

RECLAMATION

Managing Water in the West

Environmental Assessment

Central Dublin Recycled Water Distribution and Retrofit Project

**U.S. Department of the Interior
Bureau of Reclamation
Mid-Pacific Region**

July 2011

Environmental Assessment

**Central Dublin Recycled Water Distribution
and Retrofit Project**

Prepared For:

United States Bureau of Reclamation
Mid-Pacific Region
2800 Cottage Way
Sacramento, CA 95825
Contact: Doug Kleinsmith
(916) 978-5034

Prepared By:

Vinnedge Environmental Consulting
1800 Grant Street
Berkeley, CA 94703
Contact: Brook Vinnedge
(510) 665-7885

July 2011

Table of Contents

Executive Summary	1
Introduction	1
Background	1
Purpose / Objectives and Need	2
Proposed Action.....	2
No-Action Alternative	3
Summary of Impacts and Mitigation Measures	3
 Chapter 1. Purpose and Need for Action	 1
1.1 Introduction.....	1
1.2 Proposed Action Location.....	1
1.3 Purpose / Objectives and Need	1
1.4 Background	2
1.5 Related Actions by Other Agencies.....	11
1.6 Document Format.....	11
 Chapter 2. Proposed Action and Alternatives	 13
2.1 Introduction	13
2.2 Proposed Action	13
2.2.1 New Pipeline Alignments.....	13
2.2.2 Pipeline Sizing and Installation	16
2.2.3 Project Construction	34
2.2.4 Project Operation	35
2.3 No-Action Alternative	36
 Chapter 3. Analysis of the Proposed Action and No-Action Alternative 39	
3.1 Introduction.....	39
3.2 Biological Resources	40
3.2.1 Affected Environment	40
3.2.2 Environmental Consequences	46

3.3	Surface Water and Drainage.....	50
3.3.1	Affected Environment	50
3.3.2	Environmental Consequences	51
3.4	Geology, Soils and Seismicity.....	53
3.4.1	Affected Environment	53
3.4.2	Environmental Consequences	53
3.5	Air Quality	54
3.5.1	Affected Environment	54
3.5.2	Environmental Consequences	56
3.6	Noise	59
3.6.1	Affected Environment	59
3.6.2	Environmental Consequences	60
3.7	Transportation / Traffic	61
3.7.1	Affected Environment	61
3.7.2	Environmental Consequences	61
3.8	Hazardous Materials.....	63
3.8.1	Affected Environment	63
3.8.2	Environmental Consequences	63
3.9	Land Use	64
3.9.1	Affected Environment	64
3.9.2	Environmental Consequences	65
3.10	Recreation	65
3.10.1	Affected Environment	65
3.10.2	Environmental Consequences	66
3.11	Visual Resources	66
3.11.1	Affected Environment	66
3.11.2	Environmental Consequences	67
3.12	Utilities and Public Services	67
3.12.1	Affected Environment	67
3.12.2	Environmental Consequences	68
3.13	Socioeconomics and Environmental Justice	69
3.13.1	Affected Environment	69
3.13.2	Environmental Consequences	71
3.14	Cultural Resources	71
3.14.1	Affected Environment	71
3.14.2	Environmental Consequences	72

3.15	Indian Trust Assets.....	74
3.15.1	Affected Environment	74
3.15.2	Environmental Consequences	74
3.16	Cumulative Effects	75
3.16.1	Analysis of Cumulative Effects.....	75
Chapter 4.	Consultation and Coordination with Other Agencies	79
4.1	State Historic Preservation Officer	79
4.2	Native American Tribes.....	79
4.3	U.S. Fish and Wildlife Service and National Marine Fisheries Service	80
4.4	California Department of Fish and Game	80
Chapter 5.	References Cited	81
5.1	Cited Literature.....	81
5.2	Personal Communications	83
Chapter 6.	List of Preparers.....	85
6.1	Lead Agency.....	85
6.2	Environmental Assessment Authors.....	85

Tables

Table ES-1	Summary of Impacts and Mitigation Measures.....	ES-4
Table 2-1	Proposed Pipeline Segments Diameter and Length.....	33
Table 3.2-1	Federally-Listed Plant Species with Potential to Occur in the Action Area.....	42
Table 3.2-2	Federally-Listed Wildlife Species with Potential to Occur in the Action Area	43
Table 3.6-1	Typical Construction Noise Generation	60
Table 3.13-1	Population Composition by Ethnic Group	70
Table 3.13-2	Median Household Income and Population in Poverty in 2008	70
Table 3.16-1	Projects Considered in the Cumulative Effects Analysis.....	75

Figures

Figure 1	Project Location and Vicinity.....	3
Figure 2	Customer Locations Served by the Proposed Action	5
Figure 3	Proposed Action Alignment – Pipeline Sizing and Location	7
Figure 4	Alamo Creek Park Onsite Piping.....	9
Figure 5	Wells Middle School, Cronin Park, and Valley High School Onsite Piping.....	17
Figure 6	Frederiksen Elementary School Onsite Piping	19
Figure 7	Dublin High School Onsite Piping and Representative Bore Pit Location	21
Figure 8	Kolb Park Onsite Piping	23
Figure 9	Murray Elementary School Onsite Piping	25
Figure 10	Dublin Swim Center Onsite Piping	27
Figure 11	Stagecoach Park & Stagecoach Assessment District Onsite Piping.....	29
Figure 12	Amador Lakes Apartments Onsite Piping.....	31
Figure 13	Potential Construction Staging Areas.....	37

Acronyms

ACS – American Community Survey	EA – Environmental Assessment
APE – Area of Potential Effect	EBDA – East Bay Dischargers Authority
BAAQMD – Bay Area Air Quality Management District	EBMUD – East Bay Municipal Utility District
BART – Bay Area Rapid Transit	EDD – California Employment and Development Department
BMP – best management practice	EIR – Environmental Impact Report
CARB – California Air Resources Board	EPA – U.S. Environmental Protection Agency
CCR – California Code of Regulations	ESA – Federal Endangered Species Act
CDFG – California Department of Fish and Game	FEMA – Federal Emergency Management Agency
CDPH – California Department of Public Health	FIRM – Flood Insurance Rate Map
CESA – California Endangered Species Act	GHG – greenhouse gases
CEQ – Council on Environmental Quality	HFC – hydrofluorocarbons
CEQA – California Environmental Policy Act	ITA – Indian Trust Asset
CFGF – California Fish and Game Code	IPCC – Intergovernmental Panel on Climate Change
CFR – Code of Federal Regulations	LAVWMA – Livermore-Amador Valley Water Management Agency
CH ₄ – methane	LOS – level of service
CNDDDB – California Natural Diversity Database	LSA – Lake or Streambed Alteration Agreement
CO – carbon monoxide	MBTA – Migratory Bird Treaty Act
CO ₂ – carbon dioxide	mg/L – milligrams per liter
CVP – Central Valley Project	mmhos/cm – millimhos per centimeter
dB – decibel	mph – miles per hour
DERWA – DSRSD-EBMUD Recycled Water Authority	MTCO _{2e} – metric tons of CO ₂ equivalent
DPM – diesel particulate matter	NAHC – Native American Heritage Commission
DSRSD – Dublin San Ramon Services District	

NEPA – National Environmental Policy Act	SCS – Soil Conservation Service
– National Historic Preservation Act	
NMFS – National Marine Fisheries Services	SF ₆ – sulfur hexafluoride
NO _x – nitrogen oxides	SHPO – State Historic Preservation Officer
NPDES – National Pollutant Discharge Elimination System	SRVRWP – San Ramon Valley Recycled Water Program
NRHP – National Register of Historic Places	SWP – State Water Project
PM ₁₀ – particulate matter less than 10 microns in diameter	SWPPP – Stormwater Pollution Prevention Plan
N ₂ O – nitrous oxide	SWRCB – State Water Resources Control Board
PM _{2.5} – particulate matter less than 2.5 microns in diameter	TAC – toxic air contaminants
PFC – perfluorocarbons	UPRR – Union Pacific Railroad
Reclamation – U.S. Bureau of Reclamation	USC – U.S. Code
ROG – reactive organic gases	USFWS – U.S. Fish and Wildlife Service
ROW – right-of-way	USGS – U.S. Geological Survey
RWQCB – Regional Water Quality Control Board	VOC – volatile organic compounds
SAIPE – Small Area Income and Poverty Estimates	WHEELS – Livermore Amador Valley Transit
SAR – sodium adsorption ratio	Zone 7 – Zone 7 Water Agency

Executive Summary

Introduction

This environmental assessment (EA) was prepared by the U.S. Bureau of Reclamation (Reclamation) to evaluate the environmental effects of the Central Dublin Recycled Water Distribution and Retrofit Project (proposed action). Under the proposed action, the Dublin San Ramon Services District (DSRSD) would extend recycled water distribution pipelines to serve landscape irrigation demands at several schools, parks, streetscapes and medians in Central Dublin, as well as the common area of one apartment complex. The proposed action would also provide plumbing retrofits to connect existing irrigation systems at Alamo Creek Park, Amador Lakes Apartments, Dublin schools, parks, streetscapes and medians to the recycled water system.

A portion of the funds to construct the proposed action would be provided through the Wastewater and Groundwater Study and Facilities Act of 1992, or Title XVI of Public Law 102-575 (Title XVI). Reclamation, which has discretionary approval over the provision of this funding, is the lead agency for the proposed action and has prepared this EA in accordance with the National Environmental Policy Act (NEPA) and Reclamation's NEPA Handbook (Reclamation 1990).

This EA is a public document that analyzes the environmental impacts of the proposed action, presents feasible measures to reduce or avoid potential environmental impacts, and evaluates alternatives to the proposed action. This document will serve as an informational document to be used by Reclamation during their decision-making process.

Background

The DSRSD-East Bay Municipal Utility District (EBMUD) Recycled Water Authority (DERWA) is a Joint Powers Authority formed in 1995 for the purpose of providing recycled water as a replacement for potable water. The San Ramon Valley Recycled Water Program (SRVRWP) supplies recycled water for landscape irrigation and other non-potable water uses to portions of the DSRSD and EBMUD service areas in the San Ramon and Dougherty valleys. The DERWA Board of Directors approved and certified a Program Environmental Impact Report (EIR) in accordance with the California Environmental Quality Act (CEQA) for the SRVRWP in December 1996 (SRVRWP Program EIR [DERWA 1996]). The SRVRWP Program EIR included an analysis of the transmission and distribution systems generally associated with the proposed action.

The purpose of this EA is to evaluate the potential environmental impacts of the proposed action, in accordance with NEPA, to allow Reclamation to consider the discretionary allocation of Title XVI funds to support implementation of the proposed action. Concurrently, DSRSD is preparing an addendum to the SRVRWP Program EIR in accordance with CEQA for the proposed action, to consider modifications to the

locations of some of the recycled water distribution pipeline locations identified in that document and associated with the proposed action. These modifications would allow for a more efficient (and, therefore, cost effective) distribution system and reflect system refinements made to better serve the identified customer sites.

Purpose / Objectives and Need

DSRSD has identified four primary objectives for the proposed action:

1. Expand utilization of available recycled water to customers that are currently using potable water supply for irrigation.
2. Reduce importation of potable water from the San Francisco Bay Delta and the State Water Project (SWP).
3. Reduce discharge of wastewater into the San Francisco Bay.
4. Reduce energy consumption and DSRSD's carbon footprint.

The delivery of recycled water to facilities served by the proposed action would reduce/postpone development of new or expanded water supplies. Recycled water is drought resistant, available all year long, and can be stored in existing facilities already built by DERWA or DSRSD independently. Moreover, the proposed action would replace potable water currently used for irrigation and construction.

The recycled water supply would also offset the water supply provided by the Zone 7 Water Agency (Zone 7) from the SWP, which would consequently reduce diversions, reduce groundwater extraction, and reduce energy use. The expanded use of recycled water would also reduce the burden on existing Federal water supply facilities such as the Central Valley Project (CVP). The SWP and CVP water contract allocations are closely inter-connected and supply of recycled water would reduce demand and utilization of valuable drinking water resources.

Proposed Action

Under the proposed action, Reclamation would provide Title XVI funding to DSRSD to partially fund extending recycled water distribution pipelines to serve landscape irrigation demands at the following eleven sites:

- Dublin High School
- Frederiksen Elementary School
- Wells Middle School
- Cronin Park
- Valley High School
- Kolb Park

- Murray Elementary School
- Dublin Swim Center
- Stagecoach Park
- Alamo Creek Park
- Amador Lakes Apartments

The proposed action would also provide plumbing retrofits to connect existing irrigation systems at Alamo Creek Park, Amador Lakes Apartments, Dublin schools, parks, streetscapes and medians to the recycled water system. Under the proposed action, approximately 4,450 feet of 12-inch pipeline, 10,468 feet of 6-inch pipeline, and 215 feet of 4-inch pipeline would be installed within existing paved streets in central Dublin.

No-Action Alternative

Under the No-Action Alternative, Reclamation would not provide partial funding to DSRSD for the proposed action. If Title XVI funds are not available, DSRSD may construct some portion of the proposed action using DSRSD and/or State funds, if they are available. However, in the current economic climate, it is unknown if those funds would be adequate to construct the proposed action in its entirety. As such, in this EA, the No-Action Alternative evaluates the future if the proposed action is not implemented.

This alternative would not meet the objectives of the proposed action because it would not expand the use of recycled water for irrigation purposes, or reduce importation of potable water from the SWP because potable water would continue to be used at the above locations for irrigation purposes. The No-Action Alternative would not reduce pumping costs or associated energy costs.

Summary of Impacts and Mitigation Measures

This EA evaluates the environmental consequences of the proposed action and the No-Action Alternative. A summary of impacts and associated mitigation measures is presented in Table ES-1.

Table ES-1 Summary of Impacts and Mitigation Measures

Impact		Mitigation Measures
Proposed Action	No-Action Alternative	
Biological Resources		
Impact BIO-1 – Disturbance to Nesting Birds During Construction. Construction noise has the potential to disturb nesting birds in and adjacent to the action area. In addition, nesting bird habitat could be temporarily disturbed by construction activities.	No impact.	<p><u>Mitigation Measure BIO-1 - Preconstruction Nesting Bird Surveys</u></p> <p><u>The following measures would be implemented by DSRSD or their contractors prior to, during, and after construction of the proposed action.</u></p> <ol style="list-style-type: none"> 1. If construction of the proposed action begins during the breeding season (February 1st to August 31st), preconstruction nesting bird surveys should be conducted within suitable habitat by a qualified biologist no more than two weeks prior to equipment or material staging, pruning/grubbing, or surface-disturbing activities. If no active nests are found within the action area, no further mitigation is necessary. 2. If active nests (i.e. nests in the egg laying, incubating, nestling or fledgling stages) are found within 300 feet of the proposed action footprint for raptor (birds of prey) species or 100 feet of the proposed action footprint for all other bird species, no-disturbance buffers should be established at a distance sufficient to minimize disturbance based on the nest location, topography, cover, the nesting pair's tolerance to disturbance and the type/duration of potential disturbance. Work within non-disturbance buffers should be rescheduled to occur after the young have fledged as determined by a qualified biologist. Buffer size should be determined in cooperation with CDFG and USFWS. 3. If rescheduling of work is infeasible and no-disturbance buffers cannot be maintained, a qualified biologist should be on site to monitor active nests for signs of disturbance. If it is determined that proposed action related activities are resulting in nest disturbance, work should cease immediately and CDFG and USFWS should be contacted for further guidance. 4. Tree removal, pruning, grubbing, grading, or other construction activities conducted outside of the breeding season (i.e. September 1st to January 29th) do not require preconstruction surveys.

Impact	Mitigation Measures	
Proposed Action	No-Action Alternative	
<p><u>Impact BIO-2 – Impact of Recycled Water on Vegetation.</u> Recycled water can have a higher concentration of dissolved salts than potable water. With long-term use, the application of recycled water for irrigation purposes can increase the concentration of salts in the root zone, potentially affecting plant growth and/or damaging foliage. A description of the anticipated response of general landscape plantings to changes in salinity and sodium levels are provided below.</p> <ul style="list-style-type: none"> ▪ <u>Salinity.</u> Increased salinity levels can diminish plant growth and potentially result in plant mortality. Levels of soil salinity greater than 4 mmhos/cm should be avoided. This soil salinity level would be comparable to an irrigation water salinity level of about 2.5 to 3.0 mmhos/cm. The average salinity of DSRSD recycled water is approximately 1.3 mmhos/cm. With water of this quality, a minimal reduction in top growth may occur on a few very sensitive landscape species. This impact is not anticipated to impair the appearance of these species, which is typically the primary purpose of ornamental plants. Turf grasses are not expected to be affected by irrigation water salinity. ▪ <u>Sodium.</u> High sodium in irrigation water can cause soil particles to disperse and slow the infiltration of water into the soil, or can result in direct damage to foliage. Special management practices may be necessary if the SAR of the 	No impact.	<p>5. All areas along the proposed alignment disturbed by construction shall be reseeded as a soon as possible after construction (but before fall rains) with a grass and forb mixture to reduce erosion hazards. All reseeding should be completed with a native grass and forb mixture. If landscaped vegetation is removed along existing roads or residences, it shall be replaced in kind at a 1:1 ratio with appropriate landscaping species.</p> <p><u>Mitigation Measure BIO-2 – Irrigation Water Application Best Management Practices.</u> The following irrigation water application BMP shall be implemented at customer sites under the supervision of DSRSD:</p> <ul style="list-style-type: none"> ▪ All site managers shall be properly trained in the use of recycled water for landscape irrigation. Training shall include instruction on the appropriate quantity of irrigation water to apply to ensure adequate leaching of accumulated salts from the root zone during times when precipitation is below average. ▪ All customer sites shall be maintained to allow adequate surface drainage without allowing excess quantities of recycled water to drain offsite. ▪ Site managers shall be required to monitor the health and appearance of vegetation being irrigated with recycled water and identify any adverse effects, including a substantial reduction in growth or plant mortality. ▪ As necessary and depending on the exact cause of the impact (e.g., poor drainage, poor soil structure or chemistry), one of the following additional measures may be implemented if adverse effects on on-site vegetation are observed: <ul style="list-style-type: none"> ○ Amend the soil or irrigation water, as appropriate. For example, a calcium amendment may help prevent the breakdown of the soil structure and the consequent reduction of permeability. ○ Replace salt-intolerant plants with salt-tolerant plants.

Impact		Mitigation Measures
Proposed Action	No-Action Alternative	
<p>water is greater than about 7 to 8 units, or if the sodium level in the water is greater than about 150 mg/L. The average sodium concentration in DSRSD recycled water is about 150 mg/L and the SAR of the water is about 4.2 units. Based on available data, only a few woody ornamental species would be likely to be affected by increased levels of sodium in the root zone or on their leaves. Turf grasses should not be affected by these levels of sodium.</p>		
<p><u>Impact BIO-3 – Impacts to Waters of the U.S.</u> Although the proposed project would not encroach or disturb open water or seasonal wetland habitat in the action area.</p>	<p>No impact.</p>	<p><u>Mitigation Measure BIO-3 - Avoid Disturbance of Waters of the United States, Including Wetland Communities.</u> DSRSD and the construction contractor shall avoid and minimize impacts on wetlands and other waters of the U.S. (creeks, streams, and rivers) by implementing the following measures.</p> <ul style="list-style-type: none"> ▪ The proposed action has been designed to avoid direct and indirect impacts on wetland habitats. ▪ Wetland habitats that occur near the action area will be protected by installing environmentally sensitive area fencing at least 20 feet from the edge of the wetland. Depending on site-specific conditions, this buffer may be wider than 20 feet to prevent erosion and sedimentation impacts on wetland habitat. The location of the fencing shall be marked in the field with stakes and flagging and shown on the construction drawings. The construction specifications shall contain clear language stating that construction-related activities, vehicle operation, material and equipment storage, and other surface-disturbing activities are prohibited within the fenced environmentally sensitive area. ▪ Where determined necessary by resource specialists, geotextile cushions and other materials (e.g., timber pads, prefabricated equipment pads, or geotextile fabric) shall be used in saturated conditions to minimize damage to the substrate and vegetation. <p>These measures shall be incorporated into contract specifications and implemented by the construction contractor. In addition, DSRSD shall ensure that the contractor incorporates all permit conditions into construction specifications.</p>
Surface Water and Drainage		

Impact		Mitigation Measures
Proposed Action	No-Action Alternative	
<p><u>Impact HYD-1 – Construction-Related Water Quality Impacts.</u> Construction of the proposed action could leave soils exposed to rain or surface water runoff that may carry soil contaminants (e.g., nutrients, metals, hydrocarbons, or other pollutants) into waterways adjacent to the action area, degrading water quality and potentially resulting in a violation of water quality standards.</p>	No impact.	<p><u>Mitigation Measure HYD -1 – Implement Best Management Practices.</u> To minimize construction-related water quality impacts, DSRSD and their contractors would implement BMPs in accordance with the Construction General Permit administered by the SWRCB. Examples of construction BMPs include the following:</p> <ul style="list-style-type: none"> Place temporary devices, such as straw, biodegradable fiber, or sandbags to intercept sheet flow runoff and settle sediment through the barriers. Implement dust control measures to keep the amount of airborne dust particles to a minimum and to reduce erosion and airborne pollutants during the time between site disturbance and paving or revegetation. Implement measures to prevent construction equipment or vehicles from tracking sediments out of a work site onto paved roadways. Conduct all maintenance activities in a designated area designed to contain spills and prevent run-on or run-off.
<p><u>IMPACT HYD-2 – Water Quality Impacts Associated with Frac-Out.</u> Three connections to the existing DERWA main in the Iron Horse Trail would be installed using either horizontal directional drilling or dry auger boring. Horizontal directional drilling would require use of bentonite lubricant, which, under certain conditions, can leak into an adjacent waterway through a hydraulic fracture in the streambed (referred to as a “frac-out”).</p>		<p><u>Mitigation Measure HYD -2 – Prepare a Site Specific Bore Plan.</u> Before horizontal directional drilling occurs, the construction contractor will prepare a site specific bore plan. This plan would include provisions for minimizing the risk of a frac-out and for managing construction activities in the unlikely event that a frac-out was to occur. The bore plan shall identify a process for the timely detection of frac-outs, including a description of responsibilities for the construction site supervisor, environmental inspector, and the field crew during directional drilling activities. The bore plan shall also identify a process for implementing an organized, timely, and low-impact response to a frac-out event. Response methods shall include assessing appropriate methods for containment of frac-out slurry; the process for suspending drilling operations when a frac-out cannot be controlled or contained; and methods to recover frac-out slurry based on site specific conditions. For example, it may be appropriate to use a vacuum truck in upland areas to recover large amounts of slurry, whereas hand-placed barriers, such as collection sumps, may be more appropriate for spills in sensitive habitats.</p>
Geology, Soils, and Seismicity		
<p><u>Impact GEO-1 – Earthquake Damage to Facilities.</u> Facilities associated with the proposed action could be affected by moderate to strong ground shaking</p>	There would be no potential impacts on geology or soils under the No-Action Alternative	<p><u>Mitigation Measure GEO-1 – Design Proposed Action to Meet Seismic Requirements.</u> DSRSD will ensure that all facilities associated with the proposed action conform to the most recent editions of the Uniform Building Code, the</p>

Impact		Mitigation Measures
Proposed Action	No-Action Alternative	
from major earthquakes during the life of the proposed action. Due to the close proximity of the Calaveras Fault, a major earthquake along this fault (or other currently inactive faults in general vicinity) could produce severe ground shaking at sites within the action area.	because no new infrastructure would be constructed. Similar to the proposed action, existing infrastructure delivering potable to water to customer sites would also be subject to ground shaking should it occur.	California Building Code, and the Seismic Safety element of the City of Dublin's General Plan and grading ordinance. In particular, Alamo Creek Park facilities, which would be located within the Alquist-Priolo Special Study Zone, would be designed to accommodate the maximum expected offset from fault rupture.
Air Quality		
<u>Impact AQ-1 – Construction-Generated Regional Air Pollutants.</u> Construction emissions would likely vary day-to-day, depending on the level of activity, the specific type of operation, and the prevailing weather conditions. It is highly unlikely that all construction activity types associated with the proposed action (e.g., trenching, excavation, pipe installation, directional drilling) would occur on the same day; however, if they did, the proposed action's generation of regional air pollutants would exceed the BAAQMD's daily emission rate threshold for NOx.	Continued use of potable water to irrigate lands within the action area would result in more substantial GHG and air pollutant emissions when compared to the use of recycled water for the same purposes, as prescribed under the proposed action. An additional 118 MTCO ₂ e of GHG would be emitted per year to deliver potable water to irrigate proposed action facilities under the No-Action Alternative.	<u>Mitigation Measure AQ-1 –Equipment Use and Maintenance.</u> During construction of the proposed action, the construction contractor shall ensure horizontal directional drilling does not occur on the same day as either excavation and shoring activities or pipe installation and backfill activities. Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes. Clear signage stating the same shall be provided for construction workers at all staging areas and work access points. The construction contractor shall also ensure all construction equipment is maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.
<u>Impact AQ-2 – Construction-Generated Local Air Pollutants.</u> Construction of the proposed action would result in the generation of fugitive dust associated with disturbance of exposed soil (mainly PM ₁₀) and road dust entrained from vehicles transiting through construction sites (both PM ₁₀ and PM _{2.5}). The proposed action's use of diesel-powered construction equipment would also result in the emission of DPM. Emissions of DPM, however, would not be substantial enough to be considered a significant health risk.	No construction-related air pollutant emissions would be associated with the No-Action Alternative.	<u>Mitigation Measure AQ-2 – Implement Air Quality Best Management Practices in Accordance with BAAQMD Guidance</u> The following air quality BMPs will be implemented by the construction contractor in accordance with BAAQMD guidance: <ul style="list-style-type: none"> ▪ All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day. ▪ All haul trucks transporting soil, sand, or other loose material off-site shall be covered. ▪ All visible mud or dirt tracked onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited. ▪ All vehicles speeds on unpaved roads shall be limited to 15 mph.

