South Bay Advanced Recycled Water Treatment Facility

Draft Environmental Assessment/Initial Study-Mitigated Negative Declaration

U.S. Department of the Interior
Bureau of Reclamation
Mid Pacific Region
Sacramento, California

Santa Clara Valley Water District

5750 Almaden Expressway
San Jose, CA 95118

December 2009

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Prepared for:

Santa Clara Valley Water District
5750 Almaden Expressway
San Jose, CA 95118
Contact:
Elise Latedjou-Durand, Environmental Planner
Stanley Zhu, Senior Engineer
408/265-2607

United States Bureau of Reclamation
Mid-Pacific Region
2800 Cottage Way
Sacramento, CA 95825
Contact:
Douglas Kleinsmith, Natural Resources Specialist
David White, Title XVI Program Manager
916/978-5100

Prepared by:

ICF Jones & Stokes
2841 Junction Avenue, Suite 114
San Jose, CA 95134
Contact: Andrew Martin
408/434-2244

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Acronyms

µm	micrometers
µg/m3	micrograms per cubic meter
AB32	Assembly Bill 32
ABAG	Association of Bay Area Governments
ac	acres
ac ft/year	acre-feet per year
af	acre-feet
ARWTF	Advanced Recycled Water Treatment Facility
AWWA	American Water Works Association
BAAQMD	Bay Area Air Quality Management District
BARWRP	Bay Area Regional Recycling Program
Basin Plan	San Francisco Bay Basin
BMPs	best management practices
Bureau	U.S. Bureau of Reclamation
C&D	construction and demolition
CAA	Clean Air Act
CAAQS	California ambient air quality standards
CARB	California Air Resources Board
CCR	California Code of Regulations
CCT	Chlorine Contact Tank
CBOD	carbonaceous biological oxygen demand
CEC	California Energy Commission
CEQ	Council on Environmental Quality
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
cfs	cubic feet per second
CHSC	California Health and Safety Code
CIP	Clean-In-Place
City	City of San Jose
CMP	Congestion Management Program
CNDDB	California Natural Diversity Database
CNEL	community noise equivalent level
CNPPA	California Native Plant Protection Act
CO	carbon monoxide
Corps	U.S. Army Corps of Engineers
CPUC	California Public Utilities Commission
CVP	Central Valley Project
dB	Decibel
dBA	A-Weighted Decibel
DFG	California Department of Fish and Game

DHS	California Department of Health Services
District	Santa Clara Valley Water District
DNA	Deoxyribonucleic acid
DOC	Department of Conservation
DOF	Department of Finance
DWR	California Department of Water Resources
EA	environmental assessment
EFM	Enhanced Flux Maintenance
EO	Executive Order
EO 12898	Executive Order 12898
EOA	Eisenberg, Olivieri and Associates, Inc.
EPA	Environmental Protection Agency
ESA	Endangered Species Act
FEIS	Final Environmental Impact Statement
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FIRM	Flood Insurance Rate Map
FMMP	Farmland Mapping and Monitoring Program
FPPA	Farmland Protection Policy Act
FRP	fiberglass reinforced plastic
GHGs	Greenhouse gases
GWh	gigawatt hours
HCP	habitat conservation plan
HMBP	Hazardous Materials Business Plan
HOV	high occupancy vehicle
I&C	Instrumentation and control
IFI	Important Farmland Inventory
IRWMP	Integrated Regional Water Management Plan
IS	initial study
kWh	kliowatt-hours
L_{dn}	day-night sound level
L_{eq}	equivalent sound level
LESA	Land Evaluation and Site Assessment
L_{min} and L_{max}	minimum and maximum sound levels
LOS	Level of service
MBTA	Migratory Bird Treaty Act
MF	Microfiltration
MGD	million gallons per day
MMT	2 million metric tons
MSL	mean sea level
MW	megawatts
NAHC	Native American Heritage Commission
NAAQS	National ambient air quality standards
NCCP	natural community conservation plan
NEPA	National Environmental Policy Act
NMFS	National Marine Fisheries Service
NO_2	nitrogen dioxide
NO_x	nitrogen oxide
NOI	Notice of Intent
NPDES	National Pollutant Discharge Elimination System

NRCS	Natural Resource Conservation Service
NTUs	nephelometric turbidity units
NWR	National Wildlife Refuge
O_3	ozone
OPR	Governor's Office of Planning and Research
Pb	lead
PG&E's	Pacific Gas and Electric's
PM10	particulate matter of 10 micrometers or less
PM2.5	particulate matter of 2.5 micrometers or less
ppm	parts per million
ppt	parts per thousand
RARE	Richmond Advanced Recycled Expansion
RO	Reverse Osmosis
ROG	Reactive Organic Gases
RWQCB	Regional Water Quality Control Board
SB97	Senate Bill 97
SBWR	South Bay Water Recycling
SCVURPPP	Santa Clara Valley Urban Runoff Pollution Prevention Program
SFBAAB	San Francisco Bay Area Air Basin
SFPUC	San Francisco Public Utility Commission
SIP	State Implementation Plan
SJ/SC WPCP	San Jose/Santa Clara Water Pollution Control Plant
SJFD	San Jose Fire Department
SMP	Stream Maintenance Program
SO_2	sulfur dioxide
sq ft	square feet
SRF	State Revolving Fund
SWP	State Water Project
SWPPP	Stormwater Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TDS	total dissolved solids
tpd	tons per day
TPS	Transmission Pump Station
TSS	total suspended solids
TU	toxicity unit
UF	Ultrafiltration
USC	U.S. Government Code
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
UV	ultraviolet
V/C	Volume to capacity
VOC	Volatile Organic Compound
vphpl	vehicles per hour per lane
VTA	Valley Transportation Authority
Williamson Act	California Land Conservation Act
WCWD	West County Wastewater District
WET	Whole Effluent Toxicity
WPCP	Water Pollution Control Plant
ZRRROL	Zanker Road Resource Recovery Operation and Landfill

