Initial Study/Mitigated Negative Declaration

Shortcut Pipeline Improvement Project

September 22, 2011

CONTRA COSTA
WATER DISTRICT

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*Available at Contra Costa Water District, 2411 Bisso Lane, Concord, CA 94520

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List of Acronyms and Abbreviations

AB 32	Assembly Bill 32
AB 1493	Assembly Bill 1493
ABAG	Association of Bay Area Governments
AF	acre-feet
AFY	acre-feet/year
APE	area of potential effects
ARB	Air Resources Board
BAAQMD	Bay Area Air Quality Management District
BC	Before Christ
BCDC	San Francisco Bay Conservation and Development Commission
BMPs	Best Management Practices
BO	Biological Opinion
BRA	Biological Resources Analysis
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CAP	Clean Air Plan
CCR	California Code of Regulations
CCWD	Contra Costa Water District
CDFG	California Department of Fish and Game
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CFR	Code of Federal regulations
cfs	cubic-feet per second
CGP	Consolidated General Permit
CH_4	methane
cm	centimeter
CNDDB	California Natural Diversity Database
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalents
COE	U.S. Army Corps of Engineers
CNDDB	California Natural Diversity Data Base
CNPS	California Native Plant Society
CWA	Clean Water Act
dB	decibels
dBA	A-weighted decibels
Dbh	diameter at breast height
DOC	California Department of Conservation
DMG	Division of Mines and Geology
DPM	diesel particulate matter
DTSC	Department of Toxic Substances Control
DWR	Department of Water Resources
EA	Environmental Assessment
EBMUD	East Bay Municipal Utility District
EBRPD	East Bay Regional Park District
EPA	Environmental Protection Agency

ESA	Endangered Species Act
ft	feet
FEMA	Federal Emergency Management Agency
FONSI	Finding of No Significant Impact
FMMP	Farmland Mapping and Monitoring Program
FWCA	Fish and Wildlife Coordination Act
GHG	greenhouse gases
I	Interstate (Highway)
IPCC	Intergovernmental Panel on Climate Change
IS	Initial Study
ITA	Indian Trust Assets
HFCs	hydro fluorocarbons
JPC	Joint Policy Committee
km	kilometer
lbs.	pounds
LUST	Leaking Underground Storage Tanks
MBTA	Migratory Bird Treaty Act
mg/L	milligrams per liter
MLD	Most Likely Descendant
MND	Mitigated Negative Declaration
MRZ	Mineral Resource Zone
MS4	Municipal Separate Storm Sewer System
MSL	Mean Sea Level
MSM	Mobile Source Measure
MTC	Metropolitan Transportation Commission
$MTCO_2e$	metric tons of carbon dioxide equivalents
N_2O	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NIC	Northwest Information Center
NOI	Notice of Intent
NO_x	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
O&M	operations and maintenance
PFCs	perfluorocarbons
PM	particulate matter
$PM_{2.5}$	particulate matter less than 2.5 microns in diameter
PM_{10}	particulate matter less than 10 microns in diameter
POTW	Publically Owned Treatment Works
ppm	parts per million
PRDs	Permit Registration Documents
Project	Shortcut Pipeline Improvement Project
PVC	polyvinyl chloride
O_3	ozone
RCEM	Road Construction Emission Model
Reclamation	U.S. Dept. of the Interior, Bureau of Reclamation
Recovery Act	American Recovery and Reinvestment Act of 2009
ROG	reactive organic gases
ROW	right-of-way

RWQCB	Regional Water Quality Control Board
SCADA	Supervisory Control and Data Acquisition
SCP	Stormwater Control Plan
SCPL	Shortcut Pipeline
SF_6	sulfur hexafluoride
SFBA	San Francisco Bay Area
SFBAAB	San Francisco Bay Area Air Basin
SFRWQCB	San Francisco Regional Water Quality Control Board
SHPO	State Historic Preservation Officer
SIP	State Implementation Plan
SLIC	Spills, Leaks Investigation and Cleanup
SMHM	salt-marsh harvest mouse
State	State of California
SWPPP	Stormwater Pollution Prevention Plan
TDS	total dissolved solids
g/m^3	micrograms per cubic meter
U.S. (or US)	United States
USC	United States Code
USFWS	U.S. Fish and Wildlife Services
USGS	U.S. Geological Society
VOCs	volatile organic compounds
WDA	Waste Discharge Authorization
WMU	Waste Management Unit
WPT	western pond turtle

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Section 1 Introduction

This Initial Study (IS) has been prepared by the Contra Costa Water District (District) as the lead state agency to satisfy the requirements of the California Environmental Quality Act (CEQA). The Shortcut Pipeline (SCPL) is owned by the United States Dept. of the Interior, Bureau of Reclamation (Reclamation) and a National Environmental Policy Act (NEPA) document will be prepared at a future date. The District has included in this document all required CEQA information and has also included information that will support Reclamation's NEPA document (EA/FONSI).[1]

1.1 Background / Summary Project Description

The Martinez Reservoir is the terminus of the Contra Costa Canal system, and the SCPL is used to balance flows and allow reliable service to all CCWD customers. The SCPL is the main source of water supply for the City of Martinez, California, the Foster Wheeler Power Plant within the Tesoro Refinery, as well as the Shell Oil Martinez refinery. It is approximately 5½ miles (28,000 feet) long and located generally in north-central Contra Costa County within a 40-foot, non-exclusive easement that passes through several private and publicly owned property parcels (see **Figure 1**).

1.1.1 Summary SCPL Description

The SCPL is a cement-mortar-lined and coated steel water supply pipeline that was built in 1972 and conveys untreated water from the Contra Costa Canal to the Martinez Reservoir. **Figure 1** shows an aerial photo of the project area within the SCPL, shown in blue. On the eastern end, the SCPL connects to the Contra Costa Canal. The SCPL proceeds on a generally westerly course to its terminus with Martinez Reservoir. Prior to construction of the SCPL, deliveries to Martinez Reservoir followed the portion of the Contra Costa Canal known as the Loop Canal as it proceeded south from Clyde, then looped through the cities of Concord, Walnut Creek, Pleasant Hill and Martinez to Martinez Reservoir. The SCPL consists of 42-, 48-, and 60-inch-diameter pipe segments. There are pipeline appurtenances associated with the SCPL that include numerous valves that allow for sealing, draining and refilling of the pipe, settlement monitors to allow for detection of SCPL settling, and a cathodic protection system to prevent corrosion. Access to the pipeline and infrastructure is gained through various routes.

The District has identified critical repairs and improvements needed to ensure reliable long-term water supply using the SCPL. For example, there are 5 valves that are currently not readily accessible for maintenance or repair due to lack of usable roads at Sites 5, 7, and 10 (see **Table 1** and **Figure 6**). The SCPL Improvement Project (Project) includes unpaved gravel access road construction and infrastructure rehabilitation activities, followed by permanent and long-term ongoing operation and maintenance (O&M) activities. These O&M activities, currently constrained due to limited access conditions, will be facilitated by the planned access road construction. **Table 1** summarizes information about the Project sites and **Table 2** summarizes the work activities at each site in chronological order. A limited number of Phase 1 repairs were completed in January 2011 within portions of the pipeline easement within the Shell and Tesoro Oil Refineries. Phase 1 work was covered under a Categorical Exclusion Checklist (CEC) dated April 1, 2010.

[1] Environmental Assessment/Finding of No Significant Impact.

The site figures in **Appendix B** display visual information about Sites 1 through 10, including valve and access road location, as well as detailed information on biological and hazardous material issues. It is suggested that the reader of this report keep these maps in foldout form for reference while reading the report.

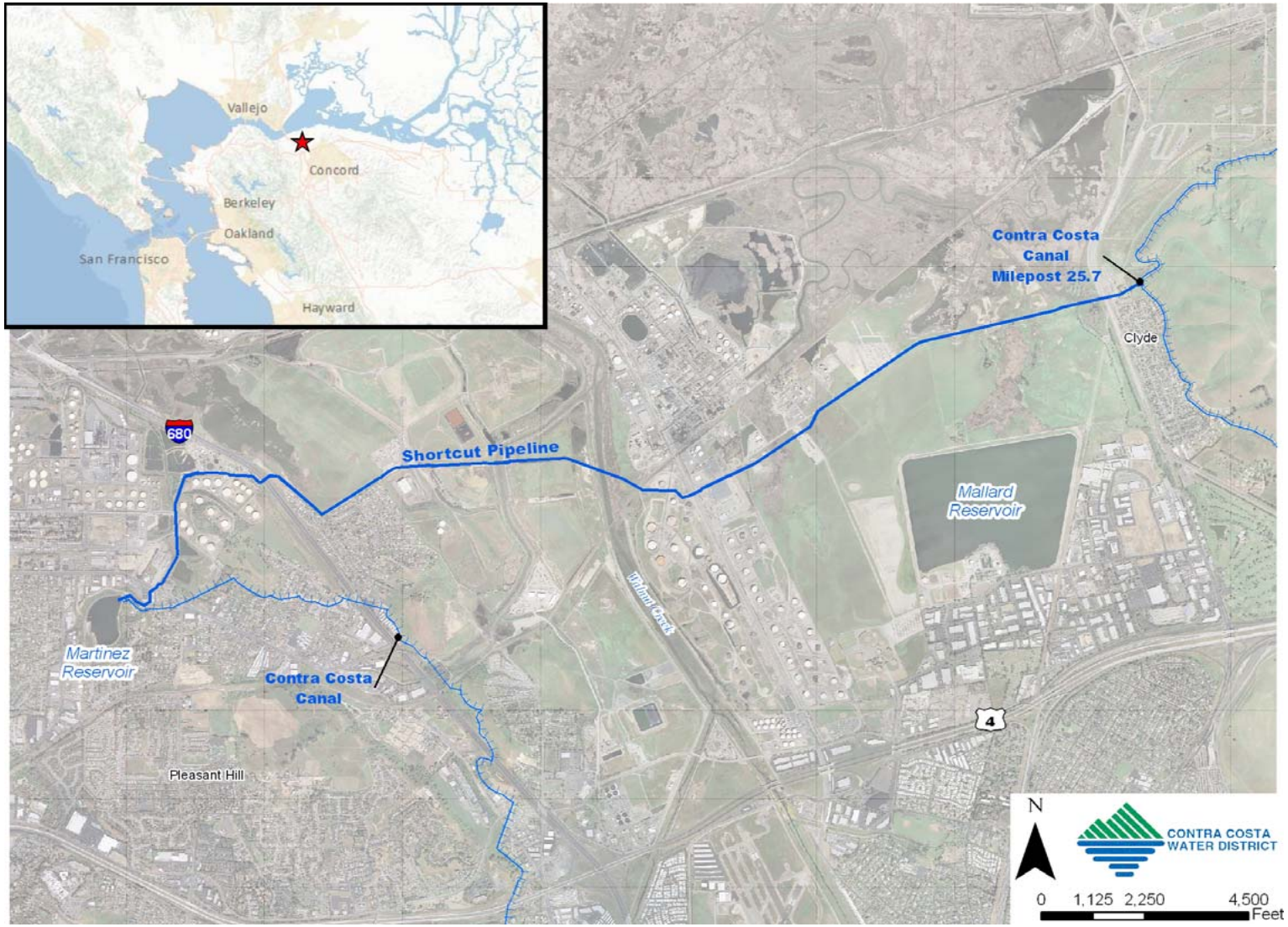

Figure 1 - Location and Site Vicinity Map

Source: CCWD

Table 1 Summary of Information About Each Site					
Work Site	**Site Description**	**Proposed Improvements**	**Land Use**	**Habitats and Wetlands**	**Hazardous Materials**
Site 1	Shell Refinery	Settlement Monitors	Heavy Industrial	None	Potential
Site 2	Tree Service Company	Blow-off Valve	Heavy Industrial	Adjacent to McNabney Wetlands	Minimal
Site 3	Martinez Gun Club	Settlement Monitors, Blow-off Valve	Heavy Industrial	Grasslands	Minimal
Site 4	IT Ponds	Air Valve, Settlement Monitors and Access Road	Heavy Industrial	Wetlands	Medium potential
Site 5	Foster Wheeler Power Plant	Access Road, Blow-off Valve and new Butterfly Valve, Settlement Monitor	Heavy Industrial	Grasslands and wetlands	Minimal
Site 6	Tesoro Refinery	Blow-off, Air and Butterfly Valves, Access Road, Settlement Monitors	Heavy Industrial	None	Potential (WMU4)[1]
Site 7	Tesoro Refinery	Blow-off Valve and Access Road	Heavy Industrial	Grasslands and wetlands	Minimal
Site 8	Tesoro Refinery	Air Valve,	Heavy Industrial	Grasslands	Minimal
Site 9	Tesoro-end of Monsanto Way	Air Valve, Blow-off Valve, Settlement Monitors	Heavy Industrial	Grasslands	Minimal
Site 10	Concord Naval Weapons Station	Blow-off, Air and Butterfly Valves, new Access Road, Settlement Monitors	Heavy Industrial	Grasslands and wetlands	Minimal

[1]Waste Management Unit 4 within the Tesoro Golden Eagle Refinery.

Table 2 List of Activities and Estimated Time Frames for the SCPL Improvement Project		
Activity	**Subactivity**	**Construction or Maintenance Timeframe**
Pipeline Assessment Phase **Complete**	1. Inspect pipeline valves. 2. Third–party access agreements have been obtained as required.	Completed Completed
Phase 1 Valve Repair & Refurbishment Work began in June 2010 and was completed in early 2011. Sites 1, 3, and adjacent to Site 5.	1. Refurbish 3 existing Air Valves and 1 Blow–off Valve. 2. Replace 3 Butterfly Valves and construct 4 new Air Valves. 3. Construct 500–foot gravel haul road (Tesoro property). 4. At Contra Costa Canal construct 18–inch air vent adjacent to SCPL slide gate. 5. Maintain valves that have been repaired or newly installed. Maintain new access road on Tesoro property.	Completed Completed Completed

Table 2 List of Activities and Estimated Time Frames for the SCPL Improvement Project		
Activity	**Subactivity**	**Construction or Maintenance Timeframe**
Phase 2A	1. Construct 5 new gravel at-grade access roads. a. Approximately 1,900 feet along the easternmost segment of the pipeline (to access 1 Butterfly Valve, 1 existing Air Valve, 1 new Air Valve and 2 Blow-off Valves). Site 10. b. 650 feet of access road at Site 7 within the Tesoro Refinery. Site 7 is east of WMU4; the road provides access to a Blow-off Valve. c. Approximately 450 feet of road west of the Foster Wheeler power plant (to access a Blow-off Valve adjacent to Pacheco Slough and for installation of a new Butterfly Valve). Site 5. d. Approximately 2,000 feet adjacent to IT Corporation property (the area where the pipeline failed during the 1989 Loma Prieta earthquake) with access to 1 Air Valve and numerous settlement monitors. Site 4. e. Construction of minor gravel, paved or concrete access to 2 Air Valves, both along Monsanto Way east of WMU4 site (Sites 8 and 9). Regraveling of approximately 480 feet of existing Monsanto Way road. Site 9.	Summer/Fall (2012 and 2013)
	2. Refurbish 3 existing Air Valves (Sites 4, 8, 9, and 10) and 6 Blow–off Valves (Sites 2, 5, 7, 9, and 2 valves at 10). 3. Replace 1 Butterfly Valve and construct 1 new Air Valve. Site 10. 4. Construct new Butterfly Valve. Site 5. 5. Install or replace up to 40 settlement monitors.	Following road construction in 2012 and 2013 (Subactivities 2-5)

Table 2 List of Activities and Estimated Time Frames for the SCPL Improvement Project		
Activity	**Subactivity**	**Construction or Maintenance Timeframe**
Phase 2B	1. Work within WMU4 site on Tesoro Golden Eagle Refinery property. 130 feet of access road construction, refurbish Blow-off Valve, replace Air Valve, replace Butterfly Valve construct new Air Valve, install settlement monitors. Site 6. 2. Construct levee road turnout and refurbish 1 Blow-off Valve east of the Martinez Gun Club (Site 3).	Pending discussions with the Avon Remediation team (ART)[2] and the SFRWQCB.
Phase 3	1. Inspect pipeline in the area where prior break occurred in 1989. Site 4. 2. Based on the inspection, if necessary, repair pipeline section either through slip lining existing pipeline, spot repairs with excavation or via trenching and installation of replacement pipeline.	2013 2014
Routine Operations and Maintenance	1. Access pipeline using access roads. Test valves as required. Inspect and repair cathodic protection system as needed. Inspect settlement monitors. 2. Perform maintenance as required (including weed abatement) while minimizing and avoiding impacts to sensitive resources.	Starting in 2012 Ongoing once repairs are made

1.1.2 Purpose and Need/Project Objectives

The purpose of the proposed Project is to perform repairs to the existing pipeline and associated valves, construct new access roads to some of the inaccessible portions of the SCPL, install settlement monitors, and improve operational flexibility so that maintenance and repairs can be performed with reduced environmental effects.

New and replacement valves are needed on the SCPL to allow for greater isolation of pipeline segments, so that only partial sections need to be drained to perform repairs, thereby reducing the amount of discharge/flooding and the amount of water wasted. Valve work also allows portions of the pipeline to remain in service while repairs are being made to the isolated sections. The 1989 Loma Prieta earthquake illustrated this need when it resulted in the rupture of a section of the SCPL. New roads are needed to provide access to the SCPL to facilitate the performance of critical maintenance activities, while reducing the impact of those activities. The pipeline crosses sensitive wetland habitat near Suisun Bay. Without access roads to valves located in these areas, trucks and equipment could damage the sensitive habitat and some sections of the SCPL would remain inaccessible for maintenance activities during periods when these areas are wet.

[2] ART includes Tesoro and Teseco Downstream Properties, a subsidiary of Chevron Environmental Management Company.

The primary objective of the proposed Project is to ensure reliable long-term untreated water supply to our customers, including the City of Martinez, Foster Wheeler Power Plant within the Tesoro Refinery, and the Shell Oil Refinery using the SCPL. Maintaining the SCPL in good operational condition is critical to this objective because the alternative means for conveying water to the Martinez Reservoir—the Loop Canal—is taken out of service for 3 months each year for maintenance, such as vegetation clearance from the canal channel. In addition, the Loop Canal is a less efficient and less reliable means of conveying water to Martinez Reservoir, and at times is incapable of fully meeting the peak water demand of the City and the Shell Oil Refinery. Finally, Martinez Reservoir is the terminus of the Contra Costa Canal system and is used to balance flows and allow reliable service to all of CCWD's customers. The SCPL is a necessary element to provide that reliable service. The SCPL also facilitates better management of the Loop Canal.

1.1.3 Scope/Project Location and Setting

The SCPL is located in north-central Contra Costa County, approximately 1.5 miles north of State Highway 4 and about 1.5 miles south of the San Joaquin/Sacramento Delta. The western portion of the alignment crosses Interstate 680 (I–680). The alignment passes through undeveloped open space (primarily grassland and marshland), 2 refineries, and industrial development; it also passes adjacent to two residential neighborhoods. The SCPL alignment traverses a number of property boundaries as shown in **Figure 2**. Existing conditions along the SCPL alignment are depicted in **Figures 3 and 4**.

The eastern end of the SPCL begins at the Contra Costa Canal, at the northern edge of the unincorporated community of Clyde, approximately 950 feet east of the Port Chicago Highway and approximately 3,500 feet northeast of Mallard Reservoir. The alignment runs adjacent to an existing residential neighborhood within Clyde, then crosses under the Port Chicago Highway and begins traversing open fields containing salt marsh and low-lying grasslands. Approximately 4,000 feet west of the Port Chicago Highway, the alignment turns to the southwest and follows Monsanto Way, a private road within the Tesoro Golden Eagle Refinery property.

Continuing in a southwesterly direction, the SCPL crosses developed Tesoro refinery property, then crosses under Walnut Creek, continues west for another 2,000 feet across a flat, vacant field, then crosses under Pacheco Creek. The SCPL continues west for approximately 1,800 feet across open ground, passing adjacent to the Martinez Gun Club property. It follows Arthur Road in a southwesterly direction, passing between a residential subdivision and open space property owned by the East Bay Regional Park District. After jogging under Interstate I-680, the alignment passes through the Shell Oil Martinez Refinery, crosses Pacheco Boulevard, passing a commercial property, then veers east and terminates at the Martinez Reservoir.

The topography along the majority of the alignment is relatively flat, and elevations along most of the pipeline range from just below sea level to about 20 feet above sea level. Near the western end, the SCPL winds through several hills and terminates at the Martinez Reservoir at an elevation of 100 feet.

1.1.4 Waste Handling Units Along SCPL Alignment

Waste handling was performed in the past on 4 facilities located near the SCPL under separate U.S. EPA facility identification numbers: CAD000092619 – labeled "Former IT Corporation Waste Pond (see Site Map 4, Appendix B); CAD000094771 – labeled "IT Group" and "Former

IT Corporation Waste Pond" (see Site Maps 3 and 4, Appendix B); CAD089680250 – labeled "Former IT Corporation Waste Pond" (see Site Map 4); and CAD041835695 – labeled "IT Group" (see Site Map 3, Appendix B). All 4 facilities, used before 1989 for waste treatment and liquid waste impoundments, in the 1990s underwent closure processes and today are in post-closure monitoring phases. In addition, Site 6 is located within a known hazardous waste site (WMU4) and of immediate concern is the October 2010 San Francisco Bay RWQCB conditional approval of the Closure and Post-Closure Maintenance Plan, WMU4, Golden Eagle Refinery in Martinez, California.[3] The Avon Remediation Team (ART), comprised of Tesoro and Chevron-Environmental Management Company for Texaco Downstream Properties, Inc., is implementing the planned closure at WMU4. Communication has been established with ART regarding the planned closure of the waste site and its relationship to the existing SCPL.

Remediation of all of the waste sites with respect to the SCPL is discussed in **Section 3.9, Hazards and Hazardous Materials**. Locations of key waste sites are depicted in **Figure 5** and on the individual site figures in **Appendix B.**

1.2 Project Sites and Activities

Figure 6 presents the proposed 10 sites for Phase 2. There are 4 possible Project work activities at each site:

- Check for hazardous materials at each site (see **Section 3.9 Hazards and Hazardous Materials** for procedures and details)
- Gravel access road construction
- Valve replacement or installation
- Settlement monitor replacement or installation

[3] SCPL Hazardous Materials Review, Environmental Science, 2011.

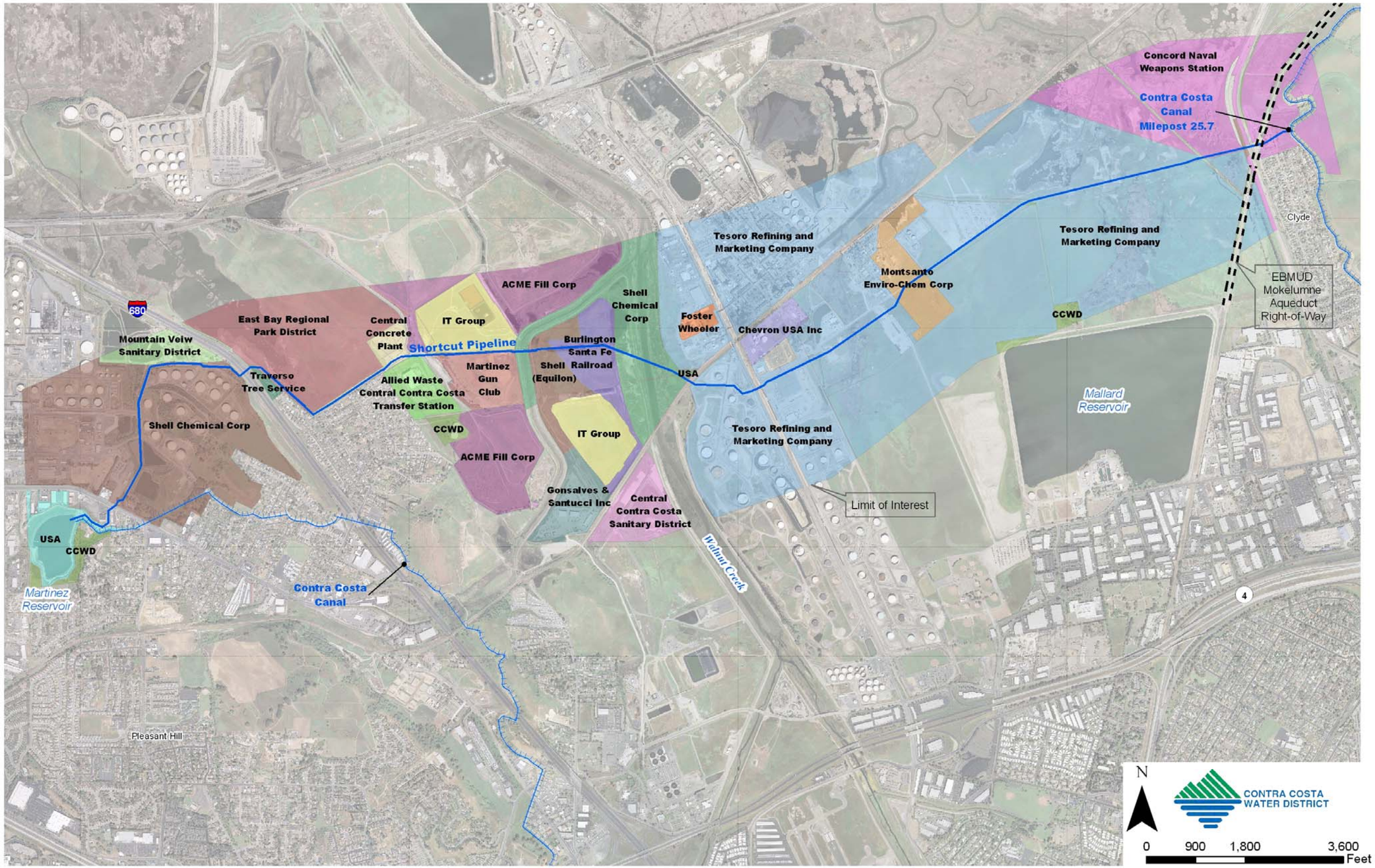

Figure 2 - Property Boundaries along Pipeline Route

Source: CCWD

Wetland marsh habitat in the vicinity of the SCPL, looking west towards Tesoro Refinery. Existing Blow-off Valve located north (right) of the fence line.

