be analyzed in the Draft EIR: Aesthetics, Agricultural and Forestry Resources, Air Quality, Biological Resources, Cultural Resources, Geology/Soils & Seismicity, Greenhouse Gas Emissions, Hazards & Hazardous Materials, Hydrology & Water Quality, Land Use & Planning, Mineral Resources, Noise, Population & Housing, Public Services, Recreation, Transportation & Traffic, and Utilities & Service Systems. Potential cumulative impacts and potential for growth inducement will be addressed. Alternatives, including the No Project Alternative, will be evaluated.

PUBLIC REVIEW PERIOD: This NOP is available for public review and comment pursuant to California Code of Regulations, Title 14, Section 15082(b) for 30 days. The comment period for the NOP begins February 19, 2015 and ends on March 23, 2015. **Written comments on the NOP must be provided to Regional San no later than 5 p.m. on March 23, 2015.**

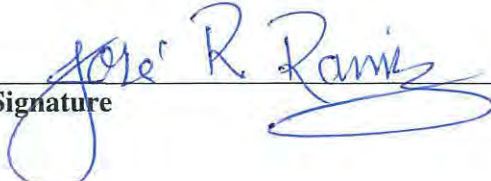
RESPONSES AND COMMENTS: Please send your responses and comments to:

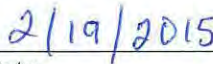
Jose Ramirez, Project Manager
Sacramento County Regional Sanitation District
10060 Goethe Road
Sacramento, CA 95827
(916) 879-6059
or via email at: ramirezj@sacsewer.com

Your response should include the name of a contact person in your Agency. Agencies with questions about the Project should contact Jose Ramirez at the above contact.

SCOPING MEETING: Regional San held an informational meeting on February 18, 2015 at the Sacramento County Farm Bureau in Elk Grove, 8970 Elk Grove Boulevard.

The NOP and future CEQA document(s) will be available for review on the internet at the following web address: <http://srcsd.com/index.php> and <http://www.per.saccounty.net/EnvironmentalDocuments/Pages/default.aspx>.


Signature


Date

ATTACHMENT A

Draft EIR/EIS Schedule

Regional San is seeking input on the scope and content of environmental information relevant to the proposed Project, including input on environmental issues and alternatives to be addressed in the EIR. The Draft EIR is scheduled for circulation in Fall 2015.

PROJECT BACKGROUND

Regional San provides regional wastewater conveyance, treatment, and disposal services to the cities of Citrus Heights, Elk Grove, Folsom, Rancho Cordova, Sacramento, West Sacramento, and the communities of Courtland, Walnut Grove and unincorporated Sacramento County. In 2007, Regional San completed the Water Recycling Opportunities Study. This study took a countywide look at a variety of potential recycled water projects and identified the South Sacramento County Agriculture and Habitat Lands Recycled Water Project for further study. The South County Recycled Water Feasibility Study, published in May 2014 and revised in January 2015, examined costs and benefits as well as the process for implementing the Project.

The Project area overlies the central Sacramento groundwater basin (Central Basin), which currently supplies water for several agencies within the Sacramento region. Groundwater levels in the Central Basin have declined mainly as a result of pumping to meet agricultural and municipal water demands in the basin. Proactive water supply management over the past two decades has resulted in more stable conditions in the groundwater basin. The Water Forum, consisting of a diverse group of participants who united to find solutions to water supply concerns, developed a Water Forum Agreement to guide water management activities in Sacramento to the present day.

EXISTING FACILITIES

SRWTP is located in Elk Grove and presently treats and discharges secondary effluent into the Sacramento River. Some of the secondary effluent is diverted to a 5-mgd Water Recycling Facility (WRF) to produce tertiary treated recycled water for the Sacramento County Water Agency (SCWA) Laguna West Recycled Water Project.

In December 2010, the Central Valley Regional Water Quality Control Board (RWQCB) adopted new Waste Discharge Requirements (WDR's) for Regional San's discharge to the Sacramento River (Order No. R5-2010-114). The new WDR's require upgrades to the treatment process that will result in Title 22 disinfected, tertiary treated, recycled water for all of the plant's effluent. Alternative treatment technologies to meet the WDR's were evaluated and performance of the selected technology was verified with a pilot project. The treatment upgrades will be sized for the plant's permitted capacity of 181 mgd (average dry weather flow) and will be operational by May 2023. The project constructing the new treatment processes is known as the EchoWater Project.

PROJECT OBJECTIVES

With the management of the groundwater basin in mind, the objectives of the proposed Project are as follows:

- Provide a reliable source of non-potable water in the County
- Maximize use of recycled water
- Reduce groundwater pumping in the Central Basin by supplying recycled water to agricultural customers as an alternative to pumped groundwater
- Minimize the cost of transmission and distribution systems while meeting service demands
- Improve environmental resources in the area by:
 - Enhancing the riparian corridor along the Cosumnes River by raising groundwater levels

- Reducing streamflow losses in the Consumnes River with increased groundwater levels to improve spawning conditions
- Providing drought-resistant water supplies to agricultural users to encourage long-term agricultural uses in the south county and Cosumnes River area.
- Providing a reliable water supply to managed wetlands
- Assist in long term fulfillment of the Water Forum Agreement for conjunctive use of surface water and groundwater supplies in the County
- Support the Sacramento Central Groundwater Authority and environmental organizations in developing a Groundwater Accounting Program that will balance the increase in groundwater supply with regional water needs and environmental benefits.

PROJECT DESCRIPTION

The proposed Project elements and their level of environmental evaluation in the joint EIR/EIS are as follows:

- New pump station at the SRWTP (project-level)
- Transmission pipeline from the pump station to Twin Cities Road (project-level)
- Distribution mains from the transmission pipeline and lateral service connections to potential customers (agriculture and Stone Lakes NWR) (program-level)
- Potential recharge area and diluent wells (program-level)

Pump Station

An above-ground distribution pump station would be constructed at the SRWTP to pressurize the new recycled water system. The proposed distribution pump station would be located between Central Street and South Landfill Way, as shown in **Figure 2**. The pump station would require a total installed horsepower (hp) of approximately 7,000, including standby pumps. The footprint would be approximately 10,000 square feet with a height of 25 feet.

Pipelines

Transmission Pipeline

The 30-inch to 60-inch-diameter transmission pipeline, to be evaluated at a project level of detail, would extend from the new pump station at the SRWTP to Twin Cities Road. The transmission pipeline consists of three segments under evaluation: A) SRWTP south through Elk Grove; B) Southern route; and C) Eastern route. The options currently under consideration for the transmission pipeline are shown in **Figure 2**. Regional San is currently conducting additional analysis to determine the alignment that would be analyzed as part of the proposed Project in the EIR/EIS so all alignment options are shown at this time in the NOP. The selected alignment would be a combination of the individual segments. The alignments would range from approximately 65,000 feet to 71,000 feet (12 to 13.5 miles).

Distribution Mains and Service Connection Laterals

Distribution mains and service connection laterals will be evaluated at a program level of detail. **Figure 1** shows the conceptual layout of the distribution mains, which are based on the location of potential customers. These pipelines would range from 12 inches to 30 inches in diameter. Service lateral connections are not shown since their alignments will be based on customer's point of connection and this information has not been collected yet. Lateral pipelines would range from 6 to 12 inches in diameter depending on individual customer demand. The pipelines would be located both on public road rights-of way, private dirt roads, and agricultural lands. The pipelines would be designed upon confirmation of customers to be served and points of connection to the customers.

Potential Recharge Area and Diluent Well

The proposed Project considers at a program-level of detail the potential to apply recycled water to a recharge area to increase overall recycled water use and to provide secondary benefits to the groundwater basin (through recharge of the basin). The potential area considered for the recharge area is shown in **Figure 1**. The site would be up to 560 acres and the area under consideration (and shown in Figure 1) is over 1,100 acres. Direct recharge of recycled water requires that the recycled water be blended with non-recycled diluent water, in accordance with State regulation. Diluent water could be provided from groundwater sources. As such, up to three diluent wells located 2,000 to 6,000 feet from the potential recharge area and associated pipelines would be needed to extract and convey the water to the potential recharge area for blending purposes.

Construction

Construction of the proposed Project would be phased, with construction of the pump station, the transmission pipeline, and some adjacent distribution pipelines and service connection laterals first. One or more phases would be needed to implement the remaining portions of the recycled water infrastructure and the potential recharge area.

Construction of the pump station would involve grading, excavation and shoring, and erection of the facility.

Construction of the transmission and lateral pipelines would generally consist of open-cut construction, except at sensitive crossings (e.g., stream/river/sensitive biological resources, railroad crossings, canal/ditch, busy intersections, areas with dense utilities). At these locations, a variety of trenchless construction techniques could be employed, including tunneling, microtunnel, pipe jacking (sometimes known as jack-and-bore construction), and horizontal directional drilling (HDD).

The open-cut trench width would be up to seven feet and depth would be up to ten feet. Pipeline construction would typically require a closure of one lane of traffic and use of the adjacent road shoulder. Some construction may require up to 80 feet of construction width. It is expected that open trench construction within paved roadways would proceed at the rate of up to approximately 300 feet per day. Excavated trench materials would be sidecast within approved work areas and reused as appropriate for backfill. Excess material would be hauled off for disposal. After pipeline construction and installation is complete, pavement would be restored to preconstruction conditions.

