

# RECLAMATION

*Managing Water in the West*

## North Valley Regional Recycled Water Program

Draft

**Draft Environmental Impact Report/Statement**  
SCH# 2014042068 EA/UP&P No. 2014-02



U.S. Department of the Interior  
Bureau of Reclamation



City of Modesto

January 2015

## **Mission Statements**

The mission of the Department of the Interior is to protect and provide access to our Nation's natural and cultural heritage and honor our trust responsibilities to Indian Tribes and our commitments to island communities.

The mission of the Bureau of Reclamation is to manage, develop, and protect water and related resources in an environmentally and economically sound manner in the interest of the American public.

# **North Valley Regional Recycled Water Program Draft Environmental Impact Statement/Environmental Impact Report**

**NEPA Lead Agency:** United States Department of the Interior, Bureau of Reclamation, Mid-Pacific Region, South-Central California Area Office

**CEQA Lead Agency:** City of Modesto

**Cooperating Agencies:** Del Puerto Water District, U.S. Fish and Wildlife Service, NOAA National Marine Fisheries Service

The United States Department of the Interior, Bureau of Reclamation (Reclamation) and the City of Modesto have jointly prepared this Environmental Impact Report/Environmental Impact Statement (EIR/EIS) for the North Valley Regional Recycled Water Program (NVRWP or proposed project).

The City of Modesto, City of Turlock, and Del Puerto Water District (DPWD) (Partner Agencies) propose to implement a regional solution to address water supply shortages in DPWD's service area on the west side of the San Joaquin River in San Joaquin, Stanislaus and Merced Counties, south of the Sacramento-San Joaquin River Delta (Delta). The project would deliver up to 59,000 acre feet per year (AFY) of recycled water produced by the cities of Modesto and Turlock via the Delta-Mendota Canal (DMC), a feature of the Central Valley Project owned by Reclamation. Instead of discharging into the San Joaquin River, recycled water would be conveyed from Modesto and Turlock through pipelines from their wastewater treatment facilities, crossing the San Joaquin River, ending at the DMC. The recycled water would then be conveyed directly to DPWD customers. This project also proposes to provide water to Central Valley Project Improvement Act (CVPIA) designated Refuges located south of the Delta to meet their need for water supply.

The Project Partners have identified two alternatives that use different pipeline alignments to convey water to the DMC. In addition this EIR/EIS evaluates a third alternative, which would continue river discharge, and then divert and convey water to the DMC through expanded facilities owned by the Patterson Irrigation District.

This EIR/EIS assesses potential environmental effects of the NVRWP alternatives and a No Action 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, environmental justice.

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## Acronyms and Abbreviations

AB	Assembly Bill
AF	Acre-feet
AFY	Acre-feet per year
APE	Area of Potential Effect
ASCE	American Society of Civil Engineers
ATCM	Airborne Toxic Control Measure
BA	Biological Assessment
BACT	Best Available Control Technology
BCID	Banta-Carbona Irrigation District
BMPs	Best Management Practices
BNR	Biological Nutrient Removal
BPS	Best Performance Standards
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CAL FIRE	California Department of Forestry and Fire Protection
CalEEMod	California Emissions Estimator Model
CalEPA	California Environmental Protection Agency
CalOSHA	California Division of Occupational Safety and Health
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CBC	California Building Code
CCAA	California Clean Air Act
CCIC	Central California Information Center
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	Contaminants 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
CFNR	California Northern Railroad Company
CFR	Code of Federal Regulations
cfs	cubic feet per second
CGS	California Geological Survey
CHRIS/CCIC	California Historical Resources Information System-Central California Information Center
CNDDB	California Natural Diversity Data Base
CNEL	Community Noise Equivalent Level
CNPS	California Native Plant Society
CO	Carbon monoxide
CO <sub>2</sub>	Carbon dioxide
CO <sub>2</sub> e	Carbon dioxide equivalent
CPUC	California Public Utilities Commission
CRHR	California Register of Historical Resources
CSC	California Species of Special Concern
CSLC	California State Lands Commission
CVP	Central Valley Project
CVPIA	Central Valley Project Improvement Act
CVRWQCB	Central Valley Regional Water Quality Control Board
CWA	Clean Water Act
CY	cubic yards
dB	Decibel
dBA	A-weighted decibel
DMC	Delta-Mendota Canal
DPM	Diesel particulate matter
DPWD	Del Puerto Water District
DTSC	(California) Department of Toxic Substances Control
DWP	(California) Drinking Water Program
DWR	Department of Water Resources
EFH	Essential Fish Habitat
EIR	Environmental Impact Report
EIS	Environmental Impact Statement
EMFAC	Emissions factors (model)

EPA	(United States) Environmental Protection Agency
EPCRA	Emergency Planning and Community Right-to-Know Act
ERIP	Emission Reduction Incentive Program
ESU	Evolutionarily Significant Unit
FESA	Federal Endangered Species Act
FMMP	Farmland Mapping and Monitoring Program
FPPA	Farmland Protection Policy Act
ft	feet
FWCA	Fish and Wildlife Coordination Act
GAMAQI	Guide for Assessing and Mitigating Air Quality Impacts
GGS	Giant garter snake
GHG	Greenhouse Gas
gpm	Gallons per minute
GRCD	Grasslands Resource Conservation District
GWD	Grasslands Water District
GWP	Global warming potential
H <sub>2</sub> O	Water
H <sub>2</sub> S	Hydrogen sulfide
HCP	Habitat Conservation Plan
HDD	Horizontal Directional Drilling
HFCs	Hydrofluorocarbons
HMBP	Hazardous Materials Business Plan
Hp	horsepower
HPSR	Historic Property Survey Report
I-5	Interstate 5
IL4	Incremental Level 4 (water delivery)
IPCC	Intergovernmental Panel on Climate Change
L <sub>dn</sub>	day-night average noise level
L <sub>eq</sub>	energy-equivalent noise level
LF	Linear Feet
L <sub>max</sub>	maximum noise level
LOS	Level of Service
LRA	Locally Responsible Area
LUST	leaking underground storage tank