Figure 3 - Existing Conditions Along SCPL Alignment (Site 10) **Source: LSA**

Looking east toward Clyde, Pickleweed habitat on the SCPL Right of Way at Site 10.

Existing Blow-off Valve located alongside Montsanto Way, looking west toward Tesoro Refinery at Site 9.

Figure 4 - Existing Conditions Along SCPL Alignment (Sites 9 & 10) **Source: LSA**

1.2.1 Planned Activities by Site

The planned activities at each site for Phase 2 are summarized in **Table 3**. Phase 3 work activities would involve inspection and potential repair of the pipeline in Site 4. The individual activities are described in more detail in the following sections. Maps for sites 1-10 in **Appendix B** depict the specific activities that will occur at each site. The right-of-way (ROW) and construction easements are also shown on the maps, as well as the identified jurisdictional wetlands and Waters of the U.S. discussed in **Section 3**.

Table 3
Phase 2 Planned Activities

Site No.	Access Roads	Butterfly Valves	Blow-off Valves	Air Valves	Settlement Monitors[3]	Tentative Schedule
1	-	-	-	-	1	Fall 2012
2	-	-	1	-	-	Fall 2012
3	-	-	1	-	2	Fall 2013
4	2,000 ft	-	-	1	-	Fall 2012
5	450 ft	1	1	-	1	Fall 2012
6	130 ft	1	1	2	1	Fall 2013
7	650 ft	-	1	-	1	Fall 2012
8	-	-	-	1	-	Fall 2012
9	480 ft[1]	-	1	1	1	Fall 2012
10	1,900 ft[2]	1	2	2	4	Fall 2012
Total	**5,610 ft**	**3**	**8**	**7**	**11**	Fall 2012-Fall 2013

[1]480 feet of existing road will be re-graveled.
[2]Would require up to 5 culvert crossings.
[3] Eleven proposed settlement monitors in addition to 11 existing monitors and 18 optional locations, as shown in Figure 12.

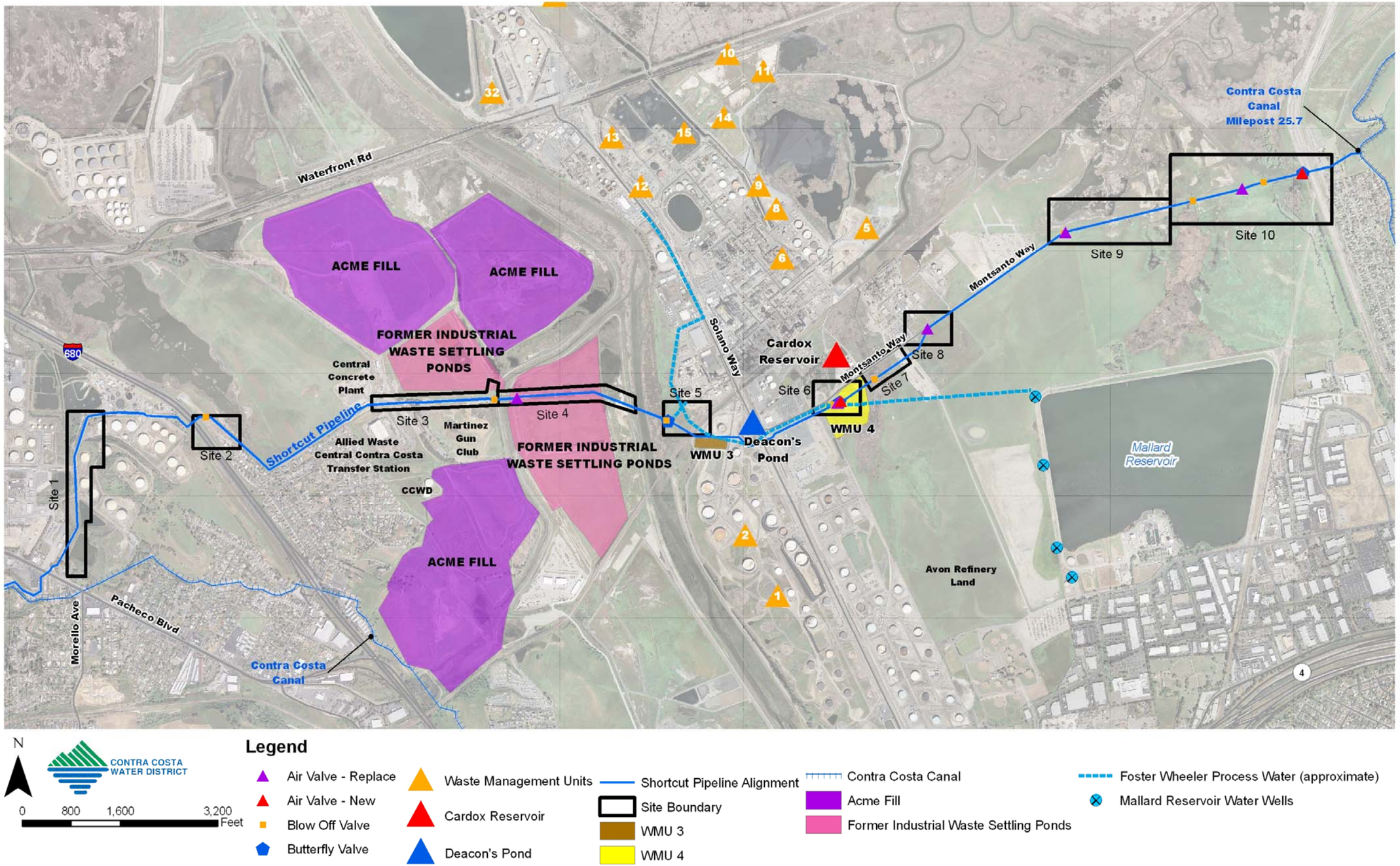

Figure 5 - Hazardous Waste Sites in the SCPL Vicinity

Source: CCWD

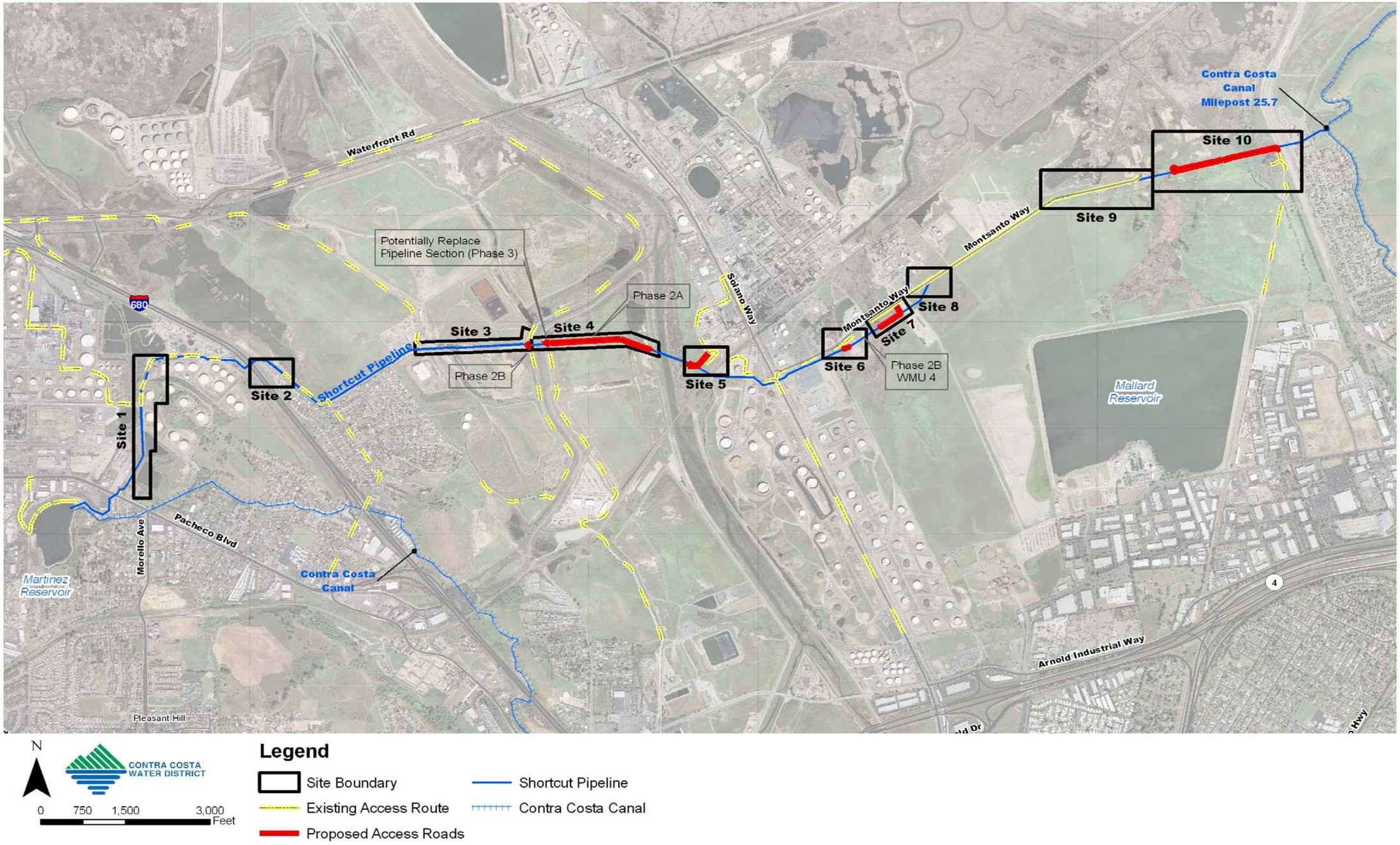

Figure 6 - Work Sites and Existing & Proposed Access Roads

Source: CCWD

1.2.2 Hazardous Materials

Property owners and the SFRWQCB will be contacted regarding hazardous materials. If required, testing near the Sites will be carried out. If hazards are present, a plan for treatment and disposal will be prepared (see details in **Section 3.9 Hazards and Hazardous Materials**). Pre-construction testing will be performed in locations where possible hazardous wastes may be present in the vicinity of the Project.

1.2.3 Access Road Construction

Gravel access road construction is a key component of the Project. SCPL maintenance and operation activities require that District maintenance staff have the ability to access valves, cathodic protection equipment, settlement monitoring stations, and other stations along the pipeline alignment. Gravel access roads are required to support safe maintenance of the SCPL. New gravel access roads are required to access certain facilities. Once access is established, ongoing maintenance activities include mowing, hand weed abatement, and herbicide applications as well as routine operations to open and close all of the valves on the SCPL. Descriptions of the required maintenance activities are provided in the following section. District staff will work with Reclamation to seek timely reviews for these maintenance activities from United States Fish and Wildlife Service (USFWS) and the U.S. Army Corps of Engineers (COE) as required.

Need for Improved SCPL Access

Access to the SCPL for repairs and maintenance is currently constrained; in certain locations there are no existing access roads, and in other locations the existing access routes pass close to environmentally sensitive areas or are inundated during the rainy season. There are portions of the SCPL right-of-way outside of sensitive environmental areas and these areas have existing vehicle access, in most cases on paved roadways.

Repair and construction of new access roads along the SCPL alignment will provide for routine maintenance in areas that are in close proximity to wetlands and sensitive habitats for special-status plants and/or wildlife species. Access road construction is intended to minimize the potential for impacts to sensitive resources and ensure safe maintenance and repair of the pipeline. It will be necessary to operate all of the valves along the SCPL at least once per year.

Description of Planned Access Roads

The District has obtained a long-term license from Contra Costa County to utilize roads to access the pipeline at Sites 3 and 4. The District is working with the East Bay Municipal Utility District (EBMUD) to obtain any related permits or licenses to use their maintenance road along the Mokelumne Aqueduct ROW to access Site 10.

The Project would require construction of 5 primary segments of new access roads; the locations are shown in **Figure 6**. Additional minor road segments would be constructed at some locations to provide connections to existing roads. Approximately 1 mile (5,130 feet) of new access roads would be constructed, and an additional 480 feet of existing road located in Site 9 would be re-graveled. The roads would be 12 feet wide and surfaced with compacted gravel. An example of an access road completed in Phase 1 is shown in **Figure 7**. All new access road construction would take place within the existing Reclamation ROW with the exception of approximately 160

feet of road at Site 7, and approximately 115 feet of road in 2 segments at Site 10. At Site 7, the access road would extend north beyond the ROW to connect to Monsanto Way on the Tesoro Golden Eagle Refinery property. At Site 10, 100 feet of road would extend north outside the ROW to form a turn-around at the western terminus, and 15 feet would be constructed to the south of the ROW to meet an existing access road on Tesoro Refinery property.

Road Construction Methods

To construct the new access roads, a dozer would clear, grub (clear of roots and stumps), and scarify (remove any existing pavement) the ground, then an excavator would over-excavate the roadbed to a depth of 1 to 2 feet below the natural ground surface. Debris and excess soil would be off-hauled for disposal at an off-site location. The roadbed would be uniformly graded and crowned for positive drainage away from the road. A non-woven geotextile fabric would be laid, then the roadbed would be backfilled with soil, crushed rock, and compacted with a vibratory compactor. The roadbed—consisting of imported Caltrans Type II aggregate base—would be built up to a height of 4 to 6 inches, including a geofabric layer for road strength and stability. In some locations, the road would be at grade rather than built up. The roadbed would be finished with gravel compacted by a two-roller compactor.

Culverts under the proposed access roads would be required at some locations to maintain existing hydrology, including storm drainage and encroachment from particularly high tides (higher high water) or 100-year flood events. It is estimated that approximately up to 5 culverts would be needed at Site 10. However, final locations and design of the culverts will determined at the time of construction. It is anticipated that the culverts will be part of surface road construction at this location.

Construction of the access roads is planned to commence in fall 2012 and would require 4 to 8 weeks to complete. Some roads may be constructed concurrently with the valve work (subject to environmental constraints). Approximately 8,190 cubic yards (cy) of fill material (primarily aggregate) would be imported, resulting in approximately 546 round trip truck trips to the sites, or an average of about 84 one-way trips per work day, or 42 round trips over the construction period. Only 10 valves will require excavation of soils. It is estimated that no more than 300 cubic yards would be exported from the site if all of the excavated materials were removed. Exported spoils would be less than imported fill. Because it is unlikely that trucks exporting excavated spoils off the site during valve repair and replacement would involve the same trucks importing fill to the site, an additional 20 one-way trips and 10 round trips would be added, resulting in a total of approximately 100 one-way trips and 50 round trips per workday. Any new hazardous materials found within the ROW are expected to be disposed of at approved waste disposal sites. As described in the hazardous materials **Section 3.9**, the District will be contacting existing property owners and seeking to dispose of any hazards at the property owner's approved disposal site.

Proposed access roads in sensitive areas would require the permanent filling of 1.23 acres of wetlands and other Waters of the United States (plus 6.49 acres on a temporary basis), requiring permits from the COE and other agencies. Additional information is provided in Section 1.3, **Required Permits and Approvals**, and in Section 3.4, **Biological Resources**. The Project will include onsite restoration of temporary impacts. Wetland mitigation may be provided via payment to the East Contra Costa County Habitat Conservancy and habitat mitigation may be paid via in lieu fees.

Example of new access road (on Tesoro Golden Eagle Refinery property adjacent to Waste Management Unit 3) completed during Phase 1 of the SCPL Improvement Project (Southeast of Site 5).

Figure 7 - Photo of Recently Completed Access Road (Phase 1, Completed 2010/2011) **Source: CCWD**

1.2.4 Valve Replacement and Installation

There are 3 types of valves on the SCPL: Butterfly Valves, Blow-off Valves and combination Air Valves. Phase 1 replacement of valves began in June 2010 and was completed in January 2011 at locations on the SCPL where existing paved access roads already provided impact-free access to the valve locations. Phase 1 construction was covered under a previous Categorical Exclusion pursuant to NEPA.[4] A total of 3 existing Air Valves and 1 Blow–off Valve were refurbished as part of the approved Phase 1 work. Phase 1 also included replacement of 3 existing Butterfly Valves and construction of 4 new Air Valves.

Valve refurbishment and replacement would continue during Phase 2 of the Proposed Project, which would commence in fall 2012 following completion of the new access roads. Phase 2A is expected to be completed by January 2013. Phase 2B construction is estimated to be completed by January 2014 but still require Contra Costa County authorization of work on its levee at Site 3 and a satisfactory resolution of any concerns at Site 6 (WMU4). In total, 2 Butterfly Valves, 8 Blow-off Valves, and 5 Air Valves would be replaced and 2 new Air Valves and 1 new Butterfly Valve would be installed. The locations of all new valves and valves to be replaced as part of the Project are shown in **Figure 8**.

Butterfly Valves

Butterfly Valves are located at strategic locations along the SCPL to regulate or shut off water flow to the pipeline or isolate water within certain sections of pipe. There are a total of 5, 48-inch Butterfly Valves on the SCPL. Encased in cast-iron with a flange that wraps around the pipeline, the valve consists of a metal disc mounted on a rod or pipe bisecting the pipe laterally. When a valve nut is turned, the disc rotates to an open or closed position. In the closed position, the valve disc rests against a flat ridge plate inside the pipeline, sealing off the flow of water. In the open position, the valve disc rotates to a position parallel with the sides of the pipe, and water flows on either side of the valve. A valve operator attached to the side of the Butterfly Valve houses the gear mechanism that rotates the disc inside the pipeline. A valve stem extension housed in 8-inch PVC piping extends upward above the ground surface, where the operating valve nut is enclosed in a housing and can be operated by authorized District personnel. The Project will replace 2 Butterfly Valves at Site 10 and Site 6 and add 1 new Butterfly Valve at Site 5. The new Butterfly Valve at Site 5 will support maintenance of the intertie between the SCPL and the Foster Wheeler Power Plant. A photo of a typical ground-level housing for a Butterfly Valve control is shown in **Figure 9.**

Blow-off Valves

Blow-off Valves are located at intervals along low points on the SCPL to allow for drainage of isolated pipeline segments for purposes of repairs or maintenance. There are a total of 9, 6-inch Blow-off Valves on the SCPL. These valves therefore are instrumental in minimizing the amount of water that must be discharged from the pipeline prior to making a repair. The steel valves are housed in a steel-reinforced concrete manhole and are connected to the SCPL with an outlet nozzle and reinforcement collar. When the gate valve is opened, water drains from the SCPL into a discharge pipe that drains to an appropriate downstream discharge location. As the Blow-off Valves are replaced, some discharge pipes will be abandoned in place and new flexible pipes used for discharge. The flexible pipe will allow water to drain to a nearby discharge

[4] Contra Costa Water District, *Categorical Exclusion Checklist: CCWD Shortcut Pipeline Valve Rehabilitation–Phase 1*, January 21, 2010.

location or if necessary to tanks that could be trucked away. A photo of a typical manhole for a Blow-off Valve is shown in **Figure 10.**

Air Valves

Air Valves allow air to be drawn into the pipe and are necessary to avoid damage that could result from negative pressure (vacuum) developing during dewatering or failure of the pipe, such as might occur during a seismic event. The Air Valves also function to release excess air when the pipe is filled. There are currently a total of 8, 8-inch Air Valves on the SCPL. The Air Valves are located at high points (elevations) on the SCPL; they are located above ground, mounted vertically on a concrete pad and protected in a locked, vented enclosure. They are laterally offset from the pipeline by approximately 8-feet, connected to the SCPL by steel riser pipe and appropriate fittings. A photo of a typical Air Valve housing and an example of a newly installed Air Valve is shown in **Figure 11.**

In addition to replacing 5 existing Air Valves, the Project would install 2 new Air Valves to provide increased operational flexibility in taking limited pipe segments out of service for maintenance. One would be located at Site 10, just downstream of the first Butterfly Valve at the eastern end of the SCPL. The second would be located at Site 6, within the Tesoro Golden Eagle Refinery. These new locations will ensure there is an Air Valve on each side of a Butterfly Valve.

Valve Rehabilitation and Installation Procedures

Replacement or new installation of Butterfly and Air Valves requires excavation around the pipeline in an area measuring approximately 10 feet wide by 10 feet long, with depths up to 10 feet. Replacement of the Blow-off Valves would not require any excavation; the valves would be accessed through the existing manhole covers, with workers climbing down to the valves on ladders mounted in the manholes.

Prior to excavation along the pipeline in areas of suspected or known contamination, the District would determine if the valve location has potential for hazardous waste. The District would follow the procedures for hazardous waste set forth in Section 3.9. For excavations around the pipeline, crushed stone foundation and bedding material would be used to stabilize the pipe. A minimum 12-inch thick layer of foundation material would be placed at the bottom of the excavation and around the new manhole structures. Additional thickness of foundation material would be placed where native soils in the excavation bottom are unstable. Foundation material would consist of clean, natural 1.5-inch crushed (i.e. angular) rock.

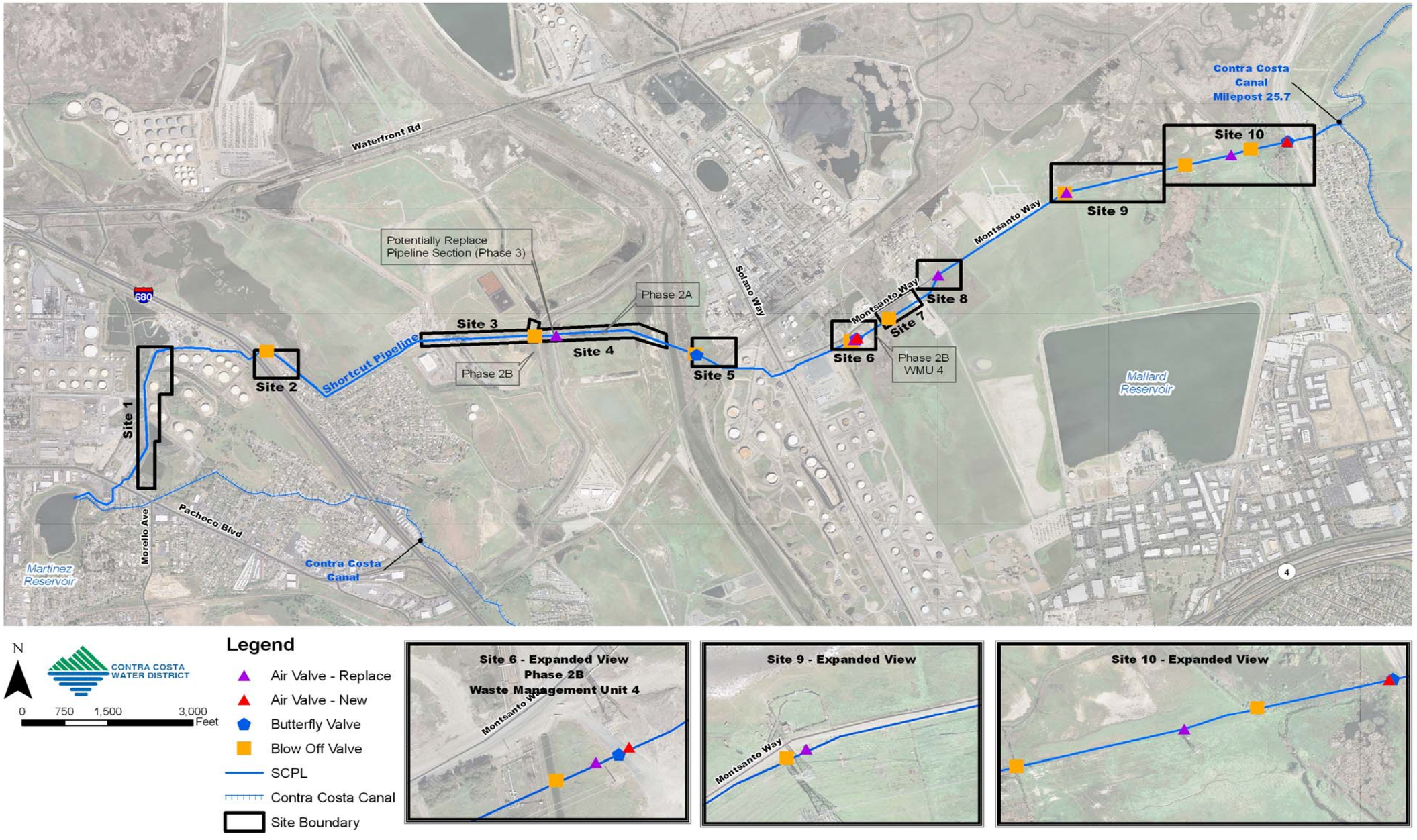

Figure 8 - Proposed New & Replacement Valve Locations

Source: CCWD

Example of a Butterfly can lid (in foreground) with Air Valve in background located at Site 6, within Tesoro's Waste Management Unit 4 (WMU4).

