

RECLAMATION

Managing Water in the West

Final Environmental Assessment

Santa Clara Valley Water District's 2017 Pacheco Conduit Maintenance Project

EA-15-059



Mission Statements

The Department of the Interior protects and manages the Nation's natural resources and cultural heritage; provides scientific and other information about those resources; and honors its trust responsibilities or special commitments to American Indians, Alaska Natives, and affiliated island communities.

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

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Section 1 Introduction

The Bureau of Reclamation (Reclamation) provided the public with an opportunity to comment on the Draft Finding of No Significant Impact (FONSI) and Draft Environmental Assessment (EA) between April 07, 2017 and April 21, 2017. No comments were received. Changes between this Final EA and the Draft EA, which are not minor editorial changes, are indicated by vertical lines in the left margin of this document.

1.1 Background

The Pacheco Conduit, Santa Clara Conduit, and Santa Clara Tunnel are part of the Reclamation's San Felipe Division of the Central Valley Project (CVP), which supplies raw water to both the Santa Clara Valley Water District (Santa Clara or District) and San Benito County Water District. Santa Clara, pursuant to Operating Agreement (Contract No. 7-07-20-W0130A), operates and maintains the Pacheco Conduit, Santa Clara Conduit, and Santa Clara Tunnel on Reclamation's behalf.

The San Felipe Reach 1 transmission system which includes the Pacheco Tunnel Reach 2, a 114-inch reinforced concrete-lined tunnel, and the Pacheco Conduit, a 120-inch pre-stressed concrete cylinder pipe, are located downstream of the Pacheco Pumping Plant (Figure 1 and Appendix A). In Tunnel Reach 2, water flows approximately 5.2 miles to the Pacheco Sectionalizing Valve. Water then flows approximately 7.9 miles in the Pacheco Conduit to the Bifurcation Structure. At the bifurcation structure, water travelling through the Pacheco Conduit is split, with a portion of the water travelling to San Benito County, through the Hollister Conduit, and the remaining water traveling to Santa Clara County through the San Felipe Reach 2 transmission system.

The San Felipe Reach 2 transmission system, downstream of the Bifurcation Structure, includes the Santa Clara Conduit a 96-inch pre-stressed concrete cylinder pipe and the Santa Clara Tunnel a 102-inch reinforced concrete-lined tunnel. Water travels for one mile through the Santa Clara Conduit to the Santa Clara Tunnel where it travels for one mile before re-entering the Santa Clara Conduit. The water then travels approximately 21-miles in the Santa Clara Conduit to the Coyote Pumping Plant in Morgan Hill, California.

Routine maintenance, rehabilitation, and factual condition assessment of the facilities are necessary to ensure that the Pacheco Conduit, Santa Clara Conduit, and Santa Clara Tunnel and their appurtenances continue to transport water between the San Luis Reservoir and Santa Clara and San Benito Counties. The District has requested authorization from Reclamation to inspect, maintain, or rehabilitate the Pacheco Conduit, Santa Clara Conduit, and Santa Clara Tunnel.

1.2 Need for the Proposed Action

The District needs to maintain the availability and reliability of the water supply to the region serviced by the Pacheco Conduit, Santa Clara Conduit, and Santa Clara Tunnel.