Trenchless construction methods minimize the area of surface disruption required for pipeline installation. The use of trenchless construction would require entry and exit pits.

Staging areas would be set up at the SRWTP and along the pipeline alignments. Construction would be limited to those hours consistent with the noise ordinance of the affected jurisdictions.

Project Operation

The average annual recycled water delivered to potential customers is approximately 50,000 AFY. Recycled water would be delivered to approximately 16,000 acres of irrigated lands and managed wetlands at Stone Lake NWR. The actual monthly demand would vary seasonally with the maximum demand occurring during the irrigation season, from May through September. The Project is designed to deliver up to two-thirds of the maximum month demand during the irrigation season. The remaining demand would be met by groundwater pumping, the existing source of water supply. As treated wastewater would be beneficially reused, there would be a commensurate reduction in the discharge of treated wastewater into the Sacramento River.

Figure 1: Overview of the Proposed Project

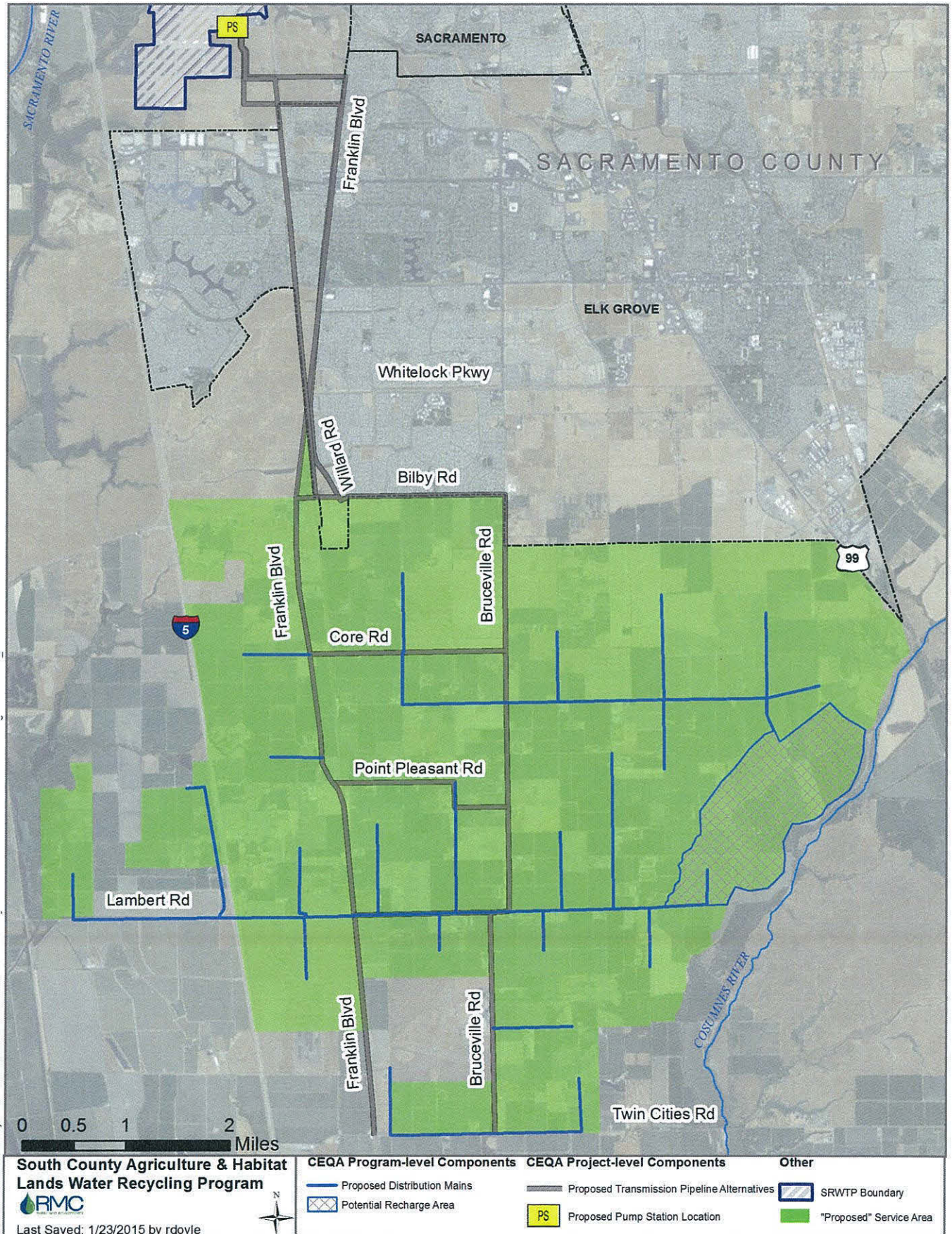
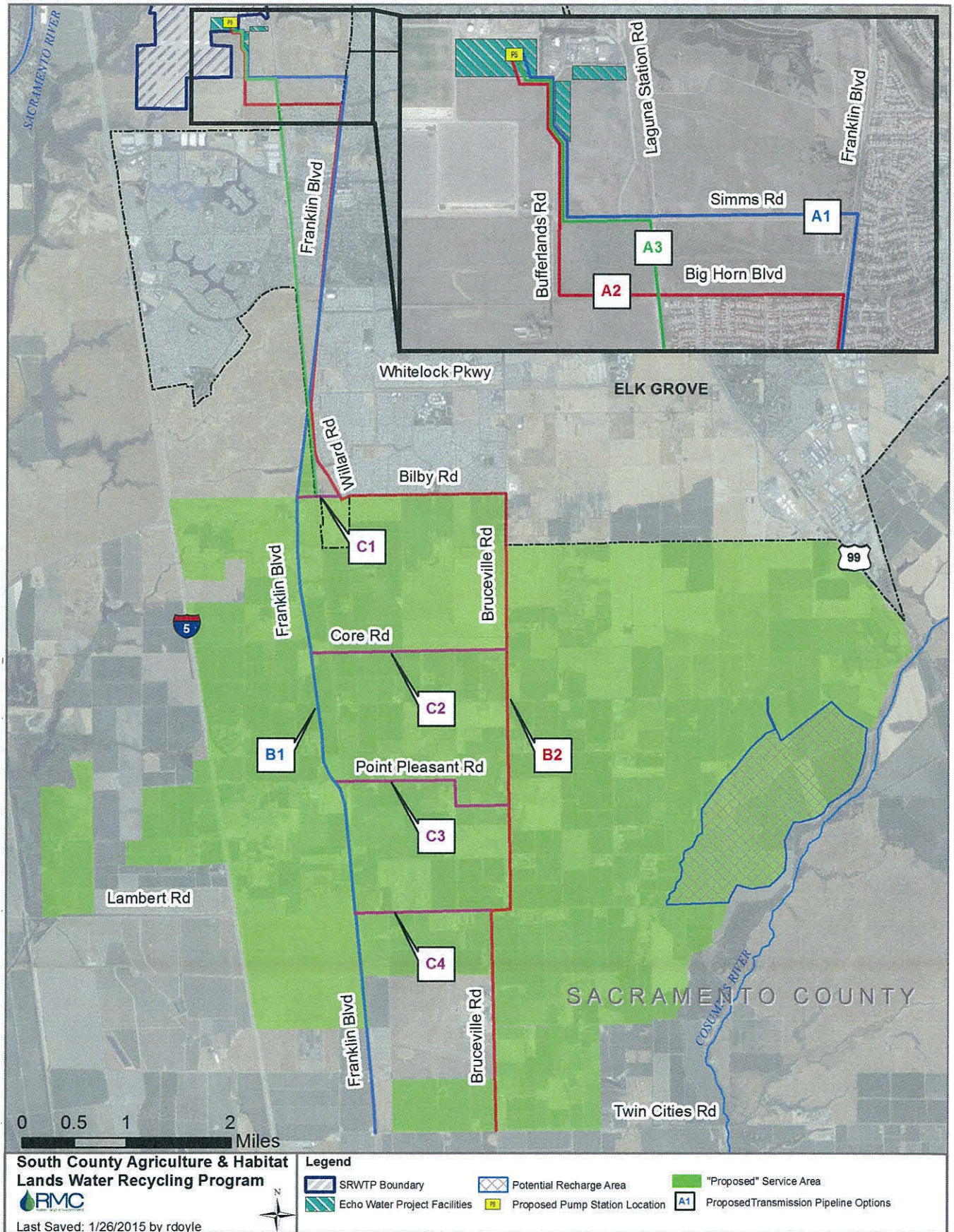


Figure 2: Proposed Pump Station Location and Transmission Pipeline Alternative Routes



Attachment B – Comment Letters Received During Scoping

This page intentionally left blank



State of California - Natural Resources Agency
DEPARTMENT OF FISH AND WILDLIFE
North Central Region
1701 Nimbus Road, Suite A
Rancho Cordova, CA 95670-4599
916-358-2900
www.wildlife.ca.gov

EDMUND G. BROWN JR., Governor
CHARLTON H. BONHAM, Director



March 9, 2015

Jose Ramirez
Sacramento Regional Sanitation District
10060 Goethe Road
Sacramento, CA 95827-3553

Subject: Notice of Preparation of a Draft Environmental Impact Report for the South Sacramento County Agriculture and Habitat Lands Recycled Water Program Project, SCH # 2015022067.