MBR	Membrane bioreactor
MBTA	Migratory Bird Treaty Act
MEI	Maximally Exposed Individual
mg	Milligrams
MG	million gallons
mg/L	milligrams per liter
mgd	million gallons per day
MOU	Memorandum of Understanding
MPO	Metropolitan Planning Organization
MSDS	Material Safety Data Sheet
MTBM	Microtunneling boring machine
MVFPD	Mountain View Fire Protection District
N <sub>2</sub> O	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NHTSA	National Highway Traffic Safety Administration
NMFS	National Marine Fisheries Service
NO <sub>2</sub>	nitrogen dioxide
NOAA	National Oceanic and Atmospheric Administration
NOI	Notice of Intent
NOP	Notice of Preparation
NO <sub>x</sub>	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
NRCS	National Natural Resources Conservation Service
NVRRWP	North Valley Regional Recycled Water Program
NWR	National Wildlife Refuge
O <sub>3</sub>	Ozone
OBD	On-board diagnostic system
OFWD	Oak Flat Water District
OPR	Office of Planning and Research
OSHA	Occupational Safety and Health Administration
Pb	Lead

PFCs	Perfluorocarbons
PG&E	Pacific Gas & Electric
PID	Patterson Irrigation District
PM <sub>10</sub>	Particulate Matter $\leq$ 10 microns
PM <sub>2.5</sub>	Particulate Matter $\leq$ 2.5 microns
PPCP	Pharmaceutical and Personal Care Products
ppm	parts per million
PPV	Peak particle velocity
PVC	Polyvinyl chloride
RCRA	Resource Conservation and Recovery Act
ROG	Reactive organic gases
ROW	right-of-way
RPF	Renewables Portfolio Standard
RSL	Regional Screening Levels
RWQCB	Regional Water Quality Control Board
RWQCF	(Turlock) Regional Water Quality Control Facility
SAA	Streambed Alteration Agreement
SARA	Superfund Amendments and Reauthorization Act
SB	Senate Bill
SCVWD	Santa Clara Valley Water District
SDC	Seismic Design Category
SDWA	Federal Safe Drinking Water Act
SF <sub>6</sub>	Sulfur hexafluoride
SHPO	State Historic Preservation Officer
SIP	State Implementation Plan (SIP)
SJCOG	San Joaquin Council of Governments
SJV	San Joaquin Valley
SJVAB	San Joaquin Valley Air Basin
SJVAPCD	San Joaquin Valley Air Pollution Control District
SLDMWA	San Luis and Delta-Mendota Water Authority
SLIC	Spills, Leaks, Investigations, and Clean-up
SO <sub>2</sub>	sulfur dioxide
SO <sub>x</sub>	sulfur oxides
SOD	South of Delta



SP&T	San Pablo and Tulare Extension Railroad Company
SR	State Route
SRA	State Responsibility Area
SRA	State Recreation Area
SSC	Species of Special Concern
SWPPP	Stormwater Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TAC	toxic air contaminant
TDS	total dissolved solids
TID	Turlock Irrigation District
TMDL	Total Maximum Daily Load
TMP	Traffic Management Plan
U.S.C.	United States Code
UBC	Uniform Building Code
UCR	Uniform Crime Reporting Program
URBEMIS model	Urban Emissions (URBEMIS) model
USACE	US Army Corps of Engineers
USBR	United States Bureau of Reclamation
USFWS	US Fish and Wildlife Service
USGS	US Geological Survey
UV	Ultraviolet light
VdB	Vibration velocity in decibels
VERA	Voluntary Emissions Reduction Agreement
VOC	Volatile organic compounds
WA	(State) Wildlife Area
WDR	Waste Discharge Requirements
WFPD	Westport Fire Protection District
WQCF	(Modesto) Water Quality Control Facility
WSCFPD	West Stanislaus County Fire Protection District
WSID	West Stanislaus Irrigation District

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## Executive Summary

### ES-1 Introduction

The U.S. Department of Interior, Bureau of Reclamation (Reclamation) and City of Modesto as lead agency for the Partner Agencies for the North Valley Regional Recycled Water Program (NVRWP) have prepared this Draft Environmental Impact Report/Environmental Impact Statement (Draft EIR/EIS). The Partner Agencies for the NVRWP include the Cities of Modesto and Turlock and the Del Puerto Water District (DPWD). The NVRWP has been developed in conformance with the requirements of Reclamation Directives and Standards for the Title XVI Reclamation and Reuse Program (USBR Document WTR 11-01), including preparation of a Feasibility Study, which identified and evaluated feasible conveyance alternatives that are included in this EIR/EIS.

This EIR/EIS has been developed to provide the public and responsible and trustee agencies reviewing the NVRWP an analysis of the potential effects on the local and regional environment associated with construction and operation of the NVRWP. The primary purpose of the NVRWP is to provide recycled water from the Cities of Modesto and Turlock to the DPWD to address water supply shortages within DPWD's service area on the west side of the San Joaquin River in San Joaquin, Stanislaus and Merced Counties, south of the Sacramento-San Joaquin River Delta (Delta) (see **Figure ES- 1**). The NVRWP would also provide water to south of Delta (SOD) Central Valley Project Improvement Act (CVPIA)-Designated Refuges. The proposed project would convey recycled water from the Cities of Modesto and Turlock to the Delta-Mendota-Canal (DMC). From the DMC, water would be provided to DPWD and to Refuges through existing turnouts from the DMC.