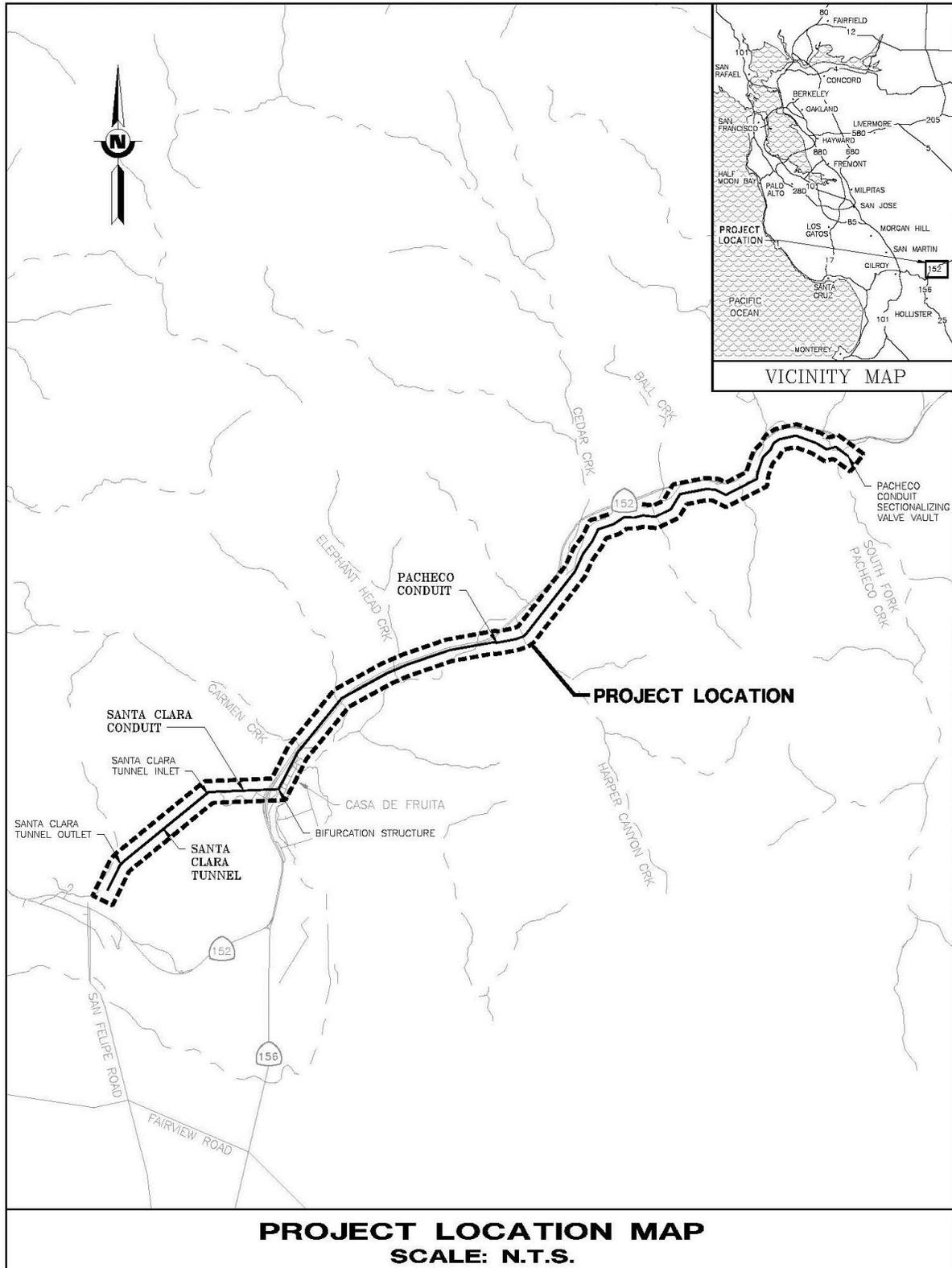
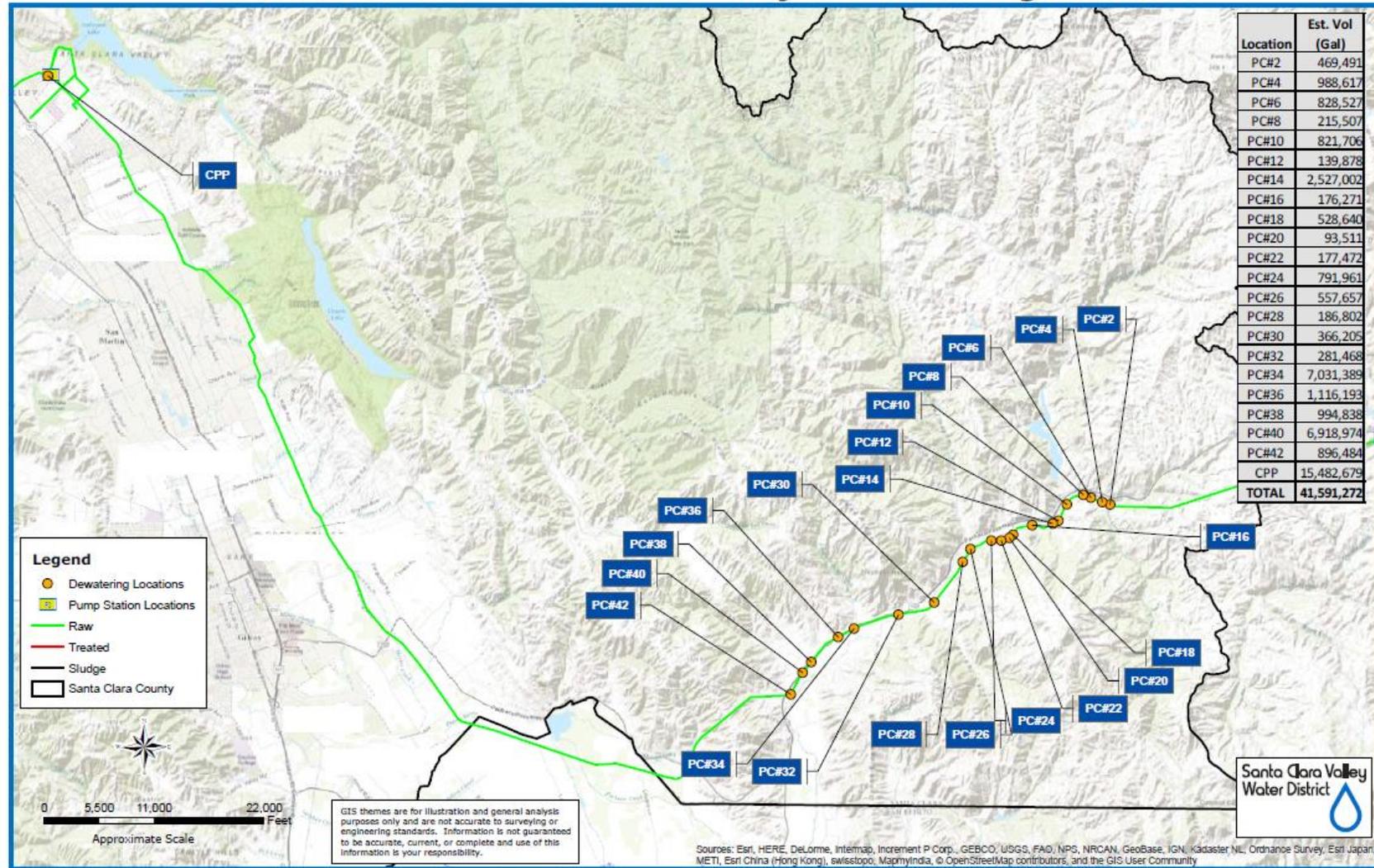


Figure 1 Location of the Santa Clara and Pacheco Conduits

Pacheco Conduit Rehabilitation Project Dewatering Locations



Date of Photography: April 2001

Figure 2 Proposed Action Area

Section 2 Alternatives Including the Proposed Action

This EA considers two possible actions: the No Action Alternative and the Proposed Action. The No Action Alternative reflects future conditions without the Proposed Action and serves as a basis of comparison for determining potential effects to the human environment.

2.1 No Action Alternative

Under the No Action Alternative, Reclamation would not authorize the District to inspect, maintain, or rehabilitate the Pacheco Conduit, Santa Clara Conduit, and Santa Clara Tunnel. The District's ability to provide water to both the Santa Clara Valley and the San Benito Water District would be severely compromised if the Pacheco Conduit, Santa Clara Conduit, and Santa Clara Tunnel were to fail.