Executive Summary

Executive Summary

Introduction

This joint environmental assessment (EA) and initial study-mitigated negative declaration (IS-MND) was prepared by the U.S. Bureau of Reclamation (Reclamation) and the Santa Clara Valley Water District (District) to evaluate the environmental effects of the District's South Bay Advanced Recycled Water Treatment Facility (ARWTF), proposed for construction on a vacant property in northern San Jose immediately across Zanker Road from the San Jose/Santa Clara Water Pollution Control Plant (SJ/SC WPCP).

The proposed ARWTF would treat secondary effluent from the SJ/SC WPCP with advanced tertiary treatment to produce high-purity effluent with low total dissolved solids (TDS) concentration. The high-purity effluent from ARWTF would blend with tertiary effluent from the San Jose/Santa Clara Water Pollution Control Plant (SJ/SC WPCP) and feed into the South Bay Water Recycling (SBWR) system via the SBWR Transmission Pump Station (SBWR TPS). The target TDS concentration in the blended recycled water would be 500 mg/L. The treatment processes at the ARWTF would consist of microfiltration (MF), reverse osmosis (RO), and ultraviolet (UV) disinfection.

The District and the City of San Jose (City), which have discretionary approval over the project, are respectively the CEQA lead agency and the responsible agency under CEQA. Reclamation, which has discretionary approval over project funds allocated through the Title XVI program, is the lead agency for the proposed project under NEPA.

This EA/IS is a public document that analyzes the environmental impacts of the proposed project, presents feasible measures to reduce or avoid potential environmental impacts, and evaluates alternatives to the project. It complies with environmental requirements established by both CEQA and NEPA. This EA/IS serves as an informational document to be used in the decision-making process and does not recommend either approval or denial of the proposed project.

Background

At peak capacity, the ARWTF would produce up to 10 million gallons of recycled water per day (MGD). The ARWTF would consist of a series of discrete structures to house various mechanical and chemical components;

several isolated storage tanks; miscellaneous yard structures; and a paved internal access driveway and parking area on a 200,000-square foot (4.6-acre) enclosed site. The ARWTF would also employ a series of pipelines to transport water from the TPS and convey waste by-products and secondary effluent between the facility and the SJ/SC WPCP. Project construction would begin in the summer of 2010 and last approximately 22 months. Construction would be phased, with some activities occurring simultaneously at the project site and other activities requiring sequential implementation.

The purpose of the action is to expand Santa Clara Valley Water District (District) existing recycled water service and increase the marketability of the existing recycled water supply. The Action is needed to provide the District with a cost-effective means of reducing demand on the potable water supply. Additionally, the proposed project will reduce the salinity of the recycled water supply, which will lessen potential total dissolved solids (TDS) impacts on underlying groundwater and will also benefit protected habitats and species in the South Bay.

Proposed Project and North Site Alternatives

Two build alternatives are being considered for the project: the Proposed Project Alternative and the North Site Alternative. Because the facility under the Proposed Project Alternative would be located adjacent to the TPS and would require shorter and more direct pipeline connections to the TPS, it is presented in this document as the proposed project. Under the North Site Alternative, the facility would be more difficult to implement due to its greater distance from the TPS; consequently, it is presented in this document as an alternative to the proposed project. Under both alternatives, the ARWTF would have the same components; however, the facility as a whole would be oriented differently to facilitate access from the unpaved service road (informally referred to in this document as the “sludge pond access road”) that provides access to the lagoons east of Zanker Road.

Under both build alternatives, the ARWTF project site – that is, the fenced in portion of the site, including all proposed structures, paved areas, and site landscaping – would be approximately 200,000 square feet (sq ft), or 4.6 acres (ac), in size and would occupy the northwestern corner of a large parcel (APN# 015-31-063) in northern San Jose. This parcel is currently owned by the City of San Jose and would remain under City ownership even if the project were implemented. If approved, the District would be responsible for overseeing the construction of the ARWTF, as well as operating and maintaining the facility. During project operation, the ARWTF would be require a small number of operators (3-4) conducting daily visits to the facility. The ARWTF would be operational 24 hours a day, 7 days a week.

No Action/No Project Alternative

Under the No Action Alternative, no ARWTF would be constructed and none of the impacts or benefits described in the previous section would occur. This alternative would not expand the District's existing recycled water service and thus would not help to fulfill both the District's and the City's objective of expanding the SBWR system to account for 5% of the total water supply by 2010 and 10% of the total water supply by 2020. Additionally, this alternative would not meet the project objectives such as increasing reliability, quality, and marketability of the recycled water supply, maximizing water reuse alternatives, and reducing effluent discharges into San Francisco Bay.

Although the current SJ/SC WPCP would continue to divert treated effluent to the SBWR system, concerns over the salinity content of system water would continue to constrain current end uses within the District's service area. TDS levels from SJ/SC WPCP tertiary effluents would likely remain consistently above the secondary drinking water standard of 500 mg/L for TDS as under current conditions. Consequently, the quality of recycled water available for irrigation, landscaping, and other uses would not improve and could potentially have adverse effects on soil permeability, vegetation, and groundwater quality. The range of uses available for recycled water would also remain unchanged; thus, demand for potable water would not be expected lessen over the long-term, and the need to augment existing potable water supplies would continue to be a regional challenge. There would also be no reduction in the current WPCP waste discharge stream and, accordingly, no reduction in the level of pollutants that are currently discharged to San Francisco Bay.