Impact	Mitigation Measures	
Proposed Action	No-Action Alternative	
<p><u>Impact AQ-3 – Construction-Related Greenhouse Gas Generation.</u> Construction of the proposed action would contribute to climate change impacts through its contribution of GHG. Construction-related GHG emissions would be associated with the exhaust of construction equipment and vehicles used to haul equipment and employees to and within the action area. The proposed action would result in approximately 350 MTCO₂e over the duration of construction.</p> <p>Because construction-related emissions would be finite in nature, below the minimum standard for reporting requirements under California State Assembly Bill 32, and because the BAAQMD did not include a construction-generated GHG threshold, the GHG emissions related to construction of the proposed action are not considered a cumulatively considerable contribution to global climate change.</p>		<ul style="list-style-type: none"> ▪ All roadways, driveways and sidewalks to be paved shall be completed as soon as possible. ▪ A publicly visible signs shall be posted with the telephone number and person to contact regarding dust complaints. This person shall respond and take corrective action within 48 hours of a complaint or issue notification. The BAAQMD's phone number shall also be visible to ensure compliance with applicable regulations. <p>No mitigation required.</p>
<p><u>Impact AQ-4 – Reduced Operation-Related Greenhouse Gas and Air Pollutant Emissions.</u> It is anticipated that operation related air pollutant and GHG emissions would be reduced as a result of the proposed action. This reduction would be attributable to the reduced distance both potable and recycled water would need to be pumped to meet ongoing demand. Specifically, use of recycled water to meet irrigation demand in the action area would offset the use of up to 203.1 acre feet (66.18 million gallons) of potable water each year and result</p>		No mitigation required.

Impact		Mitigation Measures
Proposed Action	No-Action Alternative	
in a reduction of GHG emissions of up to 118 MTCO ₂ e per year at project build-out.		
<p><u>Impact AQ-5 – General Conformity.</u> Construction of the proposed action would result in the emission of approximately 3.3 tons of NO_x, 0.5 tons of VOC, and 2.0 tons of CO. These levels are below the annual <i>de minimus</i> thresholds for these constituents (i.e., 100 tons, 50 tons, and 100 tons, respectively). Therefore, the proposed action would conform to the Clean Air Act.</p>		No mitigation required.
Noise		
<p><u>Impact NOISE-1 – Construction-Related Noise Generation.</u> The proposed action would only produce noise during the construction phase and would not expose sensitive receptors to permanent, excessive noise levels. In addition, because construction activities would occur in a linear fashion, any one receptor would only be exposed to construction-generated noise for a short duration prior to activities continuing down the pipeline.</p>	No impact.	<p><u>Mitigation Measure NOISE-1 - Limit Timing and Equipment Used During Construction.</u> The construction contractor will adhere to all local ordinances regulating hours of construction to minimize the potential for sleep disturbance and annoyance to sensitive noise receptors in the action area. As noted above, the City typically requires that construction be limited to daytime hours (between 7:30 am and 5:00 pm). To minimize construction noise generation, all equipment shall be outfitted with mufflers equal or superior in noise attenuation to those provided by the manufacture of the equipment. In addition, idling equipment will be shut off and temporary or portable acoustic barriers will be installed around stationary construction noise sources that are located in proximity to potentially sensitive noise receptors.</p>
Transportation / Traffic		
<p><u>Impact TRANS-1 – Construction-Related Traffic Disturbance.</u> The proposed action would result in construction activities within existing roadways, thereby temporarily reducing the capacity of those roadway segments during construction. Construction in existing roadways may also result in temporary closure of bike lanes and disruption of public transit services.</p>	No impact.	<p><u>Mitigation Measure TRANS-1 - Prepare Traffic Management Plan.</u> DSRSD or its contractor shall prepare a traffic management plan for review and approval by the City of Dublin. The traffic management plan shall address bike and vehicle travel through construction zones and the use of flaggers and off-peak construction hours. Coordination with the East Bay Regional Parks District will be necessary to maintain adequate access along the Iron Horse Trail, and at intersection crossings. Cones and/or other similar temporary traffic flow control devices will be used where necessary to establish bike and/or vehicle lanes through construction zones to protect bicyclists from construction activities and vehicle traffic, and to provide for adequate vehicle movement. Where vehicle lanes within heavily traveled roadways will be closed as a result of roadway crossings, lane closure plans should be employed in accordance with municipal</p>

Impact		Mitigation Measures
Proposed Action	No-Action Alternative	
		<p>traffic management requirements. Where the width of the roadway will preclude establishing temporary lanes in two directions, and where acceptable detour routes are not available, flaggers will be used to maintain two-way traffic flow.</p> <p><u>Mitigation Measure TRANS-2 - Coordinate with Transit Providers.</u> DSRSD shall coordinate with transit providers in the City of Dublin, including BART, WHEELS, and the Alameda-Contra Costa Transit District, to temporarily relocate bus stops along roadways during construction, as required, to ensure uninterrupted service.</p> <p><u>Mitigation Measure TRANS-3 – Notify Adjacent Property Owners of Construction Activities.</u> DSRSD (or its contractor) shall notify adjacent property owners of construction schedules and develop a traffic management plan (Mitigation Measure TRANS-1) that provides for temporary access to properties. For highly sensitive land uses, such as schools and emergency services, access plans will be coordinated with the facility owner or administrator, and the local police departments.</p>
Hazardous Materials		
<u>Impact HAZMAT-1 – Exposure to Unknown Hazardous Materials or Contaminated Soils During Construction.</u> Although not known to exist in the action area, it is possible that the public or construction personnel could be exposed to unknown hazardous materials or contaminated soils during construction of the proposed action.	No impact.	<u>Mitigation Measure HAZMAT-1 – Hazardous Material Site Safety Plans.</u> Site safety plans shall be prepared by the construction contractor to address the potential for encountering hazardous materials during trenching and/or trenchless construction around South San Ramon Creek. The site safety plans will identify protocols for employing personal protective equipment to prevent exposure to unknown hazardous materials or contaminated soils.
<u>Impact HAZMAT-2 – Recycled Water Effects on Human Health.</u> Recycled water is derived from wastewater. Untreated wastewater can result in human health risks associated with exposure to pathogens or other potentially dangerous constituents, such as heavy metals, nitrates, and salts. However, the recycled water produced by the DSRSD treatment plant would meet the stringent Title 22 requirements for unrestricted use. This level of treatment has proven to be fully protective of human health with regard to microbial pathogens.	No impact.	No mitigation required.

Impact		Mitigation Measures
Proposed Action	No-Action Alternative	
<p>Because of the extensive level of treatment required, recycled water can be safely used for a variety of uses, including landscape irrigation. Special signage will be posted in areas where recycled water is used. For these reasons, use of recycled water for landscape irrigation at proposed action facilities would not pose a threat to public health.</p>		
Land Use		
<p><u>Impact LU-1 – Temporary Disruption of Land Uses by Facilities Construction.</u> Construction of the proposed action could result in short-term, construction-related disruption to land uses and businesses adjacent to the construction zone. These impacts could include increases in airborne dust, noise levels, and traffic congestion. In addition, temporary staging areas for the storage of equipment, pipe, and other construction materials could result in temporary disruption of some land uses. These construction-related impacts would be short-term and would not affect current planned land uses within or in close proximity to the action area.</p>	No impact.	<p><u>Mitigation Measure LU-1 – Notification of Temporary Disruption.</u> DSRSD would provide advance notification to all land uses adjacent to construction zones and would provide opportunity for property owner / public input to the construction disruption management process.</p>
Recreation		
<p><u>Impact REC-1 – Temporary Disruption of Recreational Access and Use.</u> The proposed action may temporarily disturb access to limited portions of some of the recreational areas served by facilities associated with the proposed action, and/or the bikeways and trails that traverse the action area. This temporary disturbance would be limited in duration and would not result in the permanent displacement of recreational use or access at any location.</p>	No impact.	<p>Implementation of Mitigation Measure TRANS-1 would reduce temporary impacts to bicycle lanes within the action area. Implementation of Mitigation Measure LU-1 would ensure that affected land owners are aware of potential temporary construction-related disruptions prior to implementation of the proposed action.</p>
Visual Resources		
No impact.	No impact.	No mitigation required.

Impact		Mitigation Measures
Proposed Action	No-Action Alternative	
Utilities and Public Services		
<u>Impact UPS-1 – Interruption of Services and Utilities.</u> Municipal and utility services could be delayed or interrupted by construction activities associated with the proposed action. This could include re-routing of emergency services, difficulty in reaching service locations, and interruption of gas, electric, water, and other utility services provided to properties along the pipeline alignments. Prior to construction, DSRSD would coordinate with the City of Dublin and utility providers to determine the most appropriate way to avoid service delays and utility interruptions.	Under the No-Action Alternative, DSRSD would continue to utilize potable water for irrigation purposes at the 11 proposed action customer sites. This continued use of potable water from the San Francisco Bay Delta and the SWP would adversely impact the already limited water supplies in the Bay Area. In addition, energy usage would be higher under the No-Action Alternative because, rather than utilizing recycled water for irrigation purposes, potable water would be pumped at a higher energy cost to its San Francisco Bay disposal site.	No mitigation required.
<u>Impact UPS-2 – Potential Relocation of Infrastructure.</u> Construction within easements and ROWs that are used by other agencies or utilities may create situations where pipes, cables, and related appurtenances may need to be temporarily or permanently relocated. DSRSD would coordinate with and seek approval from necessary utility providers and/or other agencies if it is determined during final design that any utility infrastructure would need to be relocated to implement the proposed action.		No mitigation required.
<u>Impact UPS-3 –Energy Use.</u> Construction of the proposed action would require the use of energy resources, mostly derived from non-renewable sources. However, it is anticipated that operation related energy use would be reduced as a result of the proposed action because recycled water, which would require less pumping and associated energy cost, would be used for irrigation purposes.		No mitigation required.
Socioeconomics and Environmental Justice		
No Impact.	No impact.	No mitigation required.

Impact		Mitigation Measures
Proposed Action	No-Action Alternative	
Cultural Resources		
<p><u>Impact CUL-1 –Discovery of Unknown Human Remains.</u> The proposed action may uncover previously unknown human remains.</p>	<p>No impact.</p>	<p><u>Mitigation Measure CUL-1 – Protect Human Remains.</u> The following procedures, as outlined in Public Resources Code (PRC) Section 5097.98 and Section 7050.5 of the California Health and Safety Code, shall be implemented by DSRSD in the event of an accidental discovery or recognition of human remains within the action area.</p> <ul style="list-style-type: none"> ▪ There shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent human remains until the County Coroner is contacted to determine if the remains are Native American and if an investigation of the cause of death is required. If the coroner determines the remains to be Native American, the coroner shall contact the NAHC within 24 hours, and the NAHC shall identify the person or persons it believes to be the “most likely descendant” of the deceased Native American. The most likely descendant may make recommendations to the landowner or the person responsible for the excavation work, for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods as provided in PRC Section 5097.98, or where the following conditions occur, the landowner or his/her authorized representative shall rebury the Native American human remains and associated grave goods with appropriate dignity either in accordance with the recommendations of the most likely descendent or within the action area, in a location not subject to further subsurface disturbance: <ul style="list-style-type: none"> ○ The NAHC is unable to identify a most likely descendent or the most likely descendent failed to make a recommendation within 48 hours after being notified by the commission; ○ The descendent identified fails to make a recommendation; or ○ The landowner or his authorized representative rejects the recommendation of the descendent, and the mediation by the NAHC fails to provide measures acceptable to the landowner. <p>If human remains are associated with an archaeological site, Reclamation shall also be notified in a timely manner so that the federal agency can implement 36 CFR Part 800.13.</p> <p>In addition, if applicable, Reclamation’s Directives and Standards for the Inadvertent Discovery of Human Remains shall be followed as outlined below.</p> <ul style="list-style-type: none"> ▪ If human remains are encountered during earth-disturbing activities within

Impact		Mitigation Measures
Proposed Action	No-Action Alternative	
		<p>the APE, all work in the adjacent area shall stop immediately and the discoverer shall immediately provide verbal notification to Reclamation's authorized official, the Regional Director (RD) or the RD's designee, of the discovery of human remains.</p> <ul style="list-style-type: none"> ▪ Within 48 hours of the verbal notification, the RD or RD's designee will confirm the discovery with a written confirmation. In addition, the RD/RD designee will: <ol style="list-style-type: none"> 1. Immediately provide protection and security for the human remains; 2. Immediately notify the appropriate cultural resources professional; 3. Immediately notify the appropriate law enforcement agency; 4. Notify and consult with lineal descendants and tribal officials, immediately if Native American; 5. Immediately comply with appropriate laws; and 6. Within 5 working days of the written notification, establish a record of discovery including discovery circumstances, protection steps taken, names of persons notified and recommendations for further actions (Directives and Standards LND07-01[5]).
<p><u>Impact CUL-2 –Discovery of Previously Unknown Archaeological Resources.</u> Although no cultural resources were discovered during the field survey of the APE, there is a possibility for previously unknown, buried resources to be uncovered during construction of the proposed action.</p>		<p><u>Mitigation Measure CUL-2- Construction Monitoring in Archaeologically Sensitive Areas.</u> In the event that buried cultural resources are discovered during construction, the construction contractor shall stop operations immediately in the vicinity (ca. 100 feet) of the find until the Reclamation Title XVI Manager from the Mid-Pacific Regional Office (2800 Cottage Way, Sacramento California) and Reclamation's Regional Archaeologist from the Mid-Pacific Regional Office (2800 Cottage Way, Sacramento, CA) are notified and given the opportunity to determine if the resource requires further study and what steps are necessary to comply with 36 CFR 800.13(b)(3).</p>
Indian Trust Assets		
No Impact.	No impact.	No mitigation required.

Chapter 1. Purpose and Need for Action

1.1 Introduction

This environmental assessment (EA) was prepared by the U.S. Bureau of Reclamation (Reclamation) to evaluate the environmental effects of the Central Dublin Recycled Water Distribution and Retrofit Project (proposed action). Under the proposed action, the Dublin San Ramon Services District (DSRSD) would extend recycled water distribution pipelines to serve landscape irrigation demands at several schools, parks, streetscapes and medians in Central Dublin, as well as the common area of one apartment complex. The proposed action would also provide plumbing retrofits to connect existing irrigation systems at Alamo Creek Park, Amador Lakes Apartments, Dublin schools, parks, streetscapes and medians to the recycled water system.

The project falls under Reclamation's Water Reclamation and Reuse Program, as authorized by the Reclamation Wastewater and Groundwater Study and Facilities Act of 1992, or Title XVI of Public Law 102-575 (Title XVI). Title XVI provides a mechanism for Federal participation and cost-sharing in approved water reuse projects. As the agency with discretionary approval over the provision of this Federal funding, Reclamation is acting as the lead agency under the National Environmental Policy Act (NEPA) and has prepared this EA to evaluate the environmental effects of the proposed action.

1.2 Proposed Action Location

The recycled water distribution pipeline facilities associated with the proposed action would generally be located in the central portion of the City of Dublin, California, between Interstate 680 (I-680) and Dougherty Road (Figure 1). The service area for these distribution system facilities is an area generally bounded by I-680, Alcosta Boulevard, Dougherty Road, and Penn Drive (Figure 2). The majority of the distribution pipelines would be connected to the existing 16-inch DSRSD-East Bay Municipal Utility District (EBMUD) Recycled Water Authority (DERWA) main in the Iron Horse Trail (Figure 3); the Alamo Creek Park facility would be connected to the existing 30-inch DERWA main adjacent to Dougherty Road (Figure 4).

1.3 Purpose / Objectives and Need

DSRSD has identified four primary objectives for the proposed action:

1. Expand utilization of available recycled water to customers that are currently using potable water supply for irrigation.
2. Reduce importation of potable water from the San Francisco Bay Delta and the State Water Project (SWP).

3. Reduce discharge of wastewater into San Francisco Bay.
4. Reduce energy consumption and DSRSD's carbon footprint.

The delivery of recycled water to the facilities associated with the proposed action would reduce/postpone development of new or expanded water supplies. Recycled water is drought resistant, available all year long, and can be stored in existing facilities already built by DERWA, a Joint Powers Authority formed in 1995 between DSRSD and EBMUD for the purpose of providing recycled water as a replacement for potable water. Moreover, the proposed action would replace potable water currently used for irrigation and construction.

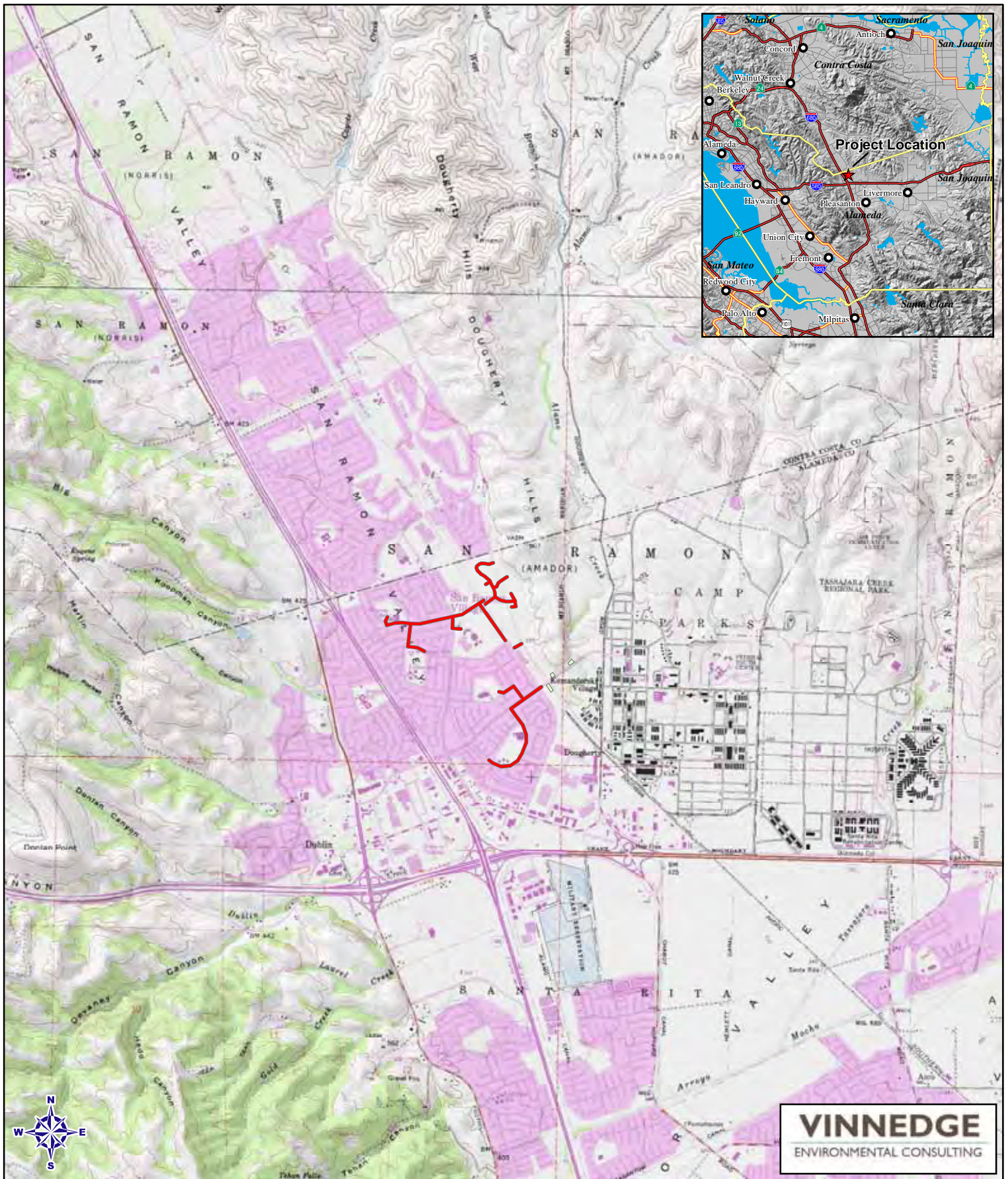
The recycled water supply would also offset the water supply provided by the Zone 7 Water Agency (Zone 7) from the SWP, which would consequently reduce diversions, reduce groundwater extraction and reduce energy use. DSRSD secondary effluent is pumped approximately 15 miles from Dublin to San Leandro through the Livermore-Amador Valley Water Management Agency (LAVWMA) and the East Bay Dischargers Authority (EBDA) pipelines. Recycling water would reduce the pumping of treated wastewater to San Francisco Bay, which saves customers money and energy, and decreases carbon emissions. The expanded use of recycled water would also reduce the burden on existing Federal water supply facilities, such as the Central Valley Project (CVP). The SWP and CVP water contract allocations are closely inter-connected and supply of recycled water would reduce demand and utilization of valuable drinking water resources.