Dear Mr. Ramirez:

The California Department of Fish and Wildlife (Department) has reviewed the Notice of Preparation (NOP) from Sacramento Regional County Sanitation District (District) regarding the Draft Environmental Impact Report (DEIR) for the South Sacramento County Agriculture and Habitat Lands Recycled Water Program (Project).

As a trustee for California's fish and wildlife resources, the Department has jurisdiction over the conservation, protection, and management of fish, wildlife, native plants, and habitat necessary for biologically sustainable populations of those species (Fish & G. Code, § 1802). The Department may also act as a Responsible Agency (Cal. Code Regs., § 21069) for a project where it has discretionary approval power under the California Endangered Species Act (Fish & G. Code, § 2050 et seq.) and the Lake and Streambed Alteration Program (Fish & G. Code, § 1600 et seq.). The Department also administers the Native Plant Protection Act, Natural Community Conservation Program, and other provisions of the Fish and Game Code that afford protection to California's fish and wildlife resources.

The Department offers the following comments and recommendations for this Project in our role as a trustee and responsible agency pursuant to the California Environmental Quality Act (CEQA).

PROJECT DESCRIPTION AND ALTERNATIVE ANALYSIS

The Project would deliver up to 50,000 acre-feet per year (AFY) of disinfected tertiary treated recycled water to approximately 16,000 acres of irrigated lands in southern Sacramento County. Recycled water would be generated at the Sacramento Regional Wastewater Treatment Plant (SRWTP) and conveyed to customers using a new pump station at the SRWTP and through a new network of recycled water pipelines located on public road rights-of-way, private roads, and agricultural land. The proposed Project would also include a potential groundwater recharge. In addition, the Project includes the delivery of recycled water to Stone Lakes National Wildlife Refuge (NWR).

Conserving California's Wildlife Since 1870

The Project description in the DEIR should include the whole action as defined in the California Code of Regulations, title 14, section 15000 et seq. (CEQA Guidelines) section 15378 and should include appropriate detailed exhibits disclosing the Project area including temporary impacted areas such as access roads and staging areas.

The Department recommends that the DEIR includes a range of alternatives that consider different water discharge levels in the Sacramento River.

As required by section 15126.6 of the CEQA Guidelines, the DEIR shall include appropriate range of reasonable and feasible alternatives that would attain most of the basic Project objectives and avoid or minimize significant impacts to resources under the Department jurisdiction. The Department recommends that alternatives that include different level of water deliveries to the Sacramento River are included in the DEIR.

ENVIRONMENTAL SETTING

The DEIR shall include a complete assessment of the existing biological conditions within the Project area including but not limited to the type, quantity and locations of the habitats, flora and fauna. Adequate mapping and information regarding the survey efforts shall be included within the DEIR. All surveys as well as the environmental analysis shall be completed by qualified Project personnel with sufficient experience in the work performed for the Project.

To identify a correct environmental baseline, the DEIR shall include a complete and current assessment of the habitats, flora, and fauna within the Project area. This analysis should include endangered, threatened, candidate, and locally unique species. CEQA guidelines section 15125, subdivision (c) requires lead agencies to provide special emphasis to sensitive habitats and any biological resources that are rare or unique to the area. This includes but is not limited to vernal pools, streambeds, riparian habitats, and open grasslands that are known to be present within the Project boundaries or its vicinity.

The Department recommends that the California Natural Diversity Database (CNDDDB), as well as previous studies performed in the area, be consulted to assess the potential presence of sensitive species and habitats. Recent surveys for the different species that have the potential to be present within the project limits and its vicinity shall be included within the DEIR. Additional information regarding survey protocols can be obtained by contacting the Department.

Species-specific surveys shall be conducted in order to ascertain the presence of species with the potential to be present within the Project vicinity. The Department recommends that the lead agency use survey protocols previously approved by the Department. The Department recommends that assessments for rare plants and rare natural communities follow the Department's 2009 Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities. The guidance document is available here:

http://www.dfg.ca.gov/biogeodata/cnddb/pdfs/protocols_for_surveying_and_evaluating_impacts.pdf.

IMPACT ANALYSIS AND MITIGATION MEASURES

The DEIR shall clearly identify and describe all short-term, long-term, permanent, or temporary impacts to biological resources under the Department jurisdiction, including all direct and foreseeable indirect impacts caused by the proposed Project. The impacts identified in the DEIR shall encompass all the phases of the Project, including planning, acquisition, development, operation, and maintenance. This includes maintenance activities within the Department jurisdictional areas and any other activity that could potentially impact biological resources.

The DEIR shall define the threshold of significance for each impact and describe the criteria used to determine each threshold (CEQA Guidelines, § 15064, subd. (f).) The DEIR must demonstrate that the significant environmental impacts of the Project were adequately investigated and discussed and it must permit the significant effects of the Project to be considered in the full environmental context.

The Department is concerned that the proposed reduction of discharge may result in direct, indirect and cumulative adverse impacts to environmental and Public Trust resources within the Sacramento River. The Sacramento River may be impacted by reducing instream flows and water availability required to maintain aquatic, riparian and terrestrial habitats, in addition to habitat for sensitive species with the system.

The Department recommends that a complete assessment (including but not limited to type, quantity, and locations) of the instream flow-related needs; aquatic, riparian, and terrestrial habitats. The Department recommends the use of survey and monitoring protocols and guidelines available at:

http://www.dfg.ca.gov/wildlife/nongame/survey_monitor.html. The Department also recommends that the District's environmental documentation provide scientifically supported discussion and adequate avoidance, minimization, and/or mitigation measures to address the following concerns:

- The Project's impact upon fish and wildlife and their habitat. We recommend that the environmental documentation identify natural habitats and provide a discussion of how the proposed Project will affect their function and value;
- An assessment of the impacts of the reduced discharge on channel forming flows;
- Identification of flows necessary to maintain the health and perpetuation of aquatic resources and a hydrologic study to determine if the production of the Sacramento River watershed is sufficient to reduce discharge at current and projected rates of flow without having direct and/or cumulative significant adverse impacts; and

- A specific proposal for the protection of fisheries in the Sacramento River that includes required minimum instream flows in the Sacramento River measured at or above the point of discharge for reduced discharges to occur.

DEIR shall discuss Project's cumulative impacts to natural resources and determine if that contribution would result in a significant impact. The DEIR shall include a list of present, past, and probable future projects producing related impacts to resources under the Department jurisdiction or shall include a summary of the projections contained in an adopted local, regional, or statewide plan, that consider conditions contributing to a cumulative effect. The cumulative analysis shall include impact analysis of other water discharges reductions within the Sacramento River watershed and their potential cumulative effects.

The DEIR shall incorporate mitigation performance standards that would ensure that significant impacts are reduced as expected. Mitigation measures proposed in the DEIR shall be made a condition of approval of the Project. Please note that obtaining a permit from the Department by itself with no other mitigation proposal may constitute mitigation deferral.

Anadromous Fish

The Sacramento River provides essential migratory, spawning and rearing habitats to anadromous and resident fish species. The DEIR should include an impact analysis to anadromous fisheries populations cause by the discharge of water to the Stone Lakes NWR. The Stone Lakes basin is tributary to Snodgrass Slough, both with poor quality holding and rearing salmonid habitat. Snodgrass Slough is connected to the lower Mokelumne River; an anadromous corridor. Providing out of basin origin water to Stone Lakes may influence the natural hydrograph and create attractant flows in Snodgrass and Stone Lakes during adult salmon migration; critical in that Mokelumne River salmon have poor return success. The Department recommends that during dry years water discharge flows from Stone Lakes into Snodgrass slough are maintained as natural as possible.

While providing treated water to the Stone Lakes NWR and ground water to the Cosumnes basin during drought years may be a worthy exercise, adding this water to the Sacramento River during drought conditions may be equally or more beneficial. During drought conditions, increasing Sacramento River flows with treated water may provide better attractant flows for salmon entering the Sacramento River from the Sacramento-San Joaquin Delta. The Department recommends that the District, provides some flexibility or maintains the ability to release water into the Sacramento River during drought periods.

Treated water that is supplied to the Cosumnes River may alter the natural hydrograph enough to alter natural river temperatures. Altered river temperatures may be detrimental to native residential fisheries or alter habitat for rearing salmonids in the lower portion of the river. A study to evaluate the Project's impacts on river temperature should be conducted.

Threatened, Endangered, Candidate Species

The project area as shown in the NOP includes habitat for several State and federally listed species. If during the environmental analysis for the Project, it is determined that the Project may have the potential to result in "take", as defined in the Fish and Game Code, section 86, of a State-listed species, the DEIR shall disclose an Incidental Take Permit (ITP) or a consistency determination (Fish & G. Code, §§ 2080.1 & 2081) may be required prior to starting construction activities. The DEIR shall include all avoidance and minimization to reduce the impacts to a less than significant level. If impacts to listed species are expected to occur even with the implementation of these measures, mitigation measures shall be proposed to fully mitigate the impacts to State-listed species (Cal. Code Regs., tit. 14, § 783.2, subd.(a)(8)).