Summary of Impacts and Mitigation Measures

This EA/IS evaluates the environmental consequences of the project alternatives, including the No Action/No Project Alternative. A summary of impacts and, as applicable, mitigation measures to reduce significant effects is presented in Table ES-1.

Table ES-1. Summary of Impacts and Mitigation Measures

Impact	Significance Determination	Mitigation Measure	Significance Determination with Mitigation Incorporation
Aesthetics			
Proposed Project Alternative/North Site Alternative	No Impact	None Required	N/A
Substantial Adverse Effect on Scenic Vistas			
Substantial Damage to Scenic Resources, Including Trees, Rock Outcroppings, and Historic Buildings within a State Scenic Highway	No Impact	None Required	N/A
Substantial Degradation of Existing Visual Character or Quality of the Project Site and Surroundings Associated with Construction of the Proposed Project	Less than Significant	None Required	N/A
Creation of a New Source of Substantial Light or Glare That Would Adversely Affect Daytime or Nighttime Public Views in the Area	Less than Significant	None Required	N/A
No Action/No Project Alternative	No Impact	None Required	N/A
ALL IMPACTS			
Agricultural Resources			
Proposed Project Alternative/North Site Alternative	No Impact	None Required	N/A
Convert Farmland to Non-Agricultural Use, Conflict with Existing Zoning for Agricultural Use or a Williamson Act Contract, or Involve Other Changes That Could Result in Conversion of Farmland to Non-Agricultural Use			
No-Action Alternative	No Impact	None Required	N/A
ALL IMPACTS			
Air Quality			
Proposed Project Alternative/North Site Alternative	No Impact	None Required	N/A
Conflict with or Obstruct Implementation of the Applicable Air Quality Plan			

Impact	Significance Determination	Mitigation Measure	Significance Determination with Mitigation Incorporation
Violate Any Air Quality Standard, Contribute Substantially to an Existing or Projected Air Quality Violation	Significant	Mitigation Measure AQ-2.1: Implement Current BAAQMD Basic Construction Measures During Construction. Mitigation Measure AQ-2.2: Implement Draft BAAQMD Basic Construction Measures During Construction. Mitigation Measure AQ-2.3: Implement Draft BAAQMD Additional Construction Measures During Construction Measures During Construction.	Less than Significant
Cumulatively Considerable Net Increase of Any Criteria Pollutant for Which the Project Region Is a Nonattainment Area	Less than Significant	None Required	N/A
Expose Sensitive Receptors to Substantial Pollutant Concentrations	Less than Significant	None Required	N/A
Create Objectionable Odors Affecting a Substantial Number of People	No Impact	None Required	N/A
Generation of Pollutant Emissions in Excess of Federal *de minimis* Threshold Levels	Less than Significant	None Required	N/A
Generation of significant Levels of Greenhouse Gas Emissions during construction	Significant	Mitigation Measure AQ-7.1: Implement Construction Equipment GHG Reduction Measures	Less than Significant
Generation of significant Levels of Greenhouse Gas Emissions during Operation	No Impact	None Required	N/A
No-Action Alternative	No Impact	None Required	N/A
ALL IMPACTS			
Biological Resources			

Impact	Significance Determination	Mitigation Measure	Significance Determination with Mitigation Incorporation
Proposed Project Alternative/North Site Alternative	Significant	Mitigation Measure BIO-1.1: Establish Buffer Zones for Nesting Raptors and Migratory Birds	Less than Significant
Substantial Adverse Effect on Any Species Identified as a Candidate, Sensitive, or Special-Status Species in Local or Regional Plans, Policies, or Regulations or by the DFG or USFWS		Mitigation Measure BIO-1.2: Conduct Survey for Western Burrowing Owls and Remove Existing Refugia Prior to Breeding Season	
		Mitigation Measure BIO-1.3: Conduct Preconstruction Survey for New Nest Burrows and Establish Exclusion Zones If Needed	
		Mitigation Measure BIO-1.4: Compensate for Loss of Burrowing Owl Habitat	
Substantial Adverse Effect on Any Riparian Habitat or Other Sensitive Natural Community Identified in Local or Regional Plans, Policies, or Regulations, or by the DFG or USFWS	No Impact	None Required	N/A
Substantial Adverse Effect on Federally Protected Wetlands As Defined By Section 404 of the Clean Water Act through Direct Removal, Filling, Hydrological Interruption, or Other Means	No Impact	None Required	N/A

Impact	Significance Determination	Mitigation Measure	Significance Determination with Mitigation Incorporation
Interfere Substantially with the Movement of Any Native Resident or Migratory Wildlife Species or with Established Native Resident or Migratory Wildlife Corridors, or Impede the Use of Native Wildlife Nursery Sites	Significant	Mitigation Measure BIO-4.1: Establish Buffer Zones for Nesting Raptors and Migratory Birds Mitigation Measure BIO-4.2: Conduct Survey for Western Burrowing Owls and Remove Existing Refugia Prior to Breeding Season Mitigation Measure BIO-4.3: Conduct Preconstruction Survey for New Nest Burrows and Establish Exclusion Zones If Needed Mitigation Measure BIO-4.4: Compensate for Loss of Burrowing Owl Habitat	
Conflict with Any Local Policies or Ordinances Protecting Biological Resources, Such As a Tree Preservation Policy or Ordinance	No Impact	None Required	N/A
Conflict with Any Local Policies or Ordinances Protecting Biological Resources, Such As a Tree Preservation Policy or Ordinance	No Impact	None Required	N/A
No-Action Alternative ALL IMPACTS	No Impact	None Required	N/A
Cultural Resources			
Proposed Project Alternative/North Site Alternative Substantial Adverse Change in the Significance of A Historical Resource as Defined in Section 15064.	No Impact	None Required	N/A
Substantial Adverse Change in the Significance of an Archaeological Resource Pursuant to Section 15064.5	Significant	Mitigation Measure CR-1.1: Substantial Adverse Change in the Significance of an Archaeological Resource Pursuant to Section 15064.5	Less than Significant