The proposed action is considered a Priority 1 (most important to serve) project in the 2005 DSRSD Urban Water Management Plan (West Yost & Associates 2005).

1.4 Background

The San Ramon Valley Recycled Water Program (SRVRWP) supplies recycled water for landscape irrigation and other non-potable water uses to portions of the DSRSD and EBMUD service areas in the San Ramon and Dougherty valleys. The DERWA Board of Directors approved and certified a Program Environmental Impact Report (EIR) in accordance with the California Environmental Quality Act (CEQA) for the SRVRWP in December 1996 (SRVRMP Program EIR [DERWA 1996]). The SRVRMP Program EIR included an analysis of the transmission and distribution systems generally associated with the proposed action.

The purpose of this EA is to evaluate the potential environmental impacts of the proposed action, in accordance with NEPA, to allow Reclamation to consider the discretionary allocation of Title XVI funds to support implementation of the proposed action. Concurrently, DSRSD is preparing an addendum to the SRVRP Program EIR in accordance with CEQA to consider modifications to the locations of some of the recycled water distribution pipeline locations identified in that document. These modifications would allow for a more efficient (and, therefore, cost effective) distribution system and reflect system refinements made to better serve the identified customer sites.



October 2010

Legend

Project Area

Figure 1
 Project Location and Vicinity
 DSRSD/DERWA Central Dublin
 Recycled Water Distribution and Retrofit Project

1:48,000

0 2,000 4,000

Feet



WINZLER & KELLY
CONSULTING ENGINEERS

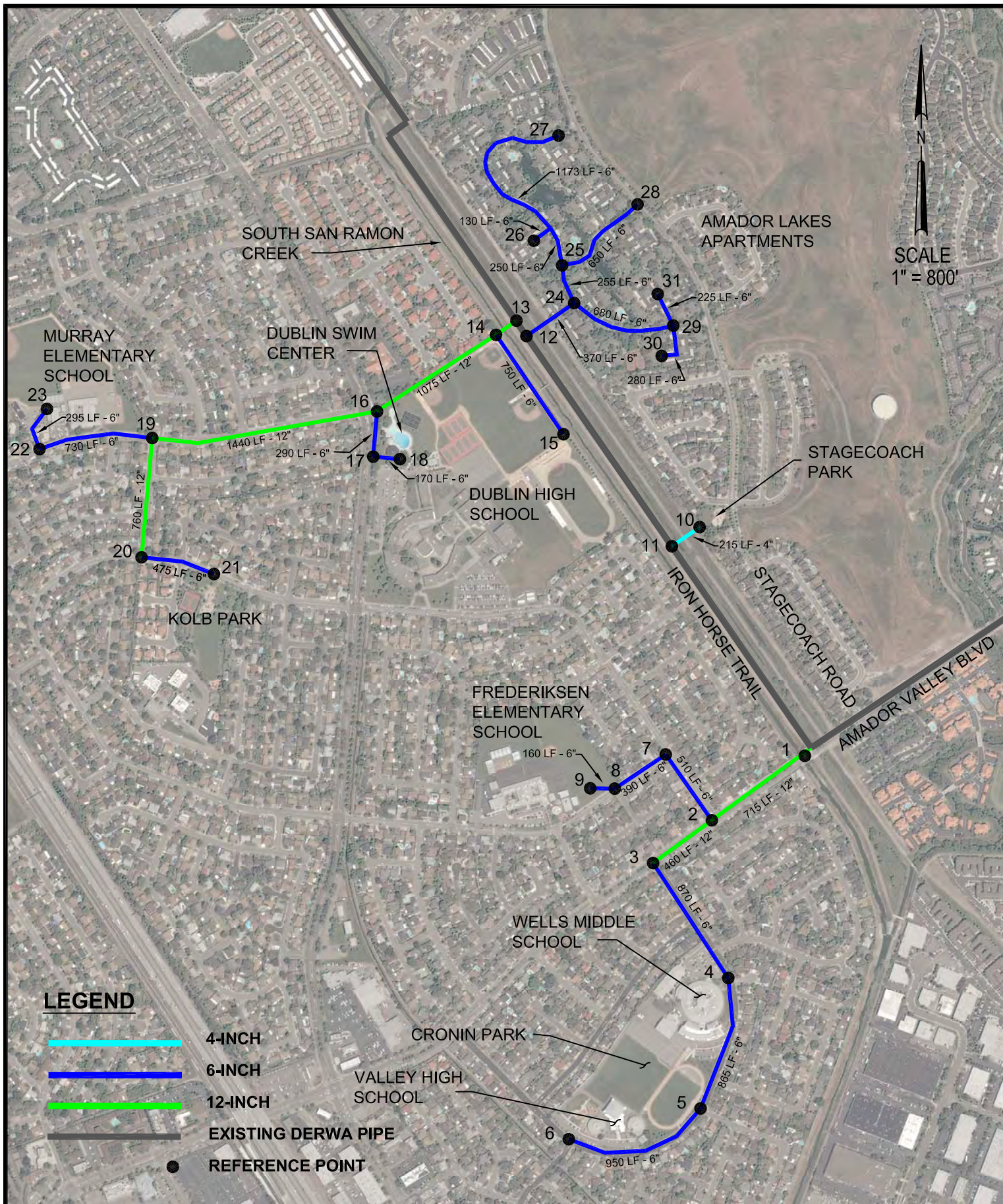
4463 B STONERIDGE DRIVE, PLEASANTON, CA 94588
PH (925) 846-0499 ♦ FAX (925) 846-0766
WWW.W-AND-K.COM



CUSTOMER LOCATIONS SERVED BY THE
CENTRAL DUBLIN RECYCLED WATER
DISTRIBUTION AND RETROFIT PROJECT

FIGURE NO.

2





WINZLER & KELLY
CONSULTING ENGINEERS

4463 B STONERIDGE DRIVE, PLEASANTON, CA 94588
PH (925) 846-0499 ♦ FAX (925) 846-0766
WWW.W-AND-K.COM



ALAMO CREEK PARK ONSITE PIPING

FIGURE NO.

4

1.5 Related Actions by Other Agencies

The following permits, approvals, and actions would be required for the proposed action to be implemented. DSRSD would be responsible for obtaining each of these permits prior to construction of the proposed action.

- Encroachment Permit, City of Dublin – The City of Dublin would require that an encroachment permit be obtained to place new distribution pipelines in City streets.
- Encroachment Permit and Permanent Easements, Union Pacific Railroad, Alameda County, and Zone 7 Water Agency - Easements from the Union Pacific Railroad (UPRR) and Alameda County would be required to encroach into their respective parcels between Stagecoach Road and the Iron Horse Trail. An easement from Zone 7 would also be required for encroachment into the Iron Horse Trail.
- Lake or Streambed Alteration Agreement, California Department of Fish and Game - A crossing under South San Ramon Creek to install a new distribution pipeline to Dublin High School, the Dublin Swim Center, Murray Elementary School, and Kolb Park would require submission of a Lake or Streambed Alteration Agreement (LSA) notification packet, in accordance with Section 1602 of the California Fish and Game Code (CFG), to the California Department of Fish and Game (CDFG). CDFG regulates any activity that may alter the bed or bank of a lake or stream.
- Construction General Permit, State Water Resources Control Board – A National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Construction General Permit) is required any time construction-related activities will disturb 1 or more acres, and may result in a discharge to a surface water or conveyance system that leads directly to a surface water of the State. The Construction General Permit is administered by the California State Water Resources Control Board (SWRCB).
- CEQA Addendum to the SRVRP Program EIR, Dublin San Ramon Services District – As the CEQA lead agency, DSRSD will need to complete and approve an addendum to the SRVRP Program EIR analyzing changes to the proposed action prior to construction.

1.6 Document Format

This document consists of six chapters. Chapter 1 and 2 provide background information and describe the proposed action and the No-Action Alternative. Chapter 3 comprises the NEPA environmental assessment, including a characterization of the existing environment, an evaluation of the proposed action and No-Action Alternative, and an assessment of potential cumulative effects. Chapter 4 describes Reclamation's coordination and consultation with other agencies during preparation of this EA. Chapters 5 and 6 include references and a list of preparers, respectively.

Chapter 2. Proposed Action and Alternatives

2.1 Introduction

Two alternatives are considered in this EA: the proposed action and the No-Action Alternative.

2.2 Proposed Action

Under the proposed action, Reclamation would provide Title XVI funding to DSRSD to partially fund extending recycled water distribution pipelines to serve landscape irrigation demands at several schools, parks, streetscapes and medians in Central Dublin, as well as the common area of one apartment complex. The proposed action would also provide plumbing retrofits to connect existing irrigation systems at Alamo Creek Park, Amador Lakes Apartments, Dublin schools, parks, streetscapes and medians to the recycled water system. Specifically, the pipelines would serve the following sites, which are depicted in Figure 2:

- Dublin High School
- Frederiksen Elementary School
- Wells Middle School
- Cronin Park
- Valley High School
- Kolb Park
- Murray Elementary School
- Dublin Swim Center
- Stagecoach Park
- Alamo Creek Park
- Amador Lakes Apartments

2.2.1 New Pipeline Alignments

As described above, the proposed action would serve eleven different facilities. The proposed locations for the new distribution pipelines are depicted in Figures 3 and 4 and described below.

With the exception of Alamo Creek Park, all pipelines associated with the proposed action would be connected to the existing 16-inch DERWA recycled water main at the Iron Horse Trail (Figure 3). There would be two connections west of the Iron Horse Trail and two connections east of the Iron Horse Trail.

The first westbound connection would be located in Amador Valley Boulevard at the intersection with the Iron Horse Trail. This pipeline would be routed westbound to serve Frederiksen Elementary School, Wells Middle School, Cronin Park, and Valley High School. This connection would be installed using cut and cover trenching technology in Amador Valley Boulevard (see Section 2.2.3.1, Construction Methodology). The second westbound connection would be located along the Iron Horse Trail north of Amador Valley Boulevard to serve Dublin High School, Kolb Park, Murray Elementary School, and the Dublin Swim Center. This connection would require the use of trenchless technology to route the pipeline under South San Ramon Creek (see Section 2.2.3.1, Construction Methodology).

East of the Iron Horse Trail, two connections to the DERWA main would be installed to serve Stagecoach Park and Amador Lakes Apartments (Figure 3). Both of these connections would also be installed using trenchless technology to minimize potential conflicts with exiting utility lines and to avoid impacts to urban landscaping in the general vicinity. Alamo Creek Park would be served by a new meter and 2-inch water service extension that would be connected to the existing 30-inch DERWA recycled water main in Dougherty Road (Figure 4).

Figures 4 through 12 depict the proposed locations for on-site routing and connection facilities at each of the eleven facilities and various streetscapes and medians that would be served by the proposed action. Proposed pipeline routing for each facility is described below:

- Alamo Creek Park – The existing potable water line would be disconnected from the existing meter and capped. A new irrigation meter would be connected to an existing 2-inch recycled water pipeline extending from the 30-inch DERWA recycled water main in Dougherty Road, located at the southeast side of the park (Figure 4).
- Wells Middle School – A distribution pipeline would be routed from Amador Valley Boulevard to the existing meter on Penn Drive (Figure 5).
- Cronin Park – A distribution pipeline would be routed to the existing meter on Penn Drive (Figure 5). Investigation of the current system operation and the expected number of stations to be irrigated at the same time will be required before a decision regarding the existing booster pump station can be made by DSRSD. It is possible that the water pressure provided by the proposed recycled water connection could require modifications to the existing booster pump station at Cronin Park, or eliminate the need for the pump station altogether.
- Valley High School – A distribution pipeline would be routed via Penn Drive to the existing water meter on York Drive (Figure 5).
- Frederiksen Elementary School – A distribution pipeline would be routed from Amador Valley Boulevard to Brighton Drive, and then southwest along Tamarack Drive to the elementary school. A new water meter would be installed at the southeast corner of the school site near Tamarack Drive, and a new pipe would be installed from the meter to the on-site system (Figure 6).

- Dublin High School –A new distribution line would be connected to the DERWA main at the northern boundary of Dublin High School (Figure 7). This connection would require the use of trenchless technology to install the pipeline under South San Ramon Creek (see Section 2.2.3.1, Construction Methodology, below). Once on-site, the new pipeline would run southeast, parallel to the Iron Horse Trail, where it would be connected to the existing irrigation system water stub-out at the southeast corner of the high school's baseball diamond.

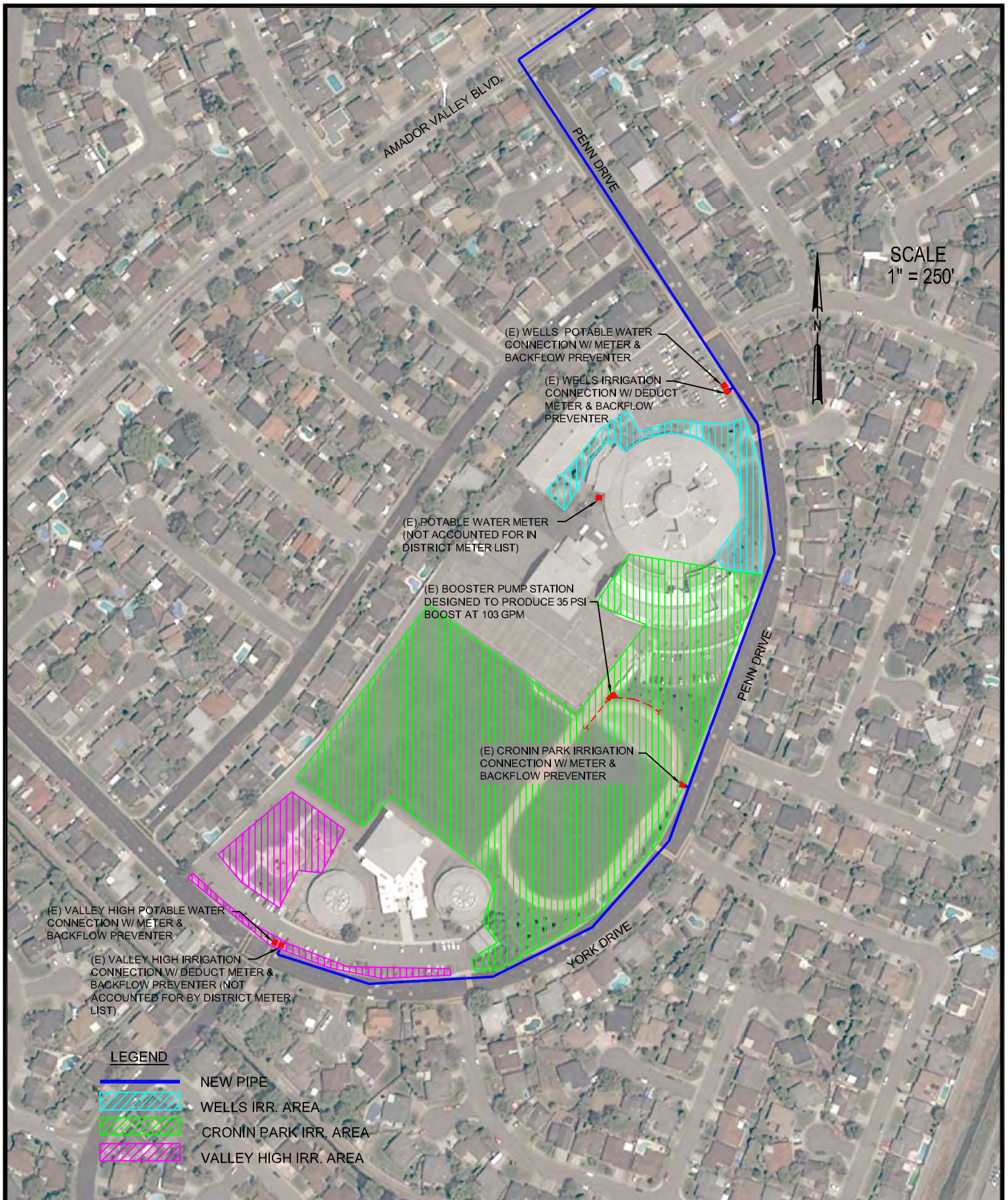
Similar to Cronin Park, installation of this pipeline may require either relocation of the existing booster pump station, or eliminate the need for the pump station altogether. Additional investigation of the current system operation and the expected number of stations to be watered at the same time will be required before a decision regarding the booster pump station can be made by DSRSD.

- Kolb Park – A distribution pipeline would be routed to the existing water meter on Brighton Drive, near the entrance to Kolb Park, via Lucania Street (Figure 8). To serve Kolb Park with recycled water, it would also be necessary to separate the existing potable water line from the irrigation lines and install a second meter.
- Murray Elementary School – To serve Murray Elementary with recycled water, the existing potable water line would be disconnected from the existing meter and capped. The existing meter would be replaced with an irrigation meter, which, in turn would be connected to the new recycled water pipeline. This pipeline would be routed along Davona Street and through the elementary school parking lot (Figure 9).
- Dublin Swim Center – The new distribution pipeline would be routed through Dublin High School, south along Village Parkway, to the southwestern edge of the Dublin Swim Center (Figure 10).
- Stagecoach Park –Stagecoach Park would be served from a single point connection to the DERWA water main along the Iron Horse Trail, adjacent to the park (Figure 11). Similar to Dublin High School, this connection would be installed using trenchless technology to avoid existing utility lines and urban landscaping (see Section 2.2.3.1, Construction Methodology, below). A single irrigation meter, located south of Stagecoach Park, is currently manifolded to two existing backflow preventer devices that serve both the irrigation system and drinking fountain at the park. To serve this facility, the existing connection to the irrigation system would be cut, capped, and the backflow device removed; a distribution pipeline would be routed to the existing irrigation system; and a new meter would be installed.
- Amador Lakes Apartments – Amador Lakes Apartments would be served from a distribution system that would have a single point of connection to the DERWA water main along the Iron Horse Trail, adjacent to the apartment complex and generally across from Dublin High School. This connection would, in turn, serve the eight irrigation meter locations in the Amador Lakes Apartment complex. The proposed routes for these pipelines are shown in Figure 12. Similar to Stagecoach Park, the connection from the DERWA main to the first connection within the apartment complex (Reference point 24 on Figure 3) would be installed using trenchless technology to avoid existing utility lines and urban landscaping.

2.2.2 Pipeline Sizing and Installation

Pipeline segments would range from 4- to 12-inches in diameter (depending on pressure and volume considerations) and most would be located within existing developed roadways, landscaped areas, driveways and areas adjacent to the Iron Horse Trail (paved trail with surrounding undeveloped areas). All alignments would be located in existing DSRSD easements except for the distribution pipeline designed to serve Dublin High School and the Dublin Swim Center. The existing DSRSD easement at these two facilities is only 10-feet wide (Figure 7); additional easement width may need to be acquired before installing the pipeline.

All pipelines would be buried approximately 5 to 6 feet below street level but could be as deep as 8 to 9 feet depending on existing utility lines. Table 2-1 provides a list of the locations of the proposed new pipeline segments for each optional alignment, as well as the associated pipeline diameters and approximate lengths. At most, approximately 4,450 feet of 12-inch pipeline, 10,468 feet of 6-inch pipeline, and 215 feet of 4-inch pipeline would be installed within existing paved streets (Table 2-1; Figure 3). Installation would occur in one lane of travel within roadways (depending on location of utilities). Because exact utility locations are unknown at this point in time, the action area (i.e., area that would be directly impacted by the proposed action) is assumed to include the entire roadway (curb to curb), though the actual width of open trench would range from 2 to 4 feet depending on pipe diameter.