The Department encourages early coordination to determine appropriate measures to offset Project impacts and facilitate future permitting processes and to coordinate with the U.S. Fish and Wildlife Service to coordinate specific measures if federally-listed species are present within the Project limits.

Jurisdictional Delineation and Wetlands

The DEIR shall identify all the areas under the Department's jurisdiction per section 1602 of the Fish and Game Code. These areas include all perennial, intermittent, and ephemeral rivers, streams, and lakes in the State and any habitats supported by these features such as wetlands and riparian habitats. If these jurisdictional features are found within the Project the DEIR should identify any potential impacts to these resources. The DEIR shall include a delineation of lakes, streams, and associated habitat that will be temporarily and/or permanently impacted by the proposed Project including an estimate of impact to each habitat type. Please note that the Department definition of wetlands as well as extent of the jurisdictional areas differ from other agencies such the U.S. Army Corps of Engineers or the Regional Water Quality Control Board. The DEIR shall identify the different jurisdictional areas present within the Project limits under each agency.

If it is determined that the Project would impact areas under the Department jurisdiction the DEIR shall propose mitigation measures to avoid, minimize, and mitigate impacts to these resources.

Natural Communities Conservation Planning

The proposed Project is located within the limits of the proposed South Sacramento Habitat Conservation Plan (SSHCP) the DEIR should provide a detailed explanation if the Project will conflict with the SSHCP. The DEIR shall include a complete analysis of how the proposed Project will be consistent with all applicable policies, procedures, and goals of the SSHCP.

Migratory Birds and Birds of Prey

Migratory nongame native bird species are protected by international treaty under the Federal Migratory Bird Treaty Act (MBTA) (16 U.S.C., §§ 703-712), The Department

implemented the MBTA by adopting the Fish and Game Code section 3513. Fish and Game Code sections 3503, 3503.5 and 3800 provide additional protection to nongame birds, birds of prey, their nests and eggs. Potential habitat for nesting birds and birds of prey is present within the Project area. The proposed Project shall disclose all potential activities that may incur a direct or indirect take to nongame nesting birds within the Project footprint and its close vicinity. Appropriate avoidance, minimization, and/or mitigation measures to avoid take shall be included in the DEIR. Measures to avoid the impacts should include species specific construction windows, biological monitoring, installation of noise attenuation barriers, etc.

Please note that when acting as a responsible agency, CEQA guidelines section 15096, subdivision (f) requires the Department to consider the CEQA environmental document prepared by the lead agency prior to reaching a decision on the Project. Addressing the Department's comments and disclosing potential Project impacts on CESA-listed species in any river, lake, or stream, and provide adequate avoidance, minimization, mitigation, monitoring and reporting measures; will assist the Department with the consideration of the DEIR and reduce potential delays when issuing an ITP and/or an LSA Agreement.

Thank you for the opportunity to comment on the NOP for the Project. If you have any questions regarding these comments please contact please contact Juan Lopez Torres at (916) 358-2951 or Juan.Torres@wildlife.ca.gov.

Sincerely



Tina Bartlett
Region Manager

EC: Jeff Drongesen
Isabel Baer
Juan Lopez Torres
Lauren Mulloy
Chris McKibben
Department of Fish and Wildlife



Central Valley Regional Water Quality Control Board

13 March 2015

Jose Ramirez
Sacramento Regional Sanitation District
10060 Goethe Road
Sacramento, CA 95827

CERTIFIED MAIL
7014 2120 0001 3978 0650

COMMENTS TO REQUEST FOR REVIEW FOR THE DRAFT ENVIRONMENTAL IMPACT REPORT, SOUTH SACRAMENTO COUNTY AGRICULTURE & HABITAT LANDS RECYCLED WATER PROGRAM PROJECT, SCH# 2015022067, SACRAMENTO COUNTY

Pursuant to the State Clearinghouse's 19 February 2015 request, the Central Valley Regional Water Quality Control Board (Central Valley Water Board) has reviewed the *Request for Review for the Draft Environment Impact Report* for the South Sacramento County Agriculture & Habitat Lands Recycled Water Program Project, located in Sacramento County.

Our agency is delegated with the responsibility of protecting the quality of surface and groundwaters of the state; therefore our comments will address concerns surrounding those issues.

Construction Storm Water General Permit

Dischargers whose project disturb one or more acres of soil or where projects disturb less than one acre but are part of a larger common plan of development that in total disturbs one or more acres, are required to obtain coverage under the General Permit for Storm Water Discharges Associated with Construction Activities (Construction General Permit), Construction General Permit Order No. 2009-009-DWQ. Construction activity subject to this permit includes clearing, grading, grubbing, disturbances to the ground, such as stockpiling, or excavation, but does not include regular maintenance activities performed to restore the original line, grade, or capacity of the facility. The Construction General Permit requires the development and implementation of a Storm Water Pollution Prevention Plan (SWPPP).

For more information on the Construction General Permit, visit the State Water Resources Control Board website at:

http://www.waterboards.ca.gov/water_issues/programs/stormwater/constpermits.shtml.

Phase I and II Municipal Separate Storm Sewer System (MS4) Permits¹

The Phase I and II MS4 permits require the Permittees reduce pollutants and runoff flows from new development and redevelopment using Best Management Practices (BMPs) to the maximum extent practicable (MEP). MS4 Permittees have their own development standards, also known as Low Impact Development (LID)/post-construction standards that include a hydromodification component. The MS4 permits also require specific design concepts for LID/post-construction BMPs in the early stages of a project during the entitlement and CEQA process and the development plan review process.

For more information on which Phase I MS4 Permit this project applies to, visit the Central Valley Water Board website at:

http://www.waterboards.ca.gov/centralvalley/water_issues/storm_water/municipal_permits/.

For more information on the Phase II MS4 permit and who it applies to, visit the State Water Resources Control Board at:

http://www.waterboards.ca.gov/water_issues/programs/stormwater/phase_ii_municipal.shtml

Industrial Storm Water General Permit

Storm water discharges associated with industrial sites must comply with the regulations contained in the Industrial Storm Water General Permit Order No. 97-03-DWQ.

For more information on the Industrial Storm Water General Permit, visit the Central Valley Water Board website at:

http://www.waterboards.ca.gov/centralvalley/water_issues/storm_water/industrial_general_permits/index.shtml.

Clean Water Act Section 404 Permit

If the project will involve the discharge of dredged or fill material in navigable waters or wetlands, a permit pursuant to Section 404 of the Clean Water Act may be needed from the United States Army Corps of Engineers (USACOE). If a Section 404 permit is required by the USACOE, the Central Valley Water Board will review the permit application to ensure that discharge will not violate water quality standards. If the project requires surface water drainage realignment, the applicant is advised to contact the Department of Fish and Game for information on Streambed Alteration Permit requirements.

If you have any questions regarding the Clean Water Act Section 404 permits, please contact the Regulatory Division of the Sacramento District of USACOE at (916) 557-5250.

¹ Municipal Permits = The Phase I Municipal Separate Storm Water System (MS4) Permit covers medium sized Municipalities (serving between 100,000 and 250,000 people) and large sized municipalities (serving over 250,000 people). The Phase II MS4 provides coverage for small municipalities, including non-traditional Small MS4s, which include military bases, public campuses, prisons and hospitals.

Clean Water Act Section 401 Permit – Water Quality Certification

If an USACOE permit (e.g., Non-Reporting Nationwide Permit, Nationwide Permit, Letter of Permission, Individual Permit, Regional General Permit, Programmatic General Permit), or any other federal permit (e.g., Section 9 from the United States Coast Guard), is required for this project due to the disturbance of waters of the United States (such as streams and wetlands), then a Water Quality Certification must be obtained from the Central Valley Water Board prior to initiation of project activities. There are no waivers for 401 Water Quality Certifications.

Waste Discharge Requirements

If USACOE determines that only non-jurisdictional waters of the State (i.e., "non-federal" waters of the State) are present in the proposed project area, the proposed project will require a Waste Discharge Requirement (WDR) permit to be issued by Central Valley Water Board. Under the California Porter-Cologne Water Quality Control Act, discharges to all waters of the State, including all wetlands and other waters of the State including, but not limited to, isolated wetlands, are subject to State regulation.

For more information on the Water Quality Certification and WDR processes, visit the Central Valley Water Board website at:

http://www.waterboards.ca.gov/centralvalley/help/business_help/permit2.shtml.

Regulatory Compliance for Commercially Irrigated Agriculture

If the property will be used for commercial irrigated agricultural, the discharger will be required to obtain regulatory coverage under the Irrigated Lands Regulatory Program.