Impact	Significance Determination	Mitigation Measure	Significance Determination with Mitigation Incorporation
Disturb Human Remains	Significant	Mitigation Measure CR-3.1: Substantial Adverse Change in the Significance of an Archaeological Resource Pursuant to Section 15064.5	Less than Significant
No-Action Alternative	No Impact	None Required	N/A
ALL IMPACTS			
Geology and Soils			
Proposed Project Alternative/North Site Alternative	Less than Significant	None Required	N/A
Substantial Adverse Effects Including the Risk of Loss, Injury, or Death Involving Rupture of a Known Earthquake Fault			
Substantial Adverse Effects Including the Risk of Loss, Injury, or Death Involving Strong Seismic Groundshaking or Seismic-Related Ground Failure, Including Liquefaction	Less than Significant	None Required	N/A
Substantial Adverse Effects Including the Risk of Loss, Injury, or Death Involving Landslides	Less than Significant	None Required	N/A
Substantial Soil Erosion or the Loss of Topsoil	Less than Significant	None Required	N/A
Be Located on a Geologic Unit or Soil That Is Unstable or That Would Become Unstable As A Result of the Project	Less than Significant	None Required	N/A
Be Located on Expansive Soil	Less than Significant	None Required	N/A
Have Soils Incapable of Adequately Supporting the Use of Septic Tanks or Alternative Wastewater Disposal Systems	No Impact	None Required	N/A
Potential for Damage to Paleontological Resources	No Impact	None Required	N/A
No-Action Alternative	No Impact	None Required	N/A
ALL IMPACTS			
Hazards and Hazardous Materials			

Impact	Significance Determination	Mitigation Measure	Significance Determination with Mitigation Incorporation
Proposed Project Alternative/North Site Alternative	Less than Significant	None Required	N/A
Create a Significant Hazard to the Public or the Environment through the Routine Transport, Use, or Disposal of Hazardous Materials, or through Reasonably Foreseeable Upset and Accident Conditions			
Emit Hazardous Emissions or Involve Handling Hazardous or Acutely Hazardous Materials, Substances, or Waste within One-Quarter Mile of an Existing or Proposed School	No Impact	None Required	N/A
Be Located on a Site That Is Included on a List of Hazardous Materials Sites Compiled Pursuant to Government Code Section 65962.	No Impact	None Required	N/A
Be Located within an Airport Land Use Plan Area or within Two Miles of a Public Airport or Public Use Airport and Result in a Safety Hazard for People Residing or Working in the Project Area	No Impact	None Required	N/A
Be Located within an Airport Land Use Plan Area or within Two Miles of a Public Airport or Public Use Airport and Result in a Safety Hazard for People Residing or Working in the Project Area	No Impact	None Required	N/A
Impair Implementation of or Physically Interfere with an Adopted Emergency Response Plan or Emergency Evacuation Plan	Less than Significant	None Required	N/A
Expose People or Structures to a Significant Risk of Loss, Injury, or Death Involving Wildland Fires	No Impact	None Required	N/A
No-Action Alternative	No Impact	None Required	N/A
ALL IMPACTS			
Hydrology and Water Quality			
Proposed Project Alternative/North Site Alternative	Less than Significant	None Required	N/A
Violate Any Water Quality Standards or Waste Discharge Requirements			

Impact	Significance Determination	Mitigation Measure	Significance Determination with Mitigation Incorporation
Substantially Deplete Groundwater Supplies or Interfere Substantially with Groundwater Recharge	Less than Significant	None Required	N/A
Cause Alterations in Drainage Contributing to Increased Erosion, Siltation, Flooding, or Excess Runoff or Otherwise Substantially Degrade Water Quality	Less than Significant	None Required	N/A
Place Housing within a 100-Year Flood Hazard Area	No Impact	None Required	N/A
Place Within A 100-Year Flood Hazard Area Structures That Would Impede or Redirect Floodflows	Less than Significant	None Required	N/A
Expose People or Structures to a Significant Risk of Loss, Injury, or Death Involving Flooding, Including Flooding as a Result of the Failure of a Levee or Dam	Less than Significant	None Required	N/A
Contribute to Inundation by Seiche, Tsunami, or Mudflow	Less than Significant	None Required	N/A
No-Action Alternative	No Impact	None Required	N/A
ALL IMPACTS			
Land Use Planning			
Proposed Project Alternative/North Site Alternative	No Impact	None Required	N/A
Physically Divide an Established Community			
Conflict with Any Applicable Land Use Plan, Policy, or Regulation of an Agency with Jurisdiction Over the Project	No Impact	None Required	N/A
Conflict with Any Applicable Habitat Conservation Plan or Natural Community Conservation Plan	No Impact	None Required	N/A