Figure 9 - Typical Butterfly Valve Can Lid (in blue) **Source: CCWD**

New blow-off valve installed during Phase 1 of the SCPL Improvement Project.

Figure 10 - Typical Blow-off Valve **Source: CCWD**

During replacement or installation of new valves, the SCPL will be shut down and segments of the SCPL would be drained to provide necessary access. Raw (untreated) water would be discharged via the Blow-off Valves, with the water drained down to an intermediate water level, below the elevation of the particular valve to be replaced. There are 5 major elevation peaks along the SCPL, each separated by butterfly isolation valves (see **Figure 9**). If the Butterfly Valves are operable, the Butterfly Valves would be closed so that only SCPL segments where the work is occurring would be drained. Draining would require disposal of untreated water from several discharge points. Possible discharge locations include nearby Walnut, Pacheco, or Seal creeks or other storm water conveyance structures. The U.S. Environmental Protection Agency (EPA) has determined that the discharge of untreated water to waters of the U.S. (such as the aforementioned creeks) is exempt from the need to obtain a discharge permit pursuant to the National Pollutant Discharge Elimination System (NPDES) established under the Federal Clean Water Act of 1972.[5] Groundwater may be encountered during excavation to install some valves and settlement monitors, and dewatering of the excavations would be required. Groundwater within excavated valve sites will either be applied to land or if necessary pumped into holding tanks and hauled off site.

Excavated areas near valves may require minor dewatering. In most cases groundwater quantities are expected to be minor. The District would dispose of any groundwater containing hazardous materials at an appropriate location for such materials. If groundwater levels are greater than anticipated, construction of temporary detention basins may be employed at some locations for groundwater disposal from dewatering sites.

1.2.5 Settlement Monitors Installation and Replacement

The proposed Project also includes the installation of settlement monitors at several locations along the SCPL to monitor settlement that may occur with natural ground subsidence or as a result of seismic activity (see **Figure 12**). An example of a settlement monitor is shown in **Figure 13.** Monitoring the pipeline for settlement is critical to preventing potential damage of the pipe.

Although the exact number and locations are still being determined, up to 40 settlement monitors would be installed along the SCPL. New settlement monitors will be installed where valve repair or replacement will occur or where new valve installation is planned. New settlement monitors will be sited to avoid disturbance of sensitive habitat. Installation of new monitors would require excavation of an area about 10 feet wide and 10 feet long, down to the depth of the top of the pipe.

[5] California Regional Water Quality Control Board, Central Valley Region, 2009, "Notice of Termination; General Waste Discharge Requirements Order No. 5-00-175 (General Order), NPDES No. CAG995001; Contra Loma Reservoir, Contra Costa Water District, Contra Costa County" [letter dated June 25, 2009].

New interior Air Valve installed during Phase 1 of the CPL improvement Project on the Tesoro Refinery property.

Typical Air Valve housing, located at the SCPL Site 8.

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Figure 11 - New Air Valve Installation and Typical Existing Air Valve Housing

Source: CCWD

1.2.6 Work Details

Several temporary staging areas or turnarounds will be established along the pipeline or access roads (see Site Maps 1-10 in **Appendix B)**. This will facilitate construction work and materials stockpiling. Temporary construction easements up to approximately 50 feet wide along the SCPL alignment would provide for localized staging of equipment and materials.

Construction activities would generally occur Monday through Friday from 8:00 a.m. to 5:00 p.m. Work on installation of new Butterfly Valves would likely be performed 24 hours a day for several days (until completion). It is anticipated that access road construction would require 14 workers while valve and pipe work would require 16 construction workers.

1.2.7 Construction Scheduling – Operational and Environmental Considerations

Construction of access roads would likely occur during summer or fall to avoid wet weather. Valve replacement and installation would require shutdown of the SCPL, so this work would need to occur when the Loop Canal can handle expected water demands. The Loop Canal is typically out of service for cleaning from November to March. There are no operational based restrictions for settlement monitor or cathodic protection work, although this would likely coincide with valve repair work.

In addition to operational constraints, there are other site-specific scheduling restrictions based on environmental factors considered in **Section 3**. Access road construction is subject to the most significant constraints as it involves the greatest disturbance of wetlands and habitat. It is expected that the construction of access roads will facilitate subsequent or concurrent valve and settlement monitor work within the access roads footprint by reducing the potential for environmentally based schedule restrictions. **Table 4** presents environmentally based calendar constraints and the possible schedule based on these constraints for road construction at each site. Sites 3, 4, 7, and 10 are the most constrained since road construction would take place in wetlands and also would have to allow for the presence of nesting birds. At these sites, the possible work window is very narrow and would need to occur from September 1 to October 15. At Sites 4 and 5, road construction would not be subject to constraints from nesting birds. Work there could proceed from April 15 through October 15. Site 6, located on Tesoro property on the WMU4 site, has the least habitat and wetland constraints however this site does have potential for hazardous waste.

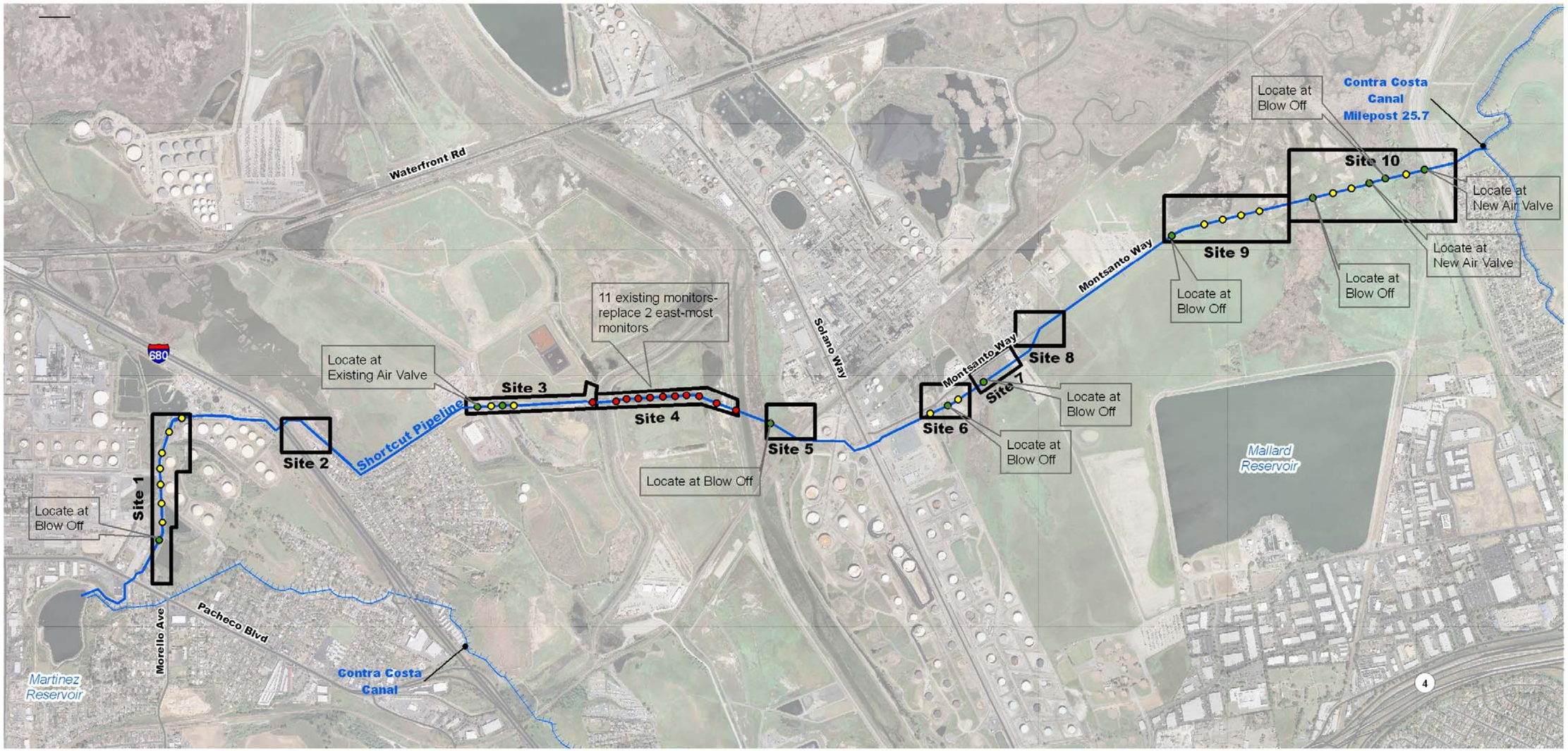

Figure 12 - Proposed Locations of New Settlement Monitors

Source: CCWD

Example of an existing settlement monitor, located at SCPL Site 4.

Figure 13 - Typical Settlement Monitor (Site 4) **Source: CCWD**

Table 4 Road Construction Calendar Constraints and Possible Schedule				
Site No.	**Nesting Bird (Avoidance Window Feb 1-Aug 31)**	**Wetlands Work (Allowed Apr 15-Oct 15)**	**Pickleweed Present (No Calendar Constraint)**	**Schedule**
3	X	X		Sep 1-Oct 15
7	X	X		Sep 1-Oct 15
10	X	X	X	Sep 1-Oct 15
4		X	X	Apr 15-Oct 15
5		X	X	Apr 15-Oct 15
6				Anytime

Once access roads have been constructed, valve and settlement monitor work can begin. It is possible that valve work can commence at the same time as the road work. There are 3 sites where there is currently access and no road construction is planned. Valve work is subject to the operational constraint discussed above. Valve and settlement monitor work is not subject to the wet weather restrictions as the excavation is minor. In addition, many of the valves and settlement monitors will fall within the footprint of the new access roads, so there will be no wetland impact. The driving constraint for any valve work is the need to take the SCPL out of service. There are a few sites, where nesting birds could hinder valve or settlement monitor work.

Figure 14 below illustrates the environmental constraints for sites construction and the possible schedules based on these combined constraints. The majority of work along the pipeline must be completed between September-December. Some sites have added flexibility, and work at these locations can also be completed in April and May.

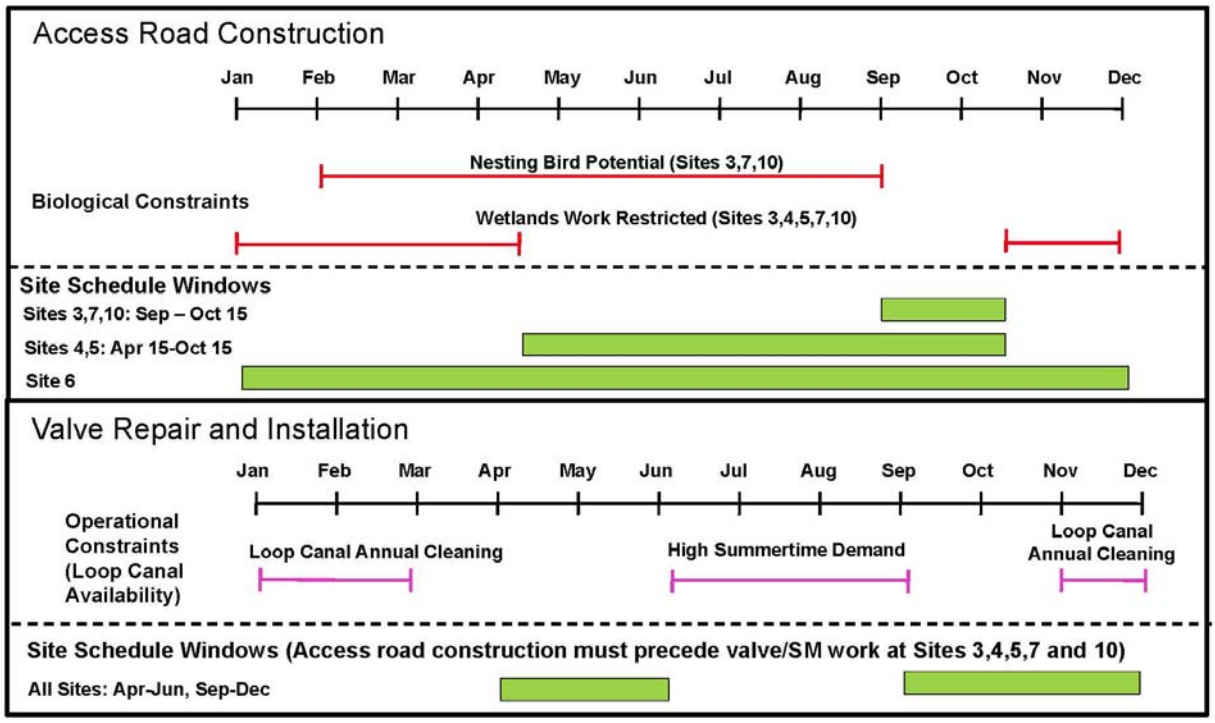

Figure 14 – Calendar-based Environmental Constraints **Source: CCWD**

1.2.8 Phase 3 Pipe Inspection and Repair

Phase 3 of the proposed Project would entail inspection and repair of the SCPL. Following completion of Phase 2 of the proposed project, the SCPL interior would be visually inspected for damage, particularly the area where the prior break occurred as a result of the 1989 Loma Prieta earthquake, located on Site 4. It is possible that some sections of pipe located between Walnut Creek on the east and Site 3 are cracked and would need to be repaired or replaced. This would entail excavation of an area—centered on the pipeline—of about 10 feet wide and 10 feet deep, with length varying depending on the length of damaged pipe section. The cracked pipe sections would be wrapped and sealed and the pipe will be stabilized with crushed stone, then backfilled with compacted soil.

Under a worst-case scenario, an approximately 2,100-foot-long SCPL section between Walnut Creek and Pacheco Creek would be replaced. A 10-foot-wide trench would be excavated by backhoe and excavator following dewatering of the pipeline. Replacement pipe would be laid on a crushed stone foundation, then the trench would be backfilled with compacted soil.

1.2.9 Future Operations and Maintenance

Reclamation worked with the USFWS on operations maintenance activities for a wide range of facilities in the Central Valley Project including the SCPL.[6] Carrying out repairs and maintenance activities of the SCPL requires undertaking numerous activities. The District has identified necessary SCPL operations and maintenance (O&M) activities (designated by activity number) from Table 1 of the USFWS BO. They are listed and described below.

Recommended O&M Activities Associated with the Shortcut Pipeline[7]

Activity 2: Blading and Disking of Right-of-Way. A grader or tractor with mounted blade or disc is used to scrape or shallowly till the soil to kill, prevent, or retard growth or spread of weeds, to reduce cover for pests, and to limit vegetation fuel load while providing fire breaks. This activity is conducted once to several times per year and may be conducted at any time of year, but primarily occurs during the dry season (March through November).

Activity 3: Blading of O&M Roads. A grader or tractor with mounted blade is used to scrape unpaved roadways and road shoulders to remove weedy vegetation, ruts, and to level and maintain the surface for access to the project. This activity is conducted once annually during the dry season, primarily from May through November.

Activity 5: Canal/Tunnel/Conduit Liner Repair. Cracked or broken pipe liner panels or the aprons or outlets at the Canal are patched with concrete, grout compound, shotcrete, or other similar material that is pumped, blown, or fed from a mixture by gravity. Damaged liner that cannot be repaired is overlaid with shotcrete or removed with heavy equipment and a new panel is fashioned in place.

Activity 8: Contact Herbicide Applications. Contact herbicides are applied to control vegetation on canal banks, on rights–of–way, and around water intakes and other structures. Contact herbicides are sprayed from pressurized tanks via

[6] Biological Opinion of the U.S. Fish and Wildlife Service, 2005. Formal Endangered Species Consultation on the Operations and Maintenance Program Occurring on Bureau of Reclamation lands within the South-Central California Area Office, U.S. Fish & Wildlife Service, February 17, 2005.

[7] The District will perform pre-maintenance biological surveys as necessary.

vehicle–mounted booms, backpack sprayers or other application rig, bean gun, wand, or by manually wicking herbicides directly onto vegetation.

Activity 11: Drain Ditch and Channel Maintenance. Debris, trash, soil, sediment, and vegetation are cleaned from open ditches, canals, basins, or pipe in order to ensure the conveyance of water through facilities were a way from facilities. Material may be removed by hand, shovel, backhoe, gradall, excavator, or tractor. Cleared soil and vegetation may be piled on adjacent land or, when extensive, transported in trucks to spoil site. This activity is conducted annually, primarily in spring and fall, but concentrated during the end of the dry season (August through October).

Activity 13: Hand Control of Vegetation. Small amounts of nuisance vegetation and/or weeds are removed at facilities or around structures where use of equipment or herbicides is impractical. Removal is done by hand pulling or with aid of stringed weed cutters, spades, hoes, shovels, adzes, saws, or other hand implements. This activity is conducted year–round.

Activity 14: Insecticidal Sprays. Insecticides are applied year–round, as needed, but primarily from spring through fall, to control bees, wasps, spiders, ants, cockroaches, fleas, termites, mosquitoes, and other arthropods. They are applied directly from canisters, applicators, or by hired structural pest control specialists. They are applied at structures along conveyance facilities and appurtenant structures.

Activity 15: Mudjacking/Injecting Grout. Mudjacking and/or injecting grout is used to repair leaks, cracks, holes, or voids in the canal or pipeline in order to prevent a blowout failure that could result in flooding of surrounding land. Repairs are conducted when defects are discovered, with work preferentially conducted during dewatering. Holes are bored behind the liner with an auger, then grout or fill (liquefied clay) is gravity fed from a mixer through tubes or hole borings into the void until the void is filled.

Activity 16: Pre-emergent Herbicide Applications. Pre–emergent herbicides are used where nearly year–round invasive weeds threaten the facility integrity or increase fire hazards through the growth of fuel load. The herbicides are applied directly to soil before seeds germinate, usually once annually in fall or early winter. Applications are made from pressurized spray tanks with a vehicle–mounted boom sprayer, backpack sprayer, or, for granular formulations, with spreaders. Pre-emergent herbicides are applied around water intakes, on canal banks, on rights–of–way, and around structures.

Activity 18: Right-of-Way Dust Abatement. Dust abatement is conducted to minimize the fugitive dust where the unpaved, non-operational roadway or outer canal bank is graded and where construction is occurring or spoils soil is being hauled during work operations at facilities. Typically, a water truck traverses the roadway or work area and sprays water directly onto the soil surface during single or multiple passes. Flooding may also be used to limit dust.

Activity 19: Right-of-Way Mowing. Mowing is conducted primarily in spring to control weeds and reduce or eliminate the need for herbicide applications along the canal and adjacent rights–of–way. Mowing is conducted with a rotary, sickle bar, or other mower blade attached to a tractor.

Activity 20: Rip-Rap. Rip–rap is used to prevent erosion of shorelines or embankments, and to strengthen the canal. Rip–rap is comprised of large rocks and boulders of varying sizes that are placed at dams, spillways, and canal or levee banks, especially near bridges and canal undercrossings or water control structures. Rock is delivered to the site by truck and trailer; dumped rock is piled with the aid of backhoes and excavators. The work is conducted when needed to protect banks, but is preferentially performed during the dry season.

Activity 23: Bargate/Fence Installations. Gate and fence installations and repairs are made to limit access to facilities, to provide security and safety, and protect resources where encroachment is a problem. Chain-link fence is installed to restrict public access and prevent dumping or vandalism. Bargates are installed where canal rights–of–way intersect public roadways, such as corners of bridges, on secondary or primary roads, or on parallel fences at or near structures. Holes for fence supports are dug by hand implements, power auger, or backhoes. Holes for bargates are dug with power augers or a backhoe. Pipe rods to which chain–link fencing is attached are set in the ground with concrete. Gates are cleaned and painted.

Activity 29: Drainage Improvements. Heavy equipment, including dozers, tractors, backhoes, longsticks, graders, etc., is used to excavate drainage trenches and install drain pipe or to fill low spots to improve drainage. Trenches and drains are cleared of vegetation and silt with heavy equipment or by hand. Excavated material is piled on levees rights–of–way, or is transported by truck to an off-site location. Drainage improvements are made as needed, though mostly annually, and preferentially during dry conditions—usually in the fall, before rains begin.

Activity 30: Electrical Repairs by Utility Companies. Electrical repairs are made year-round on an as–needed basis by utility line crews operating from service vehicles. Repairs (or replacements) are made at all utility–serviced facilities, including power poles, transformers, and underground utility lines.

Activity 31: Embankment Maintenance. Fill embankments along the sides of the canal are used to reduce runoff and erosion of soil into the canal and/or divert water toward underdrains or overchutes. The embankments are maintained with backhoes, graders, excavators, or hand implements employed to fill gullies and burrows, compact soil, and grade slopes. Trucks are used to haul fill. Embankment maintenance is conducted as needed, but primarily during the dry season.

Activity 32: Facilities Inspection. All project facilities are inspected once annually. Mechanical equipment (gates, valves, etc.) and electrical equipment (communications, monitoring, computer systems, etc.) are visually inspected and operated to test functioning.

Activity 33: Graffiti Removal from Concrete Structures. Graffiti is painted over by hand with a brush or roller, or is removed by sandblasting. Waste paint from sandblasting is collected and disposed of at an appropriate waste disposal site.

Activity 35: Valve Rehabilitation. Valve function is checked annually, and when they do not operate, they are removed and repaired or replaced. Valve rehabilitation work is contained within the existing SCPL ROW.

Activity 41: Right-of-Way Trash Removal. Tires, plastics, lumber, bedding, scrap metal, and other trash and garbage is removed by hand from rights–of–ways and hauled by truck to an appropriate waste disposal site. Larger items such as vehicles and appliances are removed with the aid of service trucks with hoists or winches. Where needed, trained waste handlers are used to collect and dispose of hazardous wastes.

Activity 42: SCADA System Repair and Upgrade. Supervisory Control and Data Acquisition (SCADA) electrical, computer, or communications equipment— primarily modular components or panels— located at control structures is repaired or replaced as needed.

Activity 48: Utility Trenching. Utility trench is excavated with a trencher, backhoe, or excavator to lay underground utilities to facilities and upgrade the systems in place. Most utility infrastructure has been provided, and the need for trenching is infrequent.

Activity 54: Minor Road Construction/Rehabilitation. Minor road rehabilitation or construction is done to provide new access to facilities or to recondition existing roads. Rehabilitation can involve ripping and removal of existing asphalt, re-grading of roadbed, and compaction of the new bed and underlying soil. Sand is spread by truck, along with crushed rock, and new asphalt that is compressed. Road construction is done irregularly or annually on a limited scale.

Activity 57: Structure Construction. Structures (blockhouses, stilling wells, etc.) are constructed when new operational facilities are added. Sites are graded and forms set for pouring concrete pads framing may use concrete block, metal, or would, with metal siding. Trenching may be done to provide underground utilities to the site.

Activity 58: Utility and Facilities Repair. Utility companies may send a service vehicle to repair or electrical connections or replace transformers. Repairs may occur anywhere along facilities, but are primarily conducted inside structures, and are completed irregularly on an as–needed basis.

Activity 59: Pump-In System Set-Up During Flood Years. During flood years, pumped diversion of water into the canal may occasionally be required, as permitted by operational agreements. Pump sites are cleared and leveled with heavy equipment and temporary piping is laid.

Additional ongoing maintenance activities not included above would include regular inspection and maintenance of the cathodic protection system, which protects the external surfaces of the mortar-coated steel cylinder of the SCPL from corrosion. The system consists of seven deep-well ground beds with high silicon, cast iron anodes connected to pole mounted rectifiers, and test stations installed at various locations along the pipeline as shown in **Figure 15**. District operations and maintenance staff would take system power input and output readings on a monthly basis and perform a pipe-to-soil potential survey annually to test the protective potential of the cathodic protection system.

1.3 Required Permits and Approvals

1.3.1 Reclamation Actions

The Proposed Action requires permission from Reclamation to construct the improvements and to maintain the SCPL and its right–of–way. Reclamation must issue the District an MP-620 permit prior to the start of construction of Phase 2, and must confirm that the District is authorized to perform routine maintenance of the refurbished, replaced, and new valves along the SCPL easement. Additionally where new ROWs are required, Reclamation may need to authorize these additional easements in accordance with the amended BO which allows activities outlined in Section 1.2.9. Before Reclamation can authorize the above action, it must prepare an Environmental Assessment under the National Environmental Policy Act (NEPA). It is anticipated that Reclamation will prepare this document as soon as the CEQA document is completed.

1.3.2 Additional Permits

The following permits from other federal, State, regional, and local agencies would also be required:

Federal

U.S. Army Corps of Engineers (COE): Construction of new access roads would require a Section 404 fill permit from the San Francisco Bay COE in compliance with the Clean Water Act (1972). Due to the amount of wetlands or Waters of the U.S. that would be filled (1.23 acres, plus up to 6.49 acres on a temporary basis), the Proposed Action would require an Individual 404 Permit from the COE. The District will formally apply for the 404 permit once the CEQA document has been issued.