There are two options to comply:

1. **Obtain Coverage Under a Coalition Group.** Join the local Coalition Group that supports land owners with the implementation of the Irrigated Lands Regulatory Program. The Coalition Group conducts water quality monitoring and reporting to the Central Valley Water Board on behalf of its growers. The Coalition Groups charge an annual membership fee, which varies by Coalition Group. To find the Coalition Group in your area, visit the Central Valley Water Board's website at: http://www.waterboards.ca.gov/centralvalley/water_issues/irrigated_lands/app_approval/index.shtml; or contact water board staff at (916) 464-4611 or via email at IrrLands@waterboards.ca.gov.
2. **Obtain Coverage Under the General Waste Discharge Requirements for Individual Growers, General Order R5-2013-0100.** Dischargers not participating in a third-party group (Coalition) are regulated individually. Depending on the specific site conditions, growers may be required to monitor runoff from their property, install monitoring wells, and submit a notice of intent, farm plan, and other action plans regarding their actions to comply with their General Order. Yearly costs would include State administrative fees (for example, annual fees for farm sizes from 10-100 acres are currently \$1,084 + \$6.70/Acre); the cost to prepare annual monitoring reports; and water quality monitoring costs. To enroll as an Individual Discharger under the Irrigated Lands Regulatory

Program, call the Central Valley Water Board phone line at (916) 464-4611 or e-mail board staff at IrrLands@waterboards.ca.gov.

Low or Limited Threat General NPDES Permit

If the proposed project includes construction dewatering and it is necessary to discharge the groundwater to waters of the United States, the proposed project will require coverage under a National Pollutant Discharge Elimination System (NPDES) permit. Dewatering discharges are typically considered a low or limited threat to water quality and may be covered under the General Order for *Dewatering and Other Low Threat Discharges to Surface Waters* (Low Threat General Order) or the General Order for *Limited Threat Discharges of Treated/Untreated Groundwater from Cleanup Sites, Wastewater from Superchlorination Projects, and Other Limited Threat Wastewaters to Surface Water* (Limited Threat General Order). A complete application must be submitted to the Central Valley Water Board to obtain coverage under these General NPDES permits.

For more information regarding the Low Threat General Order and the application process, visit the Central Valley Water Board website at:

http://www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders/general_orders/r5-2013-0074.pdf

For more information regarding the Limited Threat General Order and the application process, visit the Central Valley Water Board website at:

http://www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders/general_orders/r5-2013-0073.pdf

If you have questions regarding these comments, please contact me at (916) 464-4684 or tcleak@waterboards.ca.gov.



Trevor Cleak
Environmental Scientist

cc: State Clearinghouse unit, Governor's Office of Planning and Research, Sacramento

Phone: 916.478.2265
Fax: 916.691.3175

Web: www.elkgrovecity.org

Development Services – Planning
8401 Laguna Palms Way
Elk Grove, California 95758



March 20, 2015

Sacramento Regional County Sanitation District (Regional San)
Jose Ramirez, Project Manager
10060 Goethe Road
Sacramento, CA 95827

RE: Notice of Preparation of an Environmental Impact Report for the South Sacramento County Agriculture & Habitat Lands Recycled Water Program (Project)

Dear Mr. Ramirez,

On behalf of the City of Elk Grove (City), thank you for providing us an opportunity to review and comment on the Notice of Preparation (NOP) for this Project. The City understands that this project will provide up to 50,000 acre-feet per year of Title 22 tertiary-treated recycled water for agricultural purposes in the South County, as well as a potential groundwater recharge area of approximately 5,000 acre-feet per year. The Project would also provide recycled water to support habitat at the Stone Lakes NWR to protect sensitive resources.

The City applauds Regional San's efforts on this Project. When completed, these improvements will provide another source of water for agricultural operations in the South County and can lessen reliance on groundwater sources, thereby creating benefits for the rest of the region. Further, the benefits to the Stone Lakes NWR are not to be understated.

That said, the City remains concerned about the limited nature of the Project. For more than the past decade, development projects south of Elk Grove Boulevard have been required to provide "purple pipe" infrastructure for roadside, park, and trail landscaping. This added expense has been incurred in the hope that Title 22 tertiary-treated recycled water would someday be available to the area. The proposed Project includes construction of trunk infrastructure from the Regional Plant on Franklin Boulevard south, roughly along the alignment of the Union Pacific Railroad line. This runs directly past the planned point of connection at Whitelock Parkway and Franklin Boulevard. Given this, the City believes the Project should be modified to provide opportunity for this connection should either (1) additional water become available in later phases or (2) acceptance of the Title 22 water by agricultural users runs substantially below capacity. This may require upsizing the trunk line from the Regional Plant to Whitelock Parkway. The City is happy to meet with you to discuss this in further detail and work to identify solutions. The provision of Title 22 water to urban users is just as critical as agricultural users.

Should you have any questions, please feel free to contact me or Richard Shepard, the City's Public Works Director, at your convenience.

Sincerely,

Darren Wilson, PE
Planning Director
City of Elk Grove

DEPARTMENT OF TRANSPORTATION

DISTRICT 3 – SACRAMENTO AREA OFFICE
2379 GATEWAY OAKS DRIVE, STE 150 – MS 19
SACRAMENTO, CA 95833
PHONE (916) 274-0635
FAX (916) 263-1796
TTY 711



*Serious drought.
Help save water!*

March 23, 2015

032015-SAC-0031
03-SAC-5 / 4.653
SCH# 2015022067

Mr. Jose Ramirez
Sacramento Regional Sanitation District
10060 Goethe Road
Sacramento, CA 95827-3553

South Sacramento County Agriculture & Habitat Lands Recycled Water Program – Notice of Preparation for a Draft Environmental Impact Report (NOP)

Dear Mr. Ramirez:

Thank you for including the California Department of Transportation (Caltrans) in the environmental review process for the project referenced above. The Sacramento Regional Sanitation District is proposing to provide tertiary-treated recycled water to 16,000 acres of irrigated lands in south Sacramento County via a new transmission pipeline and new pump station at the Sacramento Regional Wastewater Treatment Plant (SRWTP). Distribution mains from the transmission pipeline and lateral service connections to potential customers, and potential recharge area and diluent wells are the program-level components of the proposed project. The project is located south of the City of Elk Grove between the Interstate 5 (I-5) / Hood-Franklin Rd. interchange (IC) and the I-5 / Twin Cities Rd. IC, and in portions of Stone Lakes National Wildlife Refuge. The following comments are based on the NOP.

Encroachment Permit

Please be advised that any work or traffic control that would encroach onto the State Right of Way (ROW) requires an encroachment permit that is issued by Caltrans. To apply, a completed encroachment permit application, environmental documentation, and five sets of plans clearly indicating State ROW must be submitted to the address below.

Sergio Aceves
Caltrans, District 3 Office of Permits
703 B Street
Marysville, CA 95901

Mr. Jose Ramirez, Sacramento Regional Sanitation District
March 23, 2015
Page 2

Traffic-related mitigation measures should be incorporated into the construction plans prior to the encroachment permit process. See the website link below for more information.
<http://www.dot.ca.gov/hq/traffops/developserv/permits/>.

Hydraulics

The transmission mains or distribution mains must not be located within State ROW at I-5.

Proposed distribution mains if placed under I-5 shall be placed by directional drilling under I-5; and no open cut across I-5 will be permitted.

Directional drilling pits must be excavated outside State ROW at I-5. Spoils must not be placed within State ROW.

Spoils from the proposed project must not be placed at any locations that may impede or cause the redirection of drainage flows from the highway.

Any pipes placed under I-5 must be encased within a larger conduit.

Please provide our office with copies of any further actions regarding this project. We would appreciate the opportunity to review and comment on any changes related to this development.

If you have any questions regarding these comments or require additional information, please contact Arthur Murray, Intergovernmental Review Coordinator at (916) 274-0616 or by email at: arthur.murray@dot.ca.gov.

Sincerely,



ERIC FREDERICKS, Chief
Office of Transportation Planning – South

c: Scott Morgan, State Clearinghouse

**Environmental Management
Department**

Val F. Siebal, Director



Divisions

Environmental Compliance
Environmental Health

County of Sacramento

March 23, 2015

Sent via Electronic Mail and Regular Mail

Jose Ramirez, Project Manager
Regional San
10060 Goethe Road
Sacramento, CA 95827
Email: ramirezj@sacsewer.com

Subject: Comment Letter – Notice of Preparation (NOP) of a Draft Environmental Impact Report (EIR) for Regional San’s South Sacramento County Agriculture & Habitat Lands Recycled Water Program (Project)

Dear Mr. Ramirez:

Sacramento County Environmental Management Department (EMD) has reviewed the above referenced NOP. The Project would deliver up to 50,000 acre-feet per year of Title 22 disinfected tertiary treated recycled water to approximately 16,000 acres of irrigated lands in southern Sacramento County. Recycled water would be generated at the Sacramento Regional Wastewater Treatment Plant (SRWTP) and conveyed to customers using a new pump station at the SRWTP and through a new network of recycled water pipelines located on public road rights-of-way, private roads, and agricultural land. The proposed Project would also include a potential recharge area to increase recycled water usage and benefit the local groundwater basin through increasing groundwater tables. Additionally, the Project includes provision of recycled water use to support wetland habitat at the Stone Lakes National Wildlife Refuge.

Additionally, EMD requests that we be added to the recycled water stakeholder list for future project review and comment.

Please contact me for any additional information and clarification.