2.2 Proposed Action

Reclamation proposes to authorize the District's inspection, maintenance, or rehabilitation the Pacheco Conduit, Santa Clara Conduit, and Santa Clara Tunnel as described below.

District engineering and maintenance staff would access the entirety of San Felipe Division Reach 1 facilities¹, the first two miles of the San Felipe Division Reach 2 facilities, and all appurtenances on the Pacheco Conduit, the section of the Santa Clara Conduit between the Bifurcation Structure and the Santa Clara Tunnel, and the Santa Clara Tunnel.

In general the Proposed Action includes the following:

- Pipeline and tunnel dewatering.
- Pipeline and tunnel inspections.
- Appurtenance rehabilitation, as needed.
- Internal pipeline maintenance and repair activities, as needed.
- Structural lining and repair of internal surface lining, as needed.
- The installation of new equipment and improvements.

¹ "Reach 1" shall mean the facilities from the Pacheco Tunnel to and including the Pacheco Bifurcation structure, including but not limited to , the Pacheco Pumping Plant Substation, Pacheco Pumping Plant Substation-70kV Line, Pacheco Tunnel (including the inlet works in and under San Luis Reservoir), Pacheco Conduit and Pacheco Bifurcation Structure (Amendatory Contract No. 7-07-02-W0023A).

2.2.1 Pipeline and Tunnel Dewatering

The District, its contractors and consultants, and San Benito County representatives would isolate the Pacheco Conduit, Hollister Conduit, Santa Clara Tunnel, and Santa Clara Conduit for dewatering to allow for the internal inspection and rehabilitation efforts. Dewatering the Pacheco Conduit, Hollister Conduit, Santa Clara Tunnel, and Santa Clara Conduit would include steps to use the water for beneficial use. Dewatering would begin in November 2017 and last for approximately 23 days².

To produce the initial depressurization and draining of the pipeline and tunnel, the gravity drain of water would start at the Coyote Pumping Plant. Approximately 15.5 million gallons of Santa Clara Conduit water would drain into existing groundwater recharge facilities in central and northern Santa Clara County including the Main, San Pedro, Madrone, and Coyote Creek recharge facilities.

Approximately 26 million gallons of water would be then be dewatered from the Pacheco Conduit into the ground or into Pacheco Creek through the blow-off valves along Pacheco Conduit. To protect the ground from erosion and allow for the safe discharge of water, the District would utilize Best Management Practices (BMPs) which may include coir logs, straw waddles, and visqueen (Appendix C). The BMPs would minimize the amount of pipeline sediment and debris entering the environment and would minimize the ground saturation in the appurtenance work areas.

Draining would also include pumping out standing water from low points in the Pacheco Conduit. Water would be pumped into geotextile filter bags to minimize sediment and debris discharged to the environment, and visqueen would be used for erosion protection. Flows from the geotextile filter bags would either be directed into Pacheco Creek; to local tributaries of Pacheco Creek; or overland to soak into the ground.

Affects from the discharges would be further managed by limiting flows to 2-4 cubic feet per second (cfs). The District's best estimate of volumes of water and rates at each vault/segment are described in Table 1. The dewatering locations are shown in Figure 2.

Table 1 Proposed Dewatering

Location	Discharge Facility	Receiving Body	Estimated Volume (Gallons)
CPP	PJ	Coyote Creek	15,482,679
PC#2	BO	South Fork Pacheco Creek	469,491
PC#4	BO	South Fork Pacheco Creek	988,617
PC#6	BO	South Fork Pacheco Creek	828,527
PC#8	BO	South Fork Pacheco Creek	215,507
PC#10	BO	Pacheco Creek	821,706
PC#12	BO	Pacheco Creek	139,878
PC#14	BO	Pacheco Creek	2,527,002
PC#16	BO	Pacheco Creek	176,271
PC#18	BO	Pacheco Creek	528,640
PC#20	BO	Pacheco Creek	93,511
PC#22	BO	Pacheco Creek	177,472
PC#24	BO	Pacheco Creek	791,961
PC#26	BO	Pacheco Creek	557,657

² The most likely dewatering schedule is found in Appendix B

Location	Discharge Facility	Receiving Body	Estimated Volume (Gallons)
PC#28	BO	Pacheco Creek	186,802
PC#30	PO	Pacheco Creek	366,205
PC#32	BO	Pacheco Creek	281,468
PC#34	BO	Elephant Head Creek	7,031,389
PC#36	PO	Pacheco Creek	1,116,193
PC#38	PO	Pacheco Creek	994,838
PC#40	BO	Carmen Creek	6,918,974
PC#42	PO	Storm Drain Catch Basin to Pacheco Creek	896,484
TOTAL			41,591,272
Notes:			
CPP = Coyote Pumping Plant			
PC = Pacheco Conduit			
SC = Santa Clara Conduit			
BO = Blowoff Discharge for Gravity Drain. Estimated drainage volume from Blow Offs is 22,734,873 gallons.			
PO = Pumped Out Discharge. Estimated drainage volume from Pump Outs is 3,373,720 gallons.			
PJ = Polyjet Drainage. Estimated drainage volume from Polyjet is 15,482,679 gallons.			

All work described below would be conducted when the facilities are shutdown. Access for all internal components of the Proposed Action would be through the existing pipeline and tunnel appurtenances inside of the existing precast or cast-in-place concrete vaults.

2.2.2 Pipeline and Tunnel Inspections

Pipeline and tunnel inspections include performing internal pipeline visual, sounding, and electromagnetic inspections of the Pacheco Conduit and a portion of the Santa Clara Conduit and Santa Clara Tunnel (approximately 1 mile). The inspections of the pre-stressed concrete cylinder pipe would provide the District with a baseline condition assessment of the pipeline. Work crews would be accessing the pipeline through existing in-vault appurtenances and nozzles, utilizing trucks and small lift equipment. Travel would occur on existing overland all-weather gravel roads and developed unpaved ranch roads at the series of surface vaults along the conduit between the Pacheco Sectionalizing Valve Vault and the west end of the Santa Clara Tunnel. The roads are connected to controlled access gates along California State Route 152 (Highway 152). Emergency extraction teams and equipment would be simultaneously staged at entry/exit points for each section of the inspection.