U.S. Fish and Wildlife Service (USFWS): As part of its permitting process, Reclamation would initiate a Section 7 consultation with USFWS. The USFWS would make a determination as to whether the Proposed Action could result in biological jeopardy to a plant or animal species listed as Threatened or Endangered under the Endangered Species Act (1973), and if so, identify mitigation measures to protect the affected species and/or offset potential impacts to such species. Listed species are taxa for which proposed and final rules have been published in the Federal Register

San Francisco Bay Area Regional Water Quality Control Board (SFRWQCB): The Project would also require filing of a Notice of Intent (NOI) to the San Francisco Bay Area Regional Water Quality Control Board and preparation of a Stormwater Pollution Prevention Plan (SWPPP). The SWPPP addresses control of storm water pollution during construction through implementation of Best Management Practices (BMPs). In addition, the Project would require Section 401 Water Quality Certification from the RWQCB, pursuant to the federal Clean Water Act, as a prerequisite to a permit from the COE. A National Pollutant Discharge Elimination System (NPDES) permit will not be required for discharge of groundwater from dewatered excavations, because the work is considered maintenance of an existing utility line to restore and maintain its original purpose. Maintenance also includes work to restore existing facilities including access roads. The only work that may be subject to a

General Construction NPDES permit would be the construction of new access roads where none previously existed.

State

California Department of Fish and Game (CDFG): CDFG may require a Streambed Alteration Agreement for any activity that could affect the bank or bed of any stream that has value to fish and wildlife. CDFG authority is typically extended to any "blue line" stream shown on a U.S. Geological Society (USGS) topographic map, as well as unmapped channels with a definable bank and bed.

Local

East Bay Municipal Utility District: (EBMUD): The Project will require an encroachment permit from EBMUD for access to Site 10 that borders the Mokelumne Aqueduct.

Contra Costa County Flood Control and Water Conservation District (CCCFC&WCD): Permission from the CCCFC&WCD is necessary to use levee roads along Pacheco Creek and Walnut Creek for construction to access Sites 3 and 4. A 10-year license agreement was completed in December 2010 tha allows maintenance access to Sites 3 and 4. CCCFC&WCD must also agree to a modification of its levee adjacent to the Blow-off Valve at Site 4. This will allow maintenance crews site access to this valve and a truck turnaround.

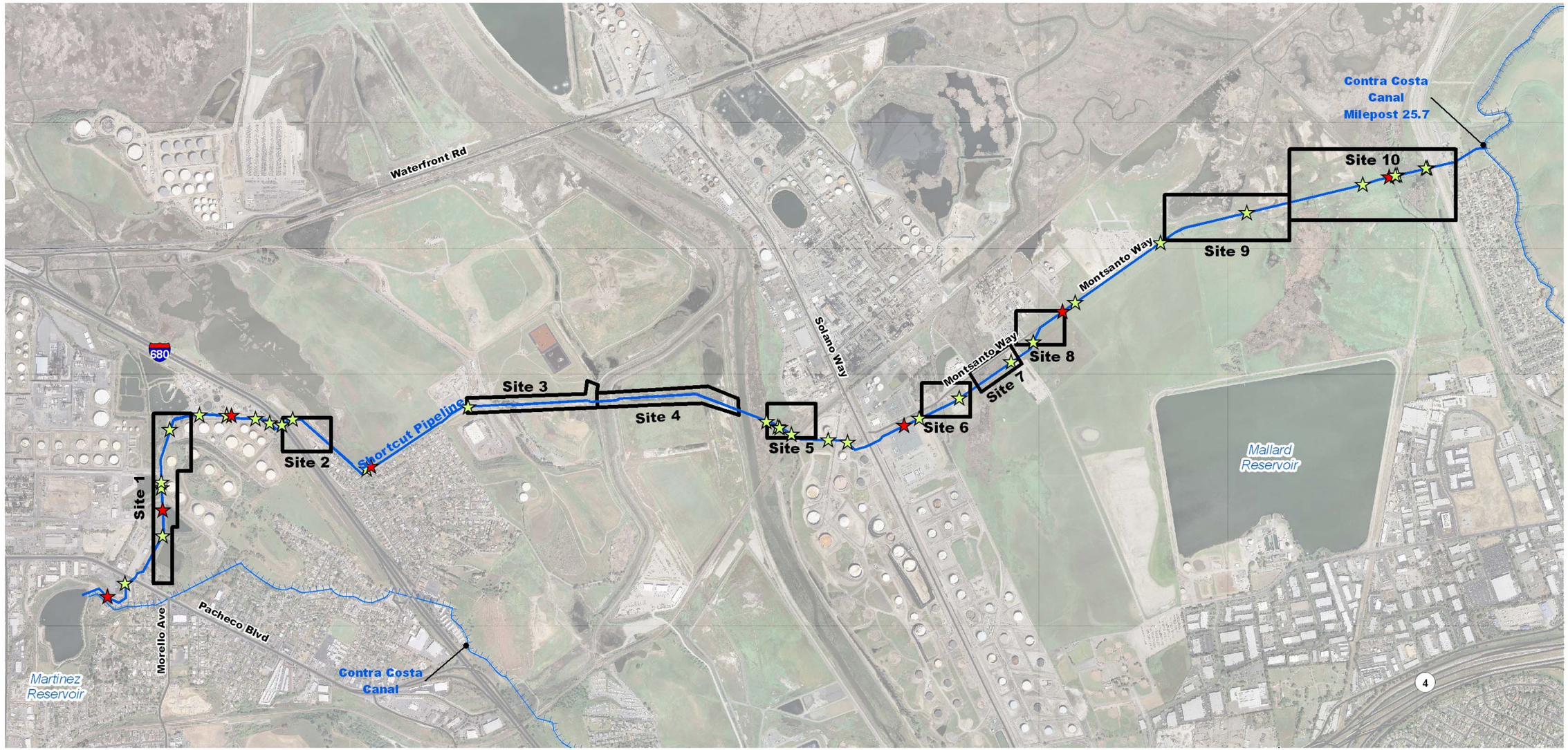

Figure 15 - Cathodic Protection Locations

Source: CCWD

1.4 Potential Environmental Issues

This IS/MND analyzes the affected environment of the Proposed Action in order to determine the potential and cumulative impacts to the following resources. Note that EA refers to a NEPA required section and IS refers to a CEQA required section.

- Aesthetics (IS)
- Agricultural Resources (IS)
- Air Quality (EA/IS)
- Biological Resources (EA/IS)
- Cultural Resources (EA/IS)
- Environmental Justice (EA)
- Geology and Soils (IS)
- Global Climate Change (EA/IS)
- Hazards and Hazardous Materials (EA/IS)
- Hydrology & Water Quality (IS)
- Indian Trust Assets (EA)
- Land Use and Planning (EA/IS)
- Mineral Resources (IS)
- Noise (IS)
- Population/Housing (IS)
- Public Services (IS)
- Recreation (IS)
- Socioeconomic Resources (IS)
- Transportation/Traffic (IS)
- Utilities/Service Systems (IS)

Section 3 includes the analysis of potential environmental issues for both CEQA (IS/MND) and NEPA (EA/FONSI).[8] Reclamation will finalize the EA/FONSI once the IS/MND is completed. **Section 3** includes the analysis portion of the potentially affected environment and the environmental consequences involved with the Proposed Action and the No Action Alternative. Mitigation measures are also indicated in this section where appropriate.

[8] EA/FONSI – Environmental Assessment/Finding of No Significant Impact.

Section 2 Alternatives and Proposed Action

This environmental report 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 environment. Other alternatives were considered but rejected from further evaluation due to infeasibility and/or greater environmental impacts. One option entailed relocating portions of the SCPL to avoid impacts to sensitive habitat areas. However, the costs of new land acquisition would be excessive and substantial impacts to sensitive habitat would still occur. Another alternative to facilitate full maintenance access considered construction of a new permanent access road along the entire length of the pipeline. This alternative was rejected because it would have greater impacts than the Proposed Action as well as greater costs.

2.1 No Action Alternative

Under the No Action Alternative, Reclamation would not approve the construction of Phase 2 of the Project. No new access roads would be constructed, no valves would be replaced or added, and no new settlement monitors would be constructed. Operation and maintenance of the SCPL would continue under the currently constrained conditions, with difficult to infeasible access to certain portions of the pipeline. Over time, aging and deteriorated valves could become inoperable, further impeding the feasibility of repairing and maintaining the pipeline. The reliability of the water supply CCWD provides to the City of Martinez would be compromised and could be completely cut-off in the event of a rupture of the pipeline. Reliability of supplies to users along the entire Contra Costa Canal would be compromised because the use of the Martinez Reservoir for balancing daily flows would be adversely affected. Under this scenario, the No Action Alternative could result in a series of adverse secondary effects which are evaluated in this environmental document.

2.2 Proposed Action

The Proposed Action is defined as Phase 2 and Phase 3 of the project. The Proposed Action will construct new access roads in 5 locations along the SCPL alignment to provide access—for maintenance purposes—to valves that are currently inaccessible or accessible only during dry summer months. Once constructed, the roads would allow CCWD to access valves without adversely affecting sensitive biological habitat located in and adjacent to some portions of the alignment.

Following completion of or in conjunction with the proposed access roads, the Proposed Action would include inspection of sections of the pipeline that may ultimately require repairs due to cracking and deterioration in some segments. Additionally, aging valves would be replaced or refurbished, and new valves would be installed to improve efficiency and flexibility for pipeline operations and maintenance.

More specifically, the Proposed Action would include:

- Potential new Rights-of-Way from Contra Costa County and Tesoro.
- Temporary access agreements from Contra Costa County, EBMUD, and the Concord Naval Weapons Station.
- Construction of 5 new gravel at-grade access roads at Sites 4,5,6,7 and 10 totaling approximately 5,000 feet in length, including:

  - Approximately 1,900 feet along the easternmost segment of the pipeline (Site 10);
  - Three segments within the Tesoro Refinery consisting of approximately 480 feet near the Foster Wheeler power plant (Site 5), 130 feet within WMU4 (Site 6), 580 feet east of WMU4 with-in Site 7 and;
  - Approximately 2,000 feet in the area where the pipeline failed during the 1989 Loma Prieta earthquake (Site 4); and
  - Construction of minor gravel, paved, or concrete road segments to the remaining valves (3 Air Valves and 3 Blow-off Valves). Regraveling of 480 feet of existing road (Site 9).
- Replacement of 5 existing Air Valves.
- Installation of 2 new Air Valves.
- Replacement of 8 Blow–off Valves.
- Replacement of 2 Butterfly Valves.
- Installation of 1 new Butterfly Valve.
- Installation, replacement, repair of up to 40 settlement monitors.
- Inspection and repair of cathodic protection system as needed.
- Ongoing maintenance of the pipeline, valves, cathodic protection equipment, settlement monitoring stations, and other stations along the pipeline alignment.

Additional details and illustrating maps and figures are provided in **Appendix B**.

Section 3 Affected Environment & Environmental Consequences

Note that Section 3 combines features of both the CEQA and NEPA formats. All CEQA pertinent sections have the typical CEQA Guidelines Appendix G questions and responses to the questions. Mitigation measures are provided for both the CEQA and NEPA sections. To avoid confusion all CEQA required information including responses and mitigation measures is indicated in *italics.*

3.1 Aesthetics

The following sections combine both CEQA and NEPA. *Also, all CEQA findings are indicated in italics.*

Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☐	☒
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☒
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☐	☐	☒
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☐	☒

Discussion

Contra Costa County stretches approximately 40 miles from west to east and approximately 20 miles from north to south. The County covers a total of 805 square miles, of which approximately 732 square miles are land with the remainder consisting of water areas (Contra Costa County, General Plan, 2005). The physical environment is diverse, with the western and central areas providing much of the urban and suburban character, and the eastern portion containing most of the agricultural communities. The topography of the SCPL project area, which is located in the County's northern flood plain, is for the most part flat.

Scenic Routes

As stated in the County's General Plan (Contra Costa County, 2005), a scenic route is defined as "a road, street, or freeway, which traverses a scenic corridor of relatively high visual or cultural value." There are no scenic routes, scenic corridors, or major scenic resources in or near the SCPL project area. The only scenic resource within view from the project area is San Francisco Bay to the north; however, because the Project area is generally located in an industrialized area without scenic corridors or viewpoints the Project area is essentially without scenic resources.

There would be no aesthetic impacts of the Proposed Action since project activities would take place in an industrialized area without existing aesthetic features. Views of San Francisco Bay to the north would be unhindered because the pipeline repair is for the most part underground. Above ground features would include Air Valves and similar small scale pipeline features. These features are visually non-intrusive, and would generally not be visible from publicly accessible vantage points.

a. No Impact. While the SCPL crosses some lands encompassed by scenic vistas toward and/or across marshlands bordering Suisun Bay, Project components would be virtually invisible from public vantage points. The Project would therefore have no impact on a scenic vista or on scenic resources.

b. No Impact. *There would be no damage to existing scenic resources due to the low profile nature of the proposed access roads and valves, and because the SCPL is located underground. With the exception of Waterbird Regional Preserve, located north of the pipeline between Sites 2 and 3, the SCPL is located on and adjacent to private property, with no public access. The proposed Air Valves and Blow-off Valves extend a few feet above ground, but are visually non-intrusive, and would generally not be visible from publicly accessible vantage points.*

c. No Impact. *The temporary construction project will not substantially degrade the existing visual character or quality of the Project site and its surroundings. Therefore, no impacts are anticipated from the Project.*

d. No Impact. *Work will take place during daytime hours. The proposed Project would not include any lights, so the Project would have no nighttime glare impacts, nor would any daytime glare be introduced to the Project area.*

3.2 Agricultural Resources

The following sections combine both CEQA and NEPA. *Also, all CEQA findings are indicated in italics.*

In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland.

Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒

Discussion

The majority of the land traversed by the SCPL is designated "Urban and Built-Up Land" on the most recent map of important farmland published by the Department of Conservation (DOC), a department of the California Resources Agency.[9] The eastern end of the SCPL alignment encompassing Sites 9 and 10 is designated by the DOC as "Farmland of Local Importance," which is typically used for livestock grazing, but is also capable of producing dryland grain on a two–year (or longer) summer fallow rotation with volunteer hay and pasture. The land extending between Sites 6 and 9 is designated by the DOC as "Grazing Land," assigned to land suitable for grazing livestock. [10] Just to the north of the SCPL alignment and these two farmland designations is land designated "Other Land," which is land not included in any other mapping category. Wetlands, which apply in this case, are among the examples of Other Land listed by the DOC.

The land between Sites 3 and 6 is designated Urban and Built–Up Land. West of Site 3, the East Bay Regional Park District's (EBRPD) Waterbird Regional Preserve, located north of the alignment between Sites 2 and 3, is designated Grazing Land, as is the tank farm that is part of the Shell Martinez Refinery (between Sites 1 and 2).

Neither Farmland of Local Importance nor Grazing Land is protected by the State, and the Contra Costa County General Plan does not contain any policies protecting grazing land. There is no Prime Farmland, Unique Farmland, or Farmland of Statewide Importance in the vicinity of

[9] California Department of Conservation, Division of Land Resource Protection, Farmland Mapping and Monitoring Program, "Contra Costa County Important Farmland 2008" (map), June 2009.

[10] California Department of Conservation, Division of Land Resource Protection, Farmland Mapping and Monitoring Program, "Contra Costa County, Grazing Land" (map), July 2011.

the project site. The DOC's Farmland Mapping and Monitoring Program (FMMP) updates the maps every two years; the most recent map was prepared in 2008.

a. No Impact. *The proposed Project would not convert prime farmland, unique farmland, or farmland of statewide importance to non-farmland uses. Therefore, the proposed Project would not adversely affect agricultural uses.*

b. No Impact. *The proposed Project would not conflict with any Williamson Act contract. Therefore, the proposed Project would not adversely affect agricultural uses.*

3.3 Air Quality

The following section combines both CEQA and NEPA line items. *All CEQA findings are indicated in italics.*

Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☐	☒
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☐	☒	☐	☐
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	☐	☐	☒	☐
d) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☐	☒
e) Create objectionable odors affecting a substantial number of people?	☐	☐	☐	☒
f) Substantially alter air movement, moisture, or temperature, or cause any substantial change in climate?	☐	☐	☒	☐

3.3.1 Affected Environment

The Proposed Action lies within the San Francisco Bay Area Air Basin (SFBAAB), one of the cleanest air basins in the State. The nine counties surrounding San Francisco Bay (Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, southwestern Solano, and southern Sonoma counties) form a regional air basin, sharing common geographical features and weather patterns, and therefore similar air pollution burdens, which cannot be addressed by counties acting on their own. Stationary sources of air pollution in the SFBAAB are regulated by the Bay Area Air Quality Management District (BAAQMD). The air quality analysis presented herein was performed using methodologies and assumptions recommended in the BAAQMD's air quality impact assessment guidelines.[11]

The region currently has Non-Attainment status for compliance with the National Ambient Air Quality Standards (NAAQS) for ozone (O_3) and fine particulate matter ($PM_{2.5}$), and has a Non-Attainment designation with respect to the California Ambient Air Quality Standards (CAAQS) for ozone, inhalable particulate matter (PM_{10}), and fine particulate matter. PM_{10} refers to particle sizes less than 10 microns in diameter, while $PM_{2.5}$ refers to particle sizes less than 2.5 microns

[11] Bay Area Air Quality Management District (BAAQMD), *California Environmental Quality Act Air Quality Guidelines*, June 2010.

in diameter. $PM_{2.5}$ is the newest standard promulgated by the U.S. Environmental Protection Agency (EPA). **Table 5** summarizes the Federal and State standards and attainment status for these criteria air pollutants, as well as for carbon monoxide (CO).

Table 5
Partial List of Applicable Ambient Air Quality Standards in the San Francisco Bay Area

Air Pollutant	California		Federal	
	Standard	**Status**	**Standard**	**Status**
Ozone (O_3)	0.09 ppm (1-hour) 0.07 ppm (8-hour)	Non-Attainment Non-Attainment	revoked (1-hour) 0.075[1] ppm (8-hour)	Attainment (2004) Non-Attainment (2004)[2] Postponed (2011)[2]
Carbon Monoxide	9.0 ppm (8-hour) 20 ppm (1-hour)	Attainment Attainment	9 ppm (8-hour) 35 ppm (1-hour)	Attainment (2005) Attainment
Particulate Matter (PM_{10})	50 µg/m3 (24 hour) 20 µg/m3 (Annual)[3]	Non-Attainment Non-Attainment	150 µg/m3 (24 hour) revoked (Annual)	Unclassified --
Fine Particulate Matter ($PM_{2.5}$)	None (24-hour) 12 µg/m^3 (Annual)[3]	-- Non-Attainment	35 µg/m^3 (24-hour) 15 µg/m3 (Annual)	Non-Attainment (2009)[4] Attainment

NOTES:
ppm = parts per million
µg/m^3 = micrograms per cubic meter
[2] ( ) year of U.S. EPA rule-making
The 8-hour 2008 ozone NAAQS is 0.075 ppm. The previous 1997 8-hour ozone NAAQS was 0.080 ppm. The SFBAAB is designated a marginal non-attainment area for the previous 8-hour 1997 ozone NAAQS. Attainment or non-attainment designations for the 8-hour 2008 ozone NAAQS have been postponed 1 year until March 2011.
California Air Resources Board established new annual standards for $PM_{2.5}$ and PM_{10} in June 2002.
U.S EPA lowered the 24-hour $PM_{2.5}$ standard from 65 µg/m^3 to 35 µg/m^3 effective December 2006. U.S.EPA designated the SFBA as non-attainment for the 24-hour 2006 $PM_{2.5}$ standard effective December 14, 2009.

SOURCES: BAAQMD, 2010
http://hank.baaqmd.gov/pln/air_quality/ambient_air_quality.htm

3.3.1.1 Emissions Reductions Strategies

On March 11, 2010, the Air District released the draft *Bay Area 2010 Clean Air Plan* (2010 CAP) and a draft program Environment Impact Report on the 2010 CAP. On September 15, 2010, the BAAQMD adopted the 2010 Clean Air Plan (2010 CAP) to identify and implement SFBA actions to meet applicable air quality standards. The 2010 CAP adopted Mobile Source Measure C-1 (MSM C-1) to reduce emissions from construction and farming equipment.

Implementation of MSM C-1 depends on: 1) cash incentives to retrofit construction and farm equipment with diesel particulate matter filters or upgrade to a Tier 3 or Tier 4 off-road engine; 2) BAAQMD's cooperation with the Air Resources Board (ARB) and the California Energy Commission (CEC) to develop more fuel-efficient off-road engines and drive-trains; 3) BAAQMD's cooperation with local communities, contractors, and developers to encourage the use of renewable alternative fuels in applicable equipment. MSM C-1 is expected by BAAQMD to reduce ROG by 0.04 tons per day, NO_x by 0.72 tons per day, and $PM_{2.5}$ by 0.019 tons per day.

3.3.2 Environmental Consequences

3.3.2.1 No Action Alternative

Under the No Action Alternative, the reliability of the CCWD water supply would be compromised for customers such as the City of Martinez and the Shell Oil Refinery and could be completely cut off in the event of rupture of the pipeline. Reliability of water supply to users along the entire Contra Costa Canal would also be compromised because the use of Martinez Reservoir for balancing daily flow could be adversely affected.

Under the No Action Alternative, there would be no impacts to air quality under normal operating conditions since neither construction nor changes in operations would take place. However, if emergency repairs were needed, there could be short term impacts due to the need to mobilize equipment quickly and to complete the work at an accelerated pace in order to restore the SCPL to service. The short term impacts could be magnified in those areas where access is currently limited as access routes to the affected portion of the SCPL would need to be constructed as well. It would be necessary to access the pipeline without adequate maintenance roads and this could create air quality impacts.

3.3.2.2 Proposed Action

The air quality impacts of the Proposed Action would be greatest during short-term construction, and would generally arise from dust generation (fugitive dust) and operation of haul trucks and construction equipment. Fugitive dust would result from land clearing, grubbing, grading, excavation, placement of fill and aggregate, and vehicle traffic on paved and unpaved roads. Fugitive dust is a source of airborne particulates, including PM_{10} and $PM_{2.5}$. Large earth-moving equipment, trucks, and other mobile sources powered by diesel or gasoline are also sources of combustion emissions, including nitrogen oxides (NO_x), CO, reactive organic compounds (ROG), sulfur dioxide, and small amounts of air toxics. Typical equipment involved in the Project include ½ ton and ¾ ton trucks, backhoes, bulldozers, excavators, loaders, dump trucks, water trucks, roller compactors, and trash pumps.

The analysis of air quality impacts evaluated emissions of pollutants during all 3 phases of the Proposed Action: service road construction (Fall 2013 and 2014), valve repair or replacement (Summer/Fall 2013 & Fall 2014 following road construction work), Phase 3 pipeline inspection and repair or replacement (2013 through 2014), and Phase 4 ongoing routine operations and maintenance (starting in 2012). The analysis assumes repair or replacement of sections of a 2,100-foot-long segment of pipeline in Site 4, which was damaged following the Loma Prieta earthquake in 1989. However, it is likely that only a portion of this pipe segment will be repaired or replaced.

a) No Impact. *The Project would not conflict with or obstruct implementation of the applicable air quality plan.*

b) Less than Significant with Mitigation Incorporation. *Unmitigated, construction of the Project would violate the State NO_x air quality standard. Construction activities for each phase were determined and an estimate of equipment required and duration of use for each piece of equipment was made in order to calculate daily and annual emissions estimates for ROG, CO, NO_x, PM_{10} and $PM_{2.5}$. These estimates were compared to established state and federal emissions thresholds. An initial set of calculations were conducted that showed that unmitigated emissions would just exceed the BAAQMD NO_x threshold of 54 lbs/day.*

*All other pollutants are within the thresholds. The BAAQMD guidelines allow additional NO_x reduction mitigation measures to be applied to bring estimates below the threshold. These are the four Air Quality mitigation measures listed in **3.3.3** below. Emissions estimates were recalculated assuming that these mitigation measures were implemented. The results are shown in **Table 6.***

Table 6
Emissions Estimates for the Proposed Action with Mitigation Measures Applied

PHASE AND ACTIVITY	Average Daily Emission (lbs/day)				
	ROG	CO	NO_x	PM_{10} exh	$PM_{2.5}$ exh
Phase 2a – Summer/Fall 2013 & 2014 Construct 5,100 lineal feet of new service roads (20-calendar day schedule, 406 lin. ft./work day). Assume up to 10,000 cu. yds. of imported fill and excavated material.	7.5	43.9	53.6*	1.9	1.7
Phase 2b – Following road construction in 2013 & 2014 Inspect valves; install, repair or replace valves and install settlement monitors. Assume up to 900 cu. yds. of exported material.	2	11	17	0.8	0.7
Phase 3 – Fall 2014 Replace up to 2,100 lineal feet of 48-inch diameter welded steel water pipe.					
Cut and Cover (42-calendar day schedule, 70 lin. ft./work day)	5	33	43	4.5	4.2
OR					
Slip-Lined (42-calendar day schedule, 70 lin. ft./work day)	7	30	50	3.0	2.8
Phase 4 – Starting in 2012 Ongoing routine operations & maintenance	<1	<1	<1	<1	<1
Maximum for Phases 2a, 2b, 3 and 4	7	39	52	4.8	4.4
BAAQMD Thresholds*	**54**	**NA**	**54**	**82**	**54**

NOTES:
"NA" means the Bay Area Air Quality Management District (BAAQMD) has not set a threshold based on pounds per day (lbs/day) average during the construction period. Construction activity is assumed to be conducted 8 hours per day.
SOURCE: *BAAQMD, adopted June 2, 2010; Environmental Service, November 2010.

BAAQMD thresholds of significance are more rigorous than the National Ambient Air Quality Standards (NAAQS), so meeting BAAQMD standards usually assures compliance with the federal standards. The NAAQS standards are specified in both daily and annual limits. In **Table 7** the daily estimated emissions for each phase given in **Table 6** are converted to tons per year, based on an assumed number of calendar days for each construction work phase (Phase 4 operations are addressed separately below), and compared with the thresholds for Federal conformity determinations. Daily estimates were determined by dividing the annual estimates by 90 days. As shown in **Table 7**, project emissions are estimated to be well below these thresholds.