Impact	Significance Determination	Mitigation Measure	Significance Determination with Mitigation Incorporation
No-Action Alternative	No Impact	None Required	N/A
ALL IMPACTS			
Mineral Resources			
Proposed Project Alternative/North Site Alternative	No Impact	None Required	N/A
Result in the Loss of Availability of a Known Mineral Resource or a Locally Important Mineral Resource Recovery Site			
No-Action Alternative	No Impact	None Required	N/A
ALL IMPACTS			
Noise			
Proposed Project Alternative/North Site Alternative	Less than Significant	None Required	N/A
Expose Persons to or Generate Noise Levels in Excess of Standards Established in a Local General Plan or Noise Ordinance or Applicable Standards of Other Agencies			
Expose Persons to or Generate Excessive Groundborne Vibration or Groundborne Noise Levels	No Impact	None Required	N/A
Cause a Substantial Permanent Increase in Ambient Noise Levels in the Project Vicinity above Levels Existing without the Project	Less than Significant	None Required	N/A
Cause a Substantial Temporary or Periodic Increase in Ambient Noise Levels in the Project Vicinity above Levels Existing without the Project	Less than Significant	None Required	N/A
Be Located within an Airport Land Use Plan Area or within Two Miles of a Public Airport or Public Use Airport and Expose People Residing or Working in the Project Area to Excessive Noise Levels	No Impact	None Required	N/A
Be Located in the Vicinity of a Private Airstrip and Expose People Residing or Working in the Project Area to Excessive Noise Levels	No Impact	None Required	N/A

Impact	Significance Determination	Mitigation Measure	Significance Determination with Mitigation Incorporation
No-Action Alternative	No Impact	None Required	N/A
ALL IMPACTS			
Population and Housing			
Proposed Project Alternative/North Site Alternative	Less than Significant	None Required	N/A
Induce Substantial Population Growth in an Area, Either Directly or Indirectly			
Displace a Substantial Number of Existing Housing Units or People, Necessitating the Construction of Replacement Housing Elsewhere	No Impact	None Required	N/A
No-Action Alternative	No Impact	None Required	N/A
ALL IMPACTS			
Public Services			
Proposed Project Alternative/North Site Alternative	No Impact	None Required	N/A
Result in Substantial Adverse Effects Associated with the Provision of or Need for New or Physically Altered Governmental Facilities			
No-Action Alternative	No Impact	None Required	N/A
ALL IMPACTS			
Recreation			
Proposed Project Alternative/North Site Alternative	No Impact	None Required	N/A
Increase the Use of Existing Neighborhood and Regional Parks or Other Recreational Facilities Such That Substantial Physical Deterioration of the Facility Would Occur or Be Accelerated			

Impact	Significance Determination	Mitigation Measure	Significance Determination with Mitigation Incorporation
Include Recreational Facilities or Require the Construction or Expansion of Recreational Facilities that Might Have an Adverse Physical Effect on the Environment	No Impact	None Required	N/A
No-Action Alternative	No Impact	None Required	N/A
ALL IMPACTS			
Transportation and Traffic			
Proposed Project Alternative/North Site Alternative	Significant	Mitigation MeasureTR-1.1: Coordinate with City to Reduce Peak Hour Traffic Impacts	Less than Significant
Increase in Area Traffic Volumes and Degradation of LOS Attributable to Construction-Generated Traffic			
Increase in Area Traffic Volumes and Degradation of LOS Attributable to Operational Traffic	Less than Significant	None Required	N/A
Change in Air Traffic Patterns that Results in Substantial Safety Risks	No Impact	None Required	N/A
Substantially Increase Hazards Because of a Design Feature	No Impact	None Required	N/A
Result in Inadequate Emergency Access	Significant	Mitigation Measure TR-5.1: Coordinate with City to Reduce Peak Hour Traffic Impacts	Less than Significant
Result in Inadequate Parking Capacity	No Impact	None Required	N/A
Conflict with Adopted Policies Supporting Alternative Transportation	No Impact	None Required	N/A
No-Action Alternative	No Impact	None Required	N/A
ALL IMPACTS			
Utilities and Service Systems			
Proposed Project Alternative/North Site Alternative	No Impact	None Required	N/A
Exceed Wastewater Treatment Requirements of the Applicable Regional Water Quality Control Board			

Impact	Significance Determination	Mitigation Measure	Significance Determination with Mitigation Incorporation
Require or Result in the Construction of New Water or Wastewater Treatment Facilities or Expansion of Existing Facilities	No Impact	None Required	N/A
Need New or Expanded Water Supply Entitlements	No Impact	None Required	N/A
Exceed Wastewater Treatment Capacity	No Impact	None Required	N/A
Require or Result in the Construction of New Stormwater Drainage Facilities or Expansion of Existing Facilities	No Impact	None Required	N/A
Be Served by a Landfill with Sufficient Permitted Capacity to Accommodate the Project's Solid Waste Disposal Needs	Less than Significant	None Required	N/A
Project Comply with Federal, State, and Local Statutes and Regulations Related to Solid Waste	No Impact	None Required	N/A
No-Action Alternative	No Impact	None Required	N/A
ALL IMPACTS			
Socioeconomics and Environmental Justice			
Proposed Project Alternative/North Site Alternative	Less than Significant	None Required	N/A
Change Local Employment Opportunities			
Disproportionately affect minority communities or low-income communities	Less than Significant	None Required	N/A
No-Action Alternative	No Impact	None Required	N/A
ALL IMPACTS			
Indian Trust Assets			
Proposed Project Alternative/North Site Alternative	No Impact	None Required	N/A
Adverse Change in the Value, Use, Quantity, Quality, or Enjoyment of Indian Trust Assets			

Chapter 1

Purpose and Need for Action

Chapter 1

Purpose and Need for Action

1.1 Introduction

The Santa Clara Valley Water District (District), in collaboration with the City of San Jose (City), proposes to construct the South Bay Advanced Recycled Water Treatment Facility (ARWTF) adjacent to the existing San Jose/Santa Clara Water Pollution Control Plant (SJ/SC WPCP), located at the south end of the San Francisco Bay. The project also falls under the U.S. Bureau of Reclamation's (Reclamation's) Water Reclamation and Reuse Program, as authorized by the Reclamation Wastewater and Groundwater Study and Facilities Act of 1992 (Title XVI of Public Law 102-575). Title XVI provides a mechanism for Federal participation and cost-sharing in approved water reuse projects.