2.2.3 Appurtenance Rehabilitation

The District would perform work on, modify, and/or rehabilitate pipeline appurtenances that are inside of existing precast or cast-in-place concrete vaults. In order to access the vaults and stage needed materials and equipment approximately 3,770 square feet of woody chaparral vegetation at PAC #15 and PAC #16 (including the blow-off riser) would be removed to ensure safe access during maintenance activities (Figure 2). The vegetation will be cut off at ground level and either hauled off site or chipped on site. At the existing vault locations, the District would perform the following work:

- Replace sectionalizing valve(s) to improve system isolation and operation capabilities.
- Replace bypass piping and valve(s) to improve system isolation and operations capabilities.
- Install bypass assembly support for the remediation of previously identified assembly deficiencies.

- Conduct pipeline appurtenance assemblies and piping maintenance and rehabilitation for the remediation of previously identified deficiencies and improved operational performance.

2.2.4 Internal Pipeline Maintenance and Repair Activities

The District would perform maintenance and repair activities on the interior surfaces of the Pacheco Conduit, Santa Clara Conduit, and Santa Clara Tunnel, based on the District's previous condition assessments and the conclusions and findings of the internal visual and sounding inspection activities conducted as part of this Proposed Action. Internal maintenance and repair activities would consist of the following:

- Repair of the steel cylinder by steel patching.
- Repair pipe lining by grouting.
- Repair separated joints or circumferential cracks in the pipeline cylinder with the installation of Weko-Seal®.

2.2.5 Structural Lining and Repair of Internal Surface Lining

The District would perform work on, modify, and/or rehabilitate the internal structure of the Pacheco Conduit, Santa Clara Conduit, and Santa Clara Tunnel as necessary based on the conclusions and findings of the internal visual, sounding, and electromagnetic inspection activities. The work would consist of:

- Internal maintenance, repair, and rehabilitation of pre-stressed concrete cylinder pipe on the Pacheco and Santa Clara Conduits, for the remediation of deficiencies identified during inspections. Rehabilitation of pre-stressed concrete cylinder pipe would include structural lining of the pipeline using Carbon Fiber Reinforced Polymer on a section or multiple sections of the pipeline.
- Partial replacement of the internal lining of the Santa Clara Tunnel to mitigate previously identified excess leakage and landslide issues. This work would consist of lining the internal surface of the eastern most portion of the Santa Clara Tunnel to mitigate known leakage issues. Internal tunnel surface restoration would include contact grouting (to fill voids between the tunnel wall and the surrounding earth), rock pocket resurfacing (to fill void in the surface of the tunnel wall), chemical grouting (to fill and bond cracks in the tunnel wall), and Polyurea lining the tunnel surface (to encapsulate and seal any other deleterious anomalies), etc.

2.2.6 New Equipment and Improvements

The Proposed Action includes new equipment and improvements to help protect existing infrastructure and facilitate future maintenance and repair work. The new equipment and improvements consist of the following:

- Installation of an additional sectionalizing valve for improved system isolation in an effort to mitigate the intrusion of mussel-laden water for the Hollister Conduit during shutdown conditions.
- Installation of additional bypass pumping piping to facilitate future pipeline dewatering. The District and its representatives would install additional bypass pumping piping at the

Bifurcation Structure to facilitate pipeline dewatering efforts for future projects. The additional bypass pumping piping would allow the District to pump water from one side of the Bifurcation line valves to the other, minimizing the discharge of water to the environment during inspection and maintenance.

- Installation of additional maintenance platforms and ladders to facilitate the safe maintenance and operation the existing facilities.
- Installation of acoustic fiber optic cables inside the pipeline to provide the District with real-time assessment of Pacheco Conduit conditions. The District and its representatives would install the acoustic fiber optic cable while the pipeline is dewatered; the cable would enter and exit the pipeline through existing pipeline appurtenances. Junction boxes would be installed at the cable exit points to facilitate splicing of the cable for long runs, and the junction boxes would be inside existing appurtenance vaults along the pipeline.
- Installation of transient flow monitoring devices to monitor pressure changes in the Pacheco Conduit to provide the District with real-time alerts if pressure thresholds are exceeded. The District and its representatives would install transient monitoring systems at the approximately 15 locations most prone to severe hydraulic transients (high points, turnouts, pump stations, etc.).

2.2.7 Access and Staging

Work crews would travel on existing paved roads, all-weather gravel roads, and developed unpaved ranch roads to access surface vaults along the conduit between the Pacheco Sectionalizing Valve Vault and the west end of the Santa Clara Tunnel (Appendix A).

Equipment and materials would be staged at entry/exit points at the vaults for each section of the proposed inspection. Several staging areas are proposed on both private and public property near the intersection of Highway 152 and Casa de Fruta Parkway on Assessor's Parcel Numbers (APNs): 898-20-043 and 898-58-001 (0.61 acre); 898-59-001 (0.44 acre); and 898-59-002 (5.14 acres).

2.2.8 Environmental Commitments

As part of the Proposed Action, Santa Clara shall (1) implement best management practices (BMPs) included in Appendix C, (2) adhere to all applicable Santa Clara Valley Habitat Plan avoidance and minimization measures (AMMs) included in Appendix D, and (3) comply with all requirements in the National Marine Fisheries Service (NMFS) concurrence memorandum included as Appendix E.

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Section 3 Affected Environment and Environmental Consequences

This section identifies the potentially affected environment and the environmental consequences involved with the Proposed Action and the No Action Alternative, in addition to environmental trends and conditions that currently exist.

3.1 Resources Eliminated from Further Analysis

Reclamation analyzed the affected environment and determined that the Proposed Action did not have the potential to cause direct, indirect, or cumulative adverse effects to the resources listed in Table 2.