Sincerely,

A handwritten signature in black ink, appearing to read "CHUNLEY".

Chris Hunley, REHS
Environmental Compliance Division

Attachment

COMMENTS

Pump Station

The NOP states that one new above-ground distribution pump station would be constructed at the SRWTP to pressurize the new recycled water system. The proposed distribution pump station would be located between Central Street and South Landfill Way which is north of an existing closed landfill that accepted grit and screenings from SRCSD. Per Title 27 of the California Code of Regulations (27 CCR), Section 21190 (c), the Local Enforcement Agency (LEA) shall review and approve proposed postclosure land uses if the project involves structures within 1,000 feet of the disposal area, structures on top of waste, modification of the low permeability layer, or irrigation over waste.

If the project involves structures within 1,000 feet of the landfill, then the structures must meet the construction standards of 27 CCR 21190 (g), or an exemption must be applied for and approved by the LEA and CalRecycle.

Please provide additional information on the distance of the WRF from the closed landfill and describe how the requirements of 27 CCR 21190 will be met.

Recycled Water Pipelines

Please discuss on how the Project will address safety of the public health and environment including plan review, permitting and inspection procedures for the potential Project customers. Also, please discuss how the Project will address future land use changes within the Project boundaries.

Hazards and Hazardous Materials

Please address how Regional San will address hazardous materials storage and/or hazardous waste generation. As the project is going to be a year-long (and possibly longer) construction site, please include the following language in the draft EIR.

“If hazardous materials are stored in reportable quantity and/or hazardous waste is generated at any laydown area along the pipeline, separate hazardous materials and/or hazardous waste permits may be required for each location. Permits are business and owner specific and may not be transferred to other owners or locations. Since construction of the main pipeline is anticipated to last 13 months the construction exemption outlined in Sacramento County Code 6.96.095 may not apply.”

For permanent structures, please add the following language.

“If hazardous materials are stored in reportable quantity and/or hazardous waste is generated at any appurtenant facilities along the pipeline, a separate hazardous materials and/or hazardous waste permit may be required for each location. Permits are business and owner specific and may not be transferred to other owners or locations.”

Potential Recharge Area and Diluent Well

The NOP describes the potential to apply recycled water to a recharge area of approximately 560 acres. Direct recharge of recycled water requires that the recycled water be blended with non-recycled diluent water. Up to three diluent wells located 2,000 to 6,000 feet from the potential recharge area and associated pipelines would be needed to extract and convey the water to the potential recharge area for blending purposes.

Please note that the construction of new wells is permitted through EMD's Well Program.

Notice of Preparation (NOP) of a Draft Environmental Impact Report (EIR) for Regional San's South Sacramento County Agriculture & Habitat Lands Recycled Water Program

Comments prepared by the Sacramento County Water Agency (water supply)
March 23, 2015

1. The Project Background states that the project "overlies the central Sacramento groundwater basin (Central Basin)." This should more accurately state that the project overlies a portion of the Central Basin and should be appropriately represented as such in the EIR.
2. The Project Objectives state that one of the objectives is to reducing groundwater pumping in the Central Basin by supplying recycled water to agricultural customers. This is further defined in the Project Operation section by stating that, "The Project is designed to deliver up to two-thirds of the maximum month demand during the irrigation season..." and "The remaining demand would be met by groundwater pumping, the existing source of water supply."
 - a. The NOP seems to indicate that recycled water will be available for irrigation purposes during all hydrologic years. If there are any other additional operational constraints or variations the EIR should reflect this.
 - b. The Project Objectives mentions both "regional water needs" and "environmental benefits" but only describes the environmental benefits. The EIR should describe in more detail their understanding of what meeting "regional water needs" means.
3. The Potential Recharge Area and Diluent Well section states that, "Diluent water could be provided from groundwater sources." The EIR should indicate what other sources of diluent water are available proximate to the proposed location of the recharge area and identify the volume of water necessary to meet state requirements for dilution.
4. Previous conversations with Regional San have indicated that the proposed transmission line would provide recycled water to the Phase 2 portion of SCWA's recycled water pilot project. No mention of this can be found in the NOP. The EIR should identify this as a component of the proposed project.

March 23, 2015

Jose Ramirez, Project Manager
Sacramento County Regional Sanitation District
10060 Goethe Road
Sacramento, CA 95827

Re: Notice of Preparation of a Draft Environmental Impact Report for Regional San's South County Agriculture and Habitat Lands Water Recycling Program

Dear Mr. Ramirez:

Thank you for the opportunity to provide recommendations regarding the scope of Sacramento Regional County Sanitation District's (Regional San) Draft Environmental Impact Report (DEIR) for the South County Agriculture and Habitat Lands Water Recycling Program (Project). Groundwater modeling done on behalf of The Nature Conservancy (Conservancy) and as part of the Project's Feasibility Study shows potential for the Project to have significant ecological benefit for the habitats and species dependent on the adjacent Cosumnes River Preserve (Preserve) if implemented appropriately.

The Preserve is managed as a partnership among eleven federal, state, local and non-profit partners, including the Conservancy. We have been active for over 30 years in preserving this area due to its exceptional ecological values, which include both natural areas such as riparian forests, wetlands and grasslands and working lands in grazing or wildlife friendly agriculture. Agriculture, both in the Preserve and in the Project area, provides important habitat for a variety of native and listed species including greater sandhill cranes, Swainson's hawks and giant garter snakes.

The Conservancy has long recognized the importance of groundwater in protecting the conservation values of the Preserve. Beginning with the 1993 Water Forum Agreement and continuing to the 2007 MOU to develop Groundwater Management Plans and governance structures for the Central and South Sacramento Groundwater Basins, and most recently in 2011 with the Sacramento Water Recycling Coalition, we have supported regional planning that balances water supply and environmental needs. A representative of conservation interests, including the Conservancy, currently serves as a board member on the Sacramento Central Groundwater Authority (SCGA), and we have hosted multiple stakeholder meetings and performed advanced modeling to help understand and integrate better long-term groundwater management.

The cities, small communities, and irrigated agriculture in the vicinity of the Project largely rely on local groundwater for their water supplies. Their withdrawals have resulted in large areas where groundwater levels have been considerably lowered as compared with pre-development levels. Such areas, referred to as regional cones of depression, have developed both north and south of the Cosumnes River (Mount et al. 2001, Fleckenstein et al. 2004). As a result, the river

loses flow to the groundwater along most of its lower reaches and the river goes dry every summer and fall when the leakage to groundwater exceeds the river flow coming from the mountains. This is damaging to salmon, as flows are often insufficient in the fall to allow for successful escapement and spawning in the gravel reaches upstream of Rancho Murrieta on the Cosumnes. In addition, the riparian forests of the Cosumnes River Preserve developed in conditions of perennially high groundwater levels, and the lowered groundwater levels leave the riparian forests dependent on intermittent high flows of the Cosumnes or uncertain local water supplies, threatening their long-term viability.

Multiple studies have assessed the impacts of lowered groundwater levels, and methods of mitigating these impacts. Based on the 2001 study by Mount et al., the Conservancy initiated the Cosumnes River Flow Augmentation to pre-wet the channel. We undertook this effort in the early fall of 2005 to determine whether the pre-wetting of the channel would allow for earlier connection of instream flows between the Delta and upstream spawning gravels. In 2011, the Conservancy completed a study that showed the groundwater, ecological and integrated water management benefits of bringing additional surface water into the basin as an in-lieu irrigation water supply.

While we are still conducting additional modeling, based on initial results there is potential for significant ecological benefits from Project implementation by providing alternative water supplies, thereby reversing declining groundwater levels and improving conditions for riparian forest, wetlands, in-stream flows and agriculture. There are also areas where the Project and the assessment of its benefits could be improved. We look forward to continuing to work with Regional San to identify the best project design and environmental assessment.

1. Agricultural Resources

Over 80% of the Preserve is in agriculture, and the surrounding agricultural properties provide an important wildlife friendly farming buffer that also benefits species. This Project has the potential to improve the long-term sustainability of farmland in the area, particularly in drought and potential climate change scenarios. Higher priced and more reliable water supplied by the Project also has the potential to push cropping patterns towards more profitable but less wildlife friendly permanent crops, such as vineyards or walnuts. The potential for the project to drive conversion of wildlife friendly crops to permanent crops should be explored and potentially mitigated through protection mechanisms including the application of conservation easements designed to protect wildlife-friendly farming practices. There may be synergistic opportunities to partner with other mitigation programs in this effort, such as the South Sacramento Habitat Conservation Plan (SSHCP) and Bay Delta Conservation Plan (BDCP). The Conservancy and other local and regional conservation entities have a long experience with voluntary mechanisms, such as conservation easements, to shape compatible practices on agricultural lands, and we look forward to exploring options in this vein with Regional San.

The engineered recharge basin as proposed in the Feasibility Study would remove a significant amount of wildlife friendly agriculture from the vicinity of the Preserve. The Conservancy has proposed exploration of alternate uses for this area that would maintain wildlife friendly agriculture, expand use of treated wastewater beyond just in-lieu irrigation and incorporate improved riparian restoration opportunities resulting from raised groundwater levels. Such

options may include, for instance, deliberate over-irrigation of working agricultural lands at times, creating shallow ponds to maximize waterfowl and crane use. The Conservancy requests Regional San's consideration of alternative designs for this area that may provide water management and habitat benefits.