Table 7 BAAQMD Emissions Thresholds for Federal Conformity Determinations				
Pollutant	**National Ambient Air Quality Standards**		**Proposed Action Emissions 2012-2014 (Phases 2a, 2b, and 3)**	
	(tons/year)[a]	**(pounds/day)[a]**	**(tons/year)[b]**	**(lbs/day)[c]**
Volatile organic compounds (VOC)[d] (as an ozone precursor)	50	274	2013: 0.210 2014: 0.071	2013: 4.667 2014: 1.578
Nitrous oxides (NO_x) (as an ozone precursor)	50	274	2013: 1.474 2014: 0.528	2013: 32.756 2014: 11.733
Inhalable particulate matter (PM_{10})	100	548	2013: 0.085 2014: 0.032	2013: 1.889 2014: 0.711
Carbon monoxide (CO)	100	548	2013: 1.117 2014: 0.313	2013: 24.822 2014: 6.956

[a] 40 CFR 93.153

[b] Based on 90 calendar days of emissions.

[c] Environmental Service, 2010

[d] VOCs are comparable to ROGs and are used interchangeably here.

The Proposed Action also involves the operation of electrically-driven pumps and motors; accordingly, there would not be any direct emissions from the operation of Project facilities/equipment. The air quality emissions from electrical power have already been considered in environmental documentation for the Project; therefore, a conformity determination is not required. Accordingly, Project construction and operations under the Proposed Action would not result adverse impacts to air quality beyond Federal thresholds.

d) e) No Impact. *Since the Proposed Action is not located near population centers, sensitive receptors would not be exposed to substantial pollutant concentrations by the Project. The project would not create objectionable odors affecting a substantial number of people.*

f) Less than Significant Impact. *Since the Proposed Action is short-term in nature, it would not substantially alter air movement, moisture, or temperature or cause any substantial change in climate.*

3.3.2.3 Cumulative Impacts

c) Less than Significant Impact. *The Proposed Action, when added to other existing and proposed actions, would not contribute to cumulative impacts to air quality since construction activities are short-term and operations would not result in cumulative adverse air quality impacts.*

3.3.3 Environmental Protection Measures

The District will implement the following BAAQMD mitigation measures to achieve emission reductions through the use of improved equipment, operational measures and the best available technology:

- *Minimize the idling time of diesel powered construction equipment to 2 minutes.*
- *Develop a plan demonstrating that the off-road equipment (more than 50 horsepower) to be used in the construction project (i.e., owned, leased, and subcontractor vehicles) would achieve a project wide fleet-average 20 percent NOx reduction and 45 percent PM reduction compared to the most recent ARB fleet average. Acceptable options for reducing emissions include the use of late model engines, low-emission diesel products, alternative fuels, engine retrofit technology, after-treatment products, add-on devices such as particulate filters, and/or other options as such become available.*
- *Require that all construction equipment, diesel trucks, and generators be equipped with Best Available Control Technology for emission reductions of NOx and PM.*
- *Require all contractors use equipment that meets California ARB's most recent certification standard for off-road heavy duty diesel engines.*

3.4 Biological Resources

The following section combines both CEQA and NEPA line items. *All CEQA findings are indicated in italics.*

Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☒	☐	☐
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☒	☐	☐
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☒	☐	☐
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☐	☒
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☒
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒

3.4.1 Affected Environment

The Proposed Action involves access road construction, valve and settlement monitor replacement and installation, and ongoing O&M operations in an area of mixed uses dominated by industrial properties and undeveloped and reclaimed open space. The SCPL is located within a 40-foot non-exclusive easement that passes through several private and publicly owned property parcels. The undeveloped portion of the project area is dominated by seasonal wetland,

flatlands, and marsh habitats portions of which are likely regulated by the COE, Regional Water Quality Control Board (RWQCB), and CDFG. The permits listed in Section 1.3 would be required prior to project construction activities involving any fill or adverse impacts within with these habitat types.

A Biological Resources Analysis (BRA) was prepared by Olberding Environmental, Inc. to evaluate existing biological conditions in the project area and identify potential impacts that would result from the Proposed Action.[12] The BRA included a review of the California Natural Diversity Database (CNDDB 2010), a review of the California Native Plant Society's (CNPS) Inventory of Rare and Endangered Vascular Plants of California, and a review of information related to species of plants and animals that could potentially utilize the described habitats. A field reconnaissance investigation included site visits within the Project area on August 5, 13, 16, and 19, 2010. Additional field investigations were performed along portions of the Study Area on September 2, 14, and 20, 2010 and on June 21 and June 23, 2011. Based on the CNDDB and CNPS inventories, **Table 8** presents a list of State- and federally listed species that were determined to have the potential to occur within the Project area. The full list of species that were considered is found in the BRA. The list is for the following 7½" USGS quads: Vine Hill, Honker Bay, Clayton, Walnut Creek, Briones Valley, Benicia, Cordelia, Fairfield South, and Denverton.

During the field surveys performed in August and September of 2010, Olberding Environmental determined that the Study Area contains wetlands/waters regulated by the COE and State of California. Olberding Environmental completed a COE jurisdictional delineation along the 5-mile alignment of the Study Area in October 2010, identifying potentially jurisdictional wetland/waters habitat within Sites 3, 4, 5, 7, 9, and 10 of the Study Area. The mapped wetlands and other Waters of the U.S. for the Proposed Action Sites are shown on **Figure 16**.

[12] Olberding Environmental, Inc., *Biological Resources Analysis Report for the Shortcut Pipeline Study Area, Contra Costa County, California*, November 2010.

Table 8 State- and Federally-Listed Species Potentially Present in the Project Area[1]					
Common Name/ Scientific Name	**Status (Fed/State/ CNPS)[2]**	**Blooming or Survey Period**	**Habitats of Occurrence**	**Potential on Site**	**Status on Site****
PLANTS					
Congdon's Tarplant (*Centromadia parryi* ssp. *congdonii*)	-/-/1B	June – November	Valley and foothill grasslands in alkaline soils.	Moderate	May Occur
Soft Bird's-Beak (*Cordylanthus mollis* ssp. *mollis*)	E/R/1B	July – November	Coastal salt marshes and swamps.	Moderate	May Occur
Delta Tule Pea (*Lathyrus jepsonii* var. *jepsonii*)	-/-/1B	May – September	Freshwater and brackish marshes and swamps.	Moderate	May Occur
Mason's Lilaeopsis (*Lilaeopsis masonii*)	-/R/1B	April – November	Brackish or freshwater marshes and swamps.	Moderate	May Occur
Suisun Marsh Aster (*Symphyotrichum lentum*)	-/-/1B	May – November	Brackish and freshwater marshes and swamps.	Moderate	May Occur
REPTILES					
Western Pond Turtle (*Emys marmorata*)	-/-/SC	March – October	Aquatic turtle needs permanent water in ponds, streams, irrigation ditches. Nests on sandy banks or grassy fields.	High	May Occur
BIRDS					
Tricolored Blackbird (*Agelaius tricolor*)	SOC/-/SC	February – August	Nesting within seasonal wetland marshes, blackberry brambles or other protected substrates. Forages in annual grassland and wetland habitats.	High	May Occur
Great Egret (*Ardea alba*) ROOKERIES	-/-/-	February – August	(Rookery) Colonial nester in large trees; rookery sites located near marshes, tide-flats, irrigated pastures, and margins of rivers and lakes.	High	**Present**
Great Blue Heron (*Ardea herodias*) ROOKERIES	-/-/-	February – August	(Rookery) Nests in tall trees in close proximity to foraging areas such as marshes and streams.	High	**Present**
Burrowing Owl (*Athene cunicularia*)	SOC/-/SC	February – August	Dry open annual or perennial grassland, desert and scrubland. Uses abandoned mammal burrows for nesting.	Moderate	May Occur
Red-Tailed Hawk (*Buteo jamaicensis*)	-/CP/-	February – August	Various grassland habitats, urban land, oak woodlands with grassland for foraging.	High	**Present**

Table 8 State- and Federally-Listed Species Potentially Present in the Project Area[1]					
Common Name/ Scientific Name	**Status (Fed/State/ CNPS)[2]**	**Blooming or Survey Period**	**Habitats of Occurrence**	**Potential on Site**	**Status on Site****
Red-Shouldered Hawk (*Buteo lineatus*)	-/CP/-	February – August	Forages in variety of semi-developed habitats including orchards. Forages in woodlands and riparian areas. Nests in riparian habitat but also eucalyptus groves.	High	**Present**
Ferruginous Hawk (*Buteo regalis*)	-/CP/-	Late Fall – Winter	Open country such as semiarid grasslands with few trees, rocky outcrops, and open valleys. Also along streams or in agricultural areas during migration.	Foraging Only	May Occur
Northern Harrier (*Circus cyaneus*)	-/-/SC	February – August	Nests in grasslands and marshlands, ground nesting bird. (Nesting) Coastal salt and freshwater marsh. Nest and forage in grasslands, from salt grass in desert sink to mountain cienagas. Nests on ground in shrubby vegetation, usually at marsh edge; nest built of a large mound of sticks in wet areas.	High	**Present**
Snowy Egret (*Egretta thula*) ROOKERIES	-/-/-	February – August	(Rookery) Colonial nester, with nest sites situated in protected beds of dense tules. Rookery sites situated close to foraging areas: marshes, tidal-flats, streams, wet meadows, and borders of lakes.	High	May Occur
White-Tailed Kite (*Elanus leucurus*)	SOC/CP/FP	February – August	Various grassland habitats, urban land, oak woodlands with grassland for foraging.	High	**Present**
American Kestrel (*Falco sparverius*)	-/CP/-	February – August	Various grassland habitats, urban land, oak woodlands with grassland for foraging.	Foraging Only	May Occur
Saltmarsh Common Yellowthroat (*Geothlypis trichas sinuosa*)	SOC/-/SC	February – August	Fresh and saltwater marshes of the San Francisco Bay area. Forages in thick, continuous vegetation down to water surface. Nests in tall grasses, tule patches, and willows.	High	May Occur
Loggerhead Shrike (*Lanius ludovicianus*)	SOC/-/SC	February – August	Open grassland habitats, grazed grasslands. Uses shrubs for nesting.	High	May Occur
Suisun Song Sparrow (*Melospiza melodia maxillaris*)	-/-/SC	February – August	Brackish marshes of Suisun Bay. Breeds in cattails, tules, sedges, and *Salicornia*.	High	**Present**

Table 8
State- and Federally-Listed Species Potentially Present in the Project Area[1]

Common Name/ Scientific Name	Status (Fed/State/ CNPS)[2]	Blooming or Survey Period	Habitats of Occurrence	Potential on Site	Status on Site**
MAMMALS					
Hoary Bat (*Lasiurus cinereus*)	-/-/SC	Resident	Prefers open habitats or habitat mosaics with access to trees for cover and open areas or habitat edges for feeding. Roosts in dense foliage of medium to large trees near water. Feeds mainly on moths.	Moderate	May Occur
Salt-Marsh Harvest Mouse (*Reithrodontomys raviventris*)	E/E/FP	Resident	Middle marsh habitat dominated by pickleweed. Only in the saline emergent wetlands of San Francisco Bay and its tributaries. Pickleweed is primary habitat. Do not burrow; build loosely organized nests. Require higher areas for flood escape.	High	May Occur

1. Special-status plants and animals as reported by the California Natural Diversity Data Base, California Native Plant Society, and other background research October 2010.
2. Order of Codes for Plants - Fed/State/CNPS

Order of Codes for Animals - Fed/State/CDFG

Codes:
SOC - Federal Species of Concern
SC - California Species of Special Concern
E - Federally/State Listed as an Endangered Species
T - Federally/State Listed as a Threatened Species
C - Species listed as a Candidate for Federal Threatened or Endangered Status
R - Rare
D - Delisted
CP- California protected
FP - State Fully Protected
DFG: SC California Special Concern species
1B - California Native Plant Society considers the plant Rare, Threatened, or Endangered in California and elsewhere.
1A - CNPS Plants presumed extinct in California.
2 - CNPS Plants Rare, Threatened or Endangered in California, but more common elsewhere.
3 - CNPS Plants on a review list to find more information about a particular species.
4 - CNPS Plants of limited distribution - a watch list.

Figure 16 - Mapped Wetlands & Other Waters of the U.S.

Source: Olberding Environmental

As discussed in more detail below, a total of 1.23 acres of wetlands or other Waters of the U.S. would be permanently filled as a result of implementation of the Proposed Action, and an additional 6.49 acres of Wetlands/Waters of the U.S. would be temporarily filled and then restored during construction (see **Table 9**).

Table 9
Permanent and Temporary Impacts of the Proposed Action on Wetlands and Other Waters of the U.S.

Site	Permanent Impacts (acres)		Temporary Impacts (acres)	
	Wetlands	Waters	Wetlands	Waters
Site 1	0	0	0	0
Site 2	0	0	0	0
Site 3	0.003	0	0	0
Site 4	0.42	0.1	2.85	0.52
Site 5	0.006	0	0.06	0
Site 6	0	0	0	0
Site 7	0.05	0	0.38	0.01
Site 8	0	0	0	0
Site 9	0	0	0.2	0
Site 10	0.65	0	2.47	0
Subtotal	1.129	0.1	5.96	0.53
Total	**1.23**		**6.49**	

Based on the field surveys conducted by Olberding Environmental, Inc. in August and September 2010, no special-status plant species were identified in the Study Area. However, the survey included only those plant species that have a blooming period that includes the months of September and October. Due to the presence of suitable habitats and recent occurrences within 5 miles of the Study Area, the following special-status plant species were determined to have the potential to occur in the Study Area: Congdon's tarplant (blooms June through November), soft bird's-beak (blooms April to July), Delta tule pea (blooms May to September), Mason's lilaeopsis (blooms April to December), and Suisun marsh aster (blooms May to November).

Focused surveys for these species were done in the spring of 2011. Congdon's tarplant and San Joaquin Spearscale were found near the SCPL easement on Site 9. These species can be avoided during construction.

Several special-status bird and raptor species, including ground-nesting burrowing owl and northern harrier, were determined to have the potential to forage and nest on or in proximity to Sites 2 through 10 within the Study Area, based on suitable habitat types and recent occurrences in the vicinity of the 5-mile pipeline alignment. Special-status birds and raptors observed during the August 2010 surveys include Suisun song sparrow, red-tailed hawk, red-shouldered hawk, northern harrier, and white-tailed kite. Site 10 contains a grove of mature trees, which could harbor a raptor nest given the isolation of the grove and surrounding open space that could be utilized for foraging. Site 3 also contains mature trees suitable to support nesting raptors. However, this site is located adjacent to the entrance of an active gun club; it is therefore likely that it is regularly impacted by disturbance from vehicles and gun reports, making it less likely

that raptors would utilize the site for nesting purposes. All other sites were determined to contain suitable habitat for ground-nesting raptors, such as burrowing owl, short-eared owl, northern harrier, and loggerhead shrike.

Pickleweed habitat was observed within Sites 3, 4, 5, and 10 of the Study Area. Expected permanent impacts to pickleweed habitat are estimated to be 0.14 acres and occur at Sites 4 and 10 (see **Table 10**). Pickleweed is the preferred habitat of the salt-marsh harvest mouse, a species listed as Endangered by both USFWS and CDFG. Habitat for western pond turtle, a California Species of Special Concern, is present within Sites 2, 3, 4, 5, 7, 9, and 10, but is outside the areas of planned work at Sites 2 and 9. Habitat utilized by the pond turtle includes brackish marsh, slough, creek, and ruderal habitats.

Table 10
Permanent and Temporary Impacts of the Project on Pickleweed Habitat

Site	Permanent Impacts (acres)	Temporary Impacts (acres)
2	0	0
3	0	0
4	0.03	0.2
5	0	0
9	0	0
10	0.11	0.37
Total	**0.14**	**0.57**

Table 11 provides a summary of the habitat types found at each site and the special-status wildlife species that potentially occur within each site.

Table 11
Habitat Types and Potential Special-Status Species Occurring at Each Site Within the Study Area

Study Area	Habitat Type	Potential for Special-Status Species
Site 1- Shell Refinery	Developed industrial	NA
Site 2- Local firewood processing and storage	Coastal brackish marsh with pickleweed Grassland	Tricolored blackbird Salt-marsh harvest mouse Burrowing owl Northern harrier Pond turtle
Site 3- Gun Club	Grassland Eucalyptus Grove	Burrowing owl Salt-marsh harvest mouse Northern harrier Pond turtle
Site 4- IT Ponds	Salt panne Coastal brackish marsh with pickleweed Grassland	Tricolored blackbird Salt-marsh harvest mouse Burrowing owl Northern harrier Pond turtle

Table 11 Habitat Types and Potential Special-Status Species Occurring at Each Site Within the Study Area		
Study Area	**Habitat Type**	**Potential for Special-Status Species**
Site 5- Foster Wheeler Power Plant	Developed industrial Coastal brackish marsh with pickleweed Seasonal wetlands Grassland	Tricolored blackbird Salt-marsh harvest mouse Burrowing owl Northern harrier Pond turtle
Site 6- Tesoro Refinery/ WMU4 site	Developed industrial Coastal brackish marsh Seasonal wetlands Grassland	Burrowing owl Northern harrier
Site 7- Tesoro	Developed industrial Coastal brackish marsh Seasonal wetlands Grassland	Tricolored blackbird Burrowing owl Northern harrier Pond turtle
Site 8- Tesoro	Developed industrial Coastal brackish marsh Grassland	Burrowing owl Northern harrier
Site 9- Tesoro	Seasonal wetlands Coastal brackish marsh with pickleweed Grassland	Tricolored blackbird Salt-marsh harvest mouse Burrowing owl Northern harrier Pond turtle
Site 10- Concord Naval Weapons Station	Seasonal wetlands Coastal brackish marsh with pickleweed Grassland	Tricolored blackbird Salt-marsh harvest mouse Burrowing owl Northern harrier* Pond turtle Hoary bat
* Species observed during site surveys in August and September 2010		

3.4.2 Environmental Consequences

3.4.2.1 No Action Alternative

Under the No Action Alternative, the reliability of the CCWD water supply would be compromised for customers such as the City of Martinez, the Foster Wheeler Power Plant at the Tesoro Refinery, and the Shell Oil Refinery and could be completely cut off in the event of rupture of the pipeline. The reliability of the Canal operations would also be impacted if water levels within the Martinez Reservoir were constrained.

Under the No Action Alternative, Reclamation would not approve the Proposed Action and conditions regarding biological resources would remain the same as described above. However, without the proposed access roads, District O&M personnel would be forced to drive vehicles and equipment needed to perform repairs or maintenance directly onto sensitive habitat areas, particularly at Sites 4, 5, 7, and 10. In the event emergency repairs to pipeline segments or

components were required, these impacts on wetlands and other sensitive habitats would occur without time to consider compensatory mitigation. Therefore, impacts to sensitive habitat and associated wildlife and special-status species could be greater under the No Action Alternative than under the Proposed Action.

3.4.2.2 Proposed Action

Construction of access roads under the Proposed Action would have the most significant potential for effect on Biological Resources. Activities associated with valve and settlement monitor repair and installation would have less potential for effect, particularly once the access roads have been constructed to provide a clear path to the valve and settlement monitor worksites.

a)-b) Less Than Significant Impact with Mitigation Incorporation. *With implementation of the environmental protection measures listed in **3.4.3**, the Proposed Action would have no significant impacts to any of the species and their habitat listed in **Tables 8 and 11**. The potential environmental consequences for each resource are discussed below.*

Burrowing Owl. This species is considered a Species of Special Concern under the California Endangered Species Act, is identified as a "candidate" species by USFWS, and is protected under the Federal Migratory Bird Treaty Act (MBTA). Burrowing owls generally require open annual grassland habitats in which to nest, but can be found on abandoned lots, roads, airports, and other urban areas. Burrowing owls generally use abandoned California ground squirrel holes for their nesting burrow, but are also known to use pipes or other debris for nesting purposes. Burrowing owls prefer annual grassland habitats with low vegetative cover. The most recent occurrence of this species within the vicinity of the Study Area occurred in 2008, roughly 2.9 miles southwest of the Study Area; this species was not observed during the August and September 2010 surveys or during surveys in 2011. While the last recorded occurrence is recent and relatively close to the Proposed Action, habitats on the Study Area represent only moderately suitable conditions to support this species, as it generally prefers open, drier vegetation, lower vegetation, and areas with smaller mammal burrows. Despite this, some upland areas within the study area within Sites 2 through 10 could provide suitable conditions to support this species. As described in the mitigation measures below, the implementation of pre-construction surveys at Sites 2 through 10 and appropriate actions if burrowing owls are encountered will ensure that the Proposed Action will not have significant impacts on this species. Mitigation measure BIO-1 in **Biological Resources Section 3.4.3** describes mitigation measures for this species.

Hoary Bat. This California Species of Special Concern occurs across much of the State, with the exception of the southeastern deserts, where occurrences are patchy. Winters are spent along the coast and in southern California, and breeding occurs inland and north of the winter range. Breeding habitat includes woodlands and forests with medium-sized to large trees and dense foliage. During migration periods, male hoary bats are encountered in foothills, deserts and mountains, while females are found in lowlands and coastal valleys. Roost sites consist of dense foliage in medium to large trees, with diverse forest habitats at the edge of open areas preferred. This species has been found in Spanish moss, squirrel nests, woodpecker holes, and out in the open on the trunks of trees. The most recent CNDDB occurrence of this species was in 2001, roughly 5.5 miles south of the Proposed Action. This species has a moderate potential to roost amongst the large palm trees within Site 10 of the Study Area. This species was not observed during August 2010 surveys, but may occur throughout the Study Area. Although breeding habitat may be found in larger trees associated with Sites 3 and 10, only Site 10 has potentially

suitable roosting habitat. As described in the mitigation measure BIO-2 in **Biological Resources Section 3.4.3** below, the implementation of pre-construction surveys at Sites 3 and 10 and appropriate actions if hoary bats are encountered will ensure that the Proposed Action will not have significant impacts on this species.

Oak and Riparian Trees. The removal of oak or riparian trees is not anticipated. Should removal of these trees be required then the adherence to the County's Tree Protection Ordinance and the Conservation Element of the County General Plan will ensure that the Proposed Action will not have significant impacts to these trees.

Other Protected Birds. The wetland, marsh, and creek habitats on and adjacent to the Project area provide foraging and nesting habitat for the tricolored blackbird (a federal Species of Concern and State Species of Special Concern), great egret, great blue heron, snowy egret, salt marsh common yellowthroat (a federal Species of Concern and State Species of Special Concern), California black rail (a State Threatened species), Suisun song sparrow, and California clapper rail (a State and federal Endangered species). (Additional information on the status of these species is provided in **Table 8**.) The marsh, slough, creek, and ruderal habitats on and adjacent to the Project area represent suitable foraging and nesting habitat for the loggerhead shrike (a federal Species of Concern and State Species of Special Concern). The great egret, great blue heron, and Suisun song sparrow were observed within the marsh and wetland habitats during the August 2010 surveys, and WRA biologists observed the salt marsh common yellowthroat, loggerhead shrike, and California black rail within the Tesoro Refinery adjacent to the eastern portion of the SCPL alignment in 2009. While the salt marsh common yellowthroat and loggerhead shrike were not observed in the August 2010 surveys, they are considered likely to be present in the project area. The California black rail and California clapper rail are considered unlikely to occur within the area due to the lack of cover vegetation within the pickleweed habitats in the project area. As described in mitigation measures BIO-4 in **Biological Resources Section 3.4.3**, the implementation of pre-construction surveys during the breeding season (February 1 through August 31) at Sites 3, 7 or 10 and appropriate actions if protected birds are encountered will ensure that the Proposed Action will not have significant impacts on these species.

Raptors. Raptors are migratory bird species protected by the MBTA and the California Department of Fish and Game Code. Nesting opportunities for red-tailed hawk, red-shouldered hawk, ferruginous hawk, northern harrier, white-tailed kite, and American kestrel are present within the easternmost portion of Site 10, the only site that contains suitable nest trees with minimal disturbance, and each of these species except ferruginous hawk and American kestrel were observed in the project area during the August 2010 surveys. Site 3 also contains suitable nest trees, but raptors are not expected to nest in this area due to its proximity to the Martinez Gun Club and the associate shooting activities. The northern harrier, a ground-nesting raptor, could potentially nest throughout the project area. As described in mitigation measures BIO-5 in **Biological Resources Section 3.4.3**, the implementation of pre-construction surveys at Sites 3, 7 or 10 and appropriate actions if raptors are encountered will ensure that the Proposed Action will not have significant impacts on these species.

Salt Marsh Harvest Mouse. This small rodent is a State- and federally-listed endangered species that resides only in the saline emergent wetlands of the greater San Francisco Bay and its tributaries. The primary habitat for this rodent is pickleweed (*Sarcocornia pacifica* [*Salicornia depressa*]). These nocturnal mice build loosely organized nests in vegetation above ground and do not burrow. The salt-marsh harvest mouse (SMHM) also requires higher areas within its range where it can escape from high water. Several CNDDB occurrences of this species have been made within 5 miles of the Project area within the last ten years (see **Appendix C, Attachment 1, Figure 6, Biological Resources Analysis**). The dense pickleweed habitat within

the marsh habitat on and adjacent to Sites 2, 3, 4, 5, 9, and 10 represents suitable foraging and nesting habitat to support this species. This species was not observed during surveys, but may occur. No work would occur within pickleweed habitat at Sites 2 or 9. At the other sites, some pickleweed habitat in the footprint of the proposed access roads would be permanently displaced, while some pickleweed would need to be temporarily removed in the area of construction easements and on portions of the ROW needed to support construction. These impacts are illustrated for Sites 4 and 10 in **Figure 17** and **Figure 18** respectively. This would result in permanent impacts of 0.14 acres of pickleweed and temporary impacts of 0.57 acres as shown in **Table 10**. The temporary impacts can likely be reduced by making adjustments in the field during construction to avoid working in pickleweed areas. As described in mitigation measures BIO-6 in Biological Resources Section 3.4.3, the implementation of measures prior to construction will ensure that the Proposed Action will not have significant impacts on this species.