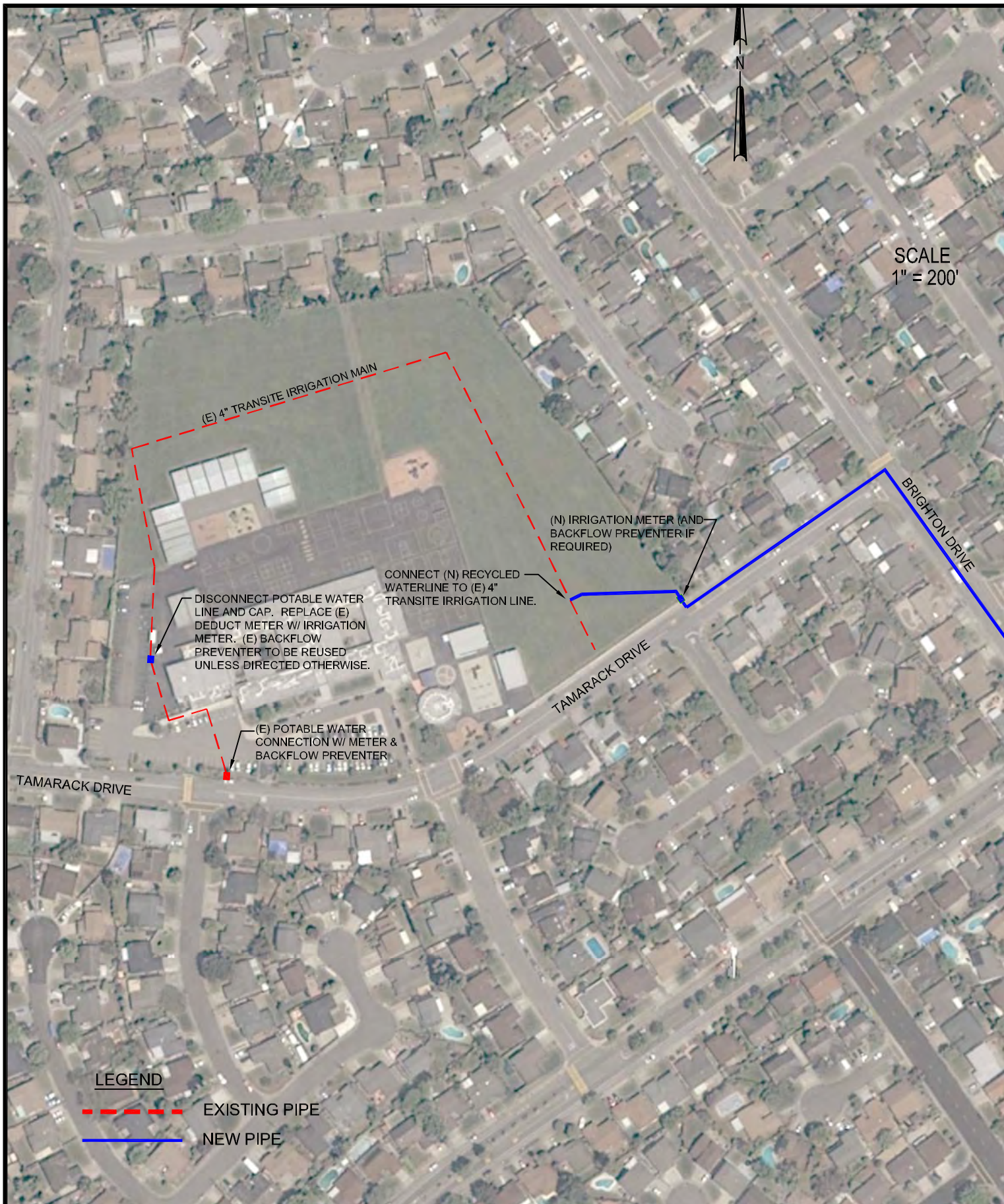
WINZLER & KELLY
CONSULTING ENGINEERS
4463 B STONERIDGE DRIVE, PLEASANTON, CA 94588
PH (925) 846-0499 ♦ FAX (925) 846-0766
WWW.W-AND-K.COM



WELLS MIDDLE SCHOOL, CRONIN PARK,
AND VALLEY HIGH SCHOOL ONSITE PIPING

FIGURE NO.

5



WINZLER & KELLY
CONSULTING ENGINEERS
4463 B STONERIDGE DRIVE, PLEASANTON, CA 94588
PH (925) 846-0499 ♦ FAX (925) 846-0766
WWW.W-AND-K.COM

\\Dublin San Ramon.tif



FREDERIKSEN ELEMENTARY SCHOOL
ONSITE PIPING

FIGURE NO.

6



WINZLER & KELLY
CONSULTING ENGINEERS

4463 B STONERIDGE DRIVE, PLEASANTON, CA 94588
PH (925) 846-0499 ♦ FAX (925) 846-0766
WWW.W-AND-K.COM



DUBLIN HIGH SCHOOL ONSITE PIPING AND REPRESENTATIVE BORE PIT LOCATION

FIGURE NO.

7





WINZLER & KELLY
CONSULTING ENGINEERS

4463 B STONERIDGE DRIVE, PLEASANTON, CA 94588
PH (925) 846-0499 ♦ FAX (925) 846-0766
WWW.W-AND-K.COM



MURRAY ELEMENTARY SCHOOL ONSITE PIPING

FIGURE NO.

9



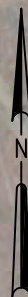
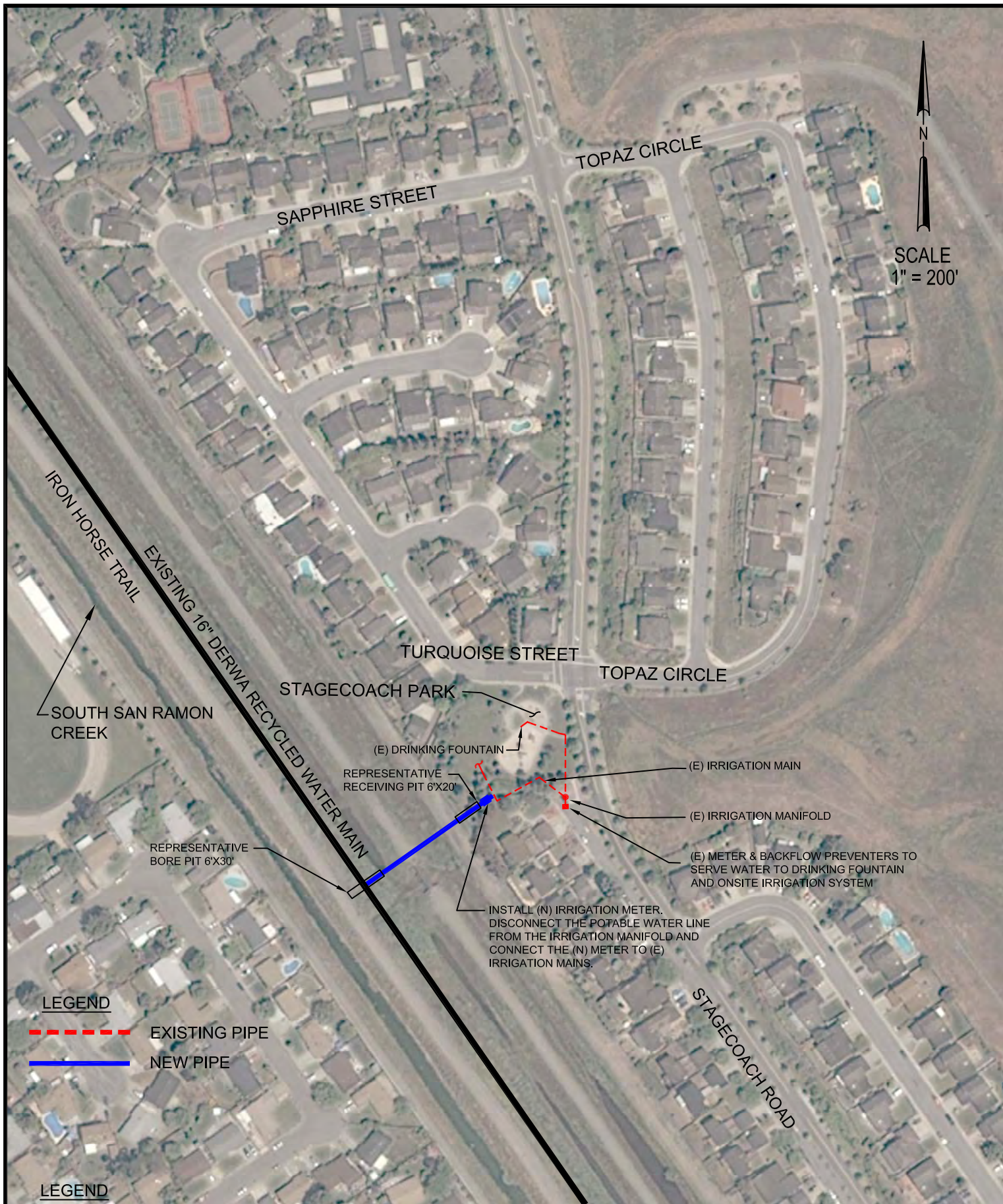
WINZLER & KELLY
CONSULTING ENGINEERS
4463 B STONERIDGE DRIVE, PLEASANTON, CA 94588
PH (925) 846-0499 ♦ FAX (925) 846-0766
WWW.W-AND-K.COM



DUBLIN SWIM CENTER ONSITE PIPING

FIGURE NO.

10



SCALE
1" = 200'



LEGEND

- NEW PIPE
- EXISTING DERWA PIPE

Table 2-1 Proposed Pipeline Segments Diameter and Length

Facility Served	Street	Reference Point ¹		Pipeline Diameter (inches)	Pipeline Length (feet)
		From	To		
Valley High School, Cronin Park, and Wells Middle School	Amador Valley Boulevard	1	2	12	715
		2	3	12	460
	Penn Drive	3	4	6	870
		4	5	6	865
	York Drive	5	6	6	950
Frederiksen Elementary School	Brighton Drive	2	7	6	510
	Tamarack Drive	7	8	6	390
	On-Site	8	9	6	160
Dublin High School	On -Site	14	15	6	750
Kolb Park	Luciana Street	19	20	12	760
	Brighton Drive	20	21	6	475
Murray Elementary School	Davona Street	16	19	12	1,440
	Davona Street	19	22	6	730
	On-Site	22	23	6	295
Dublin Swim Center	Dublin High School	13	16	12	1,075
	Village Parkway	16	17	6	290
	On-Site	17	18	6	170
Stagecoach Park	Iron Horse Trail	11	10	4	215
Amador Lakes Apartments	On-Site	12	24	6	370
		24	29	6	680
		29	30	6	280
		29	31	6	225
		24	25	6	255
		25	28	6	650
		25	26	6	380
		26	27	6	1,173

¹ Reference Points derived from Figure 3.

2.2.3 Project Construction

2.2.3.1 Construction Methodology

Pipeline installation would be by cut-and-cover trenching, with the exception of three locations where trenchless technology would be used to avoid impacts to either South San Ramon Creek or existing utility lines and urban landscaping (see *Trenchless Technology* below). Cut-and-cover trenching would require excavating an open trench to allow placement of the recycled water pipeline and associated infrastructure, and backfilling that trench after the pipeline has been assembled. The trench would be 2 to 4 feet deep, depending on the size of pipe to be installed. Excavated material not needed for trench backfill would be removed and disposed of at Waste Management's Altamont Landfill site located in Livermore, or at another approved site in the general vicinity of the proposed action. Large diameter pipe would be pre-positioned along the alignment during construction to avoid multiple handling; smaller diameter pipe may be temporarily stored at a suitable construction yard for delivery to the alignment as required. Distribution pipeline installation would occur at a rate of approximately 100 feet per day.

Construction of the proposed action would result in the disturbance of up to approximately 15,000 linear feet of roadway within the action area. Approximately 200 feet of existing roadway would be disturbed at any given time. No more than 100 feet of that distance would be associated with an open trench; the remaining 100 feet would be associated with active pipe laying and paving activities. It is also unlikely that different segments would be constructed simultaneously within public streets. Placement of the pipe under the creek and within the off road "easement" portions of the alignment behind Dublin High School could potentially be constructed concurrently with other construction occurring within the public right-of-way (ROW).

Trenchless Technology

Trenchless technology would be used at three locations within the action area to connect the new recycled water pipelines to the existing DERWA main along the Iron Horse Trail: (1) adjacent to Dublin High School, from the west side of the Iron Horse Trail, to provide recycled water to Dublin High School, the Dublin Swim Center, Murray Elementary School, and Kolb Park (Figure 7); (2) adjacent to Stagecoach Park, from the east side of the Iron Horse Trail, to provide recycled water to Stagecoach Park (Figure 11); and (3) adjacent to Amador Lakes Apartments, from the east side of the Iron Horse Trail, to provide recycled water to eight meters within that complex (Figure 12).

Installation of the underground pipeline at these locations would be accomplished using either horizontal directional drilling or dry auger boring. These construction methodologies are commonly used for crossing sensitive areas, such as water features or underground utility line locations, to minimize ground or surface water disturbance. Both methods require the construction of a boring pit and a receiving pit at the entrance and exit points of the underground pipeline. A drill rig would be inserted through the boring pit and used to drill a small pilot hole that would extend to the exit point at the receiving pit. The pilot hole would be enlarged by pulling an increasingly larger series of "reamer" (hole expansion) drill heads along the alignment with the drill rig. Once the hole is large enough, the distribution pipeline would be pulled through the drill path to the receiving pit.

For horizontal directional drilling, drilling mud, composed of naturally-occurring bentonite clay and water, would be used as a lubricant and coolant for the drill head. The drilling mud would be brought above-ground by the drilling equipment and stored / reused during drilling operations in the boring and receiving pits. Upon completion of horizontal directional drilling activities, the drilling mud would be dewatered, hauled away by truck, and disposed of at an approved off-site location. Dry auger boring would not require the use of drilling mud to facilitate installation of the underground pipeline. The maximum bore depth using either method would be approximately 21 feet.

The bore and receiving pits at each location would be approximately 6 feet wide by 20 feet long. The likely location of the receiving and boring pits for Dublin High School, Stagecoach Park, and Amador Lakes Apartments are illustrated in Figures 7, 11, and 12, respectively. A lay down area for storing and staging pipeline and other construction equipment would also be required at each drilling location. Each lay down area would be approximately 1,250 square feet in area. Regardless of method chosen, it is estimated that installation of the underground portion of the pipeline at Amador Lakes Apartments and Stagecoach Park would take up to 5 days each; installation of the pipeline under South San Ramon Creek at Dublin High School would take up to 9 days.

Construction Staging

The three potential locations for construction staging areas are shown in Figure 13. Potential Staging Area 1 would be located in an empty 1/3 acre lot on the north side of Amador Valley Boulevard, just east of Dougherty Hills Dog Park. This site is owned by the City of Dublin and has been used by the City previously for construction staging. Potential Staging Area 2 would be located on an empty 3/4 acre lot on the south side of Amador Valley Boulevard just east of the Iron Horse Trail. This site is owned by Zone 7 and has also been used previously for staging by Zone 7. Potential Staging Area 3 would be located at DSRSD's potable water Turnout 2/Pump Station 1A site located at the northeast corner of the Amador Valley Boulevard and Stagecoach Road. This site is limited in area and would be used for construction vehicle parking only.

Construction Schedule

Construction of the proposed action would begin in the summer of 2011, assuming the proposed action is funded. Construction would last up to one year.

2.2.4 Project Operation

The recycled water that would be delivered to customers under the proposed action would be produced at the existing DSRSD recycled water treatment facility which is located at its wastewater treatment plant in the City of Pleasanton, about 3 miles south of the action area. This recycled water facility, similar to all recycled water facilities, is permitted by the California Department of Public Health (CDPH) and the San Francisco Regional Water Quality Control Board (RWQCB) to produce recycled water appropriate for unrestricted use, as defined by Title 22 of the California Code of Regulations (CCR). Division 4, Chapter 3 of Title 22 outlines the water quality criteria, treatment process requirements, and treatment reliability criteria for water recycling operations, all of which are enforced by the RWQCB to ensure that recycled water projects are safe, reliable, and protective of public health.

Allowable uses for disinfected tertiary treated water that meet the requirements of Title 22 include irrigation of food crops, parks and playgrounds, school yards, residential landscaping, unrestricted access golf courses, and other approved irrigation and recreational impoundments. Other permitted uses include toilet flushing, firefighting, industrial processes, dust control, and cooling towers. DSRSD's continuous water quality testing program indicates that the recycled water produced at the wastewater treatment plant meets or exceeds all regulatory requirements for water reuse 99 percent of the time (DERWA 2010).

From August 2009 through August 2010, DSRSD's wastewater treatment plant produced 2,149 acre-feet of recycled water for existing customers (Ivy pers. comm. 2010). As noted above, recycled water would be used under the proposed action at customer sites for irrigation purposes that are currently served by potable water. It is anticipated that the proposed action would require 225 acre-feet of recycled water per year to meet anticipated demand at these sites (Portugal pers. comm. 2010). Given that the current plant capacity allows for flow of up to 12.2 million gallons per day of recycled water, or an equivalent of 13,675 acre-feet per year, implementation of the proposed action would not affect the ability of the plant to meet ongoing demand in the future.

Once installed, operation of the recycled water distribution system would be similar to operation of the existing potable water distribution system. Signs would be posted to notify the public of areas where recycled water is being used.

2.3 No-Action Alternative

Under the No-Action Alternative, Reclamation would not provide partial funding to DSRSD for the proposed action. If Title XVI funds are not available, DSRSD may construct some portion of the proposed action using DSRSD and/or State funds, if they are available. However, in the current economic climate, it is unknown if those funds would be adequate to construct the proposed action in its entirety. As such, in this EA, the No-Action Alternative evaluates the future if the proposed action is not implemented.



WINZLER & KELLY
CONSULTING ENGINEERS
4463 B STONERIDGE DRIVE, PLEASANTON, CA 94588
PH (925) 846-0499 ♦ FAX (925) 846-0766
WWW.W-AND-K.COM



POTENTIAL CONSTRUCTION STAGING
AREAS

FIGURE NO.

13

Chapter 3. Analysis of the Proposed Action and No-Action Alternative

3.1 Introduction

This chapter describes existing conditions within the action area and the environmental consequences of implementing the proposed action and No-Action Alternative. The action area considered in this assessment includes the proposed distribution pipeline alignments and an adjacent 50-foot buffer, all access roads necessary for construction, potential construction staging areas, and other areas that may be temporarily disturbed during construction (e.g., bore pit locations). For some resource areas (e.g., air quality), the action area has been expanded to represent the extent where the effects of the proposed action may be realized. In those cases, the larger action area boundary is defined within the resource area discussion.

The following resource areas are not considered further in this EA because the proposed action would have no potential to affect them.

- Agricultural Resources. The proposed action is located entirely within an urban area. No agricultural resources are located within or near the proposed action footprint, and reuse of recycled water associated with the proposed action would have no impact on the availability of irrigation water for agricultural activities.
- Mineral Resources. No mineral deposits or mineral extraction areas are located in the action area or identified in the City of Dublin's General Plan (City of Dublin 2010a).
- Groundwater Supplies. No elements of the proposed action would deplete groundwater supplies, and installation of the pipelines would not prevent percolation of water into the underlying groundwater table. An analysis of the effects of the application of recycled water delivered by the proposed action pipelines was considered in the SRVRMP Program EIR (DERWA 1996). As described in detail in that document, the action area is underlain by the Fringe Basin/Dublin subbasin groundwater aquifer. Unlike the Main Basin located south of the action area, water quality in the Fringe Basin is generally poor. As such, groundwater from the Fringe Basin is not used as a municipal water source; any potential salt loading of the aquifer from the application of recycled water within this groundwater basin would have no effect on municipal water supplies. Further, application of recycled water within the action area would not result in salt loading of the Main Basin because Alamo Canal, which conveys water from the drainages within the action area, is underlain by impervious clay layers that effectively isolate the groundwater aquifer from the creek. Since no percolation can occur, the proposed action would have no impact on groundwater quality.

3.2 Biological Resources

3.2.1 Affected Environment

The action area is located in the City of Dublin, Alameda County, California, on the Dublin U.S. Geological Survey (USGS) 7.5 minute topographic quadrangle. The action area consists primarily of paved roads with adjacent non-native annual grassland and ornamental landscaping. Ornamental plant species present around rural residential and agricultural developments include mulberry (*Morus albus*), elm (*Ulmus pumila*), ash (*Fraxinus* sp.), Lombardy poplar (*Populus nigra 'Italica'*), blue gum (*Eucalyptus globulus*), and plum (*Prunus* sp.), in part. Areas of turf and vegetable gardens are also present. The three proposed construction staging areas consist of disturbed, bare ground and ruderal and non-native vegetation. The action area contains three natural habitat communities: non-native annual grassland, open water habitat and mixed riparian woodland habitat. These three habitat types are described in more detail below.

3.2.1.1 Habitats

Non-Native Annual Grassland

Non-native annual grassland is dominated by a sparse to dense cover of non-native annual grasses and weedy annual and perennial forbs, primarily of Mediterranean origin, that have replaced native perennial grasslands as a result of human disturbance. However, where not completely out-competed by weedy non-native plant species, scattered native wildflower species and native perennial grass species considered remnants of the original vegetation may also be present. This community occurs on fine-textured, usually clay soils, which are moist or waterlogged during the winter rainy season and very dry during the summer and fall. Germination occurs with the onset of the late fall rains while growth, flowering, and seed-set occur from winter through spring. With a few exceptions, the plants are dead through the summer and fall dry season, persisting as seeds. This community usually occurs below an elevation of 3,000 feet.

Non-native grassland intergrades with other vegetation communities on site, in particular ruderal areas and alkali grassland. Non-native grass species typical of this community include wild oats (*Avena fatua*), riggut brome (*Bromus diandrus*), soft chess (*Bromus hordeaceus*), Italian ryegrass (*Lolium multiflorum*), and hare barley (*Hordeum murinum* ssp. *leporinum*). Scattered trees and shrubs in the genus *Acacia* are present in the non-native grassland in the vicinity of the action area.

Native herbaceous species typically observed within this community include California poppy (*Eschscholzia californica*), fiddleneck (*Amsinckia menziesii* var. *intermedia*), dove lupine (*Lupinus bicolor*), purple owl's clover (*Castilleja exserta* ssp. *exserta*), purple sanicle (*Sanicula bipinnatifida*), and California lomatium (*Lomatium californicum*). Also occurring in this community are scattered scrubs including poison oak (*Toxicodendron diversilobum*) and creeping snowberry (*Symphoricarpos mollis*). Scattered individuals of valley oak (*Quercus lobata*) are present in the non-native annual grassland in the vicinity of the action area.

Open Water Habitat

Open water habitat within the action area consists of South San Ramon Creek. The portion of South San Ramon Creek located adjacent to the action area has been modified to form an earthen trapezoidal flood control channel. For most of the length of the action area, the channel banks contain grassland vegetation mixed with rock. A biological resources survey of the action area and surrounding habitats was completed in June 2010 (Vinnedge Environmental Consulting 2010). At the time of the survey, the open water habitat in the channel bed was approximately 7-feet wide and less than 1-foot deep. Within the action area, ornamental landscaping is present along the west banks of the channel adjacent to Dublin High School. The Iron Horse Trail is located along the east bank of the channel and consists of a paved asphalt trail approximately 10-feet wide.

Mixed Riparian and Woodland Habitat

There is a small amount of mixed riparian and woodland habitat within the action area, although none of this habitat occurs within the proposed action footprint. This habitat type is characterized by mostly open canopy with native and non-native trees of varying maturity and size. Mixed riparian woodlands are sparsely distributed in the vicinity of South San Ramon Creek and consist of a moderately dense overstory with an open understory. Dominant shrubs typically include blue elderberry (*Sambucus mexicana*), red willow (*Salix laevigata*), and Himalayan blackberry (*Rubus discolor*). Dominant trees include big-leaf maple (*Acer macrophyllum*), Oregon ash (*Fraxinus latifolia*), and valley oak.