Table 2 Resources Eliminated from Further Analysis

Resource	Reason Eliminated
Cultural Resources	Reclamation determined on September 6, 2013 that the Proposed Action has no potential to cause effects to historic properties pursuant to 36 CFR Part 800.3(a)(1). See Appendix E for Reclamation's determination.
Environmental Justice	The Proposed Action would not cause dislocation, changes in employment, or increase flood, drought, or disease nor would it disproportionately impact economically disadvantaged or minority populations.
Indian Sacred Sites	The Proposed Action would not limit access to ceremonial use of Indian Sacred Sites on federal lands by Indian religious practitioners or significantly adversely affect the physical integrity of such sacred sites. Therefore, there would be no impacts to Indian Sacred Sites as a result of the Proposed Action.
Indian Trust Assets	The Proposed Action would not impact Indian Trust Assets as there are none in the Proposed Action area.
Land Use	The Proposed Action would not change land use in the Action area.
Recreation	The Proposed Action would not affect recreation sites in the Action area.
Socioeconomic Resources	The Proposed Action would have beneficial impacts on socioeconomic resources as the maintaining the pipelines and appurtenances would continue to provide uninterrupted water, thus preserving the area's water supply.

3.2 Air Quality

Section 176 (C) of the Clean Air Act (42 U.S.C. 7506 (C)) requires any entity of the federal government that engages in, supports, or in any way provides financial support for, licenses or permits, or approves any activity to demonstrate that the action conforms to the applicable State Implementation Plan required under Section 110 (a) of the Federal Clean Air Act (42 U.S.C. 7401 [a]) before the action is otherwise approved. In this context, conformity means that such federal actions must be consistent with State Implementation Plan's purpose of eliminating or reducing the severity and number of violations of the National Ambient Air Quality Standards and achieving expeditious attainment of those standards. Each federal agency must determine that any action that is proposed by the agency and that is subject to the regulations implementing the conformity requirements would, in fact conform to the applicable State Implementation Plan before the action is taken.

On November 30, 1993, the Environmental Protection Agency (EPA) promulgated final general conformity regulations at 40 CFR 93 Subpart B for all federal activities except those covered under transportation conformity. The general conformity regulations apply to a proposed federal action in a non-attainment or maintenance area if the total of direct and indirect emissions of the relevant criteria pollutants and precursor pollutant caused by the Proposed Action equal or exceed certain *de minimis* amounts thus requiring the federal agency to make a determination of general conformity.

3.2.1 Affected Environment

The Proposed Action area lies within the boundaries of two air districts, the San Francisco Bay Air Basin under the jurisdiction of the Bay Area Air Quality Management District and the North Central Coast Air Basin under the jurisdiction of the Monterey Bay Unified Air Pollution Control District. The San Francisco Bay Air Basin is currently in nonattainment for the national ozone and fine particulate matter (PM_{2.5}) standards, as well as the California ozone, inhalable particulate matter (PM₁₀) and PM_{2.5} standards. The area is in attainment for the state and federal carbon monoxide standards. The North Central Coast Air Basin is currently in nonattainment for the California ozone and inhalable particulates (PM₁₀) standards. Status for the Proposed Action area is described as unclassified/attainment for both the state and federal carbon monoxide (CO₂) standards.

In 2010, the Bay Area Air Quality Management District issued its 2010 Clean Air Plan (Bay Area Air Quality Management District 2010), which outlined policies and actions to improve air quality in the basin. Mobile Source Measure C-1 of the 2010 Clean Air Plan specifically addressed emissions from construction and farming equipment. The measure involves cash incentives for upgrading old equipment; cooperation with state agencies to develop better emission control technology; and cooperation with local agencies to encourage use of cleaner equipment.

Monterey Bay Unified Air Pollution Control District ambient air quality standards are lower than those of Bay Area Air Quality Management District; therefore, the Bay Area Air Quality Management District standards will be used for the analysis of the Proposed Action.

3.2.2 Environmental Consequences

No Action

Under the No Action Alternative, the Pacheco Conduit, Santa Clara Conduit, and Santa Clara Tunnel would continue to be operated in their existing condition. There would be no change in air emissions.

Proposed Action

The operation of construction machinery associated with the Proposed Action would result in short-term emissions of air pollutants. The California Emissions Estimator (CalEEMod), Version 2013.2.2, was used to estimate construction and operational (vehicle trips) emissions. The modeling results are provided in Table 3 and the CalEEMod output files are provided in Appendix F.

Table 3 Calculated Proposed Action Unmitigated Total Annual Emissions

Activity	Activity dates	ROG (tons)	CO (tons)	NO _x (tons)	PM ₁₀ (tons)	PM _{2.5} (tons)	CO _{2e} (Metric Tons)
Site preparation, dewatering activities, and maintenance activities	October 2 through December 31, 2017	0.4134	1.9070	4.1769	0.2068	0.1793	450.8
Annual total 2017		0.4134	1.9070	4.1769	0.2068	0.1793	450.8
Maintenance and site restoration activities	January 2018	2.3854	0.3898	0.8421	0.0371	0.0330	108.5
Annual total 2018		2.3854	0.3898	0.8421	0.0371	0.0330	108.5
Bay Area Air Quality Management District Thresholds (per year)		15	NA	15	15	15	1,100

Construction emissions are estimated to be below the thresholds established by both Air Districts during the 5-month schedule for the Proposed Action (Table 3). In addition, once construction is complete, the pipeline would be operated in the same way as it has in the past. Therefore, no changes in operational emissions would occur as a result of the Proposed Action and there would be no adverse impacts to air quality.

Cumulative Impacts

Construction-related emissions are considered temporary, and do not exceed the Air District's thresholds of concern, so cumulative adverse effects would not occur. Since long-term operational emissions would be unchanged as a result of the Proposed Action, they also would not contribute to cumulative air quality impacts.