As described in the mitigation measure BIO-6 in **Biological Resources Section 3.4.3**, the erection of silt fence barriers around pickleweed habitat at Sites 3, 4, 5 and 10 prior to construction activities and the implementation of additional measures established in the USFWS' 2009 Biological Opinion for the Chevron Natural Gas Pipeline Maintenance and Repair Project[13] will ensure that the Proposed Action will not have significant impacts on the SMHM.

Special-Status Plants. Although several special-status plant species have the potential to occur within the project area, due to the lack of recent occurrences in the area, site disturbance, and lack of suitable habitat, most of these plants are presumed absent or unlikely to occur in the Study Area. However, the following special-status plants have the potential to occur in the Study Area due to suitable habitats and recent CNDDB occurrences: Congdon's tarplant, soft bird's-beak, Delta tule pea, Mason's Lilaeopsis, and Suisun marsh aster. The implementation of focused surveys and the development of mitigation plans if necessary, as described in the mitigation measures BIO-7 in **Biological Resources Section 3.4.3**, will ensure that the Proposed Action will not have significant impacts on special-status plants.

[13] United States Department of the Interior, Fish and Wildlife Service, Sacramento Fish and Wildlife Office, *Biological Opinion for the Proposed Natural Gas Pipeline Maintenance and Repair Project by the Chevron Pipe Company, City of Richmond, Contra Costa County, California* (Corps File No. 2009–00392S), August 5, 2009.

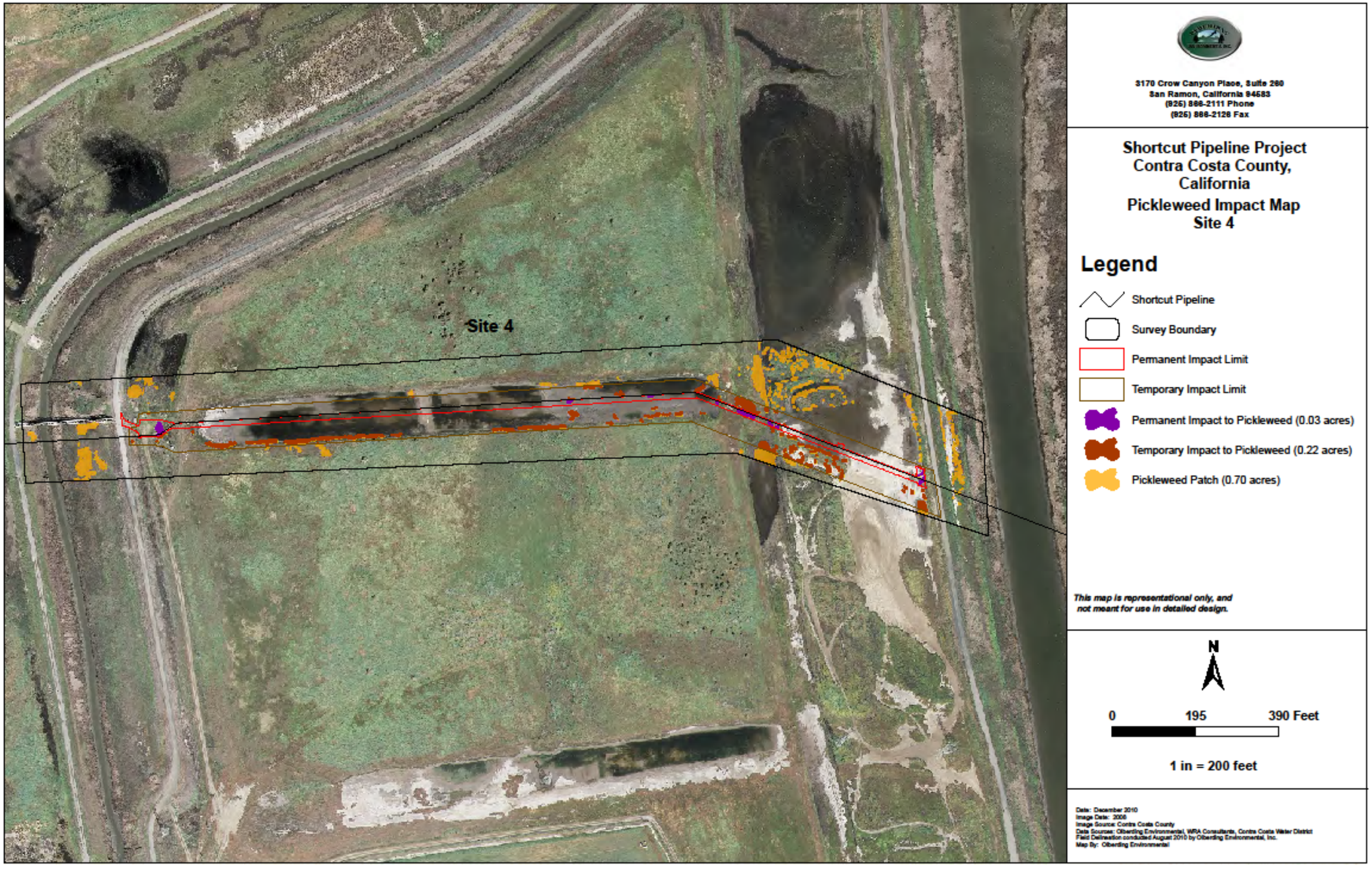

Figure 17 - Permanent and Temporary Impacts for Pickleweed at Site 4

Source: Olberding Environmental

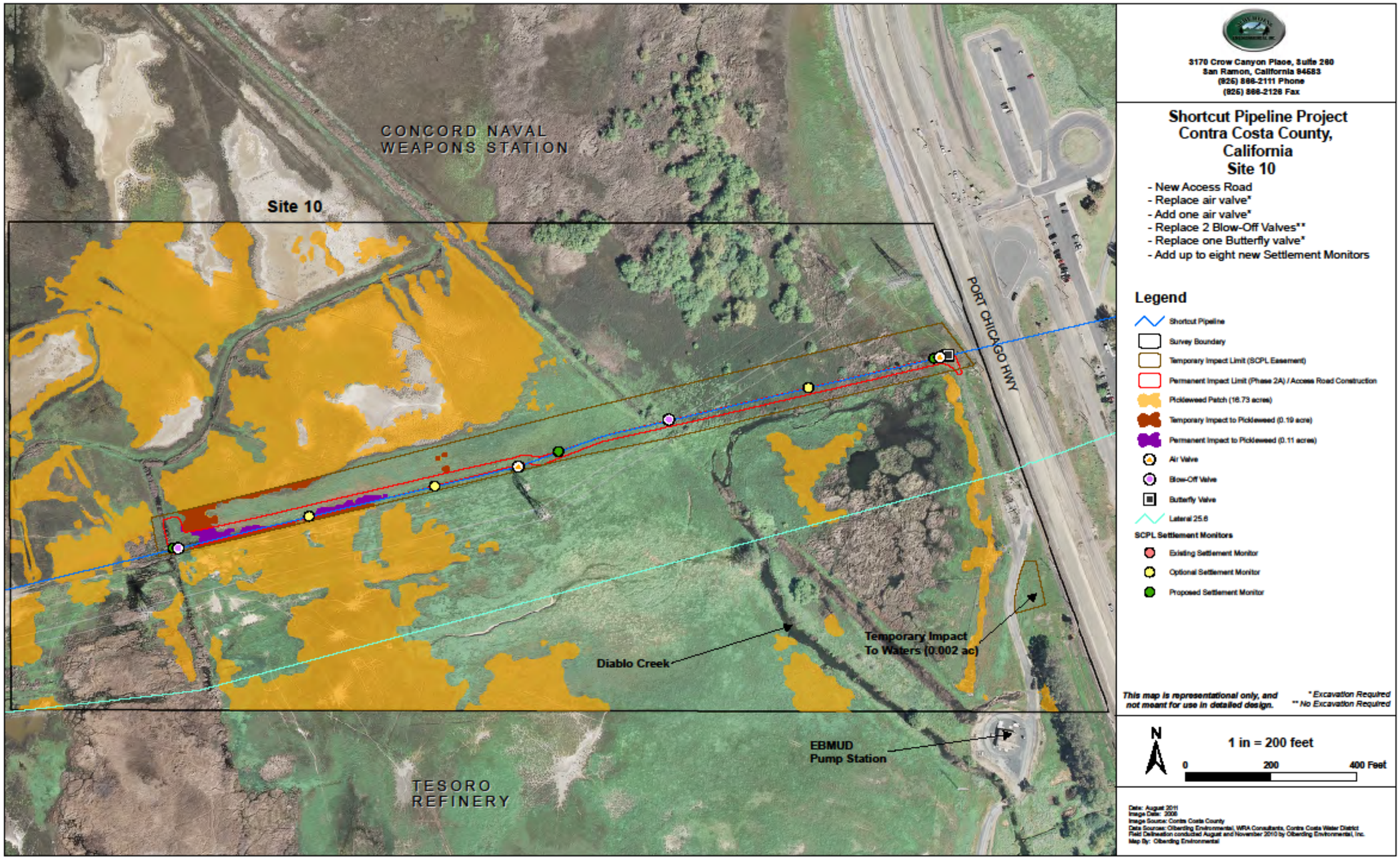

Figure 18 - Permanent and Temporary Impacts for Pickleweed at Site 10

Source: Olberding Environmental

Western Pond Turtle. This species is considered as a Species of Special Concern under the California Endangered Species Act, and is known to occur within the vicinity of the project area. The western pond turtle is a thoroughly aquatic turtle that may be found in marshes, ponds, streams, and irrigation ditches where aquatic vegetation is present. The turtles, which range from 9 to 10 inches in size, require basking sites and suitable upland habitat for egg laying.

Suitable breeding upland habitats may consist of sandy banks or grassy open fields. Brackish marsh, slough, creek, and ruderal habitats on and adjacent to the Study Area represent suitable foraging, basking and nesting habitat for this species. Several CNDDB occurrences of this species have been made within 5 miles of the Study Area within the last ten years. This species was not observed during surveys, but could occur within Sites 2, 3, 4, 5, 7, 9 and 10. Access road construction at Sites 3, 4, 5, and 7 under the Proposed Action could have potential effect on western pond turtles, if present. The implementation of pre-construction surveys and appropriate actions if western pond turtles are encountered, as described in the mitigation measures BIO-8 in **Biological Resources Section 3.4.3**, will ensure that the Proposed Action will not have significant impacts on this species.

Wetlands and Waters of the U.S.

c) Less Than Significant impact with Mitigation Incorporation. *The Proposed Action would require temporary and permanent impacts to or filling of jurisdictional and non-jurisdictional wetlands and other Waters of the U.S. The temporary impacts occur where temporary construction easements, laydown and staging areas, and access roads would be developed and utilized during proposed construction. A total of 1.129 acres of jurisdictional wetlands and 0.1 acres of other waters would be permanently filled or disturbed during construction, a combined total of 1.23 acres of permanent impacts. Where permanent access roads and valve platforms would be constructed, permanent impacts would occur to these habitats. As shown in* ***Table 9*** *there may be temporary impacts up to 5.96 acres of wetlands and 0.532 acres of other Waters of the U.S., a total of 6.49 acres of temporary impacts.*

Implementation by the District of the environmental protection measures identified in BIO-9 and BIO-10 in **Biological Resources Section 3.4.3** would ensure that impacts of the Proposed Action to jurisdictional wetlands and other Waters of the U.S. would not be significant. While it is generally preferred by the regulatory agencies that wetland impacts be compensated by the creation of similar habitats on site, in certain instances, compensation at an off–site location may be deemed acceptable. The District may provide replacement habitat if feasible (or pay comparable in-lieu fees) for temporary or permanent impacts for disturbed wetlands or Waters of the U.S., and would comply with other permit requirements from the COE, RWQCB, and/or CDFG, such as monitoring, submittal of annual reports, etc.

3.4.2.3 Cumulative Impacts

Biological resources would continue to be affected by other types of activities that are ongoing but unrelated to the Proposed Action. For example, the Avon Remediation Team expects to be building a clean fill cap on Site 6 to address SFRWQCB requirements for WMU4 (see also **Section 3.9 Hazardous Materials**). Impacts to biological resources from the implementation of the Proposed Action would occur only during construction activities. Development of the proposed access roads would enable the District to conduct routine O&M activities following project construction without incursion into sensitive habitat areas, significant disturbance of, or impacts to wildlife species occurring in the Project area. The Proposed Action, when added to

other existing and proposed actions, would not contribute to adverse cumulative impacts to wildlife resources since construction activities are short-term in duration.

d) No Impact. *The Proposed Action would not interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native species or with established native resident or migratory corridors, or impede the use of native wildlife nursery sites.*

e) No Impact. *The Proposed Action would not conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance, because the project will consist of repairs to and maintenance of an existing buried pipeline. The District will comply with all provisions of the County's Tree Protection Ordinance and the Conservation Element of the Contra Costa County General Plan.*

f) No Impact. *The Proposed Action is not within the boundaries of any Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan. Therefore, the Proposed Action would not conflict with the provisions of any Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plans.*

3.4.3 Environmental Protection Measures

Mitigation Measure BIO–1: Burrowing Owls. *Pre-construction surveys will be conducted within 14 days prior to ground-disturbing and vegetation removal activities. Due to the potential for burrowing owls utilizing nests outside the breeding season (February 1 through August 31), surveys will be conducted at all times of the year when required. To the extent possible, road construction will be scheduled to avoid the breeding season altogether. Once eggs have been laid, a buffer of at least 100 feet, or other CDFG approved buffer, must be established around the nest site and the site protected until August 31 or until the young have fledged.*

Mitigation Measure BIO–2: Hoary Bats. *Pre-construction bat surveys would be conducted by a qualified biologist at Sites 3 and 10 no more than seven days prior to vegetation removal that will occur between February 1st and October 31st.*

Mitigation Measure BIO–3: Oak and Riparian Trees. *The District will comply with all provisions of the County's Tree Protection Ordinance and the Conservation Element of the Contra Costa County General Plan.*

Mitigation Measure BIO–4: Other Protected Birds. *Pre-construction breeding bird surveys will be conducted at Sites 3, 7, or 10 within 14 days prior to ground disturbance or impacts to on-site shrubs, trees, and wetland and marsh vegetation during the breeding season (February 1 through August 31). The surveys will encompass suitable nesting habitat on and within 200 feet of the work site(s). To the extent possible, road construction will be scheduled to avoid the breeding season altogether. Once eggs have been laid, a buffer of at least 100 feet, or other CDFG approved buffer, must be established around the nest site and the site protected until August 31 or until the young have fledged.*

Mitigation Measure BIO–5: Raptors. *Pre-construction breeding bird surveys will be conducted within 14 days prior to ground disturbance and vegetation removal activities at Sites 3, 7, or 10.*

Due to the potential for ground nesting raptors utilizing nests outside the breeding season (February 1 through August 31), surveys will be conducted at all times of the year when required. Surveys will encompass nesting habitat on and within 200 feet of the work site(s). To the extent possible, road construction will be scheduled to avoid the breeding season altogether. Once eggs have been laid, a buffer of at least 100 feet, or other CDFG approved buffer, must be established around the nest site and the site protected until August 31 or until the young have fledged.

Mitigation Measure BIO–6: Salt Marsh Harvest Mouse: *Prior to initiation of construction at Sites 2, 3, 4, 5,7, 9 and 10, the project sponsor shall install a black silt fence barrier around pickleweed habitat for the salt-marsh harvest mouse (SMHM) to prevent the possible intrusion of this species into the work area during construction activities. The silt fence shall be installed six inches deep into the ground, so as to have no openings at the bottom of the fence, and shall stand 30 to 36 inches in height. In addition, all of the additional SMHM protection measures listed in* ***Appendix C*** *shall be implemented.*

Mitigation Measure BIO–7: Special-Status Plant Species: *Prior to initiation of construction, a qualified plant biologist shall conduct focused plant surveys at Work Site 10 for Congdon's tarplant (blooms June through November) and at all sites for soft bird's-beak (blooms April to July), Delta tule pea (blooms May to September), Mason's lilaeopsis (blooms April to December), and Suisun marsh aster (blooms May to November). Focused surveys for each of these plants shall be conducted during their respective blooming seasons to determine presence or absence on each work site. Any special-status plants identified within any work site will be protected during construction by construction barrier fencing around the special-status plant populations, and appropriate avoidance and mitigation measures would be developed and implemented in consultation with CDFG and/or USFWS.*

Mitigation Measure BIO–8: Western Pond Turtle: *Pre-construction surveys at Sites 3, 4, 5, and 7 will be performed to identify any turtles encountered within work sites, and installation of silt fencing surrounding upland pond turtle nesting areas to act as a barrier during the breeding season (March 1 – April 30), would avoid impacts to this species. Impacts at the other sites are not anticipated, and pre-construction surveys are not warranted. At Site 2, the proposed work would occur outside a seasonally inundated drainage (and when the drainage would be dry) and well separated from a permanent pond located more than 180 feet to the northeast. There are no drainage channels or pond habitat in the work areas at Sites 9 and 10, so the potential for impacts to pond turtles is very remote at these work sites.*

Mitigation Measure BIO–9: Wetlands and Waters of U.S. and State: *To the extent feasible, all planned activities will be designed to avoid and minimize disturbances to wetlands as verified by the USACE. Prior to the placement of fill into wetlands or any alteration or modification of an existing creek, wetland, drainage or other jurisdictional feature, the project sponsor shall obtain permits under Sections 401 and 404 of the Clean Water Act. These permits, administered by the San Francisco Bay Regional Water Quality Control Board (RWQCB) and the U.S. Army Corps of Engineers (USACE), respectively, will identify specific mitigation measures that would be imposed on the project as permit conditions. Additionally, a Streambed Alteration Agreement from CDFG may be required. The District will comply with all permit conditions of the regulatory agencies, including the implementation of an appropriate compensatory mitigation plan for unavoidable impacts to wetlands.*

Mitigation Measure BIO–10: Wetlands and Waters of U.S. and State: *Road construction work in wetlands and waters of the U.S. shall only occur between April 15th and October 15th to minimize the potential for erosion and sedimentation in downstream waters. Prior to road construction at Sites 3, 4, 5, 7, 9 and 10, the District will erect exclusion fencing around all wetlands to protect adjacent wetlands from incursion by equipment and vehicles.*

3.5 Cultural Resources

The following section combines both CEQA and NEPA line items. *All CEQA findings are indicated in italics.*

Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	☐	☒	☐	☐
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	☒	☐	☐
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☒	☐	☐
d) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☒	☐	☐

3.5.1 Affected Environment

A cultural resource is a broad term that includes prehistoric, historic, architectural, and traditional cultural properties. The National Historic Preservation Act (NHPA) of 1966 is the primary Federal legislation that outlines the Federal Government's responsibility to cultural resources. Section 106 of the NHPA requires the Federal Government to take into consideration the effects of an undertaking on cultural resources listed on or eligible for inclusion in the National Register of Historic Places (NRHP). Those resources that are on or eligible for inclusion in the NRHP are referred to as historic properties.

The Section 106 process is outlined in the Federal regulations at 36 Code of Federal Regulations (CFR) Part 800. These regulations describe the process that the Federal agency (Reclamation) takes to identify cultural resources and the level of effect that the proposed undertaking would have on historic properties. In summary, Reclamation must first determine if the action is the type of action that has the potential to affect historic properties. If the action is the type of action to affect historic properties, Reclamation must identify the area of potential effects (APE), determine if historic properties are present within that APE, determine the effect that the undertaking would have on historic properties, and consult with the State Historic Preservation Officer (SHPO), to seek concurrence on Reclamation's findings. In addition, Reclamation is required through the Section 106 process to consult with Indian Tribes concerning the identification of sites of religious or cultural significance, and consult with individuals or groups who are entitled to be consulting parties or have requested to be consulting parties.

The Project alignment runs through lowland and marsh areas along the southern edge of Suisun Bay, crossing several creeks including Walnut Creek, Pacheco Creek, Mt. Diablo Creek, and Seal Creek. These water sources and the associated marshes created a hospitable environment for the region's prehistoric inhabitants. Prior to the arrival of the first Europeans, the Project area was within the northeastern edge of Bay Miwok territory, which extended into the interior

valleys of the eastern shore of San Francisco Bay. The Bay Miwok may have been present in the area as far back as 2500 BC. Archaeological evidence indicates that ancestors of the Bay Miwok may have been present in Contra Costa County as long as 9,000 years ago.

The Bay Miwok comprised 5 autonomous tribelets, each of which functions as independent and sovereign nations: Saclan; Chupcan, Volvon, Julpun, and Tatcan. Previous archaeological investigations in the project area concluded that the Chupcan likely occupied the Project area. The typical tribelet had a population of between 200 and 400 people distributed across several permanent settlements and many seasonally occupied camps. Both types of settlements were frequently located adjacent to water sources.

The Project area was first explored by Europeans in 1772 by an expedition led by Pedro Fages. Following the establishment of the San Francisco Presidio by Capt. Juan Bautista de Anza in 1776, Bautista de Anza and his men explored the East Bay shoreline, crossing through the Project area and further eastward toward the present-day city of Tracy.

An archival search of recorded archaeological sites and resources was conducted via the Northwest Information Center (NIC) at Sonoma State University. The NIC reported that there are two recorded historic–period archaeological resources in the Proposed Action area, an historic drainage system (P–07–002685) and the Contra Costa Canal (P–07–002695). There are no recorded Native American archaeological resources in the area and no recorded historical buildings or structures.[14]

3.5.2 Environmental Consequences

3.5.2.1 No Action Alternative

Under the No Action Alternative, the reliability of the CCWD water supply would be compromised for customers such as the City of Martinez and the Shell Oil Refinery and could be completely cut off in the event of rupture of the pipeline. Reliability of supplies to users along the entire Contra Costa Canal would also be compromised because the use of the Martinez Reservoir for balancing daily flows could be adversely affected.

Under the No Action Alternative, there would be no impacts to cultural resources since there would be no change in operations and no additional ground disturbance. Conditions related to cultural resources would remain the same as existing conditions.

3.5.2.2 Proposed Action

Under the Proposed Action, road construction and excavation to replace valves could potentially disturb sensitive cultural resources within the APE.

a) - d) Less Than Significant Impact with Mitigation Incorporation. *Although no cultural resources were encountered during construction of the SCPL in 1972, installation of the new valves and installation of replacement valves would over-excavate around the pipeline and valve housings, which could result in the disturbance of previously undisturbed areas. The approximate dimensions of the excavated areas around the valves would be 10 feet wide by 10 feet long by 10 feet deep. Except for surficial clearing and grubbing, access road construction would involve mostly imported fill for the rehabilitation of 480 feet of existing access roads. The*

[14] Northwest Information Center, Sonoma State University, *Record Search Results for the Proposed Contra Costa Water District's Short-Cut Pipeline Repair and Maintenance Project*, September 13, 2010.

*width of improved existing and new access roads would be 12 feet. Access roadway construction for the 5,130 feet of new roads would involve excavation of up to 2 feet. The NIC concluded that there is a moderately high possibility of identifying Native American archaeological resources and a high possibility of identifying historic-period archaeological resources within the APE. If significant prehistoric or historic cultural resources are present within the APE, their disturbance could result in a significant impact to cultural resources. With implementation of the environmental protection measures listed in **3.5.3**, impacts would not be significant.*

Implementation of the Proposed Action would also require an assessment of the two historic-period archeological resources identified in the NIC report (the Contra Costa Canal and the historic drainage ditch). CCWD does not believe that the SCPL Improvement Project will adversely affect these resources. Reclamation may consult with the State Historic Preservation Office (SHPO) to ensure that the Proposed Action construction would not result in impacts to cultural resources. Accordingly, the Bureau has initiated consultation with SHPO to confirm if SHPO consultation is necessary for this Project. Subject to consultation with SHPO and confirmation that the environmental protection measures are adequate to protect any cultural resources that may exist within the APE, it could be concluded that the Proposed Action would not result in impacts to cultural resources. Approval of the Proposed Action would not conclude until completion of the consultation.

3.5.2.3 Cumulative Impacts

Subject to the consultation with SHPO, the Proposed Action, when added to other existing and proposed actions, would not contribute to cumulative impacts to cultural resources.

3.5.3 Environmental Protection Measures

The District will implement the following mitigation measures to reduce cultural resource impacts to less-than-significant levels:

CULTURAL RESOURCES-1 If any cultural artifacts are encountered during site grading or other construction activities, all ground disturbance in the vicinity shall be halted until a qualified archaeologist can identify and evaluate the resource(s) and, if necessary, recommend mitigation measures to document and prevent any significant adverse effects on the resource(s).