This EIR/EIS considers a No Project/No Action alternative and three Action Alternatives. The Action Alternatives include two pipeline alignment alternatives for conveying recycled water to the DMC from the Cities of Modesto and Turlock. The pipeline alternatives would convey recycled water through pipelines that extend from each city's existing discharge location to the DMC. Under these alternatives discharges to the river would be discontinued.

In addition to the pipeline alternatives, a third alternative has been developed with the aim of reducing the amount of construction needed to develop a conveyance system. This alternative continues discharge and would use the San Joaquin River and expanded Patterson Irrigation District (PID) facilities for conveyance. The alternatives considered are:

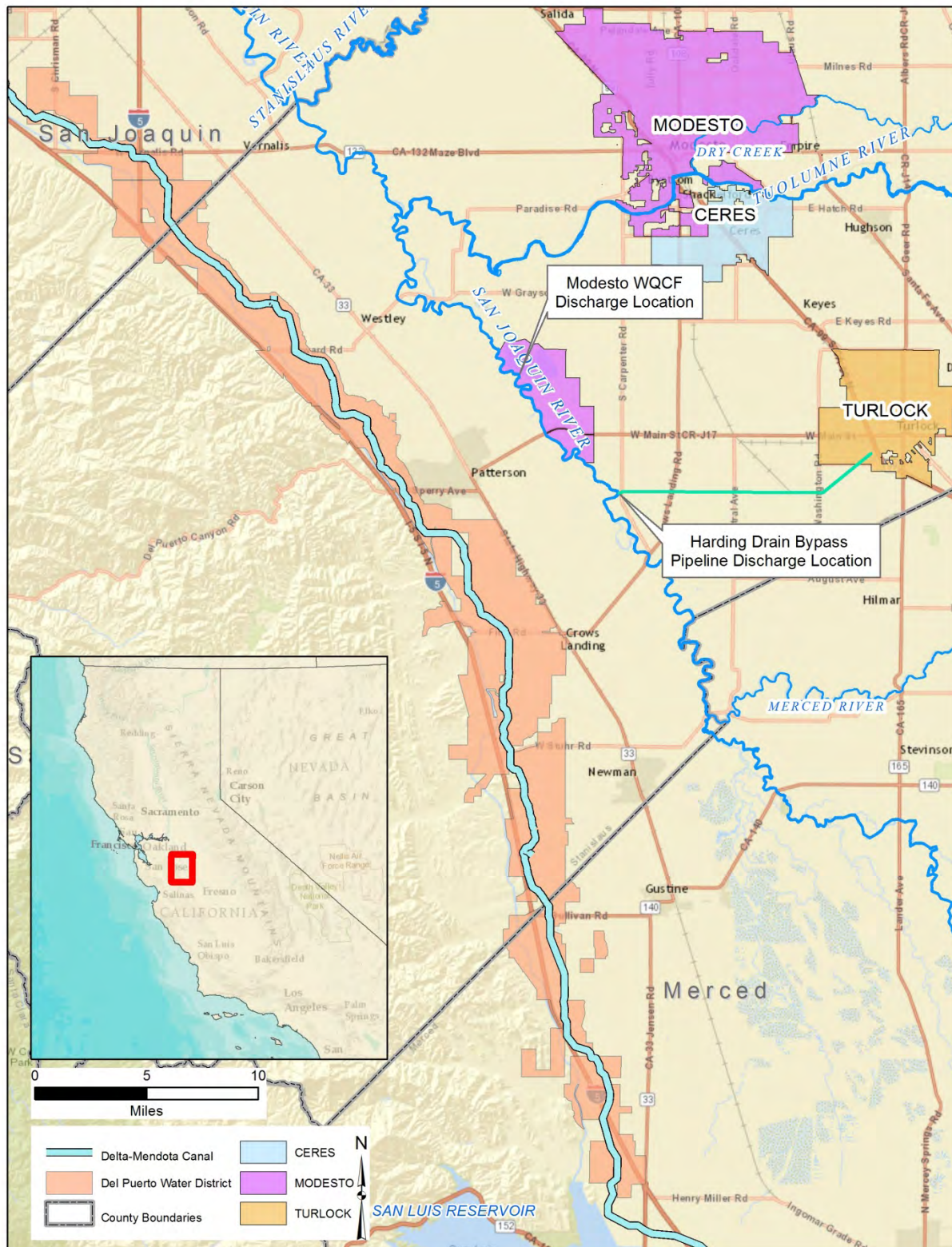
**No Project/No Action Alternative**, assumes that the proposed project would not be constructed and that recycled water would not be supplied to DPWD or to south of Delta Refuges.

**Alternative 1, Combined Alignment Alternative**, would convey recycled water from the City of Turlock through a pipeline beginning at the end of the existing Harding Drain Bypass Pipeline north to the City of Modesto's Jennings Water Quality Control Facility (WQCF or Jennings Plant), where it would be combined with recycled water from Modesto. From the Jennings Plant the pipeline would cross under the San Joaquin River, and convey water to the DMC.

**Alternative 2, Separate Alignment Alternative**, would include two separate pipelines to convey flows from Turlock and Modesto: one from the end of the Harding Drain Bypass Pipeline, crossing under the San Joaquin River and conveying flows to the DMC, and one from Modesto's Jennings Plant, crossing under the river and delivering water to the DMC.