Riparian habitat in the study area may support a variety of urban wildlife due to the diverse vegetative species that make up the canopy cover, as well as the availability of water and food sources. The value of the riparian habitat within the action area for wildlife is diminished somewhat by the proximity and density of the residential development surrounding it. Species expected to occur within this habitat type include red-shouldered hawk (*Buteo lineatus*) and Cooper's hawk (*Accipiter cooperi*). Species observed in this habitat during site visits include black phoebe (*Sayornis nigricans*), scrub jay (*Apelocoma californica*), Anna's hummingbird (*Calypte anna*), and house finch (*Carpodacus mexicanus*).

3.2.1.2 Special-Status Species

For the purposes of this EA, special-status plant and wildlife species are defined as those species listed as endangered, threatened, or proposed for listing under the Federal Endangered Species Act (ESA), as amended (Code of Federal Regulations [CFR], Title 50, Section 17), and/or birds protected under the Migratory Bird Treaty Act (MBTA) (16 U.S. Code [USC] 703-712). As summarized below, a limited number of special-status plants and wildlife species have the potential to occur within the action area. No suitable habitat for special-status species occurs within the existing roads where the majority of the recycled water pipelines would be located.

Tables 3.2-1 and 3.2-2 provide a summary of the status and habitat requirements for each of the federally-listed species with potential to occur in the action area. Species only protected under the MBTA (i.e., not federally-listed under the ESA) are not listed in Table 3.2-2 because most bird species occurring in California fall under the protection of the MBTA. The lists in Tables 3.2-1 and 3.2-2 are a compilation of species obtained from the U.S. Fish and Wildlife Service (USFWS) species list for Alameda County, a search of the California Natural Diversity Database (CNDDB), relevant literature, knowledge of

regional biota, existing data from regional experts, and observations made during the field investigation. The potential for each species to occur in the action area was evaluated in consideration of site-specific conditions. Based on that evaluation, each species was placed into one of four categories, as defined below and indicated in Tables 3.2-1 and 3.2-2.

- **None** indicates that the action area contains a complete lack of suitable habitat, the local range for the species is restricted, and/or the species is extirpated in this region.
- **Not Expected** indicates situations where suitable habitat or key habitat elements may be present but may be of poor quality or isolated from the nearest extant occurrences. Habitat suitability refers to factors such as elevation, soil chemistry and type, vegetation communities, microhabitats, and degraded/significantly altered habitats.
- **Possible** indicates the presence of suitable habitat or key habitat elements that potentially support the species.
- **Present** indicates the target species was either observed directly or its presence was confirmed by diagnostic signs (i.e., tracks, scat, burrows, carcasses, castings, prey remains, etc.) during field investigations.

Table 3.2-1 Federally-Listed Plant Species with Potential to Occur in the Action Area

Scientific Name / Common Name	Listing Status ¹	Land Cover Type	Potential for Occurrence
<i>Amsinckia grandiflora</i> large-flowered fiddleneck	Fed: FE State: CE	non-native annual grassland	None
<i>Cordylanthus palmatus</i> palmate-bracted bird's beak	Fed: FE State: CE	alkali wetland alkali sink	None
<i>Lasthenia conjugens</i> Contra Costa goldfields	Fed: FE State: None	alkali wetland alkali sink non-native annual grassland vernal pools	None

¹Explanation of State and Federal Listing Codes

FEDERAL

FE = Listed as Endangered by the USFWS

STATE

CE = Listed as Endangered by the State of California

Table 3.2-2 Federally-Listed Wildlife Species with Potential to Occur in the Action Area

Scientific Name / Common Name	Listing Status ¹	Habitat Requirements	Habitat Suitability and Local Distribution	Potential for Occurrence
Invertebrates				
<i>Branchinecta Lynchi</i> Vernal pool fairy shrimp	Fed: FT, CH State: none	Inhabit clear to tea-colored freshwater vernal pools in grass or mud bottomed swales, or basalt flow depression pools in unplowed grasslands.	No suitable habitat within action area. No documented occurrences of this species from within 1-mile of action area.	None
<i>Branchinecta conservatio</i> Conservancy fairy shrimp	Fed: FE State: none	Endemic to the grasslands of the northern two-thirds of the Central Valley; found in large, turbid pools located in swales formed by old, braided alluvium, filled by winter/spring rains that last until June.	The action area is located outside of the species' known range.	None
<i>Branchinecta longiantenna</i> Longhorn fairy shrimp	Fed: FE, CH State: none	Endemic to the eastern margins of the Central Coast Mountains in seasonally astatic grassland vernal pools; specifically, small, clear-water depressions in sandstone and clear-to-turbid clay/grass-bottomed pools in shallow swales.	No suitable habitat within project action area. No documented occurrences of this species from within 1-mile of action area.	None
<i>Euphydryas editha bayensis</i> Bay checkerspot butterfly	Fed: FT, CH State: none	A California endemic butterfly restricted to serpentine and similar habitats. Host plant is the dwarf plantain (<i>Plantago erecta</i>).	Action area does not contain suitable serpentine habitat for this species. Species is considered extirpated from Contra Costa and Alameda counties.	None
Fish				
<i>Oncorhynchus mykiss irideus</i> Steelhead Central California Coast ESU	Fed: FT, CH State: none	An anadromous fish that spend several years in the ocean; returning to freshwater rivers and tributaries to spawn and rear.	Steelhead not currently known from action area.	None
Amphibians				
<i>Ambystoma californiense</i> California tiger salamander Central California DPS	Fed: FT, CH State: SSC	A large terrestrial salamander that inhabits seasonal/semi- permanent water sources (3-4 months in duration) and adjacent upland habitat with small fossorial mammal activity in lowland grasslands, oak savannah and mixed woodlands.	No suitable aquatic or adjacent upland habitat within action area. Critical Habitat has been designated by USFWS in Collier Canyon, east of action area.	None

Scientific Name / Common Name	Listing Status ¹	Habitat Requirements	Habitat Suitability and Local Distribution	Potential for Occurrence
<i>Rana aurora draytonii</i> California red- legged frog	Fed: FT, CH State: SSC	A medium-sized frog that inhabits lowlands & foothills in or near permanent sources of deep water with dense, shrubby or emergent riparian vegetation up to 1,500 meters in elevation.	No suitable breeding or aquatic habitat within action area. Critical Habitat has been designated by USFWS in Collier Canyon, east of action area.	None
Reptiles				
<i>Masticophis lateralis euryxanthus</i> Alameda whipsnake	Fed: FT, CH State: ST	The Alameda whipsnake is a subspecies of the California whipsnake, (<i>Masticophis lateralis</i>). Inhabits valleys, foothills, and low mountains associated with northern coastal scrub or chaparral habitat; requires rock outcrops for cover and foraging.	No suitable habitat or documented occurrences from action area.	None
Birds				
<i>Falco peregrinus</i> American peregrine falcon (nesting)	Fed: FD State: SE, FP	Typically a year-round resident in California and most common along the coast. Nests on cliffs, but frequently uses man-made structures such as bridges and buildings. Nests are generally located close to water bodies with abundant avian prey.	No suitable nesting habitat present in action area. No documented nesting from action area.	None
<i>Haliaeetus leucocephalus</i> Bald eagle (nesting & wintering)	Fed: FD State: SE, FP	Winters at lakes, reservoirs, river systems and some rangelands and coastal wetlands. Nests in large conifers near aquatic sources.	No suitable nesting/wintering habitat present in the action area.	Not Expected
Mammals				
<i>Vulpes macrotis mutica</i> San Joaquin kit fox	Fed: FE State: ST	Inhabits annual grasslands or grassy open stages with scattered shrubby vegetation; needs loose-textured sandy soils for burrowing, as well as a suitable prey base.	Action area does not contain suitable habitat or known occurrences of this species. Nearest occurrence from Brushy Peak and East Altamont Hills 20 miles northeast of action area (CDFG 2010).	None

¹ Explanation of State and Federal Listing Codes

Federal listing codes:

FE	Federally listed as Endangered
FT	Federally listed as Threatened
FD	Federally delisted
CH	Critical Habitat (Proposed or Final) is designated

California listing codes:

SE	State listed as Endangered
ST	State listed as Threatened
SSC	California Species of Special Concern
FP	Fully Protected

Special-Status Plants

There is no suitable habitat for federally-listed plants within the action area (Table 3.2-1). The roadways and shoulders associated with the action area are completely developed or landscaped and do not provide conditions to support native plants. The three potential staging areas do not provide high quality habitat for special-status plants as they consist of non-native ruderal vegetation and are routinely disturbed by disking and treated for weed control. Bore pit locations located adjacent to South San Ramon Creek would also be located in disturbed areas with predominantly ruderal species.

Special-Status Fish

The action area does not contain suitable habitat for special-status fish species (Table 3.2-2). There are no occurrences of sensitive or locally rare fish species within 1-mile of the action area (CDFG 2010). South San Ramon Creek is tributary to the drainage channel feeding Arroyo de la Laguna. According to the 2005 Center for Ecosystem Management and Restoration report on steelhead salmon (*Oncorhynchus mykiss*), no records regarding this species of fish exist for this creek (Leidy et al. 2005). Informal surveys of South San Ramon Creek indicate that the watershed does not presently support an *O. mykiss* population (Leidy et al. 2005).

Special-Status Wildlife

The developed roads, medians, road shoulders and landscaped parks and schools within the action area do not provide habitat suitable to support federally-listed wildlife species (Table 3.2-2). No federally-listed wildlife species were observed during the June 2010 field survey and the action area is not located within federally designated critical habitat (Vinnedge Environmental Consulting 2010).

Suitable nesting habitat for birds protected under the MBTA is present in the undeveloped areas east of Iron Horse Trail and within the riparian and open water habitats adjacent to the action area. However, because construction of the proposed action would not encroach into the bed or bank of South San Ramon Creek, the proposed action would not result in direct removal of nesting habitat. A brief discussion of potential indirect effects on birds, including noise disturbance during nesting, is provided in Section 3.2.3, Environmental Consequences, below.

Amphibians

The action area does not contain suitable habitat for special-status amphibian species (Table 3.2-2). The federally-threatened California tiger salamander (*Ambystoma californiense*) and California red-legged frog (*Rana draytonii*) have not been detected within 1-mile of the action area (CDFG 2010). California tiger salamanders require two major habitat components: aquatic breeding sites with large contiguous areas of vernal pools or comparable aquatic breeding habitats with multiple breeding ponds, and nearby terrestrial aestivation or refuge sites, none of which occur within the action area. California red-legged frogs are found in aquatic sites that support substantial riparian and aquatic vegetation and lack non-native predators. South San Ramon Creek is a flood control channel that lacks emergent vegetation and the banks of the creek are steep, vegetated with non-native grass, and contain little to no suitable habitat for over-wintering frogs. According to Dr. Mark Jennings, California red-legged frogs are not present at Dublin Creek, Alamo Creek [Canal] (South San Ramon Creek complex), or at the unnamed drainage at Fallon Road (Jennings pers. comm. 2010). In general, channelization of the watercourses

and presence of extensive numbers of bullfrogs (*Rana catesbeiana*) and other introduced aquatic predators, such as introduced largemouth bass (*Micropterus salmoides*), green sunfish (*Lepomis cyanellus*), western mosquitofish (*Gambusia affinis*), and Louisiana red-swamp crayfish (*Procambarus clarkii*), have resulted in habitat conditions unsuitable for native amphibians.

Reptiles

The action area does not contain suitable habitat for special-status reptile species (Table 3.2-2). There are several occurrences of the federally threatened Alameda whipsnake (*Masticophis lateralis euryxanthus*) within 5-miles of the action area (south and west) in the Pleasanton Ridge area; however all occurrences are west of I-680 and south of I-580. The action area does not contain suitable rock outcrop and grassland habitat for this species. The potential for these reptile species to occur on site was ruled out based on the disturbed condition of the creek and lack of suitable habitat.

Birds

There are several species of birds protected under the MBTA with potential to occur in or adjacent to the action area, including Cooper's hawk (nesting), sharp-shinned hawk (*Accipiter striatus*), merlin (*Falco columbarius*, wintering), western burrowing owl (*Athene cunicularia*), white-tailed kite (*Elanus leucurus*), olive sided flycatcher (*Contopus cooperi*), California horned lark (*Eremophila alpestris actia*), grasshopper sparrow (*Ammodramus savannarum*), lark sparrow (*Chondestes grammacus*, nesting), yellow warbler (*Dendroica petechia brewsteri*, nesting), Nuttall's woodpecker (*Picoides nuttallii*, nesting), Allen's hummingbird (nesting), loggerhead shrike (*Lanius ludovicianus*), Lawrence's goldfinch (*Carduelis lawrencei*) and California thrasher (*Toxostoma redivivum*). During the June 2010 field survey, biologists observed cliff swallows nesting in the bridge over South San Ramon Creek at Amador Valley Boulevard.

3.2.2 Environmental Consequences

3.2.2.1 Proposed Action

Construction noise and temporary ground disturbing activities have the potential to impact wildlife and their habitat within the action area. Operation of the proposed action could also modify soil salinity and effect existing vegetative communities, as described below.

Impact BIO-1 – Disturbance to Nesting Birds During Construction

Suitable nesting habitat for migratory birds and raptors is present within and adjacent to the action area. Implementation of the proposed action could temporarily affect common bird species and/or their nests through loss of available nesting habitat and noise disturbance during construction activities. Implementation of Mitigation Measure BIO-1, below, would reduce the potential for construction-related effects on nesting birds.

Mitigation Measure BIO-1 – Conduct Preconstruction Nesting Bird Surveys, Establish No-disturbance Buffers, and Revegetate Disturbed Areas

The following measures would be implemented by DSRSD or their contractors prior to, during, and after construction of the proposed action.

1. If construction of the proposed action begins during the breeding season (February 1st to August 31st), preconstruction nesting bird surveys should be conducted within suitable habitat by a qualified biologist no more than two weeks prior to equipment or material staging, pruning/grubbing, or surface-disturbing activities. If no active nests are found within the action area, no further mitigation is necessary.
2. If active nests (i.e., nests in the egg laying, incubating, nestling or fledgling stages) are found within 300 feet of the proposed action footprint for raptor (birds of prey) species or 100 feet of the proposed action footprint for all other bird species, no-disturbance buffers should be established at a distance sufficient to minimize disturbance based on the nest location, topography, cover, the nesting pair's tolerance to disturbance, and the type/duration of potential disturbance. Work within no-disturbance buffers should be rescheduled to occur after the young have fledged as determined by a qualified biologist. Buffer size should be determined in cooperation with CDFG and USFWS.
3. If rescheduling of work is infeasible and no-disturbance buffers cannot be maintained, a qualified biologist should be on site to monitor active nests for signs of disturbance. If it is determined that proposed action-related activities are resulting in nest disturbance, work should cease immediately and CDFG and USFWS should be contacted for further guidance.
4. Tree removal, pruning, grubbing, grading, or other construction activities conducted outside of the breeding season (i.e., September 1st to January 29th) do not require preconstruction surveys.
5. All areas along the proposed alignment disturbed by construction shall be reseeded as soon as possible after construction (but before fall rains) with a grass and forb mixture to reduce erosion hazards. All reseeded areas should be completed with a native grass and forb mixture. If landscaped vegetation is removed along existing roads or residences, it shall be replaced in kind at a 1:1 ratio with appropriate landscaping species.

Impact BIO-2 – Impact of Recycled Water on Vegetation

Recycled water can have a higher concentration of dissolved salts than potable water. With long-term use, the application of recycled water for irrigation purposes can increase the concentration of salts in the root zone, potentially affecting plant growth and/or damaging foliage. These impacts can result from an increase in the total amounts of salts in the water and irrigated soil (salinity), or from an increase in the concentration of certain individual salts, such as sodium, chloride, or boron. Of these, sodium is the only constituent that may occur in high enough concentrations in DSRSD recycled water to impact vegetative growth when applied for irrigation purposes (DERWA 1996).

Plants exhibit varying degrees of tolerance to increased salinity and sodium levels in the root zone. The principal plants grown within the customer sites associated with the proposed action are turf grasses, ornamental trees, shrubs, and ground covers. Given the wide variety of plant species present, it is not practical to predict the response of all species to the application of recycled water. As a result, a description of the anticipated response of general landscape plantings to changes in salinity and sodium are provided below.

- **Salinity.** Increased salinity levels can diminish plant growth and potentially result in plant mortality. According to DERWA (1996), levels of soil salinity greater than 4 millimhos per centimeter (mmhos/cm) should be avoided. This soil salinity level would be comparable to an irrigation water salinity level of about 2.5 to 3.0 mmhos/cm (DERWA 1996).

The average salinity of DSRSD recycled water is approximately 1.3 mmhos/cm (DERWA 2010). With water of this quality, a minimal reduction in top growth may occur on a few very sensitive landscape species. This impact is not anticipated to impair the appearance of these species, which is typically the primary purpose of ornamental plants. Turf grasses are not expected to be affected by irrigation water salinity (DERWA 1996).

- **Sodium.** High sodium in irrigation water can have two types of impacts. If the sodium adsorption ratio (SAR, a measure of the relationship between sodium, calcium, and magnesium) of the water is high, it can cause soil particles to disperse, which slows the infiltration of water into the soil. Special management practices may be necessary if the SAR of the water is greater than about 7 to 8 units (DERWA 1996). High sodium levels can also result in direct damage (e.g., wilting or discolored leaves) to highly sensitive ornamental landscape plants. A sodium level in the water greater than about 150 milligrams per liter (mg/L) could cause plant damage (DERWA 1996).

The average sodium concentration in DSRSD recycled water is about 150 mg/L and the SAR of the water is about 4.2 units (DERWA 2010). Based on available data, only a few woody ornamental species would be likely to be affected by increased levels of sodium in the root zone or on their leaves. Turf grasses should not be affected by these levels of sodium (DERWA 1996).

Implementation of Mitigation Measure BIO-2 would ensure that the application of recycled water to customer sites within the action area would have a minimal impact on existing vegetation.

Mitigation Measure BIO-2 – Irrigation Water Application Best Management Practices

The following irrigation water application best management practices (BMP) shall be implemented at customer sites under the supervision of DSRSD:

- All site managers shall be properly trained in the use of recycled water for landscape irrigation. Training shall include instruction on the appropriate quantity of irrigation water to apply to ensure adequate leaching of accumulated salts from the root zone during times when precipitation is below average.
- All customer sites shall be maintained to allow adequate surface drainage without allowing excess quantities of recycled water to drain offsite.
- Site managers shall be required to monitor the health and appearance of vegetation being irrigated with recycled water and identify any adverse effects, including a substantial reduction in growth or plant mortality.

- As necessary and depending on the exact cause of the impact (e.g., poor drainage, poor soil structure or chemistry), one of the following additional measures may be implemented if adverse effects on on-site vegetation are observed:
 - Amend the soil or irrigation water, as appropriate. For example, a calcium amendment may help prevent the breakdown of the soil structure and the consequent reduction of permeability.
 - Replace salt-intolerant plants with salt-tolerant plants.

Impact BIO-3 – Impacts to Waters of the U.S.

Although the proposed project would not encroach or disturb open water or seasonal wetland habitat in the action area, Mitigation BIO-3 would be implemented to ensure that all wetland habitats adjacent to or near the action area are avoided during construction. Of note, DSRSD has committed to maintaining a no-disturbance distance of 10-feet between the top of the bank of South San Ramon Creek and the proposed action footprint.

Mitigation Measure BIO-3 - Avoid Disturbance of Waters of the United States, Including Wetland Communities

DSRSD and the construction contractor shall avoid and minimize impacts on wetlands and other waters of the U.S. (creeks, streams, and rivers) by implementing the following measures.

- The proposed action has been designed to avoid direct and indirect impacts on wetland habitats.
- Wetland habitats that occur near the action area will be protected by installing environmentally sensitive area fencing at least 20 feet from the edge of the wetland. Depending on site-specific conditions, this buffer may be wider than 20 feet to prevent erosion and sedimentation impacts on wetland habitat. The location of the fencing shall be marked in the field with stakes and flagging and shown on the construction drawings. The construction specifications shall contain clear language stating that construction-related activities, vehicle operation, material and equipment storage, and other surface-disturbing activities are prohibited within the fenced environmentally sensitive area.
- Where determined necessary by resource specialists, geotextile cushions and other materials (e.g., timber pads, prefabricated equipment pads, or geotextile fabric) shall be used in saturated conditions to minimize damage to the substrate and vegetation.

These measures shall be incorporated into contract specifications and implemented by the construction contractor. In addition, DSRSD shall ensure that the contractor incorporates all permit conditions into construction specifications.

3.2.2.2 No-Action Alternative

There would be no potential impacts on biological resources under the No-Action Alternative because the proposed action would not be constructed and construction-related impacts would not be realized.

Potential effects on plant growth or longevity would also not be realized because potable, rather than recycled water, would be used for irrigation purposes.

3.3 Surface Water and Drainage

3.3.1 Affected Environment

3.3.1.1 Surface Hydrology

The action area lies within the Alameda Creek watershed, which is generally defined by Altamont Pass (near Livermore) to the east, Mount Diablo to the north, Mount Hamilton to the south, and its outlet to San Francisco Bay in Union City on the west. The northern portion of the watershed, which encompasses the action area, consists of the predominantly developed Livermore-Amador Valley and includes the Alamo Creek/Canal, Tassajara Creek, and Arroyo las Positas subbasins.

Two creeks, Alamo Creek and South San Ramon Creek, are located in the action area. Alamo Creek drains the area generally known as the Dougherty Valley and runs along the eastern side of the City of Dublin, near Dougherty Road. A major portion of the creek is channelized, and remaining sections have mostly been improved as a result of subdivision developments (City of Dublin 2010a). South of the action area, near I-580, the creek is joined by South San Ramon Creek and transitions into a channelized section called Alamo Canal, which continues southward past the DSRSD wastewater treatment plant in the City of Pleasanton.

South San Ramon Creek bisects the action area, generally running parallel to the Iron Horse Trail, and drains the southern San Ramon and Dublin areas. It flows through urbanized areas east of and parallel to I-680 and discharges into the Alamo Canal near Dublin Boulevard. It is completely contained within an artificial drainage channel designed for flood control and receives stormwater runoff from the developed areas in the San Ramon Valley. A crossing of South San Ramon Creek would be necessary to install the new recycled water pipelines that would serve Dublin High School, the Dublin Swim Center, Murray Elementary School, and Kolb Park.

3.3.1.2 Flood Zones

None of the proposed facilities would be located within the 100-year flood plain, as defined by the Federal Emergency Management Agency (FEMA) and mapped on the 1983 Flood Insurance Rate Map (FIRM) provided in the City of Dublin's General Plan (City of Dublin 2010a). All proposed facilities would be located within the 500-year FEMA floodplain.