The proposed ARWTF would treat secondary effluent from the SJ/SC WPCP with advanced tertiary treatment to produce high-purity effluent with low total dissolved solids (TDS) concentration. The high-purity effluent from ARWTF would blend with tertiary effluent from SJ/SC WPCP and feed into the South Bay Water Recycling (SBWR) system. The target TDS concentration in the blended recycled water would be 500 mg/L. The treatment processes at the ARWTF would consist of microfiltration (MF), reverse osmosis (RO), and ultraviolet (UV) disinfection. These processes are described in greater detail in Chapter 2, Alternatives, Including the Proposed Action.

1.2 Project Location

The project is located east of the community of Alviso in northern San Jose. The project site is a vacant parcel located across the street from the SJ/SC WPCP on Zanker Road, approximately 0.55 miles north of Highway 237 and 0.6 miles south of San Francisco Bay, as shown on Figure 1-1.

1.3 Purpose/Objective and Need

By providing high-purity recycled water for a variety of purposes, the ARWTF would both expand the District's existing recycled water service and increase the

marketability of the existing recycled water supply. Implementation of the ARWTF would also help to fulfill both the District's and the City's objective of expanding the SBWR system to account for five percent (5%) of the total water supply by 2010 and ten percent (10%) of the total water supply by 2020.

Once implemented, the ARWTF is expected to meet the following project objectives:

- increase reliability of the recycled water supply,
- improve recycled water quality in order to increase its marketability,
- maximize water reuse alternatives, and
- reduce effluent discharges into San Francisco Bay.

The proposed project is needed for several reasons. An expansion of recycled water service would provide the District with a cost-effective means of reducing demand on the potable water supply. Additionally, the proposed project would reduce the salinity of the recycled water supply, which would lessen potential TDS impacts on underlying groundwater and would also benefit protected habitats and species in the South Bay by reducing wastewater effluent discharge from the SJ/SC WPCP.

The following section discusses the specific benefits that may be derived from expanding the current recycled water supply in the Bay Area. It also provides a historic context for integrated recycled water planning in the Bay Area, including the development and implementation of the current SBWR system.

1.4 Regional Context and Background

Recycled Water Planning

The San Francisco Bay Area experienced severe water shortages as a result of droughts in the 1970s, 1980s, and 1990s. In response to the droughts and facing limited future water supplies, 17 San Francisco Bay Area water and wastewater agencies, the California Department of Water Resources (DWR), and Reclamation formed the San Francisco Bay Area Regional Recycling Program (BARWRP) with the intention of developing a regional water recycling master plan for the San Francisco Bay Area (Bay Area Clean Water Agencies 2006).

Completed in 1999, the BARWRP's Master Plan for Regional Water Recycling recognized the challenges facing water recycling, including technical feasibility, cost, and public policy acceptance. The Master Plan includes an analysis of these issues and demonstrates that large-scale implementation of recycled water operations in the Bay Area would improve water supply reliability and water quality in the San Francisco Bay and Delta, and that there is a large potential market for recycled water, up to one million acre-feet per year by 2040 (Bay Area Clean Water Agencies 2006).