**Alternative 3. PID Conveyance Alternative**, would continue the existing Modesto and Turlock discharges to the San Joaquin River, which would function as a part of the conveyance system. Water would be diverted from the river through the PID intake and conveyed to the DMC through expanded PID facilities. Because the existing PID system does not have sufficient capacity to convey all of the recycled water flows from Modesto and Turlock, this alternative would need to include expansion of the existing

Figure ES- 1: Project Vicinity



PID intake structure on the San Joaquin River, and expansion of the conveyance system through construction of a new pipeline paralleling the PID Main Canal.

## **ES-2 Background**

Del Puerto Water District (DPWD or District) is located along the west side of the San Joaquin Valley adjacent to the Delta-Mendota Canal, and extends from near Vernalis in the north to near Santa Nella in the south. The District provides agricultural irrigation water to approximately 45,000 acres of productive farmland in Stanislaus, San Joaquin, and Merced Counties. Currently, DPWD's only source of water is through a contract with the United States Bureau of Reclamation (Reclamation or USBR) for the delivery of up to 140,210 acre-feet (AF) of Central Valley Project (CVP) water annually.

Since the early 1990s, DPWD's CVP water allocations have been significantly reduced due to Delta pumping restrictions resulting from the passage of the Central Valley Project Improvement Act (CVPIA), water rights decisions that were implemented to address Delta water quality objectives, National Marine Fisheries Service (NMFS) salmon and United States Fish and Wildlife Service (USFWS) Delta smelt biological opinions, and drought conditions. In 2014, DPWD received a 0 percent allocation of its CVP contract. Future contract water deliveries to DPWD are uncertain, so DPWD is seeking a reliable alternative water supply.

DPWD's service area is located a little over five miles from Modesto's Water Quality Control Facility (WQCF) and less than five miles from the end of Turlock's Harding Drain Bypass Pipeline, which will convey flows from the Turlock Regional Water Quality Control Facility (RWQCF) to a discharge located on the San Joaquin River. Both Modesto and Turlock have recycled water available that could be delivered to the District and its customers. This supply of recycled water from Modesto and Turlock could provide a long-term, reliable water supply for the DPWD and its customers that would serve to augment DPWD's CVP supply.

In addition to provision of water to the DPWD service area, the proposed project would make recycled water available to the south of the Delta CVPIA-designated Refuges to meet CVPIA requirements. Reclamation has a legislative obligation under the CVPIA, in cooperation with the U.S. Fish and Wildlife Service (USFWS) and the California Department of Fish and Wildlife (CDFW) to provide firm, average annual historical water deliveries (Level 2, or L2) of suitable quality to maintain and improve habitat areas on certain federal and state wildlife Refuges in the Central Valley. In addition to L2 deliveries, an additional increment of water supply is needed for optimal wildlife management (incremental Level 4, or IL4). Provision of secure firm, reliable water supplies for the Refuges to meet the CVPIA-mandated water levels has not been achieved "due in large part to state and federal budget shortages, inconsistency in the timing of water deliveries, and increases in the costs of blocks of water made available annually from willing sellers on the open market" (CVJV 2006).

## **ES-3 Purpose and Need**

One of the authorized purposes of the CVP is to provide water for irrigation and domestic use within California's Central Valley. In recent years, SOD CVP contractors and CVPIA-designated wildlife refuges have experienced an increased reduction in CVP water allocations from historical amounts due to drought conditions and expanded Delta pumping restrictions. As a CVP contractor, DPWD has a need to establish alternative, reliable long-term agricultural water supplies to offset this reduction in supply. Also CVPIA Section 3406(d)(2) directs Reclamation to acquire and provide supplemental water to all CVPIA designated wildlife refuges in the Central Valley. The purpose of the project is to make the Cities' recycled water available to DPWD for agricultural purposes, to provide an additional source of water south of the Delta, which can be used to meet both agricultural and support SOD refuge wildlife.

## ES-4 CEQA Objectives

The overall objective of the proposed project is to maximize beneficial use of a sustainable, alternative water supply within the region, which would address reductions in water supplies from the CVP and reduce the reliance on groundwater use. Specifically, the objectives of the project are as follows:

- Establish an alternative, reliable, long-term water supply of up to 59,000 acre feet per year (AFY) of recycled water for DPWD and refuges;
- Maximize beneficial use of recycled water by DPWD customers and refuges;
- Maximize Project Partners' control of operations and delivery of water to DPWD and refuges, while recognizing the need for coordination with Reclamation and the San Luis & Delta-Mendota Water Authority;
- Establish a long-term water right(s) to allow for the beneficial use of recycled water;
- Maximize use of existing facilities for treatment / delivery of recycled water;
- Provide supplemental annual water supplies annually to SOD refuges to meet CVPIA Sections 3406(b)(3) and 3406(d)(2) requirements;
- Avoid or minimize, through incorporation of design constraints and management practices, impacts to environmental resources such as surface water, groundwater supplies, land subsidence, groundwater quality and biological resources including sensitive species; and
- Deliver agricultural water to DPWD at a cost that supports regional economic sustainability.

The proposed project is needed to offset the significant reduction in CVP water allocations to DPWD associated with Delta pumping restrictions, drought conditions, and climate change. In addition, the proposed project is needed to offset anticipated effects (e.g., overdraft, subsidence, water quality issues) from increased groundwater pumping that have occurred and would likely continue to occur with the absence of an alternative water supply.

## ES-5 Feasibility Study

The NVRRWP Project Partners have worked cooperatively to define shared objectives and develop feasible alternatives to provide a supply of recycled water to DPWD. Their efforts culminated in the preparation of a Feasibility Study for the NVRRWP, which was completed in December 2013 (RMC 2013). The Feasibility Study documents the process for development of alternatives, and includes and economic and financial analysis.