3.3.1.3 Surface Water Quality

Water quality objectives for Alamo Creek are described in the San Francisco Bay Basin Water Quality Control Plan (Basin Plan). The water quality objectives established in the Basin Plan to protect existing and potential beneficial uses of surface waters associated with Alamo Creek include groundwater recharge, fish migration, fish spawning, wildlife habitat, water contact recreation, non-contact water

recreation, cold freshwater habitat, and warm freshwater habitat (RWQCB 2007). No specific beneficial uses are listed for South San Ramon Creek in the Basin Plan.

No water quality information is available from public agencies for surface water quality conditions east of Altamont Pass. Zone 7, however, monitors surface water quality at several stations in the Livermore Valley area. According to Zone 7, erosion and sedimentation are considered issues in both Alamo Creek and South San Ramon Creek; however neither are classified as having impaired water quality (ESA 2006).

3.3.2 Environmental Consequences

3.3.2.1 Proposed Action

Construction of the proposed action would not involve substantial alterations of existing drainage patterns within the action area. All pipeline trenches and areas of ground disturbance would be restored to original grade, maintaining preconstruction drainage characteristics. In areas where the pipeline would be located under pavement, the pavement would be replaced as part of the construction process. In areas where the pipeline would traverse vegetated areas, those areas would be re-vegetated as necessary to prevent erosion. No additional impermeable surfaces that could contribute to area flooding are proposed. Construction-related impacts on surface waters are described below.

From an operational perspective, there are typically two constituents of concern relative to the application of recycled water: organics and pathogens. Two pathogens of concern are *cryptosporidium* and *giardia*. Both of these pathogens are effectively removed through the recycled water treatment process (see Section 2.2.4, Project Operation) to levels that are less than existing detection limits. Both pathogens and organics are also filtered out of the recycled water as it passes through the soil structure. The net effect of both the treatment and adsorption/absorption/filtration processes are that all trace organics and pathogens of concern are removed prior to entering surface waters. As a result, operation of the proposed action would have no effect on surface waters.

Impact HYD-1 – Construction-Related Water Quality Impacts

Construction of the proposed action could leave soils exposed to rain or surface water runoff that may carry soil contaminants (e.g., nutrients, metals, hydrocarbons, or other pollutants) into waterways adjacent to the action area, degrading water quality and potentially resulting in a violation of water quality standards.

Mitigation Measure HYD -1 – Implement Best Management Practices

To minimize construction-related water quality impacts, DSRSD and their contractors would implement BMPs in accordance with the Construction General Permit administered by the SWRCB. Examples of construction BMPs include the following and would be documented in an approved Storm Water Pollution Prevention Plan (SWPPP):

- Place temporary devices, such as straw, biodegradable fiber, or sandbags to intercept sheet flow runoff and settle sediment through the barriers.

- Implement dust control measures to keep the amount of airborne dust particles to a minimum and to reduce erosion and airborne pollutants during the time between site disturbance and paving or re-vegetation.
- Implement measures to prevent construction equipment or vehicles from tracking sediments out of a work site onto paved roadways.
- Conduct all maintenance activities in a designated area designed to contain spills and prevent run-on or run-off.

Impact HYD-2 – Water Quality Impacts Associated with Frac-Out

Installation of the recycled water pipeline under South San Ramon Creek adjacent to Dublin High School and in the general vicinity of Stagecoach Park and Amador Lakes Apartments would require the use of trenchless technology construction techniques; either horizontal directional drilling or dry auger boring may be used. Horizontal directional drilling would require use of bentonite lubricant, which, under certain conditions, can leak into an adjacent waterway through a hydraulic fracture in the streambed (referred to as a “frac-out”). A site specific bore plan, as described in Mitigation Measure HYD-2, shall be prepared for all directional drilling locations to minimize the potential for a frac-out, and to identify a process for responding should one occur.

Mitigation Measure HYD -2 – Prepare a Site Specific Bore Plan

If horizontal directional drilling is used to construct the proposed action, a site specific bore plan would be prepared by the contractor responsible for directional drilling activities prior to the start of construction. This plan would include provisions for minimizing the risk of a frac-out, and for managing construction activities in the unlikely event that a frac-out was to occur. Specifically, the bore plan shall identify a process for the timely detection of frac-outs, including a description of the responsibilities for the construction site supervisor, environmental inspector, and the field crew during directional drilling activities. The bore plan shall also identify a process for implementing an organized, timely, and low-impact response to a frac-out event. Response methods shall include assessing appropriate methods for containment of frac-out slurry; the process for suspending drilling operations when the frac-out cannot be controlled or contained; and methods to recover frac-out slurry based on site specific conditions. For example, it may be appropriate to use a vacuum truck in upland areas to recover large amounts of slurry, whereas hand-placed barriers, such as collection sumps, may be more appropriate for spills in sensitive habitats.

3.3.2.2 No-Action Alternative

There would be no potential impacts on surface water or drainage under the No-Action Alternative because no construction activities would occur.

3.4 Geology, Soils and Seismicity

3.4.1 Affected Environment

The most recent U.S. Department of Agriculture Soil Conservation Service (SCS) soil survey for Alameda County was completed in 1966. All of the soils within the action area are mapped by the SCS as “Group D” soils, or soils that have a very slow infiltration rate resulting in a slow rate of water transmission. This characteristic generally indicates a higher potential for surface water runoff. However, since these surveys, extensive urban development of the action area has occurred. Importation of fill material and/or the movement and redistribution of soil during development has resulted in surface soils and soil profiles that are no longer entirely representative of those logged in the SCS surveys (DERWA 1996).

The action area lies with the hills of the California Coast Range and along the San Andreas fault system. The Calaveras Fault, which lies parallel to San Ramon Boulevard and just west of the action area, is the major active fault with rupture potential in the action area. The Pleasanton Fault, considered a minor active fault, also traverses the action area, although it is difficult to locate precisely (City of Dublin 2010a). The State Division of Mines and Geology has established Alquist-Priolo Special Study Zones along both faults, requiring detailed studies of rupture hazards prior to construction in those areas. Preliminary Special Study Zones are also designated with the action area, which can trigger the need to complete a fault rupture evaluation if multifamily dwellings or public or recreational facilities are proposed for construction (City of Dublin 2010a). All of the proposed facilities on the east side of the Iron Horse Trail (those associated with Stagecoach Park, Alamo Creek Park and Amador Lakes Apartments) would be located within a Preliminary Special Study Zone. Alamo Creek Park facilities would also be located within an Alquist-Priolo Special Study Zone (City of Dublin 2010a).

In addition, a paleontological report was completed to help determine the likelihood of finding paleontological and archaeological resources in the action area. The report indicated that subsurface excavation could encounter Pleistocene deposits below the Holocene sediments within the northwest corner of the action area (MBA 2011). Pleistocene alluvium is ranked as highly sensitive for significant paleontologic resources.

3.4.2 Environmental Consequences

3.4.2.1 Proposed Action

Construction-related impacts on soils under the proposed action are described below. Please refer to Section 3.1, Biological Resources, Impact BIO-2 –Impact of Recycled Water on Vegetation, for a discussion of the effect of potential changes in soil salinity associated with the application of recycled water.

Impact GEO-1 – Earthquake Damage to Facilities

Facilities associated with the proposed action could be affected by moderate to strong ground shaking from major earthquakes during the life of the proposed action. Due to the close proximity of the

Calaveras Fault, a major earthquake along this fault (or other currently inactive faults in the general vicinity) could produce severe ground shaking at sites within the action area.

Mitigation Measure GEO-1 – Design Proposed Action to Meet Seismic Requirements

DSRSD will ensure that all facilities associated with the proposed action conform to the most recent editions of the Uniform Building Code, the California Building Code, and the Seismic Safety element of the City of Dublin's General Plan and grading ordinance. In particular, Alamo Creek Park facilities, which would be located within the Alquist-Priolo Special Study Zone, would be designed to accommodate the maximum expected offset from fault rupture.

3.4.2.2 No-Action Alternative

There would be no potential impacts on geology or soils under the No-Action Alternative because no new infrastructure would be constructed. Similar to the proposed action, existing infrastructure delivering potable water to customer sites would also be subject to ground shaking should it occur.

3.5 Air Quality

3.5.1 Affected Environment

3.5.1.1 Ambient Air Quality

The action area is located within the Bay Area Air Basin (Air Basin), which is divided into seven subregions based on topography and climatology: Cotati and Petaluma Valleys, Diablo Valley-San Ramon Valleys, Livermore Valley, Napa Valley, Northern Alameda-Western Contra Costa Counties Region, Peninsula, and Santa Clara Valley. The action area is located within the Diablo Valley-San Ramon subregion.

Air pollutants are regulated at the national, state, and air basin level: the U.S. Environmental Protection Agency (EPA) regulates air pollutants at the national level, the California Air Resources Board (CARB) regulates air pollutants at the state level, and the Bay Area Air Quality Management District (BAAQMD) regulates air pollutants at the regional level. Currently, the Air Basin is in attainment (meets the established standard) for all national ambient air quality standards except ozone, particulate matter less than 10 microns in diameter (PM₁₀), and particulate matter less than 2.5 microns in diameter (PM_{2.5}). The Air Basin is also in attainment of all California ambient air quality standards except ozone and PM_{2.5}.

A detailed description of the regional and local climate and topography is contained in the Air Quality, General Conformity, and Greenhouse Gas Analysis Report for the proposed action (MBA 2010a). MBA (2010a) also contains a detailed description of local air quality, as measured from the Livermore-Rincon ambient air monitoring station located approximately 7.75 miles east of the action area.

Clean Air Act – General Conformity Rule

The General Conformity Rule of the Federal Clean Air Act (42 USC 7401) requires that Federal agencies ensure that their actions do not cause or contribute to a violation of national ambient air quality standards and that they are consistent with the State Plan to meet those national standards. The General Conformity Rule specifies *de minimis* thresholds for reactive organic gases (ROG) / volatile organic compounds (VOC), nitrogen oxides (NO_x), carbon monoxide (CO), and other regulated pollutants based on the severity of an area's nonattainment with the Federal standards. If a project generates less than *de minimis* thresholds, additional analysis is not required.

For the Air Basin, the *de minimis* thresholds are 50 tons per year of ROG (or VOC), 100 tons per year of NO_x, and 100 tons per year of CO. Both direct and indirect emissions are counted towards the conformity determination.

3.5.1.2 Greenhouse Gases and Climate Change

Climate change is a change in the average weather of the earth that is measured by changes in wind patterns, storms, precipitation, and temperature. These changes are assessed using historical records of temperature changes that have occurred in the past, such as during previous ice ages. Many of the concerns regarding climate change use this data to extrapolate a level of statistical significance specifically focusing on temperature records from the last 150 years (the Industrial Age) that differ from previous climate changes in rate and magnitude.

Climate change is caused by greenhouse gases (GHG) emitted all around the world from a variety of sources, such as the combustion of fuel for transportation and heat, cement manufacturing, and refrigerant emissions. In December 2009, EPA adopted two distinct findings regarding GHG under Section 202(a) of the Clean Air Act (Findings). The Findings state that the current and projected concentrations of the mix of six key GHGs—carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFC), perfluorocarbons (PFC), and sulfur hexafluoride (SF₆)—in the atmosphere threaten the public health and welfare of current and future generations. The Findings state that the combined emissions of CO₂, CH₄, N₂O, and HFCs from new motor vehicles and motor vehicle engines contribute to the atmospheric concentrations of these key GHGs and hence represent a threat to public health and welfare. The Findings do not impose any requirements on industry or other entities, but demonstrate EPA's authority to regulate GHGs under the Clean Air Act.

Worldwide, average temperatures are likely to increase by 1.8 degrees Celsius (°C) to 4°C, or approximately 3 degrees Fahrenheit (°F) to 7°F, by the end of the 21st century (IPCC 2007a). However, a global temperature increase does not translate to a uniform increase in temperature in all locations on the earth. Regional climate changes are dependent on multiple variables, such as topography. One region of the Earth may experience increased temperature, increased incidents of drought and similar warming effects, whereas another region may experience a relative cooling. According to the Intergovernmental Panel on Climate Change (IPCC) Working Group II Report, climate change impacts to North America may include diminished snowpack, increased evaporation, exacerbated shoreline erosion, exacerbated inundation from sea level rising, increased risk and frequency of wildfire, increased

risk of insect outbreaks, increased experiences of heat waves, and rearrangement of ecosystems as species and ecosystem zones shift northward and to higher elevations (IPCC 2007b).

For California, climate change has the potential to incur/exacerbate the following environmental impacts (CAT 2006):

- Reduced precipitation;
- Changes to precipitation and runoff patterns;
- Reduced snowfall (precipitation occurring as rain instead of snow);
- Earlier snowmelt;
- Decreased snowpack;
- Increased agricultural demand for water;
- Intrusion of seawater into coastal aquifers;
- Increased agricultural growing season;
- Increased growth rates of weeds, insect pests and pathogens;
- Inundation of low-lying coastal areas by sea level rise;
- Increased incidents and severity of wildfire events; and
- Expansion of the range and increased frequency of pest outbreaks.

Although certain environmental effects are widely accepted to be a potential hazard to certain locations, such as rising sea level for low-lying coastal areas, it is currently infeasible to predict all environmental effects of climate change on any one location.

3.5.2 Environmental Consequences

3.5.2.1 Proposed Action

Construction of the proposed action would require the use of construction equipment that generate exhaust emissions and air pollutants, including NO_x, ROG, PM₁₀, and PM_{2.5}. Ground disturbing activities would also generate fugitive dust, and paving operations would result in the release of ROG. The following summarizes potential construction-related air quality impacts, including the potential generation of GHG. Detailed analysis of the proposed action's emission generating activities and estimated emissions are provided in the Air Quality, General Conformity and Greenhouse Gas Analysis Report for the proposed action (MBA 2010a).

From an operational perspective, the proposed action would reduce air pollutant and GHG emissions by reducing the distance that water would need to be pumped to irrigate customer sites within the action area.

Impact AQ-1 – Construction-Generated Regional Air Pollutants

Construction emissions would likely vary day-to-day, depending on the level of activity, the specific type of operation, and the prevailing weather conditions. It is highly unlikely that all construction activity types associated with the proposed action (e.g., trenching, excavation, pipe installation, directional drilling) would occur on the same day; however, if they did, the proposed action's generation of regional air pollutants would exceed the BAAQMD's daily emission rate threshold for NOx. Implementation of Mitigation Measure AQ-1 would minimize the potential for this impact to be realized.

Mitigation Measure AQ-1 –Equipment Use and Maintenance

During construction of the proposed action, the construction contractor shall ensure horizontal directional drilling does not occur on the same day as either excavation and shoring activities or pipe installation and backfill activities. Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure [13 CCR 2485]). Clear signage stating the same shall be provided for construction workers at all staging areas and work access points.

The construction contractor shall also ensure all construction equipment is maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.

Impact AQ-2 – Construction-Generated Local Air Pollutants

Construction of the proposed action would result in the generation of fugitive dust associated with disturbance of exposed soil (mainly PM10) and road dust entrained from vehicles transiting through construction sites (both PM10 and PM2.5) (MBA 2010a). Implementation of Mitigation Measures AQ-1 and AQ-2 would reduce the potential for adverse localized dust impacts during construction.

In addition, the proposed action's use of diesel-powered construction equipment would emit diesel particulate matter (DPM). Risk assessments for residential areas exposed to toxic air contaminants (TACs) are generally based on a 70-year period of exposure. Construction emissions are estimated to be generated over the course of 6 months. Since the use of construction equipment would (1) be temporary and not be close to the 70-year timeframe, and (2) would not occur in a single location but be spread out geographically, exposure of sensitive receptors to TACs would not be substantial. Emissions of DPM would not be substantial enough to be considered a significant health risk.

Mitigation Measure AQ-2 – Implement Air Quality Best Management Practices in Accordance with BAAQMD Guidance

The following air quality BMPs will be implemented by the construction contractor in accordance with BAAQMD guidance:

- All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.
- All haul trucks transporting soil, sand, or other loose material off-site shall be covered.

- All visible mud or dirt tracked onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.
- All vehicles speeds on unpaved roads shall be limited to 15 miles per hour (mph).
- All roadways, driveways and sidewalks to be paved shall be completed as soon as possible.
- A publicly visible signs shall be posted with the telephone number and person to contact regarding dust complaints. This person shall respond and take corrective action within 48 hours of a complaint or issue notification. The BAAQMD's phone number shall also be visible to ensure compliance with applicable regulations.

Impact AQ-3 – Construction-Related Greenhouse Gas Generation

Construction of the proposed action would contribute to climate change impacts through its contribution of GHG. Construction-related GHG emissions would be associated with the exhaust of construction equipment and vehicles used to haul equipment and employees to and within the action area. As summarized in the GHG emissions inventory from construction activities (MBA 2010a), the proposed action would result in approximately 350 metric tons of CO₂ equivalent (MTCO₂e) over the duration of construction.

Because construction-related emissions would be finite in nature, below the minimum standard for reporting requirements under California State Assembly Bill 32, and because the BAAQMD does not have a construction-generated GHG threshold, the GHG emissions related to construction of the proposed action are not considered a cumulatively considerable contribution to global climate change.

Impact AQ-4 – Reduced Operation-Related Greenhouse Gas and Air Pollutant Emissions

It is anticipated that operation-related air pollutant and GHG emissions would be reduced as a result of the proposed action. Currently, potable water is used to irrigate landscaping associated with the schools, parks, streetscapes and medians in the action area. Potable water is procured from a variety of sources, pumped to the general vicinity of the action area, treated and distributed to facilities as irrigation water. Similarly, recycled water is generated at DSRSD's wastewater treatment plant, which is located 3 miles south of the action area, and pumped out of the action area to meet other irrigation needs. Utilization of recycled water, rather than potable water, to meet irrigation needs within the action area would reduce emissions associated with pumping, treatment and conveyance of potable water from sources farther away from the action area, as well as emissions associated with pumping recycled water to areas further away from the DSRSD wastewater treatment plant. Use of recycled water to meet irrigation demand in the action area would offset the use of up to 203.1 acre feet (66.18 million gallons) of potable water each year and result in a reduction of GHG emissions of up to 118 MTCO₂e per year at project build-out (MBA 2010a).

Impact AQ-5 – General Conformity

Construction of the proposed action would result in the emission of approximately 3.3 tons of NO_x, 0.5 tons of VOC, and 2.0 tons of CO (MBA 2010a). These levels are below the annual *de minimis* thresholds

for these constituents (i.e., 100 tons, 50 tons, and 100 tons, respectively). Therefore, the proposed action would conform to the Clean Air Act.

3.5.2.2 No-Action Alternative

As described above, continued use of potable water to irrigate lands within the action area would result in more substantial air pollutant and GHG emissions when compared to the use of recycled water for the same purposes, as prescribed under the proposed action. An additional 118 MTCO₂e of GHG would be emitted per year to deliver potable water to irrigate proposed action facilities under the No-Action Alternative.

No construction-related air pollutant emissions would be associated with the No-Action Alternative.

3.6 Noise

3.6.1 Affected Environment

3.6.1.1 Ambient Noise Levels

Vehicular traffic on freeways and major thoroughfares is the primary source of noise in the action area. Other noise sources may include overflights from Livermore Airfield.

Ambient noise levels were not measured for the assessment in this EA. However, the City of Dublin General Plan contains projected noise exposure contours for the action area. Noise exposure contours were plotted for 1983 (based on noise measurements and traffic data) and projected to 2005 based on traffic volume increases. These contours represent ambient noise levels for 2005 and are presented in decibels (dB). The dB is a logarithmic unit that expresses the ratio of the sound pressure level being measured to a standard reference level. The majority of the action area is located within the 65 dB contour line, as shown on the 2005 Projected Noise Exposure Contours for the City of Dublin, with some portions located within the 60 dB contour line (City of Dublin 2010a). Portions of the action area along Amador Valley Boulevard and Village Parkway are located within the 70 dB contour line (City of Dublin 2010a).

The City of Dublin establishes project specific hours during which construction activities are allowed. The hours depend in part on proximity to residential areas, and are part of the conditions of approval by the City for development. In general, the City allows construction on roadways to occur between 7:30 am and 5:00 pm.

3.6.1.2 Sensitive Receptors

For the purposes of this EA, a “sensitive noise receptor” is a land use in which there is a reasonable degree of sensitivity to noise. Such uses include single-family and multi-family residential uses, schools, hospitals, churches, rest homes, cemeteries, and public libraries. Sensitive noise receptors within the

action area include residential areas, schools, and churches, particularly those located along existing roadways where new recycled water pipelines would be installed.

3.6.2 Environmental Consequences

3.6.2.1 Proposed Action

Operation of the proposed action would not result in increased traffic or other noise-generating activities in the action area. Noise impacts associated with construction of the proposed action are described below.

Impact NOISE-1 – Construction-Related Noise Generation

Table 3.6-1 summarizes typical construction equipment noise levels. The proposed action would only produce noise during the construction phase and would not expose sensitive receptors to permanent, excessive noise levels. In addition, because construction activities would occur in a linear fashion, any one receptor would only be exposed to construction-generated noise for a short duration prior to activities continuing down the pipeline. Implementation of Mitigation Measure NOISE-1 would reduce construction-related noise impacts in and around sensitive noise receptors.

Table 3.6-1 Typical Construction Noise Generation

Construction Equipment	Noise Level (dBA)*
Front Loaders	79
Compressors	81
Cranes	83
Trucks	91
Pavers	89
Backhoes	85

Source: DERWA 1996

* Average noise level 50 feet from the source

Mitigation Measure NOISE-1 - Limit Timing and Equipment Used During Construction

The construction contractor will adhere to all local ordinances regulating hours of construction to minimize the potential for sleep disturbance and annoyance to sensitive noise receptors in the action area. As noted above, the City of Dublin typically requires that construction be limited to daytime hours (between 7:30 am and 5:00 pm). To minimize construction noise generation, all equipment shall be outfitted with mufflers equal or superior in noise attenuation to those provided by the manufacture of the equipment. In addition, idling equipment will be shut off and temporary or portable acoustic barriers will be installed around stationary construction noise sources that are located in proximity to potentially sensitive noise receptors.

3.6.2.2 No-Action Alternative

There would be no potential noise impacts under the No-Action Alternative because no construction-related noise would be generated.

3.7 Transportation / Traffic

3.7.1 Affected Environment

The action area is located within an existing developed community, primarily along roadways. The most prominent features of Dublin's transportation network are I-580, which forms the southern boundary of the City, and I-680, which bisects Central Dublin. Other major thoroughfares in and around the action area include Dublin Boulevard, Village Parkway, Amador Valley Boulevard, Dougherty Road, and Alcosta Boulevard. Village Parkway and Amador Valley Boulevard are classified as main arterial roadways by the City of Dublin (City of Dublin 2010a). Dougherty Road is considered a Route of Regional Significance in the Tri-Valley Transportation Council's Tri-Valley Transportation Plan/Action Plan (City of Dublin 2010a). This designation requires that the City make a "good faith effort" to maintain a Level of Service (LOS) D on arterial segments and at intersections. On all other roads in the action area, the City strives to "...phase development and road improvements so that the operating LOS for intersections shall not be worse than LOS D" (City of Dublin 2010a).