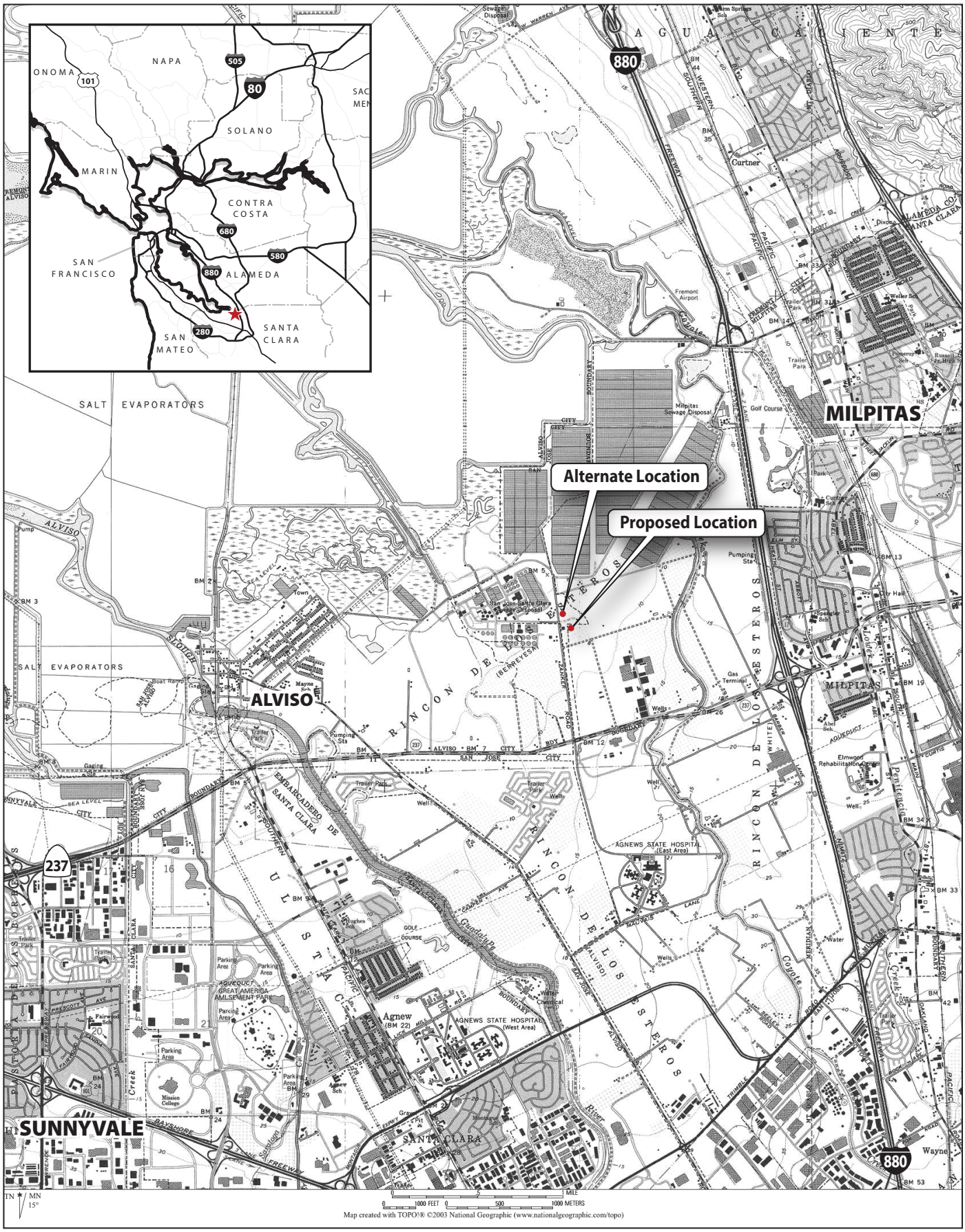

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Figure 1-1
Project Location

A more recent approach to creating an integrative framework for recycled water planning is the development of the Bay Area Integrated Regional Water Management Plan (IRWMP), which facilitates regional cooperation to more effectively address water recycling needs, among other identified needs, in the Bay Area. Funding for the Bay Area IRWMP is available from Proposition 50 bonds, approved by voters in November 2002. Proposition 50 authorized $3.4 billion in general obligation bonds to fund a variety of specified water and wetlands projects, including $380 million for IRWMP-related grants (State Water Resources Control Board 2007). The proposed project has been identified as a "Priority Near-Term Project"[1] in the Final Bay Area IRWMP Document, prepared in March 2006.

Recycled Water Benefits

Water Supply Reliability

The primary benefit of local water recycling projects is water supply reliability. Local water recycling makes use of wastewater effluent, which is available even in a drought. Water recycling also ensures that the highest use of potable water (i.e., domestic, specialized industrial, and public health uses) will have the highest quality of water. Other non-potable uses can be served by recycled water thereby extending the total amount of water resources available in the San Francisco Bay region. A large percentage of the potable water supply in the San Francisco Bay region is imported either from the Delta or above the Delta. These supplies are vulnerable to drought and infrastructure delivery problems that can occur after an earthquake or other natural disasters. Ensuring water supply reliability supports the public health, quality of life, and the economic sustainability of the region (Bay Area Clean Water Agencies 2006).

Water Quality Improvement

Salinity Management

All of the Bay Area's water sources – including recycled water, groundwater, and supplies imported from the Delta and Central Valley Project (CVP) – contain TDS. In some cases, the salinity of these sources is above the secondary drinking water standard of 500 mg/L (the limit for acceptable taste and odor). Salts in water used for irrigation can cause problems when they accumulate in poorly drained soils, further reducing soil permeability and fertility. In addition, salt in irrigation water can, under certain circumstances over time, migrate into the underlying groundwater (Black & Veatch 2004). The District has imposed limits on the use of recycled water in Santa Clara County out of concern for the impact of salinity on underlying groundwater. The proposed action is designed to help reduce the salinity of

[1] These are the projects that were included in one or more of the three Proposition 50 Chapter 8 IRWMP Implementation Grant applications for the entire Bay Region in July of 2005.

recycled water from the SJ/SC WPCP so as to allow for its expanded use in conformance with the District's policy of aggressively protecting the groundwater. Several near-term water recycling projects in the Bay Area, including the proposed project, would be designed to help manage the region's salt balance while simultaneously allowing for expanded use of recycled water (Bay Area Clean Water Agencies 2006).

Pollutant Load Reduction

Most of the proposed water recycling projects in the Bay Area will take effluent from municipal wastewater treatment agencies, provide a higher level of treatment, and reuse the resource. Since most of the Bay Area's treated wastewater is discharged to the San Francisco Bay, which is a 303(d) listed impaired water body, water recycling will result in direct water quality benefits for the Bay by converting effluent to recycled water and thereby reducing the load of pollutants that enter the Bay (Bay Area Clean Water Agencies 2006).