## ES-6 Summary of Impacts

Table ES-1 provides a summary of potential impacts by topic area for CEQA compliance. The table does not include impacts or criteria that were deemed not applicable to construction or operation of the NVRRWP. The proposed project would not result in any significant and unavoidable impacts for either alternative alignment. The No Action Alternative has the potential to result in significant and unavoidable impacts associated with conversion of agricultural land to non agriculture land uses resulting from a lack of reliable water supply.

Table ES-1: NVRRWP EIR/EIS Impact

Impact Statement	Level of Significance Before Mitigation				Mitigation Measure	Level of Significance After Mitigation			
	1-Combined Alignment	2-Separate Alignments	3 – PID Conveyance	No Project/ Action		1-Combined Alignment	2-Separate Alignments	3 – PID Conveyance	No Project/ Action
<b>Aesthetics</b>									
AES-1: Substantial damage to scenic resources and substantial degradation of existing visual character	LTS	LTS	LTS	LTS	No mitigation necessary	LTS	LTS	LTS	LTS
AES-2: New sources of substantial light or glare	PS	PS	PS	NI	AES-1: Nighttime Construction Lighting (Alternatives 1, 2, 3) AES-2: Directional Security Lighting for New Pump Station at Harding Drain Bypass Pipeline (Alternative 2)	LSM	LSM	LSM	NI
<b>Agriculture and Forestry Resources</b>									
AG-1: Convert farmland to non-agricultural use	PS	PS	PS	S&U	AG-1: Stockpile Soil (Alternatives 1, 2, 3)	LSM	LSM	LSM	S&U
AG-2: Conflict with existing zoning for agricultural use	B	LTS	B	NI	No mitigation necessary	B	LTS	B	NI
AG-3: Conflict with Williamson Act contract	NI	LTS	NI	S&U	No mitigation necessary	NI	LTS	NI	S&U
AG-4: Provide drought-resistant source of water to agriculture	B	B	B	S&U	No mitigation necessary	B	B	B	S&U
<b>Air Quality</b>									
AIR-1: Construction emissions of criteria pollutants and precursors	PS	PS	PS	NI	AIR-1: Reduce NOx Emissions (Alternatives 1, 2, 3)	LSM	LSM	LSM	NI
AIR-2: Local community risks and hazards during construction	LTS	LTS	LTS	NI	No mitigation necessary	LTS	LTS	LTS	NI
AIR-3: Odors generated during project construction	LTS	LTS	LTS	NI	No mitigation necessary	LTS	LTS	LTS	NI
AIR-4: Direct emissions of criteria pollutants during project operation	LTS	LTS	LTS	LTS	No mitigation necessary	LTS	LTS	LTS	LTS
AIR-5: Local community risks and hazards during project operation	LTS	LTS	LTS	LTS	No mitigation necessary	LTS	LTS	LTS	LTS
AIR-6: Odor emissions during project operation	LTS	LTS	LTS	LTS	No mitigation necessary	LTS	LTS	LTS	LTS
AIR-7: Consistency with applicable air quality plans	LTS	LTS	LTS	LTS	No mitigation necessary	LTS	LTS	LTS	LTS
<b>Biological Resources</b>									
BIO-1: Effects on special-status plants	PS	PS	PS	NI	BIO-1a: Avoid or Minimize Impacts to Special-Status Plant Species (Alternatives 1, 2, 3) BIO-1b: Perform Focused Surveys for Special-Status Plant Species in Suitable Habitats (Alternatives 1, 2, 3) BIO-1c: Monitor or Compensate for Impacts to Special-Status Plant Species (Alternatives 1, 2, 3) BIO-1d: Develop and Implement a Frac-out Contingency Plan for Trenchless Construction (Alternatives 1 and 2)	LSM	LSM	LSM	NI
BIO-2: Effects on vernal pool fairy branchiopods	PS	NI	NI	NI	BIO-2a: Avoid Impacts to Vernal Pool Branchiopods and their Habitat (Alternative 1) BIO-2b: Minimize and Compensate for Impacts to Vernal Pool Fairy Shrimp and Their Habitat (Alternative 1)	LSM	NI	NI	NI

Notes: NI= No Impact, LTS=Less than Significant, PS=Potentially Significant, LSM=Less than Significant with Mitigation, S&U=Significant and Unavoidable, B=Beneficial; Alternative 1=Combined Alignment, Alternative 2=Separate Alignment, Alternative 3=PID Conveyance