2. Biological Resources

The DEIR should incorporate the potential benefits of the Project for a full range of habitats from closed-canopy forest to completely open grasslands. The Conservancy has suggested using the per-acre price of riparian mitigation credits as one method of assigning monetary value to this benefit. Determining the acres that have been ecologically enhanced depends on several factors, including the spatial distribution of Project water application, with application close to the Cosumnes potentially providing more benefit. Therefore, we request that Regional San explore a Project component in which irrigated lands closest to the Cosumnes River have highest priority and/or greatest incentives for receipt of Project water.

The Cosumnes is a groundwater dependent ecosystem, and as such, another potential benefit of the Project is the additional habitat health resulting from raising groundwater levels. However, much knowledge remains to be gained regarding the type and amount of ecological benefit achieved by raising groundwater to various depths. To maximize project benefits, we request a robust groundwater monitoring component to track groundwater levels and habitat health in the basin to inform adaptive management of the Project to maintain ecological benefits. Three additional factors influencing the net benefit to riparian habitats are included in the Hydrology section below. They are the amount of future "take" (potential periodic withdrawals of groundwater that is "stored" by the Project in the groundwater basin), the location of take wells, and the design of a potential recharge basin.

We encourage Regional San to incorporate the best available science when determining what levels of groundwater recharge are most beneficial for a riparian forest response. While this science continues, any results should be incorporated into the DEIR assessment of project benefits and used for long-term adaptive management of the Project, particularly in potential future groundwater banking scenarios. Such an assessment should help ensure that specific benefits from the Project are realized for the environment and that overall sustainable water resource management is achieved, as called for in California's new Sustainable Groundwater Management Act.

The Project analysis should also assess Project benefits for species that depend on in-stream flows. For anadromous fisheries, the assessment should take into account the seasonality of increased flows and degree of benefit, given that only full reconnection of the river between the Delta and upstream spawning gravels in the fall results in successful escapement. Improvements over a portion of the dry reach is an incremental improvement, and should be calculated as such. There are other potential benefits, as well, for wetlands and other species dependent on groundwater and connected surface water. Any potential subsequent withdrawals of added water through a groundwater banking program should be designed, fully studied, and adaptively managed to maintain Project benefits (see below).

Northeast expansion

The Conservancy has been engaged in modeling a potential expansion of the project footprint in the area between Highway 99 and Wilton Road, and the Cosumnes River on the south and Grant Line Road on the north. The Conservancy has asked our consultant to model any increased groundwater benefits this area would have, as well as provide an initial rough estimate of the additional costs. We request that Regional San consider the results of this analysis and consider expanding the project into this area if results are favorable.

Pre-wetting the Cosumnes channel

The Conservancy encourages Regional San to explore incorporation of project elements that would pre-wet the channel as part of the Project. Prior studies have hypothesized and demonstrated that fall pre-wetting could provide significant anadromous fish benefits. Regional San could, for example, swap tertiary water entering the Sacramento River for flows that could be introduced into Cosumnes through the Freeport Regional Water Project (Freeport Project) diversion, Folsom South canal, or other upstream diverters. We encourage inclusion of this as a project component, as it would add significantly to the project's potential benefits for anadromous fish. The Conservancy's pre-wetting study estimated that appropriately timed and metered early fall flows totaling approximately 5,000 AF would accomplish the targeted goals.

3. Hydrology & Water Quality

Groundwater Banking opportunities

Given that the cost of water supplied by the Project is estimated to be higher than pumping similar quantities of groundwater and that SCGA is developing a Groundwater Accounting Program (GAP) concurrently with the Project, we expect that this Project will ultimately contribute to a groundwater banking program which has a "take" component, that is, some portion of the water "stored" in the groundwater basin as a result of this project, perhaps in combination with other projects, might be withdrawn under certain conditions, such as for drought water supply. We encourage exploration of such banking programs, as such projects are important tools for local or regional water supply reliability. However, we would like to make sure that any ecological benefits that are attributed to the Project aren't put at risk through development of a water bank or withdrawal component. Possible methods for protecting improved groundwater conditions for riparian ecosystems are placement of withdrawal wells at a distance from the Cosumnes River, and delivery of as much Project water as possible close to the Cosumnes.

Further, to preserve the ecological benefits of the Project, the Project should include explicit target groundwater levels in the vicinity of benefiting habitats, and an appropriate monitoring and response plan to ensure that the Project is managed to sustain the ecological benefits of the Project. Given the current level of uncertainty with respect to what groundwater levels are necessary to support the target habitats, an appropriate adaptive management approach should be designed and implemented to guide refinement of groundwater management strategies going forward. Accordingly, the GAP should be designed to leave groundwater not only to maintain overall groundwater balance but also to restore groundwater in parts of the basin to levels that support the overlying habitats.

There is already a rigorous groundwater monitoring program at the Preserve run by the Conservancy and UC Davis that could serve as a starting point for an appropriate monitoring and adaptive management program.

Water Quality

Given the potential use of Project water in managed wetlands and other areas with high wildlife use including migratory birds, fish, and amphibians, the DEIR should consider the potential impacts from constituents that are not removed during treatment, including endocrine disruptors.

Recharge basin design and assessment

The South County Ag Recycled Water Feasibility Study (Regional San, 2014) included construction of a dedicated, engineered recharge basin near the Cosumnes River. The analysis presented showed minimal groundwater recharge benefits from operation of this recharge basin using surface water as diluent. The net benefits did not appear to be environmentally significant. Given that diluent would actually be drawn from the groundwater itself, recharge may actually be less than modeled. In addition, no other area within Sacramento County offers similar potential for large scale advance mitigation opportunities to protect compatible agriculture, groundwater recharge and riparian restoration. Therefore the Conservancy recommends exploration of an alternative design for this property that could make maximum use of its potential, as described here and above in the Agricultural Resources section.

Overall, there are a wide range of impacts from the Recharge Basin Project that should be considered in the analysis including:

- Ownership and maintenance of the recharge basin and associated groundwater wells.
- Effects and feasibility of blending with diluent water. Rainfall and groundwater production are considered the most feasible diluent water sources.
- Impacts associated with the removal of agricultural habitat on lands that are placed in the recharge basin.

It is possible that some alternative designs, such as described above in the agricultural resources section, may have preferable blending requirements while also providing additional habitat benefits, such as winter habitat for migratory birds, and maintaining productive agricultural lands.

4. Land Use & Planning

There are multiple regional plans that should be considered as part of Project design and assessment. The Integrated Regional Water Management (IRWM) program is defined by the California Department of Water Resources as a collaborative effort to manage all aspects of water resources in a region. IRWM is widely touted as the most promising means for meeting California's current and future water supply challenges. The Conservancy is working to ensure that ecosystem needs, such as adequate instream flow, appropriate water temperatures, and groundwater levels sufficient to support riparian habitats, are considered proactively and integrated with the ability to provide water for multiple beneficial uses. The American River IRWM covers the project area, and demonstrates how the water needs of ecosystems can be integrated with those of human communities and agriculture. Conjunctive use with groundwater

recharge from treated wastewater could be a major tool in the integrated water management repertoire, improving groundwater conditions and meeting other habitat needs while simultaneously improving the water supply conditions for cities and agriculture.

As described, and especially with enhancements suggested here, the Project could also support mitigation requirements that are part of the SSHCP and BDCP if implemented. Protection of wildlife-friendly agriculture in the areas south of the urbanized areas and outside Spheres Of Influence is also consistent with the County of Sacramento General Plan. A consistent water supply through in-lieu irrigation and improved conjunctive use opportunities supports continuation of farming in the area, and therefore the Project also conforms with and supports the SACOG 2035 Metropolitan Transportation Plan/Sustainable Communities Strategy. The DEIR should also consider the Project's conformance with the Cosumnes River Preserve Management Plan and LAFCO policies.

Again, given our current level of understanding, the Conservancy sees this project as potentially offering considerable value for local and regional water supply sustainability, for habitat improvement, and for responsible land use planning more generally. If shaped in the correct way, projects like this one may be key parts of a balanced water future for California. Accordingly, we request that Regional San carefully consider the ideas we have presented here, as well as positive enhancements proposed by others, as you conduct the DEIR.

Thank you again for the opportunity to comment on the Scope of the DEIR. The Conservancy looks forward to working with Regional San to inform and strengthen the DEIR.

Sincerely,

A handwritten signature in cursive script that reads "Jesse Roseman".