3.3 Biological Resources

The project site is located within Santa Clara County and the plan area for the Santa Clara Valley Habitat Plan. The Santa Clara Valley Habitat Plan is a joint habitat conservation plan and natural communities conservation plan developed to serve as the basis for issuance of incidental take permits and authorizations pursuant to Section 10 of the federal Endangered Species Act and California Natural Community Conservation Planning Act. The proposed project (Santa Clara County portion) is a covered activity identified in the Santa Clara Valley Habitat Plan. All activities associated with the proposed project must be implemented consistent with requirements outlined in the Santa Clara Valley Habitat Plan. The impacts of general construction activities within the Santa Clara Valley Habitat Plan plan area were previously evaluated at a programmatic level in the Santa Clara Valley Habitat Plan Final Environmental Impact Report/Environmental Impact Statement, August 2012.

3.3.1 Affected Environment

The following information was compiled from the District's form used to comply with the Santa Clara Valley Habitat Plan (Santa Clara Valley Water District 2017), a botanical survey performed on April 15, 2016, June 13, 2016, and June 15, 2016 by District biologists (Santa Clara Valley Water District 2016), the 2008 concurrence memorandum from NMFS, and from information in Reclamation's files prepared for a previous consultation that covered the current proposed pipeline draining (i.e. related to NMFS 2008).

No Federally listed or proposed plant species were observed near the vaults or along the path of discharge between blow-off vaults and receiving waterways. The plant community is generally a mixture of non-native and native species, but dominated by non-native species, including wild radish (*Raphanus sativa*), black mustard (*Brassica nigra*), thistles (*Centaurea* spp., *Sylibum marianum*, *Carduus pycnocephalus*), hop clover (*Trifolium campestre*), and non-native grasses (including Italian wild rye [*Festuca perennis*], foxtail chess [*Bromus madritensis* ssp *madritensis*], and Mediterranean barley [*Hordeum marinum* ssp *gussoneanum*]). Native plant species in addition to non-natives, with the dominant plants including California sagebrush (*Artemisia californica*), California buckwheat (*Eriogonum fasciculatum*), elderberry (*Sambucus nigra*), and beardless wild rye (*Elymus triticoides*), are more common at vaults higher in the watershed and at higher elevations above the road. Areas along Pacheco Creek have a greater proportion of native vegetation, including typical wetland plants such as willows and rushes (arroyo willow [*Salix lasiolepis*], iris-leaved rush [*Juncus xiphioides*], and dotted smartweed [*Persicaria punctata*]). The vaults closest to Casa de Fruta (37-42) have the fewest number of plant species and are generally overgrown with tall non-native weeds (or, in the case of vault 38, mowed in conjunction with the harvest of adjacent hay fields). No serpentine habitats are located in the proposed project area, but there is some sycamore alluvial woodland, mixed riparian forest and woodland, and willow riparian forest and scrub habitat.

The grassland habitat/hay fields may provide some denning and foraging habitat for the San Joaquin kit fox (*Vulpes macrotis mutica*), and the riparian habitat, especially the willow riparian forest and scrub habitat, may provide nesting and foraging habitat for the Least Bell's Vireo. Both of these species are Federally listed as endangered. They have not been observed in the Proposed Action Area, but both could occur there, and both are addressed in the District's compliance with the Santa Clara Valley Habitat Plan (Santa Clara Valley Water District 2017). No critical habitat has been proposed or designated for the San Joaquin kit fox. Critical habitat has been designated for the Least Bell's Vireo, but it lies well to the south of the Proposed Action Area (in Southern California).

Various raptor species, not Federally listed by protected by the Migratory Bird Treaty Act, may use the Proposed Action Area for foraging and nesting.

The Proposed Action Area includes areas of proposed discharge to the Pacheco Creek, a storm drain that leads to Pacheco Creek, South Fork Pacheco Creek, Elephant Head Creek, and Carmen Creek. Pacheco Creek and Elephant Head Creek are used by the South-Central California steelhead (*Oncorhynchus mykiss*) for migration, spawning, and rearing, and Pacheco Creek is designated critical habitat for the species.

3.3.2 Environmental Consequences

No Action

Under the No Action Alternative, the needed repairs would not be conducted. As a result, the temporary and permanent impacts to the San Joaquin kit fox, Least Bell's Vireo, and temporary impacts to the South-Central California steelhead and its critical habitat would not occur. However, if necessary repairs are not conducted, then at some unknown time, a failure could occur, which may result in uncontrolled discharges to local waterways. This could result in

erosion of habitat for the San Joaquin kit fox and could scour steelhead habitat and cause siltation of eggs, etc.

Proposed Action

The Proposed Action would result in the removal of 0.1 acres of woody chaparral vegetation at PC #15 and PC #16 (including the blowoff riser at PC #16) to ensure safe access during maintenance activities. The removal of woody chaparral vegetation is being treated as a permanent impact of 0.1 acre of Northern Mixed Chaparral/Chamise Chaparral land cover for compliance with the Santa Clara Valley Habitat Plan; this would impact unlisted migratory birds. There would be a temporary loss of 9.69 acres of kit fox foraging and denning habitat. This impact would be minimized and compensated by the District's compliance with the Santa Clara Valley Habitat Plan (Appendix D).

No lethal take of Least Bell's Vireos would occur, as the Santa Clara Valley Habitat Plan requires pre-activity surveys and a buffer around riparian habitat that may be used by the vireos for nesting. If present, the vireos could still be subject to minor disturbance from noise and the presence of personnel involved in the proposed repairs. As specified by the measures required in the Santa Clara Valley Habitat Plan, some water would need to be drained at a discharge rate of 2-4 cfs into the four creeks named above in the Affected Environment section.

Potential impacts to steelhead and its critical habitat would be minimized by implementation of measures included in the NMFS concurrence memorandum (Appendix E), in which NMFS concluded that the proposed draining may affect, but was not likely to adversely affect both the species and its critical habitat. These measures would avoid or minimize impacts to the steelhead that might otherwise result from scouring, sedimentation, etc. that could damage eggs, damage the gills of fish, and possibly result in false attraction flows that could attract fish into an area to spawn, only to leave them stranded when the water recedes.