Impact Statement	Level of Significance Before Mitigation				Mitigation Measure	Level of Significance After Mitigation			
	1-Combined Alignment	2-Separate Alignments	3 – PID Conveyance	No Project/ Action		1-Combined Alignment	2-Separate Alignments	3 – PID Conveyance	No Project/ Action
BIO-3: Effects on valley elderberry longhorn beetle	PS	PS	PS	NI	BIO-1d: Develop and Implement a Frac-out Contingency Plan for Trenchless Construction (Alternatives 1 and 2) BIO-3a: Avoid Impacts to Valley Elderberry Longhorn Beetle (Alternatives 1, 2, 3) BIO-3b: Minimize or Compensate for Impacts to Valley Elderberry Longhorn Beetle (Alternatives 1, 2, 3)	LSM	LSM	LSM	NI
BIO-4: Effects of project construction on special-status fishes	PS	PS	PS	NI	BIO-1d: Develop and Implement a Frac-out Contingency Plan for Trenchless Construction (Alternatives 1 and 2) BIO-4a: Minimize Pile Driving-related Impacts to Special Status Fish (Alternatives 1 and 2) BIO-4b: Best Management Practices for In-River Intake Construction (Alternative 3)	LSM	LSM	LSM	NI
BIO-5: Effects of project operations on special-status fishes	LTS	LTS	LTS	NI	No mitigation necessary	LTS	LTS	LTS	NI
BIO-6: Effects on giant garter snake	PS	PS	PS	NI	BIO-6: Avoid and Minimize Impacts to Giant Garter Snake (Alternatives 1, 2, 3)	LSM	LSM	LSM	NI
BIO-7: Effects on San Joaquin whipsnake	LTS	LTS	LTS	NI	No mitigation necessary	LTS	LTS	LTS	NI
BIO-8: Effects on western pond turtle	PS	PS	PS	NI	BIO-8: Avoid and Minimize Impacts to Western Pond Turtle (Alternatives 1, 2, 3)	LSM	LSM	LSM	NI
BIO-9: Effects on burrowing owl	PS	PS	PS	NI	BIO-9: Avoid, Minimize, or Compensate for Impacts to Burrowing Owl (Alternatives 1, 2, 3)	LSM	LSM	LSM	NI
BIO-10: Effects on tricolored blackbird	PS	PS	PS	NI	BIO-10: Avoid and Minimize Impacts to Tricolored Blackbird Nesting Colonies (Alternatives 1, 2, 3)	LSM	LSM	LSM	NI
BIO-11: Effects on golden eagle and bald eagle	LTS	LTS	LTS	NI	No mitigation necessary	LTS	LTS	LTS	NI
BIO-12: Effects on raptors including special-status species	PS	PS	PS	NI	BIO-12: Avoid, Minimize, or Compensate for Impacts to Raptors including Special-status species (Alternatives 1, 2, 3)	LSM	LSM	LSM	NI
BIO-13: Effects on special-status passerine species and birds protected under the MBTA	PS	PS	PS	NI	BIO-13: Avoid and Minimize Impacts to Special-status passerine species and other Birds Protected under the MBTA (Alternatives 1, 2, 3)	LSM	LSM	LSM	NI
BIO-14: Effects on special-status mammals	PS	PS	PS	NI	BIO-14a: Avoid and Minimize Impacts to San Joaquin kit fox (Alternatives 1, 2, 3) BIO-14b: Avoid and Minimize Impacts to Special-Status Bats (Alternative 3)	LSM	LSM	LSM	NI
BIO-15: Effects on riparian habitat and other sensitive natural communities	PS	PS	PS	NI	BIO-1d: Develop and Implement a Frac-out Contingency Plan for Trenchless Construction (Alternatives 1 and 2) BIO-2a: Avoid Impacts to Vernal Pool Branchiopods and Their Habitat (Alternative 1) BIO-16a: Avoid and Minimize Impacts to Federally Protected Wetlands (Alternatives 1, 2, 3) BIO-16b: Obtain Regulatory Permits for Work Activities Taking Place in Wetlands and Waters of the United States and the State (Alternatives 1, 2, 3)	LSM	LSM	LSM	NI

Notes: NI= No Impact, LTS=Less than Significant, PS=Potentially Significant, LSM=Less than Significant with Mitigation, S&U=Significant and Unavoidable, B=Beneficial; Alternative 1=Combined Alignment, Alternative 2=Separate Alignment, Alternative 3=PID Conveyance



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BIO-16: Effects on federally protected wetlands	PS	PS	PS	NI	BIO-1d: Develop and Implement a Frac-out Contingency Plan for Trenchless Construction (Alternatives 1 and 2) BIO-16a: Avoid and Minimize Impacts to Federally Protected Wetlands (Alternatives 1, 2, 3) BIO-16b: Obtain Regulatory Permits for Work Activities Taking Place in Wetlands and Waters of the United States and the State (Alternatives 1, 2, 3)	LSM	LSM	LSM	NI
BIO-17: Effects on movement of fish and wildlife and use of breeding sites	PS	PS	PS	NI	See Mitigation Measures BIO-6, 8, 9, 10, 12 and 13 (Alternatives 1, 2, 3) and Mitigation Measure BIO-4 (Alternative 3) TR-2: Install Temporary Trench Plates Over Open Trenches (Alternatives 1, 2, 3)	LSM	LSM	LSM	NI
BIO-18: Conflict with local ordinances or policies protecting biological resources	PS	PS	PS	NI	See Mitigation Measures BIO-1d (Alternatives 1 and 2), 2a (Alternative 1), BIO-4b (Alternative 3) and 16a (Alternatives 1, 2, 3)	LSM	LSM	LSM	NI
BIO-19: Effects on existing Habitat Conservation Plan (HCP)	LTS	LTS	LTS	NI	No mitigation necessary	LTS	LTS	LTS	NI
BIO-CUM-2: Effects on fish species and their habitats	PS	PS	PS	PS	BIOCUM-1: Assistance with Salmonid Recovery Plan Actions (Alternatives 1, 2, 3)	LSM	LSM	LSM	PS
<b>Cultural Resources</b>									
CUL-1: Substantial adverse change in the significance of a unique archaeological resource or disturb any human remains, including those interred outside of formal cemeteries.	PS	PS	PS	NI	CUL-1: Discovery of previously unknown archaeological resources during construction (Alternatives 1, 2, 3) CUL-2: Discovery of human burials during construction (Alternatives 1, 2, 3)	LSM	LSM	LSM	NI
CUL-2: Cause a substantial adverse change in the significance of a historical resource	PS	PS	PS	NI	CUL-1: Discovery of previously unknown archaeological resources during construction (Alternatives 1, 2, 3)	LSM	LSM	LSM	NI
CUL-3: Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature	PS	PS	PS	NI	CUL-3: Discovery of paleontological resources during construction (Alternatives 1, 2, 3)	LSM	LSM	LSM	NI
<b>Energy</b>									
ENE-1: Inefficient, wasteful, or unnecessary use of energy resources	PS	PS	PS	LTS	AIR-1: Reduce NOx Emissions (Alternatives 1, 2, 3)	LSM	LSM	LSM	LTS
<b>Geology, Soils, and Seismicity</b>									
GEO-1: Facility damage and exposure of people to hazards from strong seismic groundshaking	PS	PS	PS	NI	GEO-1: Perform Design-Level Geotechnical Evaluations for Seismic Hazards (Alternatives 1, 2, 3)	LSM	LSM	LSM	NI
GEO-2: Facility damage and exposure of people to hazards from liquefaction and lateral spreading	PS	PS	PS	NI	GEO-2: Perform Design-Level Geotechnical Evaluations for Soil Expansion (Alternatives 1, 2, 3)	LSM	LSM	LSM	NI
GEO-3: Potential for substantial erosion or loss of top soil	LTS	LTS	LTS	NI	No mitigation necessary	LTS	LTS	LTS	NI
<b>Greenhouse Gas Emissions</b>									
GHG-1: GHG construction emissions	LTS	LTS	LTS	NI	No mitigation necessary	LTS	LTS	LTS	NI
GHG-2: GHG operational emissions	LTS	LTS	LTS	LTS	No mitigation necessary	LTS	LTS	LTS	LTS
GHG-3: Consistency with applicable GHG reduction plans	LTS	LTS	LTS	LTS	No mitigation necessary	LTS	LTS	LTS	LTS
<b>Hazards and Hazardous Materials</b>									