Jesse Roseman
Project Director, Cosumnes River and Delta

References

2001. Mount, et al. Linked Surface Water- groundwater Model for the Cosumnes River Watershed: Hydrologic Evaluation of Management Options to Restore Fall Flows.
2004. Fleckenstein, J., M. Anderson, G. Fogg, and J. Mount. Managing Surface Water-Groundwater to Restore Fall Flows in the Cosumnes River. Journal of Water Resources Planning and Management. 130:4.
2006. Robertson-Bryan, Inc., Fisheries Foundation of California. Cosumnes Flow Augmentation Project: 2005 Pilot Project. AFRP.
2011. The Nature Conservancy. The Promise of Reservoir Re-Operation: Implications for Integrated Water Management.
2014. Regional San. South County Ag Recycled Water Feasibility Study.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105-3901

November 30, 2015

David Murillo
Regional Director, Mid Pacific Region
U.S. Bureau of Reclamation
Attn: Douglas Kleinsmith
2800 Cottage Way
Sacramento, California 95825-1898

Subject: Notice of Intent to Prepare an Environmental Impact Report / Environmental Impact Statement for the Sacramento Regional County Sanitation District South County Ag Water Recycling Program, Sacramento County, CA

Dear Mr. Murillo:

The U.S. Environmental Protection Agency has reviewed the Federal Register Notice published October 30, 2015 requesting comments on the U.S. Bureau of Reclamation's decision to prepare a Draft Environmental Impact Report / Environmental Impact Statement for the Sacramento Regional County Sanitation District South County Ag Water Recycling Program. Our comments are provided pursuant to the National Environmental Policy Act, Council on Environmental Quality regulations (40 CFR Parts 1500-1508), and our NEPA review authority under Section 309 of the Clean Air Act.

Reclamation, along with the Sacramento Regional County Sanitation District, is beginning the preparation of a DEIS / EIR to evaluate alternatives that would provide recycled water from the Regional San Sacramento Regional Water Treatment Plant to irrigated lands in southern Sacramento County for agricultural and urban landscape uses and to the Stone Lakes National Wildlife Refuge.

EPA recognizes encourages the use of recycled wastewater to address water supply concerns and to reduce pressure on groundwater use. To assist in the scoping process for the project, EPA has identified several issues for consideration in the development of the DEIS.

Purpose and Need

The DEIS for the proposed project should clearly identify the underlying purpose and need that is the basis for proposing the range of alternatives (40 CFR 1502.13). The *purpose* of the proposed action is typically the specific objectives of the activity, while the *need* for the proposed action may be to eliminate a broader underlying problem or take advantage of an opportunity.

The purpose and need should be a clear, objective statement of the rationale for the proposed project, as it provides the framework for identifying project alternatives. It should discuss the current and projected demand for recycled water and whether or not limitations of the current discharge regime are part of the need for action. The DEIS should concisely identify why the project is being proposed, why it is being proposed now, and should focus on the specific desired outcomes of the project (e.g. reduce usage of

groundwater, maximize beneficial use of recycled water) rather than prescribing a predetermined resolution. The purpose and need should also clearly describe Reclamation's role in the project.

Regulatory Framework

The DEIS for the proposed project should include a comprehensive description of the regulatory context of the project. This section should include a description of any permits that the project will require (e.g. National Pollutant Discharge Elimination System (NPDES) permits for discharges to Waters of the United States).

On June 3, 2014, the State Water Resources Control Board adopted a statewide General Order titled *General Waste Discharge Requirements for Recycled Water Use*.¹ Page 6 of the General Order states that it applies to "recycled water projects where recycled water for non-potable use is used or transported." In the regulatory framework of the DEIS, include a discussion of the General Waste Discharge Requirements for Recycled Water Use and discuss whether the action alternatives are covered by the General Order.

Range of Alternatives

All reasonable alternatives that fulfill the project's purpose and need should be evaluated in detail, including alternatives outside the legal jurisdiction of Reclamation (40 CFR Section 1502.14(c)). The DEIS should provide a clear discussion of the reasons for the elimination of alternatives which are not evaluated in detail.

A robust range of alternatives will include options for avoiding significant environmental impacts. The DEIS should clearly describe the rationale used to determine whether impacts of an alternative are significant or not. Thresholds of significance should be determined by considering the context and intensity of an action and its effects (40 CFR 1508.27).

The environmental impacts of the proposal and alternatives should be presented in comparative form, thus sharply defining the issues and providing a clear basis for choice among options by the decision maker and the public (40 CFR 1502.14). The potential environmental impacts of each alternative should be quantified to the greatest extent possible (e.g. acres of wetlands impacted; change in water quality).

The No Action Alternative should clearly describe the current wastewater discharge regime at the Regional San Sacramento Regional Water Treatment Plant. It should specify the regulatory vehicle that governs the discharge regime and include details of all permits and transfers related to the current discharge. The description of the No Action Alternative should also indicate if there are existing compliance concerns regarding any aspects of current permits and waste discharge requirements, such as volumetric or pollutant limits. The action alternatives should include descriptions of the anticipated NPDES permit restrictions and the percentage of effluent to be diverted, including both millions of gallons per day and acre feet calculations.

The Notice of Intent indicated that the project could provide water for groundwater recharge. The range of alternatives should explore aquifer recharging as an alternate use for the recycled wastewater. Such an analysis should include the environmental impacts of spreading basins and their uses in flood management. All action alternatives should identify how and where the recycled water would be used and how each of those uses would impact groundwater.

¹ www.waterboards.ca.gov/board_decisions/adopted_orders/water_quality/2014/wqo2014_0090_dwq_revised.pdf

Each action alternative should describe the proposed percentage distribution of project water for irrigation, groundwater recharge, and wildlife refuges and the mechanism by which this distribution might change over time.

Water Quality

Each of the Action Alternatives should include a robust discussion of impacts to water quality. This should include identifying the applicable water quality standards and beneficial uses of receiving waters that receive discharges from the proposed project.

The analysis should include a description of the impacts from reduced discharge volume to the current discharge locations and waters, including but not limited to any impacts to flow of the Sacramento River. The discussion should also include impacts to water quality in the Bay Delta and current modeling efforts in that region. Explore whether or not contributions to the Delta Regional Monitoring Program will be impacted by the proposed diversions and if the proposed project would have a consequential effect on the Delta RMP.

Further, the analysis should include a description of the Waters of the U.S. within the wildlife refuges that may receive project water and how any discharges to Waters of the U.S. will impact water quality in these locations.

Climate Change

We believe the Council on Environmental Quality's December 2014 revised draft guidance for Federal agencies' consideration of GHG emissions and climate change impacts in NEPA outlines a reasonable approach, and we recommend that Reclamation use that draft guidance to help outline the framework for its analysis of these issues. Accordingly, we recommend the DEIS include an estimate of the GHG emissions associated with the project, analyze reasonable alternatives and/or practicable mitigation measures to reduce project-related GHG emissions, and qualitatively describe relevant climate change impacts. More specifics on those elements are provided below. In addition, we recommend that the NEPA analysis incorporate measures to increase resilience to foreseeable climate change and GHG reduction measures. The draft and final EIS should make clear whether commitments have been made to ensure implementation of design or other measures to reduce GHG emissions or to adapt to climate change impacts.

More specifically, we suggest the following approach:

"Affected Environment" Section

Include in the "Affected Environment" section of the DEIS a summary discussion of climate change and ongoing and reasonably foreseeable climate change impacts relevant to the project, based on U.S. Global Change Research Program² assessments, to assist with identification of potential project impacts that may be exacerbated by climate change and to inform consideration of measures to adapt to climate change impacts. Substantially higher temperatures and rising sea levels are two of the direct impacts experienced in the west that can be attributed, at least partially, to climate change. We also encourage Reclamation to draw on its extensive research into the expected effects of climate change on the arid west to create a well-informed document for the public and the decision makers.³ Among other things, this will assist in identifying resilience-related changes to the proposal that should be considered.

² www.globalchange.gov/

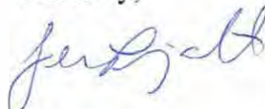
³ <http://www.usbr.gov/climate/docs/ClimateChangeLiteratureSynthesis3.pdf>

“Environmental Consequences” Section

- The DEIS alternatives analysis should, as appropriate, consider practicable changes to the proposal to make it more resilient to anticipated climate change.
- Estimate the GHG emissions associated with the proposal and its alternatives. Example tools for estimating and quantifying GHG emissions can be found on CEQ’s NEPA.gov website.⁴ For actions which are likely to have less than 25,000 metric tons of CO₂-e emissions/year, provide a qualitative estimate unless quantification is easily accomplished.
- The estimated GHG emissions can serve as a reasonable proxy for climate change impacts when comparing the proposal and alternatives. In disclosing the potential impacts of the proposal and reasonable alternatives, consideration should be given to whether and to what extent the impacts may be exacerbated by expected climate change in the action area, as discussed in the “affected environment” section.
- Describe measures to reduce GHG emissions associated with the project, including reasonable alternatives or other practicable mitigation opportunities and disclose the estimated GHG reductions associated with such measures.

We appreciate the opportunity to provide comments on the preparation of the DEIS. Please send one hard copy and one CD of the DEIS to this office at the same time it is officially filed with our Washington D.C. Office. If you have any questions, please contact me at (415) 947-4167 or prijatel.jean@epa.gov.

Sincerely,



Jean Prijatel
Environmental Review Section
Enforcement Division

⁴ https://ceq.doe.gov/current_developments/GHG_accounting_methods_7Jan2015.html

This page intentionally left blank



Prepared by:

2175 N. California Blvd., Suite 315

Walnut Creek, CA 94596

925.627.4100 T

rmcwater.com