CULTURAL RESOURCES-2 In the event that any human remains are encountered during site disturbance, all ground–disturbing work shall cease immediately and a qualified archaeologist shall notify the Office of the Contra Costa County Coroner and advise that office as to whether the remains are likely to be prehistoric or historic period in date. If determined to be prehistoric, the Coroner's Office will notify the Native American Heritage Commission of the find, which, in turn, will then appoint a "Most Likely Descendant" (MLD). The MLD, in consultation with the archaeological consultant and the project sponsor, will advise and help formulate an appropriate plan for treatment of the remains, which might include recordation, removal, and scientific study of the remains and any associated artifacts.

CULTURAL RESOURCES-3 If any paleontological resources are encountered during site grading or other construction activities, all ground disturbance shall be halted until the services of a qualified paleontologist can be retained to identify and evaluate the resource(s) and, if necessary, recommend mitigation measures to document and prevent any significant adverse effects on the resource(s).

3.6 Environmental Justice

Environmental Justice is not a CEQA requirement but is a NEPA requirement.

Environmental justice refers to the fair treatment of peoples of all races, income levels, and cultures with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. Fair treatment implies that no person or group of people should shoulder a disproportionate share of negative impacts resulting from the execution of Federal programs. Executive Order 12898, dated February 11, 1994, establishes the achievement of environmental justice as a Federal agency priority. The memorandum accompanying the order directs heads of departments and agencies to analyze the environmental effects of federal actions, including human health, economic, and social effects when required by National Environmental Policy Act, and to address significant and adverse effects on minority and low-income communities.

3.6.1 Affected Environment

The SCPL alignment is primarily located in open fields or within industrial properties, but it passes in proximity to two residential neighborhoods, one at the easternmost end of the pipeline and the other near the western end, just east of Interstate 680. On the east side of the proposed construction, the nearest residences are located in the unincorporated community of Clyde, along Warwick Lane, Norman Avenue, and Kilburn Street, approximately 330 feet from the nearest zone of work, which is the 1,900-foot long segment of proposed service road along the west side of Port Chicago Highway, within Site 10. On the west side of the Proposed Action, the nearest residences are located in the unincorporated community of Pacheco, on Cabrilho Drive, Donna Drive, and Irene Drive, approximately 650 feet from proposed valve construction at Sites 2 and 3. These residential neighborhoods are comprised of single–family homes.

The community of Clyde is consolidated in the neighborhood located adjacent to the east end of the SCPL. Based on 2000 U.S. Census data, the population of Clyde is 694 persons, of whom 12.3% are Black or African American, 0.9% are American Indian and Alaska Native, 3.6% are Asian, 0.1% are Native Hawaiian and Other Pacific Islander, 5.5% are some other race, 2.4% are two or more races, and 12.5% are Hispanic or Latino. The median 1999 household income in Clyde was $66,875. No families (0%) had incomes below the poverty level, and just 1.9% of individuals had income below the poverty level, substantially lower than the national average of 12.4%.[15]

The community of Pacheco is more geographically spread out and extends south of State Route 4, approximately 1.8 miles south of Site 3. Based on 2000 U.S. Census data, the population of Pacheco is 3,562 persons, of whom 2.2% are Black or African American, 0.8% are American Indian and Alaska Native, 7.4% are Asian, 0.2% are Native Hawaiian and Other Pacific Islander, 2.9% are some other race, 3.6% are two or more races, and 11.8% are Hispanic or Latino. The median 1999 household income in Pacheco was $45,851. The 1999 family income of 7.9% of

[15] U.S. Census Bureau, Fact Sheet: Census 2000 Demographic Profile Highlights, Clyde CDP, California, accessed November 15, 2010 at: http://factfinder.census.gov/servlet/SAFFFacts?_event=Search&geo_id=&_geoContext=&_street=&_county=Clyde&_cityTown=Clyde&_state=04000US06&_zip=&_lang=en&_sse=on&pctxt=fph&pgsl=010&show_2003_tab=&redirect=Y

Pacheco families was below the poverty level, while 10.2% of individuals had income below the poverty level.[16]

3.6.2 Environmental Consequences

3.6.2.1 No Action Alternative

The No Action Alternative could result in disruption to the water supply of the City of Martinez and the Shell Oil Martinez refinery. Reliability of supplies to users along the entire Contra Costa Canal would also be compromised because the use of the Martinez Reservoir for balancing daily flows would be adversely affected. Although it is difficult to estimate the potential economic impacts on Martinez businesses that could result from water supply disruptions, with a population that is 75.1% white in a city with median household income in 1999 of $63,010 and just 3.2% of families below the poverty level, there is no reason to believe that minorities or disadvantaged populations would be disproportionately affected by socioeconomic effects that could result from the No Action Alternative.[17] Jobs in Martinez are distributed across a wide variety of industries, with just 0.3% devoted to agriculture, forestry, fishing, and hunting, and 7.6% of total jobs in manufacturing.[18] Impacts related to environmental justice would therefore not be significant.

3.6.2.2 Proposed Action

Construction activities associated with the Proposed Action would occur within 330 feet of residents in the community of Clyde and within 650 feet of residents in the community of Pacheco. However, construction activities would be temporary and short term, and mitigation measures are identified to ensure that impacts from construction are less than significant. Operational activities would not have the potential to adversely affect neighboring residents. Based on the demographics of the City of Martinez, the continued reliability of the municipal water supply that would result from the Proposed Action would not be expected to have negative effects related to environmental justice.

3.6.2.3 Cumulative Impacts

The Proposed Action, when added to other existing and proposed actions, would have a less-than-significant contribution to adverse cumulative impacts associated with environmental justice. The jobs that the Proposed Action would help support and maintain are not disproportionately held by low-income or disadvantaged populations.

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[16] U.S. Census Bureau, Fact Sheet: Census 2000 Demographic Profile Highlights, Pacheco CDP, California, accessed November 15, 2010 at: http://factfinder.census.gov/servlet/SAFFFacts?_event=Search&geo_id=16000US0614232&_geoContext=01000US|04000US06|16000US0614232&_street=&_county=Pacheco&_cityTown=Pacheco&_state=04000US06&_zip=&_lang=en&_sse=on&ActiveGeoDiv=geoSelect&_useEV=&pctxt=fph&pgsl=160&_submenuId=factsheet_1&ds_name=DEC_2000_SAFF&_ci_nbr=null&qr_name=null&reg=null%3Anull&_keyword=&_industry=

[17] U.S. Census Bureau, Fact Sheet: Census 2000 Demographic Profile Highlights, Pacheco CDP, California, accessed November 15, 2010 at: http://factfinder.census.gov/servlet/SAFFFacts?_event=Search&geo_id=16000US0614232&_geoContext=01000US|04000US06|16000US0614232&_street=&_county=Martinez&_cityTown=Martinez&_state=04000US06&_zip=&_lang=en&_sse=on&ActiveGeoDiv=geoSelect&_useEV=&pctxt=fph&pgsl=160&_submenuId=factsheet_1&ds_name=DEC_2000_SAFF&_ci_nbr=null&qr_name=null&reg=null%3Anull&_keyword=&_industry=

[18] U.S. Census, Census 2000 Summary File 3 (SF-3), Table DP-3: Profile of Selected Economic Characteristics: 2000, Martinez city, California, accessed November 15, 2010 at: http://factfinder.census.gov/servlet/QTTable?_bm=y&-geo_id=16000US0646114&-qr_name=DEC_2000_SF3_U_DP3&-ds_name=DEC_2000_SF3_U&-_lang=en&-redoLog=false&-_sse=on

3.7 Geology and Soils

The following section combines both CEQA and NEPA line items. *All CEQA findings are indicated in italics.*

Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☒	☐
ii) Strong seismic ground shaking?	☐	☐	☒	☐
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐
iv) Landslides?	☐	☐	☒	☐
b) Result in substantial soil erosion or the loss of topsoil?	☐	☒	☐	☐
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☒	☐
d) Be located on expansive soil, as defined in Table 18-1-B of the most recently adopted Uniform Building Code creating substantial risks to life or property?	☐	☐	☒	☐
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☐	☒

Discussion

Fault Rupture

The SCPL alignment crosses the Concord fault approximately at the same location where the pipeline crosses Walnut Creek at the Tesoro Refinery and very close to where a segment of the pipeline failed during the 1989 Loma Prieta earthquake. The Concord fault is an active northwest-trending right-lateral fault of the San Andreas fault system that extends for about 18 km along the edge of Ygnacio Valley from the base of Mount Diablo to the south shore of Suisun Bay. An earthquake of magnitude 5.4 occurred on this fault in 1955 and it is zoned under the Alquist-Priolo Earthquake Fault Zoning Act of 1972.[19] The SCPL improvement project involves operations and maintenance work and would not result in construction of any structures or buildings for human occupancy. As a result, the Alquist-Priolo specific criteria for lead agencies do not apply to this project.[20]

The SCPL is located in the seismically active San Francisco Bay region and it is likely that the project area will experience periodic minor to moderate earthquakes and possibly a major earthquake of magnitude 7 or greater. For example, the U.S. Geological Survey (USGS) Working Group on California Earthquake Probabilities evaluated the probability of one or more earthquakes of Richter magnitude 6.7 or higher occurring in the San Francisco Bay Area within the next 30 years. The results of that evaluation indicated a 62 percent likelihood that such an earthquake event will occur in the Bay Area between 2003 and 2032.[21]

In addition to the Concord fault, a number of other active faults are located within 100 km of the Project. Most of these faults are related to the San Andreas fault system and include the northern San Andreas fault zone, the Hayward fault zone, the Calaveras fault zone, the Healdsburg-Rodgers Creek fault zone, the Concord-Green Valley fault zone, the Great Valley fault zone, and the Greenville fault zone (among others). A major earthquake on any of these faults could result in very strong to violent ground shaking. The intensity of such an event would depend on the causative fault and the distance to the epicenter, the moment magnitude, and the duration of shaking. The intensity of earthquake ground motion would depend upon the characteristics of the generating fault, distance of the site to the earthquake epicenter and rupture zone, magnitude and duration of the earthquake, and site-specific geologic conditions.

The SCPL crosses the northern end of the Diablo Valley and is about 2 miles south of Suisun Bay. Along its alignment, the pipeline cuts across old northwesterly-trending channels that are now filled with clay and peaty organic sediments. Intervening local hills are underlain by older

[19] In California, the Alquist-Priolo Earthquake Fault Zoning Act of 1972 (formerly the Special Studies Zoning Act) regulates development and construction of buildings intended for human occupation to avoid the hazard of surface fault rupture. This Act and supplemental amendments groups faults into the categories of active, potentially active, and inactive. Historic and Holocene age faults are considered active, Late Quaternary and Quaternary age faults are considered potentially active, and pre-Quaternary age faults are considered inactive. These classifications are qualified by the conditions that a fault must be shown to be "sufficiently active" and "well defined" by detailed site-specific geotechnical explorations in order to determine that building setbacks might be established.

[20] California Geological Survey, *Guidelines for Evaluating and Mitigating Seismic Hazards in California*, California Division of Mines and Geology Special Publication 117, 2007.

[21] United States Geological Survey (USGS) Working Group on California Earthquake Probabilities (WG02), *Open File Report 03-214: Earthquake Probabilities in the San Francisco Bay Region: 2002-2031*, 2003. http://pubs.usgs.gov/of/2003/of03-214/.

and stiffer alluvium above sedimentary bedrock.[22] The clay and peat units (also known as Bay Mud) are relatively soft, compressible, and can be problematic during construction.[23]

ai) Less Than Significant Impact. *Project workers could be exposed to a rupture of a known earthquake fault if an earthquake with sufficient magnitude to rupture were to occur on the Concord fault. This risk would only occur at the location where the pipeline crosses the fault and only if work were being performed at that location at the same time as the earthquake. Although this level of risk cannot be quantified in a meaningful manner, due to the relatively short duration of the Project, the level of risk can reasonably be assumed to be lower than the commonly accepted risk associated with persons travelling on a road or highway that crosses an active fault. As a result, the risk to the SCPL Project associated with fault rupture would be less than significant.*

Seismic Ground Shaking

aii) Less Than Significant Impact. *The SCPL Project is a short-term construction project that includes the replacement of existing pipeline valves and construction of gravel access roads; it also includes long-term operations and maintenance activities. The SCPL does not currently incorporate any habitable structures and none would be constructed as part of the improvement project. Therefore, the long-term potential for adverse impacts associated with strong ground shaking would constitute a less-than-significant impact.*

Similar to the hazard associated with fault rupture, SCPL workers could be at risk from strong ground shaking if an earthquake were to occur when work was being performed on the Project. Because most of the work will be performed at grade (i.e., at the ground surface), this risk would be comparable to the risk assumed by the general population of the San Francisco Bay Area that might be outdoors during an earthquake; this risk would not be significant.

The replacement and installation of new butterfly and Air Valves would require excavations up to 10 feet deep. Workers in un-shored or improperly designed excavations could be at risk if an earthquake occurred while the work was being performed (workers in improperly designed excavations would be at risk even in absence of ground shaking). However, all Project excavation, trenching, and earthwork would be required to be performed in accordance with the minimum permit requirements and safety standards specified in Title 8 of the California Code of Regulations (CCR). Because compliance with these minimum standards is a required component of the Project, the risk associated with ground shaking affecting workers in temporary excavations would be less than significant.

Liquefaction, Landslides, and Other Ground Failure

aiii-aiv) Less Than Significant Impact. *Hazard maps produced by the Association of Bay Area Governments (ABAG) depict liquefaction hazards for the entire Bay Area in the event of a*

[22] DCM Engineers, *op. cit.*

[23] For example, DCM (2009) notes that during original construction of the SCPL at the Walnut Creek crossing, the contractor placed fill across the channel with culverts to pass the flow. The plan was to excavate a trench through the fill with 0.75H:1V side slopes and place the pipe on a base of lightweight aggregate. The foundation material in this area was saturated peat and the equipment vibrations and instability of the peat caused repeated failures of the trench cut. As a result, the contractor abandoned plans to cut an unsupported trench and instead drove a double row of 35-foot long interlocking sheet piles within which a 12-foot-deep vertical trench was excavated and shored. This area is in the vicinity of Gravel Access Roads #3 and #4 that are part of the current SCPL project.

significant seismic event. According to these maps, the SCPL Project site is in an area expected to have moderate to low potential for liquefaction.[24] *Although these maps are regional in scale and are not site-specific, the Draft Geotechnical Engineering Evaluation included evaluation of site-specific conditions at proposed gravel access road locations and did not identify liquefaction as a potential design hazard for the Project.*[25] *Review of the boring logs included in the Draft Geotechnical Engineering Evaluation did not indicate the presence of subsurface soils that would clearly have a high potential for liquefaction. Additionally, and as indicated previously, the SCPL Project would not include any habitable structures. Therefore, the long-term potential for adverse liquefaction impacts affecting the Project would be less than significant.*

The SCPL is located in a relatively flat-lying area and there are no known large landslides mapped along or adjacent to the alignment.[26] *Additionally, preliminary design drawings for the Project do not show large cuts or fill that could potentially trigger landslides on adjacent slopes. The Draft Geotechnical Engineering Evaluation does not identify landslides or slope instability as a significant concern for the proposed access roads. Therefore, the potential for landslides affecting or being affected by the Project would be less than significant.*

Soils

b) Less Than Significant Impact with Mitigation Incorporation. *Proposed Project construction would require excavation, scraping, grading, access road construction, and stockpiling of rock and soil. Much of this work would be confined to limited work areas along the alignment of the SCPL, although approximately 5,130 feet of new access roads would be constructed and an additional 480 feet of existing road would be re-graveled. Construction activities conducted when the ground is wet also creates potential for increased runoff, which in turn, could lead to increased erosion. Additionally, topsoil would be stripped and removed from some of the grading and excavation. This would be a potentially significant impact. Implementation of the following measures would reduce the impact to a less-than-significant level.*

GEO-1 Access road grading activities should be conducted during extended dry periods to provide better support for construction equipment. The summer construction season is April 15 through October 15. All site preparation activities shall conform to the recommendations of the project Geotechnical Engineer.

GEO-2 To the extent practicable, existing topsoil in areas to be graded shall be stockpiled and re-used in the Project areas for backfill, erosion control, or other purposes.

c) Less Than Significant Impact. *The Draft Geotechnical Engineering Evaluation for the Project provides recommendations for site preparation, subgrade reinforcement, access road materials, access road cross section (thickness), and access road construction measures that will minimize on and off site landslide, lateral spreading, subsidence, liquefaction and collapse. The Draft Preliminary Design Report prepared by Brown and Caldwell notes that for excavations around the pipeline, crushed stone foundation and bedding material will be used to stabilize the*

[24] Association of Bay Area Governments (ABAG), Liquefaction Susceptibility Map of the San Francisco Bay Region, 2001.

[25] DCM GeoEngineers, *Draft Geotechnical Engineering Evaluation, Contra Costa Water District, Shortcut Pipeline Access Road, Contra Costa County, California*, 2009.

[26] T.H. Nilsen and V.A. Frizzell, *Preliminary Photointerpretation Map of Landslide and Other Surficial Deposits of the Port Chicago 7-1/2' Quadrangle, Contra Costa and Solano Counties*, USGS Open-File Map 75-277-45, 1975.

pipe due to soil conditions.[27] *Brown and Caldwell further notes that a minimum of 12 inches of foundation material will be placed at the bottom of excavations and around manhole structures and that additional thickness of foundation material will be placed where native soils in the excavation bottom are unstable. Incorporating these geotechnical recommendations as part of the SCPL Project would reduce these impacts to a less-than-significant level.*

d) Less Than Significant Impact. *Much of the SCPL alignment and the proposed gravel access roads are located in areas underlain by expansive soil. However, the Project does not include habitable structures and the Draft Geotechnical Engineering Evaluation includes design recommendations for the gravel access roads that are tailored for the geologic materials along each of the different roadway alignments. Excavations will include crushed stone foundation and manhole backfill materials. As a result, the potential for expansive soil creating substantial risk to life or property would be less than significant.*

Septic Systems

e) No Impact. *With the exception of a construction trailer, it is anticipated that no temporary facilities will be required for the Project.*[28] *A construction trailer would be self-contained and serviced by a private wastewater disposal contractor. As a result, septic tanks or alternative wastewater disposal systems would not be required. The SCPL Project would not include habitable structures and would not require long-term wastewater disposal. Impacts related to wastewater disposal would be less than significant.*

3.8 Global Climate Change

The following section combines both CEQA and NEPA line items. *All CEQA findings are indicated in italics.*

Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☒	☐	☐
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☐	☒

3.8.1 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 (changes in sun's intensity, changes in ocean circulation, deforestation, urbanization, burning fossil fuels, etc.) can contribute to climate change. Gases that trap heat in the atmosphere are often called

[27] Brown and Caldwell, *Draft Shortcut Pipeline – Valve Replacement and Access Road Improvements Project, Preliminary Design Report*, November 17, 2009.
[28] Brown & Caldwell, *op. cit.*

greenhouse gases (GHG). Some GHG such as carbon dioxide (CO_2) 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 greenhouse gases that enter the atmosphere because of human activities are: CO_2, methane (CH_4), NO_x, and fluorinated gasses.[29] During the past century, humans have substantially added to the amount of GHG 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 CO_2 and CH_4, 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. While there is general consensus in their trend, the magnitudes and onset-timing of impacts are uncertain and are scenario-dependent.[30]

In 2002, with the passage of Assembly Bill 1493 (AB 1493), the State launched an innovative and proactive approach to dealing with GHG emissions and climate change at the state level. AB 1493 requires the California Air Resources Board to develop and implement regulations to reduce automobile and light truck GHG emissions; these regulations would apply to automobiles and light trucks beginning with their respective 2009 models. On June 30, 2009, the U.S. EPA granted a waiver that allows the stringent tailpipe emissions standards to take effect. The State also passed Assembly Bill 32 (AB 32) in 2006, adopting the goal of reducing GHG emissions to the 1990 baseline by 2020, which is comparable to reducing 2009 GHG emissions by 15 percent.

The effect of increased GHG emissions as they relate to global climate change is inherently an adverse environmental impact. While the emissions of one single project will not cause global climate change, GHG emissions from multiple projects throughout the world could result in an impact with respect to global climate change. A projected ancillary effect of global climate change is a global rise in sea level resulting from melting glaciers and polar ice caps.

The Bay Area Air Quality Management District (BAAQMD) has adopted the Bay Area 2010 Clean Air Plan (CAP) to reduce the SFBA's greenhouse gas (GHG) emission, among other multi-pollutant objectives. Through vehicle exhaust emission control and stationary source regulations, air pollutant emissions and ambient concentrations of criteria pollutants and air toxics in the SFBA have been decreasing; however, at the same time, GHG emissions have been increasing in the SFBA and elsewhere nationwide.[31]

The BAAQMD does not have an adopted or proposed threshold of significance for construction-related GHG emissions. However, the BAAQMD guidance states that Lead Agency should quantify and disclose GHG emissions that would occur during construction, and make a determination on the significance of these construction-generated GHG emission impacts in relation to meeting AB 32 GHG reduction goals, as required by the Public Resources Code, Section 21082.2. The BAAQMD guidance encourages the Lead Agency to incorporate best management practices to reduce GHG emissions during construction, as feasible and applicable.[32]

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[29] U.S. Environmental Protection Agency (EPA), *Final Mandatory Reporting of Greenhouse Gases Rule*, accessed December 10, 2009 at: http://www.epa.gov/climatechange/emissions/ghgrulemaking.html.

[30] Anderson, J., F., Chung, M. Anderson, L. Brekke, D. Easton, M. Ejeta, R. Peterson, and R. Snyder, *Progress on Incorporating Climate Change into Management of California's Water Resources*, 2008. Climatic Change 87:S91-S108, DOI 10.1007/s10584-007-9353-1.

[31] Bay Area Air Quality Management District (BAAQMD), *Bay Area 2010 Clean Air Plan*, adopted September 15, 2010, http://www.baaqmd.gov/~/media/Files/Planning%20and%20Research/Plans/2010%20Clean%20Air%20Plan/CAP%20Volume%20I%20%20Appendices.ashx

[32] BAAQMD, June 2010, *op. cit.*

3.8.2 Environmental Consequences

3.8.2.1 No Action Alternative

Under the No Action Alternative, the reliability of the CCWD water supply would be compromised for customers such as the City of Martinez and the Shell Oil Refinery and could be completely cut off in the event of rupture of the pipeline.

Under the No Action Alternative, there would be no impacts on global climate change since no construction would take place and there would not be any change in existing operational conditions.

3.8.2.2 Proposed Action

The Proposed Action would involve short-term GHG impacts consisting of emissions generated during construction and long-term impacts from GHG emissions from vehicles and equipment used for operations and maintenance activities. The principal GHGs are carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), sulfur hexafluoride (SF_6), perfluorocarbons (PFCs), and hydrofluorocarbons (HFCs). CO_2 is the most common reference gas for climate change. To account for the warming potential of GHGs, GHG emissions are often quantified and reported as CO_2 equivalents (CO_2e). GHG emissions are reported in metric tons of CO_2e ($MTCO_2e$).[33]

a) Less than Significant Impact with Mitigation Incorporation. *Based on results from the Road Construction Emission Model (RCEM) (v6.3.2) recommended by BAAQMD for linear projects such as road construction or pipeline construction, total GHG emissions during 2012-2015 from construction Phases 2a, 2b, and 3 are estimated to be up to 375 $MTCO_2e$. This is a conservative estimate based upon re-construction by cut and cover of 2,100 lineal feet of 48-inch diameter welded steel pipe (less intensive repairs, such as pipe jacketing may be feasible) and construction of 5,610 lineal feet of box-fill aggregate base service roads with an average depth of fill of 2 feet (actual fill depth would range from 1 to 2.5 feet).*

Implementation during construction of the environmental protection measures listed in **3.8.3 Environmental Protection Measures,** including minimizing idling time and properly tuning equipment and vehicle engines, would minimize GHG emissions. GHG emissions would also be offset by the CCWD's proposed San Miguel Pump Station photo-voltaic project, intended to substitute clean solar energy for purchased electricity, which currently averages about 600,000 kilowatt hours (kWh) per year. Once constructed, the photo-voltaic project would offset 500 $MTCO_2e$ in less than 5 years. Although the CCWD does not currently have a program to require alternative B20 fuel (diesel and biofuel blend) in contractor construction equipment, consideration of this and similar programs to minimize GHG emission from District facility construction, operation, and maintenance is ongoing at the District. Given their magnitude, the worst-case construction emissions of GHG under the Proposed Action would result in *de minimis* impacts to global climate change.

Operational emissions of GHG from periodic travel on service roads to inspect valves, settlement monitors, and pipeline cathodic protection would result in accumulated vehicle mileage of less than 1,000-2,000 vehicle miles per year. This would result in fewer GHG emissions than those generated by one San Francisco Bay Area automobile driver. For operations of the SCPL project, therefore, GHG emission would be *de minimis*.

[33] A metric ton is 1,000 kilograms; it is equal to approximately 1.1 U.S. tons.