Cumulative Impacts

Agricultural and urban development has historically resulted in loss and modification of habitat for Federally listed species in the Proposed Action Area. Current impacts that are expected to continue in the future include agricultural activities, such as mowing of an adjacent hay field and possible use of pesticides. Compliance with the Santa Clara Valley Habitat Plan includes a requirement that the District compensate for habitat loss that would result from the Proposed Action. This, in conjunction with the minimization measures required, would reduce any cumulative contribution to biological resource impacts in the Proposed Action Area.

3.4 Global Climate Change

3.4.1 Affected Environment

Climate change refers to significant change in measures of climate (e.g., temperature, precipitation, or wind) lasting for decades or longer. Many environmental changes can contribute to climate change [changes in sun's intensity, changes in ocean circulation, deforestation, urbanization, burning fossil fuels, etc.] (EPA 2014a).

Gases that trap heat in the atmosphere are often called greenhouse gases (GHG). Some GHG, such as carbon dioxide (CO₂), occur naturally and are emitted to the atmosphere through natural processes and human activities. Other GHG (e.g., fluorinated gases) are created and emitted solely through human activities. The principal GHG that enter the atmosphere because of human activities are: CO₂, methane (CH₄), nitrous oxide, and fluorinated gasses (EPA 2014a).

During the past century humans have substantially added to the amount of greenhouse gases in the atmosphere by burning fossil fuels such as coal, natural gas, oil and gasoline to power our cars, factories, utilities and appliances. The added gases, primarily CO₂ and CH₄, are enhancing the natural greenhouse effect, and likely contributing to an increase in global average temperature and related climate changes. At present, there are uncertainties associated with the science of climate change (EPA 2014b).

Climate change has only recently been widely recognized as an imminent threat to the global climate, economy, and population. As a result, the national, state, and local climate change regulatory setting is complex and evolving.

In 2006, the State of California issued the California Global Warming Solutions Act of 2006, widely known as Assembly Bill 32, which requires California Air Resources Board (CARB) to develop and enforce regulations for the reporting and verification of statewide greenhouse gases emissions. CARB is further directed to set a greenhouse gases emission limit, based on 1990 levels, to be achieved by 2020.

In addition, the EPA has issued regulatory actions under the Clean Air Act as well as other statutory authorities to address climate change issues (EPA 2014c). In 2009, the EPA issued a rule (40 CFR Part 98) for mandatory reporting of greenhouse gases by large source emitters and suppliers that emit 25,000 metric tons or more of greenhouse gases [as CO₂ equivalents (CO_{2e}) per year] (EPA 2009). The rule is intended to collect accurate and timely emissions data to guide future policy decisions on climate change and has undergone and is still undergoing revisions (EPA 2014c).

3.4.2 Environmental Consequences

No Action

Under the No Action Alternative, the Pacheco Conduit, Santa Clara Conduit, and Santa Clara Tunnel would continue to be operated in their existing condition. There would be no change in GHG emissions.

Proposed Action

As shown in Table 3, annual construction and operational emissions of CO_{2e} are estimated to be 450.8 and 108.5 metric tons (2017 and 2018 respectively), well less than the EPA's 25,000 metric tons per year threshold for annually reporting GHG emissions. Accordingly, the Proposed Action would result in below *de minimis* impacts to global climate change.

Cumulative Impacts

GHG generated by the Proposed Action are expected to be extremely small, as seen in Table 3. While any increase in GHG emissions would add to the global inventory of gases that would

contribute to global climate change, the Proposed Action would result in potentially minimal to no increases in GHG emissions and a net increase in GHG emissions among the pool of GHG would not be detectable.

3.5 Water Resources

3.5.1 Affected Environment

The Santa Clara Conduit, Pacheco Conduit, and Santa Clara Tunnel provide water to customers in the District and San Benito County Water District.

San Benito County Water District

San Benito County Water District has a San Felipe CVP contract for up to 43,800 AF from San Luis Reservoir (Contract No. 8-07-20-W0130). The majority of CVP water is delivered for agricultural purposes but some is also delivered for municipal and industrial (M&I) purposes.

San Benito County Water District operates and maintains both the Hollister Conduit and San Justo Reservoir, and participates in the operation and maintenance of pumping and conveyance facilities from San Luis Reservoir through a joint operating agreement with Santa Clara. The Pacheco Bifurcation Structure is an intertie between San Benito and Santa Clara systems. CVP water is delivered into Zone 6 of San Benito through a pressurized distribution system that extends from San Justo Reservoir to the district distribution system. Zone 6 is the only portion of San Benito that is authorized to receive CVP water. Ten turnouts along the Hollister Conduit connect to San Benito's distribution system which provides CVP water service to 23,700 acres (both agricultural and urban) in northern San Benito County. The turnouts include flow control structures and, in some cases, booster pump stations. There are also four percolation turnouts through which water can be released into Pacheco Creek, Tres Pinos Creek, or the San Benito River for groundwater recharge. These turnouts are controlled from locked structures.

Groundwater San Benito County Water District is located within the Hollister Area Sub-basin of the Gilroy-Hollister Valley Groundwater Basin (California Department of Water Resources 2004). Historically, groundwater was the primary source of water for communities within this sub-basin which has led to overdraft in the area. In the late 1980s, CVP water was brought in as a supplemental source of water to correct for groundwater overdraft and to augment existing groundwater and local surface water supplies. Since importation of CVP water, groundwater levels have generally risen (California Department of Water Resources 2004, Pers. Comm. Dale Rosskamp 2011).