There are also numerous existing bicycle facilities in the action area. Bicycle facilities are designated as Class I, Class II, or Class III bikeways, with Class I providing the least separation of cyclists from vehicular traffic and Class III providing the most. The Iron Horse Regional Trail, a Class III bikeway, is located within the action area.

3.7.1.1 Traffic Flow Requirements During Construction

The City of Dublin generally permits construction on roadways to occur between 7:30 am and 5:00 pm, and lane closures are permitted on main arterial roadways between 9:00 a.m. and 3:30 p.m. Project specific requests for roadway work are individually considered based on their proximity to both residential areas and main arterial roadways, and require preparation of a traffic management plan prior to the start of construction.

3.7.2 Environmental Consequences

3.7.2.1 Proposed Action

The proposed action would not result in increased or additional traffic through the action area after construction is complete. Potential construction-related traffic and transportation service impacts are described below.

Impact TRANS-1 – Construction-Related Traffic Disturbance

The proposed action would result in construction activities within existing roadways, thereby temporarily reducing the capacity of those roadway segments during construction. Construction in existing roadways may also result in temporary closure of bike lanes and disruption of public transit services. Implementation of Mitigation Measures TRANS-1 and TRANS-2 would minimize temporary, construction-related impacts on traffic and transportation resources.

Mitigation Measure TRANS-1 - Prepare Traffic Management Plan

DSRSD or its contractor shall prepare a traffic management plan for review and approval by the City of Dublin. The traffic management plan shall address bike and vehicle travel through construction zones and the use of flaggers and off-peak construction hours. Coordination with the East Bay Regional Parks District will be necessary to maintain adequate access along the Iron Horse Trail, and at intersection crossings. Cones and/or other similar temporary traffic flow control devices will be used where necessary to establish bike and/or vehicle lanes through construction zones to protect bicyclists from construction activities and vehicle traffic, and to provide for adequate vehicle movement. Where vehicle lanes within heavily traveled roadways will be closed as a result of roadway crossings, lane closure plans should be employed in accordance with municipal traffic management requirements. Where the width of the roadway will preclude establishing temporary lanes in two directions, and where acceptable detour routes are not available, flaggers will be used to maintain two-way traffic flow.

Mitigation Measure TRANS-2 - Coordinate with Transit Providers

DSRSD shall coordinate with transit providers in the City of Dublin, including Bay Area Rapid Transit (BART), Livermore Amador Valley Transit (WHEELS), and the Alameda-Contra Costa Transit District, to temporarily relocate bus stops along roadways during construction and ensure uninterrupted service, as required.

Impact TRANS-2 – Displaced Access to Adjacent Properties

The proposed action may temporarily displace access to some private or commercial properties during trenching operations. Implementation of Mitigation Measure TRANS-3 would minimize this impact.

Mitigation Measure TRANS-3 – Notify Adjacent Property Owners of Construction Activities

DSRSD (or its contractor) shall notify adjacent property owners of construction schedules and develop a traffic management plan (Mitigation Measure TRANS-1) that provides for temporary access to impacted properties. For highly sensitive land uses, such as schools and emergency services, access plans will be coordinated with the facility owner or administrator, and local police departments.

3.7.2.2 No-Action Alternative

There would be no potential impacts to roadways or pedestrian or bicycle infrastructure under the No-Action Alternative because no construction would occur.

3.8 Hazardous Materials

3.8.1 Affected Environment

A material is considered hazardous if it appears on a list of hazardous materials prepared by a Federal, state, or local agency, or if it has characteristics defined as hazardous by such an agency. Chemical and physical properties such as toxicity, ignitability, corrosivity, and reactivity may cause a substance to be considered hazardous. These properties are defined in 22 CCR 6621.20-6621.24. A “hazardous waste” is any hazardous material that is discarded, abandoned, or to be recycled. The criteria that render a material hazardous also make a waste hazardous (California Health and Safety Code, Section 25117).

According to this definition, fuels, motor oil, and lubricants typical at a construction site, as well as lead built up along roadways could be considered hazardous. Excavation and trenching to install irrigation pipelines may expose buried hazardous materials resulting from prior use of the proposed site or adjacent property. In addition, in some instances, untreated wastewater could contain constituents that could be considered hazardous to public health.

A search of the California Department of Toxic Substances Control EnviroStor Database revealed that there are no toxic waste sites within the action area. The closest site is a Federal Superfund site located on San Ramon Road about one mile west of the action area (California Department of Toxic Substances 2010).

3.8.2 Environmental Consequences

3.8.2.1 *Proposed Action*

Construction of the proposed action has the potential to expose construction personnel and/or the public to unknown hazardous materials or contaminated soils, as described below. Potential human health risks associated with exposure to recycled water are also described below.

Impact HAZMAT-1 – Exposure to Hazardous Materials or Contaminated Soils During Construction

Although not known to exist in the action area, it is possible that the public or construction personnel could be exposed to unknown hazardous materials or contaminated soils during construction of the proposed action. Implementation of Mitigation Measure HAZMAT-1 would reduce the potential for this impact to occur.

Implementation of Mitigation Measure HYD-1 (see Section 3.3, Surface Water and Drainage) would minimize the potential for hazardous waste materials to be introduced inadvertently into sensitive areas, or to be abandoned within construction areas, and would reduce the potential for exposure of construction workers to construction-related hazardous materials (e.g., oils and lubricants).

Mitigation Measure HAZMAT-1 – Hazardous Material Site Safety Plans

The construction contractor shall develop site safety plans to address the potential for encountering hazardous materials during trenching and/or trenchless construction adjacent to the Iron Horse Trail. The site safety plans will also identify protocols for employing personal protective equipment to prevent exposure to unknown hazardous materials.

Impact HAZMAT-2 – Recycled Water Effects on Human Health

Recycled water is derived from wastewater. Untreated wastewater can result in human health risks associated with exposure to pathogens or other potentially dangerous constituents, such as heavy metals, nitrates, and salts. However, the recycled water produced by the DSRSD treatment plant meets the stringent Title 22 requirements for unrestricted use (see Section 2.2.4, Project Operation). This level of treatment has proven to be fully protective of human health with regard to microbial pathogens. Because of the extensive level of treatment required, recycled water can be safely used for a variety of uses, including landscape irrigation. As noted in Section 2.2.4, Project Operation, special signage will be posted in areas where recycled water is used. For these reasons, use of recycled water for landscape irrigation at proposed action facilities would not pose a threat to public health.

3.8.2.2 No-Action Alternative

There would be no potential impacts to the public, construction workers, or the environment from exposure to hazardous materials under the No-Action Alternative because no construction would occur.

3.9 Land Use

3.9.1 Affected Environment

The action area is predominantly suburban in character and consists primarily of residential, light commercial, and open space uses. The proposed pipeline corridors would be located primarily in existing roadways adjacent to residential (single-family and/or medium density) uses. Most of the sites served by the proposed action facilities are designated in the City of Dublin's General Plan as Public / Semi-Public; the only exceptions are Amador Lakes Apartments, which is designated as medium-density residential use, and Alamo Creek Park, which is designated as Parks / Public Recreation (City of Dublin 2010a). South San Ramon Creek is designated as a stream corridor in the General Plan.

Potential construction Staging Areas 1 and 2 are designated for Parks / Public Recreation uses in the General Plan. However, in practice, Potential Staging Area 1 would be located in an empty 1/3 acre lot on the north side of Amador Valley Boulevard. Similarly, Potential Staging Area 2 would be located on an empty 3/4 acre lot on the south side of Amador Valley Boulevard just east of the Iron Horse Trail. Neither of these areas are currently used for recreational purposes.

3.9.2 Environmental Consequences

3.9.2.1 *Proposed Action*

None of the proposed action facilities would be incompatible with current or planned land uses in or adjacent to the action area once they are installed and operational. The proposed pipeline corridors would generally follow existing streets to minimize disruption to the environment adjacent to these routes, and would not result in any long-term land use impacts. Construction-related land use impacts are described below.

Impact LU-1 – Temporary Disruption of Land Uses by Facilities Construction

Construction of the proposed action could result in short-term, construction-related disruption to land uses adjacent to the construction zone, including residences and school / recreation sites being serviced by proposed action facilities. These impacts could include increases in airborne dust, noise levels, and traffic congestion, as described in the Air Quality, Noise, and Traffic and Transportation sections of this EA, respectively. In addition, temporary staging areas for the storage of equipment, pipe, and other construction materials could result in temporary disruption of some land uses. These construction-related impacts would be short-term and would not affect current planned land uses within or in close proximity to the action area.

Implementation of Mitigation Measure LU-1 would ensure that all land owners are aware of potential temporary construction-related disruptions prior to implementation of the proposed action.

Mitigation Measure LU-1 – Notification of Temporary Disruption

DSRSD would provide advance notification to all land uses adjacent to construction zones and would provide opportunity for property owner / public input to the construction disruption management process.

3.9.2.2 *No-Action Alternative*

There would be no impacts to land uses within the action area under the No-Action Alternative because no construction-related temporary disruptions would occur.

3.10 Recreation

3.10.1 **Affected Environment**

Within the City of Dublin, there are approximately 22 acres of neighborhood parks, 36 acres of community parks and facilities, and 90 acres of open space (City of Dublin 2010a). There are also several existing trail networks that traverse the action area, including bikeways along Amador Valley Boulevard, Village Parkway, and Dougherty Road; a bike path that runs along Alamo Creek; and a regional trail link along the Iron Horse Trail. Additional, proposed bicycle routes and support facilities both within and in

the general vicinity of the action area are identified in the City's Bikeways Master Plan (City of Dublin 2010a).

The proposed action would provide irrigation water to several sites used for recreation within the action area, including grass fields and related outdoor school recreational facilities (e.g., ball fields) associated with Wells Middle School, Valley High School, Frederickson Elementary School, Dublin High School, and Murray Elementary School; Cronin Park; the Dublin Swim Center; Kolb Park; Stagecoach Park; and open areas used for various recreational uses in and around the Amador Lakes Apartment Complex.

3.10.2 Environmental Consequences

3.10.2.1 Proposed Action

The proposed action would not cause an increase in population or in the use of existing neighborhood or regional parks or recreational facilities, nor result in substantial physical deterioration to any existing recreational facilities. It would also not result in the construction or expansion of recreational facilities. Short-term construction-related impacts on recreational use and/or access are described below.

Impact REC-1 – Temporary Disruption of Recreational Access and Use

The proposed action may temporarily disturb access to limited portions of some of the recreational areas served by facilities associated with the proposed action, and/or the bikeways and trails that traverse the action area. These temporary disturbances would be limited in duration and would not result in the permanent displacement of recreational use or access at any location. Implementation of Mitigation Measure TRANS-1 (see Section 3.7, Transportation and Traffic) would reduce temporary impacts to bicycle lanes within the action area. Implementation of Mitigation Measure LU-1 (see Section 3.9, Land Use) would ensure that affected land owners are aware of potential temporary construction-related disruptions prior to implementation of the proposed action.

3.10.2.2 No-Action Alternative

There would be no potential impacts to recreation facilities or recreational use under the No-Action Alternative because construction activities would not occur.

3.11 Visual Resources

3.11.1 Affected Environment

The action area is generally urban and suburban in character. Visual characteristics are typical of residential, commercial, and/or open space uses. Due to the generally flat terrain, views are limited in distance. I-680, which bounds the western side of the action area, is officially designated as a State Scenic Highway, which requires special measures by local governments to protect views along the travel corridor.

3.11.2 Environmental Consequences

3.11.2.1 Proposed Action

Overall, the proposed action would not result in a long-term aesthetic impact. No new above-ground infrastructure, such as booster pump stations or water meters, would be constructed. Construction-related disturbance has the potential to temporarily alter short-range (10 to 20 feet) and medium range (more than 20 feet away) views of the construction area; however those impacts would be short-term and unlikely to affect sensitive viewsheds or viewers within the action area.

3.11.2.2 No-Action Alternative

Under the No-Action Alternative, there would be no impacts on visual resources within the action area because no construction activities would occur.

3.12 Utilities and Public Services

3.12.1 Affected Environment

3.12.1.1 Fire Protection Services

Fire protection services within the action area are under contract with the Alameda County Fire Department (City of Dublin 2010b). There are three fire stations in the City of Dublin. The closest station to the action area is located on Donohue Drive, about 2 miles west of the action area.

3.12.1.2 Police Services

Police protection services for the City are performed under contract with the Alameda County Sheriff's Office. Patrol, criminal investigation, crime prevention, and some business office functions are performed at their Civic Center location (less than 1 mile south of the most northern portion of the action area) (City of Dublin 2010b).

3.12.1.3 Energy

Pacific Gas & Electric (PG&E) provides natural gas and electricity service to the action area.

3.12.1.4 Wastewater and Sewage Treatment

Wastewater and sewage treatment service within the action area is provided by DSRSD at their treatment plant in the City of Pleasanton, which is located about 3 miles south of the action area. DSRSD effluent from the plant is currently discharged through the LAVWMA outfall to the EBDA pipeline into San Francisco Bay.

3.12.1.5 Water Supply

The City of Dublin's water supply is provided by DSRSD. Zone 7 is a wholesaler of potable water to DSRSD. Potable water lines are generally located below ground in public rights of way and in easements.

Recycled water for the proposed action will be produced at the existing DSRSD recycled water treatment facility in the City of Pleasanton. This facility currently produces 2,149 acre-feet of recycled water per year but has the capacity to produce 12.2 million gallons per day, or the equivalent of 13,675 acre-feet per year.

3.12.1.6 Solid Waste

Currently, Amador Valley Industries holds the Solid Waste Collection franchise for the City of Dublin (City of Dublin 2010b).

3.12.2 Environmental Consequences

3.12.2.1 Proposed Action

Construction of the proposed action has the potential to result in temporary disruptions of access to various public services and utilities, and may require the relocation of existing utility infrastructure.

Impact UPS-1 – Interruption of Services and Utilities

Municipal and utility services could be delayed or interrupted by construction activities associated with the proposed action. This could include re-routing of emergency services, difficulty in reaching service locations, and interruption of gas, electric, water, and other utility services provided to properties along the pipeline alignments. Prior to construction, DSRSD would coordinate with the City of Dublin and utility providers to determine the most appropriate way to avoid service delays and utility interruptions. No mitigation is required.

Impact UPS-2 – Potential Relocation of Infrastructure

Construction within easements and ROW's that are used by other agencies or utilities may create situations where pipes, cables, and related appurtenances may need to be temporarily or permanently relocated. DSRSD would coordinate with and seek approval from necessary utility providers and/or other agencies if it is determined during final design that any utility infrastructure would need to be relocated to implement the proposed action. No mitigation is required.

Impact UPS-3 –Energy Use

Construction of the proposed action would require the use of energy resources, mostly derived from non-renewable sources. However, it is anticipated that operation related energy use would be reduced as a result of the proposed action because recycled water, which would require less pumping and associated energy cost, would be used for irrigation purposes. No mitigation is required.

3.12.2.2 No-Action Alternative

The purposes of the proposed action are to expand utilization of available recycled water to customers that are currently using potable water for irrigation, and to reduce energy consumption associated with the delivery of irrigation water to proposed action customer sites. Under the No-Action Alternative, DSRSD would continue to use potable water for irrigation purposes at the eleven proposed action customer sites. This continued use of potable water from the San Francisco Bay Delta and the SWP would adversely impact already limited water supplies in the Bay Area. In addition, energy usage would be higher under the No-Action Alternative because, rather than utilizing recycled water for irrigation purposes, potable water would be pumped at a higher energy cost to its San Francisco Bay disposal site.

3.13 Socioeconomics and Environmental Justice

3.13.1 Affected Environment

Information on the population in the State of California, Alameda County, and the City of Dublin, including ethnic composition and income levels, is based on data provided by the American Community Survey (ACS), a nationwide survey by the U.S. Census Bureau to provide communities with updated trend information between official Census data collection periods. The data presented in this section is based on information collected between 2006 and 2008.

3.13.1.1 Population

The estimated population of the City of Dublin in 2008 was 44,516 which, at that time, was about 3 percent of the population of Alameda County and less than 1 percent of the total population of the State of California (U.S. Census Bureau 2008). According to the U.S. Census Bureau, between 2000 and 2006, the population of the City of Dublin grew by 39.2 percent, which was substantially higher than the state-wide population growth rate of 7.6 percent (U.S. Census Bureau 2008).

Environmental Justice Populations

Title VI of the Civil Rights Act and Executive Order 12898, Environmental Justice, requires Federal agencies to identify minority and low income populations in areas where the effects of a proposed action on human health and the environment would be disproportionately high or adverse. The following sections describe the ethnic composition and income characteristics of the City of Dublin, which encompasses the action area, as well as Alameda County and the State of California.

Ethnic Composition

Table 3.13-1 summarizes population composition by ethnic group for the State, Alameda County, and the City of Dublin. About 51.8 percent of the population in the City of Dublin identified themselves as White in the 2006-2008 ACS, which was larger than the percentage of persons in Alameda County (37.1 percent) or the State (42.6 percent). In general, the populations of Black and Asian persons in the City and County were higher than in the State, while the populations of Hispanic and Latino populations were lower (U.S. Census Bureau 2008).

Table 3.13-1 Population Composition by Ethnic Group

Ethnic Group	City of Dublin (percent)	Alameda County (percent)	State or California (percent)
White	51.8	37.1	42.6
Hispanic or Latino	13.6	21.4	36.1
Black	9.2	12.6	6.0
Asian	19.8	24.4	12.1
All Other Races ¹	5.7	5.2	3.2

Source: U.S. Census Bureau 2008

¹ Includes persons that identified themselves in the census as American Indian and Alaskan Native; Native Hawaiian and Other Pacific Island; two or more races; or "some other race".

Income

Table 3.13-2 summarizes the median household income and number of households in poverty in Alameda County and the State in 2008, as estimated by the Small Area Income and Poverty Estimates (SAIPE) program of the U.S. Census Bureau (U.S. Census Bureau 2009). Poverty status is determined by comparing an income threshold to specific characteristics of a given family (i.e., number of people, number of related children under 18, whether or not the primary householder is over age 65). If a family's income is below that threshold, the family is considered to be in poverty.

The median household income in Alameda County (\$70,217) in 2008 was higher than that for the State (\$61,107). The number of families in poverty in the County (10.4 percent) was lower than the percentage in the State (13.3 percent) (U.S. Census Bureau 2009) (Table 3.13-2).

The 2006-2008 ACS also provided an estimate of families in poverty. The ACS found that 3.9 percent of the population in the City of Dublin met the definition of a family in poverty, compared to 10.6 percent in the County and 12.7 percent in the State (U.S. Census Bureau 2008).

Table 3.13-2 Median Household Income and Population in Poverty in 2008

Area	Median Household Income (dollars)	Population in Poverty	
		Individuals	Percent
Alameda County	70,217	150,203	10.4
State of California	61,107	4,781,201	13.3

Source: U.S. Census Bureau 2009

¹ Small Area Income and Poverty Estimates are model based estimates. The limitations of the model estimates are described in detail at <http://www.census.gov/did/www/saipe/about/index.html>.

3.13.1.2 Employment

Of the nine counties that comprise the Bay Area (i.e., Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, and Sonoma counties), Alameda County is the second largest, with a population in 2009 of 1,457,169 (U.S. Census Bureau 2008). The Bay Area is considered one of

the busiest urban centers in California and employment growth for Alameda County is driven in large part by the need to provide services to an increasing Bay Area population.

The California Employment and Development Department (EDD) estimated the total labor force in Alameda County in May 2010 to be 754,500, reflecting an unemployment rate of 11.1 percent. This unemployment rate has decreased from its recent higher of 11.9 percent recorded in January 2010 and is lower than the State average unemployment rate of 11.9 percent (EDD 2010). Comparatively, the City of Dublin has historically had a very low unemployment rate. Over the past 10 years, the City's unemployment rate has been over 50 percent lower than the State's average and is currently estimated to be around 4.0 percent (City of Dublin 2010b).

3.13.2 Environmental Consequences

3.13.2.1 Proposed Action

Population trends in the action area would not be affected by implementation of the proposed action because the proposed action is not anticipated to create any additional long-term employment opportunities that could employ new staff. It is also unlikely that the proposed action would have a different or disproportionate effect on minority or low income populations. None of the potential effects identified in this EA (e.g., construction-related air quality, noise, and traffic impacts) would be realized exclusively by a minority or low income population, or in a way that would result in a disproportionate effect on a minority or low income community, either as a result of the nature or location of the specific impact.

3.13.2.2 No-Action Alternative

The No-Action Alternative would not impact low income or minority populations, or affect population trends in the action area because it would not create any new employment opportunities, or require construction activities with a potential to affect low income or minority populations.

3.14 Cultural Resources

3.14.1 Affected Environment

An assessment of the potential for the action area to support cultural resources, including prehistoric, historic, archaeological, and Native American resources, was completed in September 2010 and revised in June 2011 (MBA 2011). This assessment considered an Area of Potential Effect (APE) that included all areas that could be directly or indirectly affected by construction activities, including streets, associated easements, and proposed staging areas, as well as a vertical APE of up to 9 feet deep.

The action area lies within the San Ramon and Livermore-Amador valleys, which are situated within the *Chochenyo* territory of the Ohlone Indians. The action area is also located within the historic Murray township of Alameda County. Results from contact with the Native American Heritage Commission (NAHC) failed to indicate the presence of Native American cultural resources in the immediate action

area. None of the Native American tribal members contacted in the summer of the 2010 responded with concerns specific to the proposed action (MBA 2011). In addition, no Native American archaeological sites or resources have been previously recorded within 0.50-mile radius of the APE (MBA 2011).

No prehistoric, archaeological, or historic resources have been previously recorded within the APE or within a 0.5-mile radius of the APE. Two historic properties, a channelized section of South San Ramon Creek, and a 4,700 foot portion of railroad grade east of the Iron Horse Trail (possibly associated with the Southern Pacific Railroad San Ramon Branch line) were observed within the APE during a pedestrian survey conducted in June 2010 (MBA 2011). Both properties were evaluated for eligibility for listing on the National Register of Historic Places (NRHP); however, neither met any of the four eligibility criteria and are not considered eligible (MBA 2011).

Given the fact it is unlikely the proposed action would disturb intact soils or features, and that there are no known Native American archaeological sites or resources, or prehistoric, archaeological, or historic resources within the APE, it is anticipated the proposed action would have no effect on cultural resources.