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HAZ-1: Create a Hazard through Reasonably Foreseeable Upset and Accident Conditions Involving Release of Hazardous Materials into the Environment	PS	PS	PS	NI	HAZ-1a: Hazardous Materials Management and Spill Prevention Control Plan (Alternatives 1, 2, 3) HAZ-1b: Conduct Phase I Study along Pipeline Segments (Alternatives 2 and 3)	LSM	LSM	LTS	NI
HAZ-2: Expose People or Structures to a Significant Risk of Loss, Injury or Death Involving Wildland Fires	LTS	LTS	LTS	NI	HAZ-2: Prevention of Fire Hazards (Alternatives 1, 2, 3)	LTS	LTS	LTS	NI
HAZ-3: Conflict with Any Adopted Emergency Response Plan or Emergency Evacuation Plan	PS	PS	PS	NI	See Mitigation Measures HAZ-1a, HAZ-1b, and HAZ-2	LSM	LSM	LTS	NI
<b>Hydrology and Water Quality</b>									
HYD-1: Violation of Water Quality Standards and/or Waste Discharge Requirements (Due to Construction Activities)	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) BIO-1d: Develop and Implement a Frac-out Contingency Plan for Trenchless Construction (Alternatives 1 and 2)	LSM	LSM	LSM	NI
HYD-2: Violation of Water Quality Standards and/or Waste Discharge Requirements (at Project Implementation)	LTS	LTS	LTS	LTS	No mitigation necessary	LTS	LTS	LTS	LTS
HYD-3: Substantial Depletion of Groundwater Supplies or Substantial Interference with Groundwater Recharge	LTS	LTS	LTS	PS	No mitigation necessary	LTS	LTS	LTS	PS
HYD-4: Otherwise substantially degrade water quality (Constituents of Emerging Concern)	LTS	LTS	LTS	LTS	No mitigation necessary	LTS	LTS	LTS	LTS
HYD-5: Reduction of Flows in San Joaquin River	LTS	LTS	LTS	LTS	No mitigation necessary	LTS	LTS	LTS	LTS
HYD-6: Effect on Delta Exports at Banks and Tracy Pumping Plants	LTS	LTS	LTS	LTS	No mitigation necessary	LTS	LTS	LTS	LTS
<b>Land Use and Planning</b>									
LU-1: Physically divide an established community or result in land use conflicts	NI	NI	NI	NI	No mitigation necessary	NI	NI	NI	LTS
LU-2: Conflict with any applicable land use plan, policy or regulation	LTS	LTS	LTS	S&U	No mitigation necessary for action alternatives/ No mitigation possible for No Project/No Action	LTS	LTS	LTS	S&U
<b>Noise</b>									
NOI-1: Temporary Construction-Related Noise Increases	PS	PS	PS	NI	NOISE-1: Noise Reduction Measures (Alternatives 1, 2,3)	LTS	LTS	LTS	NI
NOI-2: Temporary disturbance from construction-related vibration increases	LTS	LTS	LTS	NI	No mitigation necessary	LTS	LTS	LTS	NI
NOI-3: Increases in ambient noise levels due to operational noise and vibration	LTS	LTS	LTS	LTS	No mitigation necessary	LTS	LTS	LTS	LTS
<b>Public Services and Utilities</b>									
PUB-1: Impacts associated with new or altered governmental facilities to maintain acceptable levels of performance	LTS	LTS	LTS	NI	No mitigation necessary	LTS	LTS	LTS	NI