Santa Clara Valley Water District

Santa Clara, a San Felipe Division contractor, is a water supply wholesaler who conserves, imports, treats, distributes, and is responsible for the quality of water within Santa Clara County for M&I and agricultural purposes. CVP water is conveyed from the Delta through the Delta-Mendota Canal to O'Neill Forebay. The water is then pumped into San Luis Reservoir and diverted through the 1.8 miles of Pacheco Tunnel Reach 1 to the Pacheco Pumping Plant. At the pumping plant, the water is lifted to the 5.3-mile-long high-level section of Pacheco Tunnel Reach 2. The water flows through the tunnel and, without additional pumping, through the

Pacheco Conduit to the bifurcation of the Santa Clara and Hollister Conduits to serve the CVP service areas of Santa Clara and San Benito County Water District.

Total annual water use in Santa Clara County is currently estimated to be 400,000 AF of which only a portion is CVP water as described below. Approximately 10 percent of this use is for agricultural purposes. Most of the remaining use is for M&I purposes, which includes residential, commercial, industrial, and institutional water use. Water is also used to meet environmental needs, such as maintenance of minimum stream flows to meet fishery needs.

Santa Clara owns and operates 17.3 miles of canals, 8.4 miles of tunnels, 142 miles of pipelines, 3 pumping stations and 3 treatment plants as part of the overall water treatment, distribution and recharge systems. The District also operates and maintains 18 major recharge ponds, with a combined surface area of more than 320 acres, and over 30 local creeks. Runoff is captured in the District's reservoirs and released into both instream and off stream recharge ponds for percolation into the groundwater basin. In addition, imported water is delivered by the raw water conveyance system to streams and ponds for groundwater recharge. The annual average recharge of these systems is 157,200 AF.

Groundwater The three major groundwater basins in the Santa Clara service area, which are interconnected and occupy nearly 30 percent of the total county area, are Santa Clara Valley, Coyote and Llagas Basins. Groundwater supplies nearly half of the total water used in Santa Clara County and nearly all use in the Coyote and Llagas basins (Santa Clara Valley Water District 2007).

Historically, Santa Clara County has experienced as much as 13 feet of subsidence caused by excessive groundwater withdrawal. The rate of subsidence slowed in 1967 when imported water was obtained to replenish groundwater supplies. Santa Clara was created partially to protect groundwater resources and minimize land subsidence. Santa Clara operates a comprehensive groundwater management program, including onstream and offstream recharge facilities and extensive monitoring. Recharge to the groundwater basins consists of both natural groundwater recharge and artificial recharge through local surface and imported water. Santa Clara owns and operates more than 30 recharge facilities and six major recharge systems with nearly 400 acres in recharge ponds. These facilities percolate both local and imported water into the groundwater aquifer. Santa Clara does not have its own groundwater extraction facilities, but does levy a charge for all groundwater extractions by local retailers and individual users overlying the Santa Clara Valley Groundwater Basin. Today, Santa Clara reduces the demand on groundwater and minimizes subsidence through conjunctive use of surface water and groundwater. Santa Clara monitors land subsidence through benchmark surveying, groundwater elevation monitoring, and data from compaction wells.

3.5.2 Environmental Consequences

No Action

Reclamation would not approve the District's Proposed Action. The District would continue to perform maintenance on a case-by-case basis consistent with existing environmental compliance.

However, the facilities could degrade if timeline maintenance did not occur and the system could be compromised, adversely impacting water resources for Santa Clara and San Benito County Water District.

Proposed Action

The Pacheco Conduit, Santa Clara Conduit, and Santa Clara Tunnel would be out of service temporarily during the dewatering and construction periods of the Proposed Action. Both water districts have alternative sources of water. In order to reduce the temporary disruption and inconvenience to water users, work requiring pipeline shutdown would be scheduled for when demand is lower. As described in Section 2.2, BMPs would be implemented during construction in order to control erosion; prevent any potential impacts to local waterways; and to minimize ground saturation in the appurtenance work areas. In addition, the District will acquire all permits required for working in waterways and implement all necessary BMPs to avoid and/or minimize potential water quality impacts.

There may be temporary impacts to groundwater levels in areas of Santa Clara and San Benito County Water District that could shift to groundwater supplies during the 5-month duration of the Proposed Action. However, these impacts would be temporary and would be offset once the shift back to surface water supplies is made. Completion of the Proposed Action would ultimately provide both water district's customers with a more reliable source of water.

Cumulative Impacts

Temporary disruption in water service to the District and San Benito Water District's customers would occur during the Proposed Action; however, this would be offset by scheduling and using other sources of water during the Project. Overall, there would be cumulatively beneficial impacts over the long-term as water supply would be more reliable. Additionally, the completion of this Proposed Action, when combined with future O&M activities, would reduce the need to discharge large amounts of water prior to future maintenance activities as new infrastructure would be added that would allow isolation of the system resulting in less water discharges prior to O&M activities. These activities also extend the useful life of the pipeline by fixing deficiencies.

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Section 4 Consultation and Coordination

4.1 Public Review Period

Reclamation provided the public with an opportunity to comment on the Draft FONSI and Draft EA during a 30-day public review period. No comments were received.

4.2 List of Agencies and Persons Consulted

Reclamation has consulted and coordinated with the following regarding the Proposed Action:

- California State Historic Preservation Office
- U.S. Fish and Wildlife Service
- National Marine Fisheries Service
- San Benito County Water District
- Santa Clara Valley Water District

4.3 Endangered Species Act (16 U.S.C. § 1531 et seq.)

Section 7 of the Endangered Species Act requires Federal agencies, in consultation with the Secretary of the Interior and/or Commerce, to ensure that their actions do not jeopardize the continued existence of endangered or threatened species, or result in the destruction or adverse modification of the critical habitat of these species.

On March 31, 2017, Reclamation requested confirmation from the U.S. Fish and Wildlife Service that Reclamation's responsibilities under Section 7 of the Endangered Species Act are met by the District's compliance with the Santa Clara Valley Habitat Plan. Confirmation was received on April 19, 2017.

Reclamation received concurrence from NMFS (2008) that the proposed draining may affect, but is unlikely to adversely affect the South-Central California steelhead and its critical habitat. The concurrence memorandum is included as Appendix E.

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