South Bay Water Recycling Program (SBWR)

The City of San Jose began implementing the SBWR program in order to comply with the SJ/SC WPCP's National Pollutant Discharge Elimination System (NPDES) Permit. The program was developed to protect the salt marsh habitat of two federally protected endangered species, the salt marsh harvest mouse and the California clapper rail, by reducing freshwater effluent flows from the SJ/SC WPCP into the brackish wetlands of the South Bay. Another benefit of the program was the development of a drought-proof supply of water, which augments local and imported water supplies. The SBWR program delivers disinfected tertiary treated wastewater from the Plant to over 500 customers throughout San Jose, Santa Clara, and Milpitas (see Figure 1-2). The recycled water is used for non-potable purposes such as agriculture, industrial cooling and processing, and irrigation of golf courses, parks, and schools. The existing SBWR system consists of the following facilities:

- The SBWR Transmission Pump Station (TPS), which serves as the main pump station providing recycled water to the system;
- A 108-inch diameter diversion pipeline that conveys disinfected tertiary effluent from the SJ/SC WPCP to the SBWR TPS; and
- Over 100 miles of distribution pipeline.

During the peak summer season, SBWR typically diverts between 10 and 16 million gallons of recycled water per day from the SJ/SC WPCP for irrigation and industrial uses. (City of San Jose 2005b). In 2008, recycled water flows in the SBWR system totaled 3,363 million gallons for the year, with an average flow of 9.2 MGD and a maximum of 18.5 MGD (Ong pers. comm.). Based on historical data, the highest maximum day demand for recycled water (19.6 MGD) occurred in July of 2006 (Black & Veach 2007). Currently, the TPS is equipped with capacity to pump a

Source: California Spatial Information Library 2009.

Graphics/Projects/00077.07 Black & Veatch SCVWD/EA-IS (10-09) SS

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Figure 1-2
South Bay Water Recycling System
(Northern Portion)

maximum of 40 MGD per day under normal operating conditions, or 48 MGD with all duty and standby pumps fully operational (Ong pers. comm.).

Acceptable uses for SBWR system water are strictly defined under Title 22 of the California Code of Regulations, which establishes water quality standards and treatment reliability criteria for water recycling. Title 22 also sets bacteriological water quality standards based on the expected degree of public contact with recycled water. For water reuse applications with a high potential for the public contact, Title 22 requires disinfected tertiary treatment. Under Title 22, the California Department of Public Health (DPH) is responsible for reviewing proposed water recycling projects and for providing comments and/or recommendations to the State Regional Water Quality Control Board (RWQCB), which issues water recycling requirements through the waste discharge permit process.

Traditionally, financing of the SBWR program, including new recycled water facility projects, has been obtained through a combination of local, state, and federal funds, including local funds from the District and the City; state funds from the State Water Resources Control Board's (SWRCB's) Water Recycling/Reclamation Loan Program and State Revolving Fund (SRF); and federal funds from Reclamation through its Title XVI program, which allows Reclamation to provide partial funding for water recycling projects (Cusker 2000).

The proposed project would be financed through local capital expenditure funds provided by the District and City, state Proposition 50 funds from the DWR, and federal Title XVI funds from Reclamation.

1.5 Purpose of this Document

This joint environmental assessment (EA) and initial study-mitigated negative declaration (IS-MND) was prepared by Reclamation and the District to evaluate the environmental effects of the District's South Bay ARWTF, in compliance with the California Environmental Quality Act (CEQA) and State CEQA Guidelines, and the National Environmental Policy Act (NEPA) and Reclamation's NEPA Handbook. The District and the City, which have discretionary approval over the project, are respectively the CEQA lead agency and the responsible agency under CEQA. Reclamation, which has discretionary approval over project funds allocated through the Title XVI program, is the lead agency for the proposed project under NEPA.

1.6 Scope of Document

This EA/IS-MND has been prepared to examine the impacts, if any, on environmental resources as a result of the proposed action. Areas of possible impacts subject to analysis include:

- Agricultural Resources;
- Air Quality;

- Biological Resources;
- Cultural Resources;
- Geology and Soils;
- Hazards and Hazardous Materials;
- Hydrology and Water Quality;
- Land Use Planning;
- Mineral Resources;
- Noise;
- Population and Housing;
- Public Services;
- Recreation;
- Transportation/Traffic;
- Utilities and Service Systems;
- Socioeconomics and Environmental Justice;
- Indian Trust Assets; and
- Energy Resources.

1.7 Requirements and Approvals

The District and Reclamation are the Lead Agencies for the purposes of environmental documentation and compliance with CEQA and NEPA. As the project proponent, the District would also need to obtain the appropriate permits and approvals. The following permits, approvals, and actions would be required for the proposed project.

- District Board of Directors—Adoption of the Initial Study/Mitigated Negative Declaration and approval of the project.
- U.S. Bureau of Reclamation—Completion of NHPA Section 106 consultation with SHPO; completion of Endangered Species Act Section 7 informal consultation with National Marine Fisheries Service; adoption of the Environmental Assessment/Finding of No Significant Impact; and approval of the project.
- San Jose Fire Department—Review and approval of hazardous materials containment and associated piping.
- City of San Jose—Grading permit.
- San Francisco Bay RWQCB—Amendment to the existing water reuse permit and compliance with any of the following potentially required permits.

- *NPDES General Permit for Stormwater Discharges Associated with Construction Activity;*
- *Waste Discharge Requirements for Discharges of Storm Water Associated with Industrial Activities Excluding Construction Activities; and*
- *NPDES General Discharge Requirements for Discharge or Reuse of Extracted Brackish Groundwater and Reverse Osmosis Concentrate Resulting from Treatment of Groundwater by Reverse Osmosis and Discharge or Reuse of Extracted and Treated Groundwater Resulting from Structural Dewatering.*