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PUB-2: Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board.	LTS	LTS	PS	LTS	No mitigation necessary (Alternatives 1 and 2) PUB-2: Treatment Plant Upgrades (Alternative 3)	LTS	LTS	LSM	LTS
PUB-3: Served by a landfill without sufficient permitted capacity or violate regulations related to solid waste	LTS	LTS	LTS	NI	No mitigation necessary	LTS	LTS	LTS	NI
PUB-4: Temporary disruption of utilities or services due to construction-related activities	PS	PS	PS	NI	PUB-4: Coordinate Relocation and Interruptions of Service with Utility Providers during Construction (Alternatives 1, 2, 3)	LSM	LSM	LSM	NI
PUB-5: Could require construction of new wastewater treatment facilities that would cause significant environmental effects	NI	NI	S&U	S&U	No mitigation defined for PID Conveyance Alternative	NI	NI	S&U	S&U
<b>Recreation</b>									
REC-1: Substantial impairment of the use of existing parks or other recreational facilities	LTS	LTS	LTS	NI	No mitigation necessary	LTS	LTS	LTS	NI
REC-2: Increase in water flow to the National Wildlife refuges such that substantial increase in birdwatching and other recreational opportunities would occur	NI	NI	NI	NI	No mitigation necessary	NI	NI	NI	NI
<b>Transportation</b>									
TR-1: Temporary Lane and Road Closures and Potential for LOS Degradation	PS	PS	PS	NI	TR-1: Implement a Construction Management Plan to Minimize Interference with Traffic and Emergency Response Hazards (Alternatives 1, 2, 3)	LTS	LTS	LTS	NI
TR-2: Potential Impacts on Public Transit, Bicycle, and Pedestrian Uses of Affected Roadways	PS	PS	PS	NI	TR-1: Implement a Construction Management Plan to Minimize Interference with Traffic and Emergency Response Hazards (Alternatives 1, 2, 3)	LTS	LTS	LTS	NI
TR-3: Interference with Emergency Access and Circulation	PS	PS	PS	NI	TR-1: Implement a Construction Management Plan to Minimize Interference with Traffic and Emergency Response Hazards (Alternatives 1, 2, 3)	LTS	LTS	LTS	NI
TR-4: Impacts to Traffic and Circulation from Trip Generation	PS	PS	PS	NI	TR-1: Implement a Construction Management Plan to Minimize Interference with Traffic and Emergency Response Hazards (Alternatives 1, 2, 3)	LTS	LTS	LTS	NI
TR-5: Damage to Driveways from Open Trench Excavation	PS	PS	PS	NI	TR-1: Implement a Construction Management Plan to Minimize Interference with Traffic and Emergency Response Hazards (Alternatives 1, 2, 3) TR-2: Install Temporary Trench Plates Over Open Trenches (Alternatives 1, 2, 3)	LTS	LTS	LTS	NI
TR-6: Impacts to State Route 33 and California Northern Railroad Company Railroad Tracks	NI	NI	NI	NI	No mitigation necessary	NI	NI	NI	NI
TR-7: Impacts to Roadway Surfaces as a Result of Construction Activities	LTS	LTS	LTS	NI	No mitigation necessary	LTS	LTS	LTS	NI

Notes: NI= No Impact, LTS=Less than Significant, PS=Potentially Significant, LSM=Less than Significant with Mitigation, S&U=Significant and Unavoidable, B=Beneficial; Alternative 1=Combined Alignment, Alternative 2=Separate Alignment, Alternative 3=PID Conveyance

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## Chapter 1 Introduction

The U.S. Department of Interior, Bureau of Reclamation (Reclamation) as NEPA lead agency and the City of Modesto, as CEQA lead agency representing the Partner Agencies for the North Valley Regional Recycled Water Program (NVRWP), have prepared this Draft Environmental Impact Report/Environmental Impact Statement (Draft EIR/EIS). The Partner Agencies for the NVRWP include the Cities of Modesto and Turlock and the Del Puerto Water District (DPWD). The NVRWP has been developed in conformance with the requirements of Reclamation's Directives and Standards for the Title XVI Reclamation and Reuse Program (Reclamation Document WTR 11-01), including preparation of a Feasibility Study, which identified and evaluated feasible conveyance alternatives that are included in this EIR/EIS.

This EIR/EIS has been developed to provide the public and responsible and trustee agencies reviewing the NVRWP an analysis of the potential effects on the local and regional environment associated with construction and operation of the NVRWP. The primary purpose of the NVRWP is to provide recycled water from the Cities of Modesto and Turlock to DPWD to address water supply shortages within DPWD's service area south of the Sacramento-San Joaquin River Delta (Delta) on the west side of the San Joaquin River in San Joaquin, Stanislaus and Merced Counties. **Figure 1-1** shows the project vicinity. The NVRWP would also provide supplemental water to certain south of Delta (SOD) Central Valley Project Improvement Act (CVPIA)-designated wildlife refuges and wetland areas.

### 1.1 Background

#### 1.1.1 DPWD's Need for an Alternative Water Supply

DPWD provides irrigation water to approximately 45,000 acres of productive farmland in western San Joaquin, Stanislaus, and Merced Counties. Currently, DPWD's primary source of water is from a contract with the United States which provides for the delivery of up to 140,210 acre-feet (AF) of Central Valley Project (CVP) water annually. The CVP is a federal water management project consisting of multiple dams and reservoirs, conveyance facilities, and other related facilities created to provide water to California's Central Valley.

Since the early 1990s, DPWD's annual CVP water allocation has been significantly reduced due to multiple factors, including;

- Delta pumping restrictions resulting from the passage of the CVPIA and the CVPIA Anadromous Fish Restoration Program;
- Water rights decisions, in particular, Water Rights Decision 1485 regarding salinity control in the Sacramento-San Joaquin Delta and Suisun Marsh (SWRCB 1978), and the Bay Delta Accord, adopted as Water Right Decision 1641, which was implemented to address water quality objectives in the San Francisco Bay and Sacramento-San Joaquin Delta (SWRCB 2000);
- Water quality objectives as established in the Water Quality Control Plans for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary, most recently the 2006 Basin Plan (SWRCB 2006);
- National Marine Fisheries Service (NMFS) salmon and United States Fish and Wildlife Service (USFWS) Delta smelt biological opinions (USFWS 2008, NMFS 2009); and
- Drought conditions.

Figure 1-1: Project Vicinity