3.14.2 Environmental Consequences

3.14.2.1 Proposed Action

The proposed action would be constructed primarily within existing roadways in an urban, developed environment, in areas where soils have generally been previously disturbed, and which do not coincide with locations of known archaeological and/or historic sites. However, construction activities have the potential to impact cultural resources not currently known to exist in the action area, as described below.

Impact CUL-1 –Discovery of Unknown Human Remains

The proposed action may uncover previously unknown human remains. These resources are protected under a variety of Federal, state, and local laws, including but not limited to the National Historic Preservation Act (NHPA) and CEQA. Implementation of Mitigation Measure CUL-1 would minimize potential impacts to human remains should they be discovered during construction of the proposed action.

Mitigation Measure CUL-1 – Protect Human Remains

The following procedures, as outlined in Public Resources Code (PRC) Section 5097.98 and Section 7050.5 of the California Health and Safety Code, shall be implemented by DSRSD in the event of an accidental discovery or recognition of human remains within the action area.

- There shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent human remains until the County Coroner is contacted to determine if the remains are Native American and if an investigation of the cause of death is required. If the coroner determines the remains to be Native American, the coroner shall

contact the NAHC within 24 hours, and the NAHC shall identify the person or persons it believes to be the “most likely descendant” of the deceased Native American. The most likely descendant may make recommendations to the landowner or the person responsible for the excavation work, for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods as provided in PRC Section 5097.98, or where the following conditions occur, the landowner or his/her authorized representative shall rebury the Native American human remains and associated grave goods with appropriate dignity either in accordance with the recommendations of the most likely descendent or within the action area, in a location not subject to further subsurface disturbance:

- The NAHC is unable to identify a most likely descendent or the most likely descendent failed to make a recommendation within 48 hours after being notified by the commission;
- The descendent identified fails to make a recommendation; or
- The landowner or his authorized representative rejects the recommendation of the descendent, and the mediation by the NAHC fails to provide measures acceptable to the landowner.

If human remains are associated with an archaeological site, Reclamation shall also be notified in a timely manner so that the federal agency can implement 36 CFR Part 800.13.

In addition, if applicable, Reclamation’s Directives and Standards for the Inadvertent Discovery of Human Remains shall be followed as outlined below.

- If human remains are encountered during earth-disturbing activities within the APE, all work in the adjacent area shall stop immediately and the discoverer shall immediately provide verbal notification to Reclamation’s authorized official, the Regional Director (RD) or the RD’s designee, of the discovery of human remains.
- Within 48 hours of the verbal notification, the RD or RD’s designee will confirm the discovery with a written confirmation. In addition, the RD/RD designee will:
 1. Immediately provide protection and security for the human remains;
 2. Immediately notify the appropriate cultural resources professional;
 3. Immediately notify the appropriate law enforcement agency;
 4. Notify and consult with lineal descendants and tribal officials, immediately if Native American;
 5. Immediately comply with appropriate laws; and
 6. Within 5 working days of the written notification, establish a record of discovery including discovery circumstances, protection steps taken, names of persons notified and recommendations for further actions (Directives and Standards LND07-01[5]).

Impact CUL-2 – Discovery of Previously Unknown Archaeological Resources

As mandated by Section 106 of the NHPA, Federal agencies must take into account the effects of their undertakings on historic properties and seek ways to avoid, minimize, or mitigate adverse effects on such properties [36 CFR 800.1(a)]. Although no cultural resources were discovered during the field survey of the APE (MBA 2011), there is a possibility for previously unknown, buried resources to be uncovered during construction of the proposed action. Implementation of Mitigation Measure CUL-2 would ensure protection of previously unknown and sensitive archaeological resources.

Mitigation Measure CUL-2- Post Review Discovery Process for Cultural Resources

In the event that buried cultural resources are discovered during construction, the construction contractor shall immediately stop all operations in the vicinity (ca. 100 feet) of the find until the Reclamation Title XVI Manager from the Mid-Pacific Regional Office (2800 Cottage Way, Sacramento, CA) and Reclamation's Regional Archaeologist from the Mid-Pacific Regional Office (2800 Cottage Way, Sacramento, CA) are notified and given the opportunity to determine if the resource requires further study and what steps are necessary to comply with 36 CFR 800.13 (b)(3).

3.14.2.2 No-Action Alternative

The No-Action Alternative would have no effect on cultural resources because no ground-disturbing activities would occur.

3.15 Indian Trust Assets

3.15.1 Affected Environment

Indian Trust Assets (ITA) are legal interests in property held in trust for Indian tribes or individuals by the United States. It is Reclamation's policy to protect ITAs from adverse impacts resulting from its programs or activities.

There are no ITAs located within the action area. The nearest ITA is Lytton Rancheria, which is located approximately 27 miles northwest from the action area.

3.15.2 Environmental Consequences

3.15.2.1 Proposed Action

The proposed action would have no effect on ITAs because no construction activities would occur within designated ITAs.

3.15.2.2 No-Action Alternative

The No-Action Alternative would have no effect on ITAs because no construction activities would occur within designated ITAs.

3.16 Cumulative Effects

The Council on Environmental Quality's (CEQ) NEPA regulations (40 CFR 1508.25) require a reasonable analysis of the significant cumulative impacts of a proposed action. Cumulative impacts refers to "two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts." Given that all of the potential adverse impacts identified in this EA would be associated with construction of the proposed action (e.g., construction-related air quality and noise impacts), the cumulative effects analysis is focused on other projects that (1) would be constructed at approximately the same time as the proposed action (i.e., in 2011); and (2) would occur in the general vicinity of the action area, or the area bounded on the north by Alcosta Boulevard, on the south by I-580, on the west by I-680, and on the east by Dougherty Road. The projects that meet these criteria and that have the potential to affect one or more of the resource areas impacted by the proposed action are summarized in Table 3.16-1.

Table 3.16-1 Projects Considered in the Cumulative Effects Analysis

Name of Project	Location	Brief Description	Projected Construction Date
West Dublin BART Station	End of Golden Gate Drive. Southwest of the action area, west of I-680*	Construction of new BART station and 711 space parking garage.	Under construction. Construction complete in 2011.
Tralelee	6617 Dublin Boulevard Southwest (about 1 mile) of the action area.	Construction of 103 townhouse units and 130 condominiums.	Under construction.
Arroyo Vista Redevelopment	6700 Dougherty Road. Southeast (about 1 mile) of action area.	Removal of 150 existing housing units and construction of 378 attached and detached units.	Fall 2011
Traffic signal improvements	Intersection of Amador Valley Boulevard and Brighton Drive.	Installation of new traffic signal.	Summer 2011

Source: City of Dublin 2010c and 2010d

* Although located outside of the cumulative effects analysis area, this project was considered in the EA due to the potential regional effect on public transportation.

3.16.1 Analysis of Cumulative Effects

The following resource areas are not discussed in this section because they were determined to have no adverse environmental consequences; therefore, they have no potential to contribute to a cumulative impact.

- Geology, Soils, and Seismicity
- Visual Resources
- Socioeconomics and Environmental Justice
- Indian Trust Assets

The following provides a discussion of potential cumulative effects of the proposed action for the remaining resource areas considered in this EA. Based on the analysis below, the proposed action, when considered in combination with the effects of the other projects listed in Table 3.16-1, would not contribute to cumulatively considerable effects.

3.16.1.1 Biological Resources

Continued and persistent development pressures within the Livermore Valley region have resulted in cumulative effects to natural communities and special-status species. Construction of the proposed action would have the potential to contribute to those cumulative impacts by temporarily disturbing native and non-native habitats during ground-disturbing activities. Implementation of Mitigation Measure BIO-1 would reduce these potential construction-related effects and ensure that the proposed action would not result in a cumulative impact. Proposed extensions of the existing recycled water system under the proposed action would not facilitate increased development in the region, or subsequently result in additional growth-related cumulative impacts on biological resources.

3.16.1.2 Surface Water and Drainage

Construction of the proposed action concurrent with other projects in the general vicinity of the action area could result in temporary impacts to water quality. Construction activities could result in increased erosion and subsequent sedimentation, which, in turn, could affect surface water quality. Additionally, surface water quality could be affected by construction activities that result in the release of fuels or other hazardous materials to stream channels or storm drains, or discharges from accidental frac-outs. Implementation of Mitigation Measures HYD-1 and HYD-2 would minimize the potential for construction-related water quality impacts from the proposed action, and would ensure that the proposed action's contribution to water quality impacts would not be cumulatively considerable.

3.16.1.3 Air Quality

Concurrent construction of the proposed action with the other projects listed in Table 3.16-1 would generate short-term emissions of criteria pollutants, including suspended and inhalable particulate matter, equipment exhaust emissions, and GHG. Implementation of Mitigation Measures AQ-1 and AQ-2 would minimize the potential effects of construction-related emissions, and ensure that such emissions are accounted for the BAAQMD's emissions inventory. As such, the proposed action's contribution to air quality impacts would not significantly contribute to a cumulative impact within the air basin.

3.16.1.4 Noise

Concurrent construction of the proposed action with the other projects listed in Table 3.16-1 could result in temporary, construction-related noise impacts to sensitive noise receptors in the general vicinity of the action area. Implementation of Mitigation Measure NOISE-1 would minimize noise impacts and ensure that the proposed action would not contribute to a cumulatively considerable noise impact.

3.16.1.5 Transportation and Traffic

Construction of the proposed action concurrent with the projects listed in Table 3.16-1 could temporarily increase traffic volumes (due to increased construction worker and vehicle trips); result in short-term delays to vehicle traffic in the action area; affect access to local businesses and residences; and cause potential traffic safety hazards for vehicles and bicycle traffic. Implementation of Mitigation Measures TRANS-1 and TRANS-2 would provide for consistent traffic management measures and appropriate timing and routing of haul trips during construction activities. With these measures in place, the proposed action would not contribute to a considerable cumulative impact on transportation or traffic patterns in the action area.

3.16.1.6 Hazardous Materials

Similar to the proposed action, construction of other projects in the general vicinity of the action area may result in the inadvertent exposure of construction workers or the public to unknown hazardous materials. Implementation of the site safety plan associated with Mitigation Measure HAZMAT-1 would minimize the potential for adverse impacts associated with such an exposure during construction of the proposed action. As such, the proposed action's contribution to impacts associated with exposure to hazardous materials would not contribute to a cumulative impact.

3.16.1.7 Land Use

As described in Section 3.9, Land Use, the proposed action has the potential to result in short-term construction-related disruption to land uses adjacent to the construction zone, which, when considered in combination with the other projects listed in Table 3.16-1, may result in a cumulative effect. Implementation of Mitigation Measure LU-1 would ensure that land uses adjacent to the construction zone have an opportunity to provide input into the construction process, and would minimize potential short term impacts. With this mitigation measure in place, and in consideration of the temporary nature of the proposed action's impacts on land use, the proposed action would not contribute to a considerable cumulative impact to land uses in the action area.

3.16.1.8 Recreation

Potential impacts to recreational facilities associated with the proposed action could include temporary disruption of the recreational facilities (i.e., schools and parks) that would be served by the proposed action facilities, as well as bicycle lanes that traverse the action area. Construction of the proposed action concurrent with the projects listed in Table 3.16-1 could further impact access to bicycle lanes and/or result in potential safety hazards for bicycle traffic. Implementation of Mitigation Measure TRANS-1 would provide for consistent traffic management measures, including safe and continued access to bike lanes in the action area. With these measures in place, the proposed action would not contribute to a considerable cumulative impact on recreation resources.

3.16.1.9 Utilities and Public Services

Construction of the proposed action could temporarily interrupt municipal and utility services within the action area, either during construction, or as a result of relocation of utility infrastructure to install

proposed action facilities. Similar utility impacts could be realized during construction of any of the projects listed in Table 3.16-1. Prior to construction of the proposed action, DSRSD would coordinate with the City of Dublin and utility providers to determine the most appropriate way to avoid service delays and utility interruptions. Other project proponents would be required to do the same. No cumulative impact on utilities and public services is anticipated.

3.16.1.10 Cultural Resources

As described in Section 3.14, Cultural Resources, there are no known cultural resources in the action area; however, there is the potential to encounter previously unidentified resources during construction activities. Similarly, there is the potential to encounter cultural resources during construction of the other projects listed in Table 3.16-1. Implementation of Mitigation Measures CUL-1 and CUL-2 would ensure that impacts to previously unknown, sensitive cultural resources within the action area would be minimized, and that a potentially cumulative considerable effect on cultural resources would be avoided.

Chapter 4. Consultation and Coordination with Other Agencies

4.1 State Historic Preservation Officer

The purpose of the NHPA is to protect, preserve, rehabilitate, or restore significant historical, archaeological, and cultural resources. Based on the results of a cultural inventory, the unlikelihood that the proposed project would disturb intact soils or features, and the evaluation of the two historic properties in the action area (MBA 2011), the proposed action would have no effect on historic properties, pursuant to 36 CFR Part 800.4 (d)(1). Reclamation will consult with SHPO per the requirements of NHPA and the FONSI will not be signed prior to completing the Section 106 process.

4.2 Native American Tribes

A letter was sent to the NAHC in April 2010 to determine whether any sacred sites listed on its Sacred Lands File are within the APE for the proposed action. A response from the NAHC was received May 20, 2010 stating that a search of its Sacred Lands File failed to indicate the presence of Native American cultural resources in the immediate action area. Included with the response was a list of eight Native American representatives who may have further knowledge of Native American resources within or near the APE.

On May 25, 2010, letters were sent to each of the eight listed tribal contacts discussing the proposed action. In addition, emails were sent to those representatives with access to email accounts on August 3, 2010, and a phone call was made to the remaining representatives on August 4, 2010. The following correspondence has been received to date from contacted individuals.

- On June 30, 2010, Ms. Ramon Garibay called Michael Brandman Associates (MBA) (the cultural resources consultant for the proposed action) to state that she had no concerns about the proposed action, but that she was available to conduct monitoring if a Native American monitor was needed.
- On July 8, 2010, an email was received from Jakki Kehl requesting a hard copy of the Cultural Resource Section of the SRVRWP 1996 EIR and the results of the record search findings. MBA provided Ms. Kehl with a summary of the record search findings in an email dated July 8, 2010, and provided her with a link to the SRVRWP 1996 EIR. A hard copy of the cultural resources section of the EIR was forwarded to Ms. Kehl at her request on July 28, 2010. No additional correspondence from Ms. Kehl has been received.

4.3 U.S. Fish and Wildlife Service and National Marine Fisheries Service

Section 7 of the ESA requires Federal agencies, in consultation with the USFWS and National Marine Fisheries Service (NMFS), to ensure that their actions do not jeopardize the continued existence of federally-listed endangered or threatened species, or result in the destruction or adverse modification of the critical habitat of these species. Based on a site assessment of the action area (Vinnedge Environmental Consulting 2010), Reclamation concluded that the proposed action would not affect any federally-listed or proposed species under the jurisdiction of USFWS or NMFS. Please refer to Section 3.2, Biological Resources for a discussion of the potential for special-status species to occur in the action area.

4.4 California Department of Fish and Game

The mission of CDFG is to manage California's diverse fish, wildlife, and plant resources, and the habitats upon which they depend for their ecological values and for their use and enjoyment by the public. Provisions of the California Endangered Species Act (CESA) protect state-listed threatened and endangered species. Based on a site assessment of the action area (Vinnedge Environmental Consulting 2010), Reclamation concluded that the proposed action would not affect any state-listed species under the jurisdiction of CDFG.

Activities that result in the diversion or obstruction of the natural flow of a stream, or substantially change its bed, channel, or bank, or utilize any materials (including vegetation) from the streambed require that the project applicant enter into an LSA with CDFG, under CFGC Section 1602. An LSA would be required to use trenchless technology to install a portion of the proposed recycled water pipeline under South San Ramon Creek.

Chapter 5. References Cited

5.1 Cited Literature

California Department of Fish and Game (CDFG). 2010. California Natural Diversity Database (CNDDB). Version 3.0.5. Database Query for the Altamont, Byron Hot Springs, Diablo, Dublin, La Costa Valley, Livermore, Mendenhall Springs, Niles, and Tassajara USGS 7-½ minute Quads. Wildlife and Habitat Data Analysis Branch. March.

California Department of Toxic Substances Control. 2010. Database query of EnviroStor for toxic waste sites in the City of Dublin. Completed: July 11, 2010. Database available at: <http://www.envirostor.dtsc.ca.gov/public/>.

California Employment Development Department (EDD). 2010. Local Area Profile for the State of California and Alameda County. May. Available at: <http://www.labormarketinfo.edd.ca.gov/>. Accessed: July 11, 2010.

Climate Action Team (CAT). 2006. Climate Action Team Report to Governor Schwarzenegger and the California Legislature. March. Available at: www.climatechange.ca.gov/climate_action_team/reports/index.html. Accessed January 7, 2010.

City of Dublin. 2010a. City of Dublin General Plan. Adopted February 11, 1985. Updated January 19, 2010. Available at: <http://www.ci.dublin.ca.us/DepartmentSubLevel2.cfm?PL=exp&SL=comdev&dsplyID=440>.

_____. 2010b. City of Dublin – Department Information Contacts. Available at: <http://www.ci.dublin.ca.us/index.aspx?NID=8>. Accessed: September 20, 2010.

_____. 2010c. City of Dublin - Future City Improvement Projects. Available at: <http://www.ci.dublin.ca.us/index.aspx?NID=429>. Last updated: August 16, 2010. Accessed: September 20, 2010.

_____. 2010d. City of Dublin – Commercial and Residential Projects. Available at: <http://www.ci.dublin.ca.us/pdf/Development%20Project%20List%20June%202010.pdf>. Last updated: May 27, 2010. Accessed: September 20, 2010.

Dublin San Ramon Services District – East Bay Municipal Utility District Recycled Water Authority (DERWA). 1996. Draft Environmental Impact Report for the San Ramon Valley Recycled Water Program (SCH No. 96013028). August.

- _____. 2010. San Ramon Valley Recycled Water Program – 2009 Recycled Water Quality Annual Report. Prepared by DERWA. Available at: <http://www.derwa.org/>. Accessed: September 21, 2010.
- ESA. 2006. Zone 7 Stream Management Master Plan, Environmental Impact Report. Prepared for Zone 7 Water Agency. March. Available at: http://www.zone7water.com/index.php?option=com_content&task=view&id=36&Itemid=199.
- Intergovernmental Panel on Climate Change (IPCC). 2007a. Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change [Solomon, S., D. Qin, M. Manning, Z. Chen, M. Marquis, K.B. Averyt, M. Tignor and H.L. Miller (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA. Available at: http://www.ipcc.ch/publications_and_data/publications_ipcc_fourth_assessment_report_wg1_report_the_physical_science_basis.htm. Accessed January 7, 2010.
- _____. 2007b. Climate Change 2007: Impacts, Adaptations and Vulnerability. Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change, M.L. Parry, O.F. Canziani, J.P. Palutikof, P.J. van der Linden and C.E. Hanson, Eds., Cambridge University Press, Cambridge, UK, 23-78.
- Leidy, R.A., G.S. Becker, B.N. Harvey. 2005. Historical distribution and current status of steelhead/rainbow trout (*Oncorhynchus mykiss*) in streams of the San Francisco Estuary, California. Center for Ecosystem Management and Restoration, Oakland, CA.
- Michael Brandman Associates (MBA). 2011. Section 106 Cultural Resources Assessment – DSRSD Central Dublin Recycled Water Distribution and Retrofit Project, City of Dublin, Alameda County, California. Prepared for Dublin San Ramon Services District. June.
- _____. 2010a. Air Quality, General Conformity, and Greenhouse Gas Analysis Report, Central Dublin Recycled Water Distribution and Retrofit Project. Prepared for Dublin San Ramon Services District. October.
- U.S. Bureau of Reclamation (Reclamation). 1990. NEPA Handbook. October.
- San Francisco Regional Water Quality Control Board (RWQCB). 2007. San Francisco Bay Basin (Region 2) Water Quality Control Plan (Basin Plan). Incorporating all amendments approved by the Office of Administrative Law as of January 18, 2007. Available at: http://www.waterboards.ca.gov/sanfranciscobay/basin_planning.shtml.
- U.S. Census Bureau. 2008. American Community Survey. Available at: <http://www.census.gov/acs/www/Products/>. Accessed: July 11, 2010.
- _____. 2009. Small Area Income and Poverty Estimates for Contra Costa County and the State of California. Release Date: November 2009. Available at: <http://www.census.gov/cgi-bin/saie/saie.cgi>. Accessed: July 11, 2010.

Vinnedge Environmental Consulting. 2010. Biological Resources Report – DSRSD Central Dublin Recycled Water Distribution and Retrofit Project, City of Dublin, Alameda County, California. Prepared for Dublin San Ramon Services District. October.

West Yost & Associates. 2005. Dublin San Ramon Services District Urban Water Management Plan. Prepared for DSRSD. May.

5.2 Personal Communications

Ivy, Louanne, Administrative Analyst. 2010. Email communication between Ivy, DSRSD, and Rudy Portugal, DSRSD, regarding DERWA Demand Summary for 2009 and 2010. September 30.

Jennings, Mark, PhD, Ecologist and Herpetologist. 2010. Email communication between Jennings, Live Oak Associates, and Brook Vinnedge, Vinnedge Environmental Consulting, regarding the presence of California red-legged frog in South San Ramon Creek. August 17.

Portugal, Rudy, Associate Engineer. 2010. Email communication between Portugal, DSRSD, and Brook Vinnedge, Vinnedge Environmental Consulting, regarding anticipated demand for recycled water associated with the proposed action. September 20.

Chapter 6. List of Preparers

6.1 Lead Agency

United States Bureau of Reclamation
Mid-Pacific Region
2800 Cottage Way
Sacramento, CA 95825
Contact: Doug Kleinsmith

6.2 Environmental Assessment Authors

Author	Affiliation	Role
Brook Vinnedge	Principal and Wildlife Biologist, Vinnedge Environmental Consulting	Project Manager and lead author for Biological Resources and Hydrology and Water Quality
April Zohn	Principal and Environmental Regulatory Specialist, Lux Environmental Consulting, LLC	NEPA Specialist and lead author for Geology and Soils; Hazardous Materials; Land Use Planning; Recreation; Visual Resources; Utilities and Public Service Systems; and Socioeconomics and Environmental Justice
Carrie Wills	Senior Project Archaeologist, Michael Brandman Associates	Lead author for Cultural Resources
Chryss Meier	Environmental Scientist, Michael Brandman Associates	Lead author for Air Quality, Noise, and Traffic and Transportation
	GIS Analyst, Michael Brandman Associates	Graphic Support