In the future, the SCPL may be exposed to sea level rise resulting from global climate change. This would not be an impact of the Proposed Action, but rather a potential impact to the SCPL. **Figure 20 s**hows areas in the vicinity of the SCPL projected by BCDC to be vulnerable to sea level rise in the next 40 to 90 years, with the SCPL shown as an orange line. About 30 percent of the existing SCPL alignment, including some proposed access roads, could be under water in the next 40-90 years even with a moderate sea level rise of 16 inches (40 cm). A sea level rise of 55 inches (140 cm) is considered at the high end of relative sea level rise projections referenced currently by the State of California. While protection of all of the lands potentially subject to future sea level rise may be desirable, the regional planning effort has just begun and strategies, policies, and plans are not yet in place.[34] [35]

[34] BCDC, *op. cit.*

[35] San Francisco Bay Conservation and Development Commission (BCDC), *Background Report for the Commission's Strategic Planning Workshop*, internal memorandum, September 5, 2008, accessed at: http://www.bcdc.ca.gov/meetings/commission/2008/2008-09-05_cspw_report.pdf

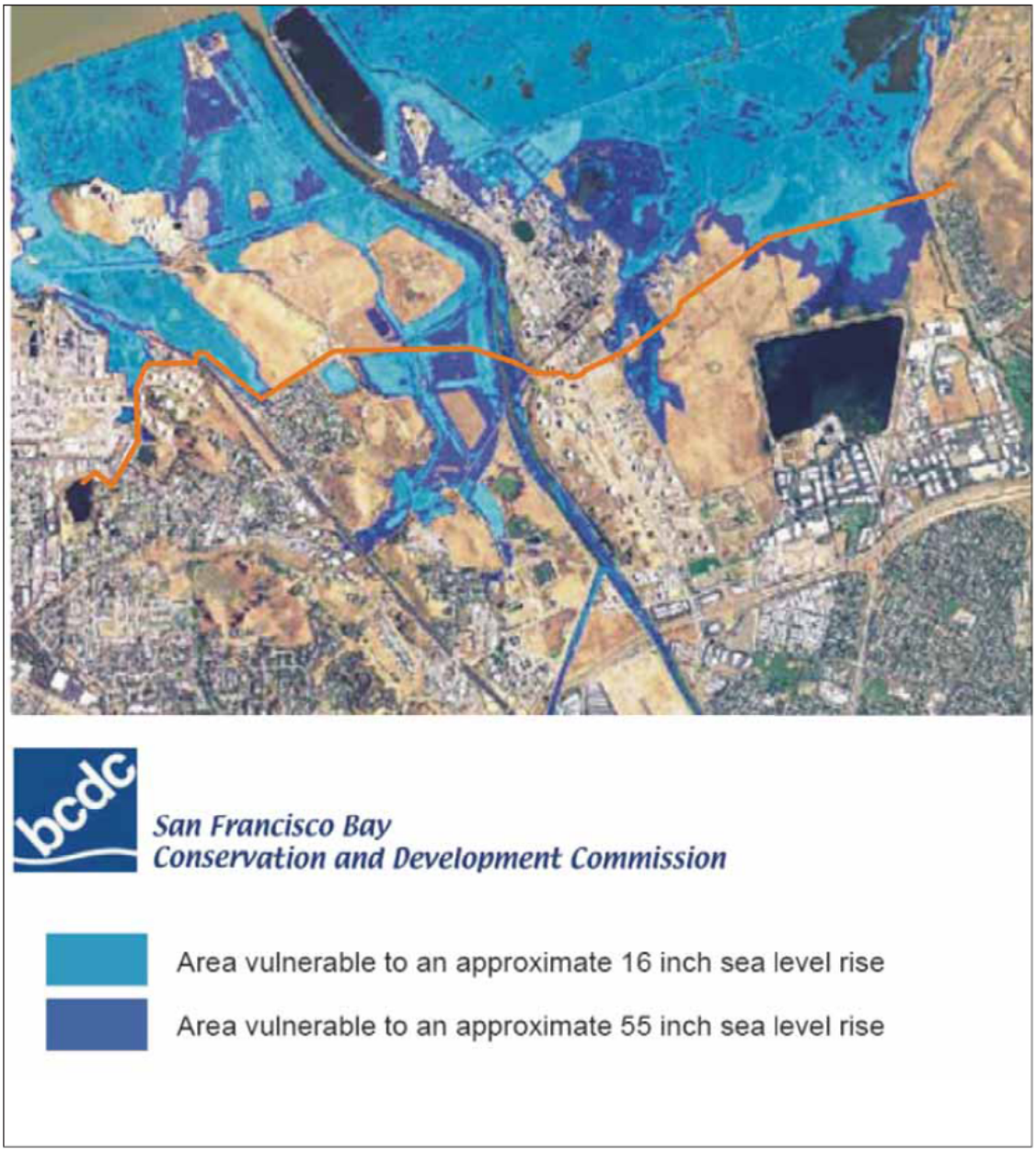

Figure 19 - Potential Inundation Areas from Future Increase in Sea Level

Source: BCDC

3.8.2.3 Cumulative Impacts

Greenhouse gas impacts are considered to be cumulative impacts. Ongoing operation and maintenance of the SCPL is estimated to produce negligible $MTCO_2e$ per year. The Proposed Action, when added to other existing and proposed actions, would not contribute to cumulative impacts to global climate change owing to the *de minimis* magnitude of annual GHG emissions.

b) No Impact. *The proposed action would not conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases.*

3.8.3 Environmental Protection Measures

The District will implement the following BAAQMD mitigation measures to achieve emission reductions through the use of improved equipment, operational measures and the best available technology.

GHG-1

- *Minimize the idling time of diesel powered construction equipment to two minutes.*
- *Require all contractors use equipment that meets California ARB's most recent certification standard for off-road heavy duty diesel engines.*

3.9 Hazards and Hazardous Materials

The following section combines both CEQA and NEPA line items. *All CEQA findings are indicated in italics.*

Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☒	☐
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☒	☐	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within ¼ mile of an existing or proposed school?	☐	☐	☐	☒
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5[36] and, as a result, would it create a significant hazard to the public or the environment?	☐	☒	☐	☐
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒

[36] Section 65962.5(a)(1) requires that DTSC "shall compile and update as appropriate, but at least annually, and shall submit to the Secretary for Environmental Protection, a list of all the following: ....(1) [a]ll hazardous waste facilities subject to corrective action pursuant to Section 25187.5 of the Health and Safety Code ("HSC")." The hazardous waste facilities identified in HSC § 25187.5 are those where DTSC has taken or contracted for corrective action because a facility owner/operator has failed to comply with a date for taking corrective action in an order issued under HSC § 25187, or because DTSC determined that immediate corrective action was necessary to abate an imminent or substantial endangerment. This is a very small and specific subgroup of facilities and they are not separately posted on the DTSC or Cal/EPA's website.

Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	☒	☐

Discussion

Regulations Governing the Handling of Hazardous Waste

Regulations governing the handling of hazardous waste are described in **Section 4 Consultation and Coordination.** Agencies with jurisdiction include the following:

- Contra Costa County Health Services (Hazardous Materials Programs)
- California Dept. of Toxic Substances Control (DTSC)
- Regional Water Quality Control Board (RWQCB)
- California Div of Occupational Safety & Health (Cal OSHA)
- Federal OSHA

The use of hazardous substances in an industrial setting is regulated by occupational safety and health laws, and the storage and disposal of hazardous substances are regulated under federal environmental protection laws including the Federal Clean Water Act, Clean Air Act, Resource Conservation and Recovery Act (RCRA), the Porter□Cologne Water Quality Act, Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) and also through state laws including the Porter-Cologne Water Quality Act and California Integrated Waste Management Act, among others. The Porter□Cologne Water Quality Act, Water Code section 13000, *et seq.*, generally prohibits the release of oil or other hazardous substances to waters of the State of California, unless covered by a permit issued by a Regional Water Quality Control Board. California Code of Regulations (CCR), Title 22, Division 4.5, Environmental Health Standards for the Management of Hazardous Waste and Title 27, Environmental Protection set out additional requirements for waste management.

At the state level, the California Environmental Protection Agency, Department of Toxic Substances Control (DTSC), regulates hazardous waste, oversees cleanup of existing contamination and works with industry to reduce hazardous waste produced in the state. DTSC regulates hazardous waste primarily under the authority of RCRA and the state Health and Safety Code. The U.S. EPA authorizes DTSC to carry out the RCRA programs in the state. Permitting, inspection, compliance, and corrective action programs are in place to ensure hazardous waste is managed in compliance with state and federal regulations.

At the local level Contra Costa County Health Services (Hazardous Materials Programs) administers the California Accidental Release Prevention (CalARP) Program and Industrial

Safety Ordinances (ISO) by Contra Costa County and the City of Richmond. The California Accidental Release Prevention (CalARP) Program includes the federal Accidental Release Prevention Program [Title 40, Code of Federal Regulations (CFR) Part 68] with certain additions specific to the state pursuant to Article 2, Chapter 6.95, of the Health and Safety Code (HSC). The purpose of the CalARP Program is to prevent the accidental releases of regulated substances. The Industrial Safety Ordinance requires regulated facilities to implement safety programs to prevent chemical accidents from occurring that could have a detrimental impact to the surrounding communities.

Description of Hazardous Waste Sites

Lands traversed by the SCPL alignment and other lands near the alignment include active and historic refinery, waste treatment/disposal, and industrial uses. The USBR-owned SCPL right-of-way is transected by pipelines, electrical power transmission lines, Pacheco Creek, Walnut Creek, and Seal Creek. Land in the area has a long history of use for disposal of refinery wastes. The Tesoro Golden Eagle Refinery (formerly known as Avon Refinery) and Shell Oil Refinery are major sources of refined petroleum products and associated air pollutants, as well as solid and liquid wastes. As shown on **Figure 5**, the SCPL alignment passes through former liquid waste disposal ponds created by the former IT Corporation, which also operated a pre-treatment plant on their property, just north of the SCPL. The alignment also passes adjacent or in proximity to lands owned by the Acme Fill Corporation that were historically used and at present are used for solid waste disposal.

Numerous Waste Management Units (WMUs) on the Tesoro Refinery property (see **Figure 5**) are in the process of closure and long-term management. A preliminary assessment conducted by a California Registered Environmental Assessor in October 2010 identified refinery site WMUs located near some of the valves, settlement monitors, and service road construction sites, at Sites 3, 4, 5, and 6 (see **Figure 5**). Additional research conducted by a second California Registered Environmental Assessor established more specificity on the waste sites near the SCPL as well as cleanup priorities.[37] Chemical-affected soil is known generally to be present in defined WMUs. Similarly, closure activities have been performed at the former liquid waste ponds and liquids treatment facility, both operated by the IT Corporation from 1971 to 1985, and a 30-year post-closure management of the facilities is underway.

Closure and Post-Closure Maintenance Permits generally are required when waste management units that previously accepted hazardous waste for treatment and/or disposal are “not clean-closed." Being “not clean-closed” means that residual wastes may be present; in such cases, monitoring and other long-term care (e.g., maintenance of caps and perimeter walls) are required by Post-Closure Permits. These permits are administered by State of California regulatory agencies including DTSC or RWQCB.

SCPL Sites 3 and 4 also encroach into a Class I hazardous waste management unit previously owned by Acme Fill Corporation (now owned by IT Corp.), as shown on **Figure 5**. Refer also to site maps 1-10 in **Appendix B** for details on potential hazardous waste at each individual site.

[37] Environmental Service, Memorandums 1-11, February-April, 2011.

More site-specific information includes the following:

Site 3: Portions of the SCPL within Site 3 may be located over or adjacent to the former Acme Class I hazardous solid waste disposal site, which later was used by IT Corporation for its liquid waste treatment operations at Vine Hill. IT Corporation's Vine Hill Treatment Facility treated incoming liquid refinery wastes received by tanker truck, stored the waste in above-ground tanks and unlined impoundments, treated the waste and piped it southward into the adjacent ponds (see discussion on Site 4, below). Site 3 appears to be clear of the Vine Hill Treatment WMU though it is very close to the southern edge. All of the former liquids impoundments at Vine Hill have been closed. Engineered controls including a perimeter slurry wall, ground water and leachate collection trenches, and an engineered cap have been installed. For treatment of extracted ground water and leachate, a pair of lined holding ponds has been constructed. Portions of the Martinez Gun Club site have received fill including a mapped zone of debris fill noted by Reclamation engineers during installation of the SCPL in 1971.

The Site 3 improvement should avoid hazardous waste impacts since there is limited work planned in this area (repair 1 Blow-off Valve and up to 4 settlement monitors) and limited amounts of excavation.

Site 4: Much of the proposed SCPL construction in Site 4 is located over the northern end of the former IT Corporation Baker facility. Portions of Site 4 may also be located over or adjacent to the former Acme Class I hazardous solid waste disposal site. The middle portion of Site 4 is located over a levee separating two of the former IT Corporation liquid waste evaporation ponds. Pond A was located on the north side of the levee and Pond B was located on the south side of the levee. Additional Ponds C, D, and E were used successively to evaporate the waste liquids (located farther south of the SCPL right-of-way). Construction of the levee itself was noted in the engineering documents as having historically damaged the SCPL. The ponds were eventually closed and dried. Contaminated pond-bottom sludge and soil were excavated and consolidated in one 22-acre disposal area. The waste consolidation area has engineered controls including perimeter slurry wall, ground water and leachate collection trenches, and an engineered cap. Collected ground water and leachate is conveyed by pipe to the Vine Hill WMU for treatment. The remainder of the former pond land was clean-closed. The subject of the Closure and Post-Closure Maintenance Plan is the waste consolidation area. As noted above, IT Corp.'s post-closure permit operations are ongoing today. Site 4 appears to be clear of the zone of potential influence from the firing range at the Martinez Gun Club except for a mapped debris fill.

Site 4 work includes a new access road, replacement of an Air Valve and repair/replacement of up to 11 settlement monitors. Given that the SCPL is located within former hazardous waste sites it is possible that contaminated soil could be encountered when work is performed at this location.

Site 5: Includes construction of a new access road from the Foster Wheeler Power Plant and replacement of a Blow-off Valve and construction of a new Butterfly Valve. A portion of the proposed SCPL construction work in Site 5 takes place north of Waste Management Unit 3 (WMU3) on the Tesoro Refinery (also known as Avon Refinery, Tesoro/Golden Eagle Refinery, and other names). (See **Figure 5**.) WMU3 on the Tesoro Refinery property is among several WMUs being managed under a post-closure permit. WMU3 was used historically to dispose tetraethyl lead sludge. It has been closed under a Closure and Post-Closure Maintenance Plan. Phase 1 work replaced a new Butterfly Valve and added a new Air Valve and road construction was performed in 2010 immediately adjacent to WMU3 without encountering hazardous materials.

Site 6: The proposed SCPL construction in Site 6 is located within the WMU4 site and the Cardox Canal on the Tesoro Refinery (see **Figure 5**). The SCPL is within an area (WMU4) proposed by the Bay Area Regional Water Quality Control Board subject to a Closure and Post Closure Maintenance Plan due to the presence of an inactive landfill which received wastes during the 1950's and 1960's and possibly beyond this time frame. Records of the disposed materials are poorly documented; however, aerial photos indicate that a surface impoundment was on the site filled with sludge. Debris, including bricks, metal scraps, concrete and tires, has been observed on the surface of WMU4 and in soil borings. Materials with an appearance consistent with coke have been observed in several borings. Soils within the SCPL easement have not been tested for hazardous materials, but the District believes from aerial photos that waste may be within the SCPL right-of-way. The waste issues appear more apparent on the eastern portion of the right-of-way where an Air Valve, Blow-off Valve and Butterfly Valve are located. There is no way to determine the extent of hazardous waste within the right-of-way from visual observations. The surface of the SCPL right-of-way is likely safe for construction workers with appropriate personal protective equipment. The Bay Area Regional Water Quality Control Board issued an order in October 2010 seeking that WMU4 be capped adjacent and south of the SCPL right-of-way.

None of the known WMUs or former waste disposal sites is a Superfund site; the nearest Superfund site is the Concord Naval Weapons Station, located approximately 3,800 feet southeast of the eastern end of the SCPL.

A summary of actions related to the above hazardous waste sites follows in **Table 12:**

Table 12
Hazardous Materials Unit & Action*

Name of Unit/Area of Concern	SCPL Site	Distance from SCPL (feet horiz.)	Action Priority
WMU4	6	0	Potential Testing
Industrial Waste Ponds	4	100-250	Potential Testing

*Source: SCPL Hazardous Materials Review, Environmental Service, 2011.

Waste site WMU4 has the highest priority waste remediation requirements while Industrial Waste Ponds (IT Ponds A and B, Vine Hill, and the Martinez Gun Club) have a moderate remediation action requirement. WMU4 (Site 6) is a site the District plans to test for potential hazardous waste. Site 4, adjacent to the Industrial Waste Ponds, may also require hazardous materials testing, though this will not be determined until prior to start of construction.

The Project activities likely to create an impact (with respect to hazards and hazardous materials) include:

- Excavation of soil
- Stockpiling of soil
- Off-site transportation of soil for disposal
- Construction water
- Contaminated groundwater

a) Less Than Significant Impact. *The proposed SCPL Project is not expected to involve routine transport, use, or disposal of hazardous materials or hazardous waste. Any contaminated soil excavated during construction, which may be found to contain metals organic compound concentrations inconsistent with on-site reuse, would require on-site or off-site disposal in accordance with contingencies identified in Worker Safety & Hygiene Plans, the Transportation Plan, and Soil Treatment and Disposal Plan as required by Mitigation Measure HAZ-2.*

b), d) Less Than Significant Impact with Mitigation Incorporation. *In addition to historical landfill and refinery waste burial in the project area, a review of Geotracker and Envirostor databases identified additional sources of potential soil or ground water contamination in proximity to the SCPL alignment. These include Leaking Underground Storage Tanks (LUST) or Spills, Leaks Investigation and Cleanup (SLIC) sites located within a 4,000-foot-wide band centered on the SCPL alignment. The agency-listed hazardous materials release sites are shown on* ***Figure 5.*** *The location of key hazardous waste sites potentially causing a hazard to the public or the environment include the industrial properties of Chevron USA and Tesoro Refining & Marketing Co. (see also* ***Figure 5).***

Where the SCPL traverses former, closed disposal sites (e.g., the former IT liquid waste disposal ponds), contaminated soil or groundwater could be encountered during proposed construction, potentially exposing construction workers to hazardous materials. Additional hazards could be encountered during valve replacement and other proposed construction work on the property of active refinery facilities, where workers could encounter pipe galleries, overhead transmission lines, above-ground tanks, and other potentially hazardous refinery facilities. This would be a ***potentially significant impact****, which would be reduced to a less–than–significant level through implementation of the following mitigation measure:*

HAZ-1: Prior to construction the District shall follow the procedures for handling of hazardous waste described at the end of Section 3.9 Hazards and Hazardous Materials (see **Procedures to Follow in Handling of Hazardous Waste).**

HAZ-2: Prior to construction, the District shall perform a review of each work site and excavation area to evaluate the potential for encountering hazardous materials during work activities. Where applicable, the District will prepare site-specific Worker Safety & Hygiene Plans known generally as Initial Site Assessment or Phase I Environmental Site Assessment. Additional special provisions for soil reuse/disposal management and construction dewatering shall be developed for sites where pollutants are present in soils and/or groundwater in accordance with "Procedures to Follow in Handling of Hazardous Waste."

c) No Impact. *No hazardous materials or waste would be handled within ¼ mile of an existing or proposed school. The nearest school is Las Juntas Elementary School, located at 4105 Pacheco Boulevard, about 800 feet west of I-680. This Martinez Unified School District property is located about 3,200 feet south of Work Site 2, 3,700 feet southwest of Work Site 3, and 5,000 feet southwest of Work Site 4. Truck routes will be appropriately identified in the Soil Transportation Plan. The route(s) will be selected to minimize or avoid the potential for the trucks to pass within a quarter mile of a school during transport. The BMPs outlined in the Transportation Plan will further reduce any potential risk.*

e–f) No Impact. *There are no private airstrips within 2 miles of the SCPL; however, Buchanan Field Airport is located about 1.5 miles to the south. The nearest SCPL work site to the airport, Site 6, is located about 1.55 miles north of the north ends of Runway 14R/32L and Runway 14L/32R. Based upon background information provided in the Contra Costa County Airport*

Land Use Compatibility Plan, the Project is located outside the Buchanan Field Airport safety zone.[38] *The proposed Project would not cause any air navigation hazards or expose project construction or operational personnel to safety hazards from airport operations.*

g) No Impact. *Traffic generated during peak project construction periods would be very light (less than 50 trips per day) and O&M traffic would be negligible. The project would therefore have very little potential to interfere with an emergency evacuation plan or response.*

h) Less Than Significant Impact. *The SCPL is located in an area largely devoid of trees or flammable grasslands. The project area is designated as having a low to moderate wildfire risk by the City of Concord.*[39] *The potential for wildfire risk would be considered a less-than-significant impact.*

Procedures to Follow in Handling of Hazardous Waste

The following plans will be developed as part of the project in order to minimize the potential adverse impacts of hazardous materials;

- Soil Sampling Plan: pre-construction sampling plan to characterize hazardous waste at site areas.
- Worker Safety Plan (with Emergency Response Plan): worker safety plan for all construction activities.
- Soil Treatment and Disposal Plan: on and offsite soil treatment and disposal plan in conformance with local, state, and federal regulations.
- Soil Management Plan: identification of how soil excavated onsite will be excavated, stored, and handled.
- Construction Dewatering Water Management Plan: identification of how groundwater will be collected, stored, pumped and treated prior to discharge.
- Transportation Plan: identification of the techniques, materials, and equipment needed to execute the removal of excavated soil that contains hazardous materials.

With respect to the SCPL the following procedures for handling hazardous waste will be followed:

<u>Step 1: Contact Property Owner & Regulators</u>

1. Contact property owners to advise that excavation will be taking place on their property within the SCPL easement to repair the SCPL and based on CCWD's assessment of areas adjacent to their property it is possible that hazardous materials may be uncovered within the SCPL easement.
2. Seek property owner commitments to assume responsibility for any hazardous materials uncovered during excavation on their property within the SCPL easement.
3. Contact the San Francisco Bay Area Regional Water Quality Control Board (SFRWQCB) to advise that excavation will be taking place within the SCPL easement and based on CCWD's assessment of certain areas adjacent to the easement it is possible that hazardous materials may be uncovered.

[38] Contra Costa County, *Contra Costa County Airport Land Use Compatibility Plan*, December 2000.
[39] City of Concord, *Concord 2030 Urban Area General Plan*, Chapter 7: Safety and Noise, adopted October 2, 2007.

Step 2: Testing & Excavation; Consult with Property Owners & Regulators; Prepare Disposal Plan

4. Conduct preconstruction surveying per the approved sampling plans. If preconstruction testing confirms hazardous materials consult with property owners and SFRWQCB regarding these hazards before excavating further. Prepare a worker safety plan to address potential hazardous materials. Prepare a treatment and disposal plan for excavated hazardous materials.
5. CCWD excavates within the SCPL construction site.
6. If necessary, inspect or test excavated soil and water to confirm presence or absence of hazardous materials exceeding U.S. EPA and RWQCB screening levels.

Step 3: Recontact Property Owner & Regulators After Testing & Excavation; Disposal of Hazardous Materials

7. If hazardous materials above U.S. EPA and RWQCB screening levels are detected within the soil or water, advise property owners and the SFRWQCB. Follow all SFRWQCB requirements regarding treatment or disposal of any hazardous materials excavated from the SCPL easement.
8. Place hazardous materials in owner-approved disposal site if available. If no owner-authorized hazardous materials site is available, follow SFRWQCB requirements regarding treatment or disposal of any hazardous materials excavated from the SCPL easement.
9. Any backfilling of soil into the construction pit and all disposal of hazardous liquids will be consistent with SFRWQCB requirements.

3.10 Hydrology & Water Quality

The following section combines both CEQA and NEPA line items. *All CEQA findings are indicated in italics.*

Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Violate any water quality standards or waste discharge requirements?	☐	☒	☐	☐
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☒	☐
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	☐	☒	☐	☐
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	☐	☐	☒	☐
e) Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	☒	☐
f) Otherwise substantially degrade water quality?	☐	☒	☐	☐
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	☐	☒
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	☐	☐	☐	☒
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	☐	☐	☐	☒
j) Inundation by seiche, tsunami, or mudflow?	☐	☐	☐	☒

Discussion

The SCPL is located in north-central Contra Costa County, approximately 1.5 miles north of State Highway 4 and about 1.5 miles south of the San Joaquin/Sacramento Delta. The pipeline connects to the Contra Costa Canal at Milepost 25.75 just above the community of Clyde and extends to the terminus of the Contra Costa Canal at Martinez Reservoir. The pipeline conveys untreated water by gravity. The western portion of the alignment crosses Interstate 680 (I–680) at the Shell Refinery. The alignment passes through undeveloped open space (primarily grassland and marshland), industrial development, and a limited amount of commercial development; it also passes adjacent to two residential neighborhoods. The topography along the majority of the alignment is relatively flat, and elevations along most of the pipeline range from just below sea level to about 20 feet above sea level. Near the western end, the SCPL winds through several hills and terminates at the Martinez Reservoir at an elevation of 100 feet.

All of Contra Costa County's water drains either directly or indirectly into the Bay-Delta system. Water from the western, urbanized portion of the County drains directly into San Francisco or San Pablo Bay, while that from the northern and eastern portions drain into Suisun Bay and the Delta river channels, eventually flowing in San Pablo and San Francisco Bays. The south-central portion of the County is within the Alameda Creek drainage basin, which drains south to Alameda Creek and then west to San Francisco Bay. The San Francisco Bay Delta system (including San Pablo Bay) is generally regarded as the most important water body in the California. It is used extensively for both recreational and commercial purposes, and supports diverse flora and fauna. Water from about 40 percent of land in California drains into the Bay and comprises most of the State's agricultural and urban supplies.

The California State RWQCB, San Francisco Bay Region, is the government agency responsible for protecting the health of the San Francisco Bay. A water quality control plan, or "basin plan," has been prepared to guide water pollution control activities in the Bay. The basin plan identifies the beneficial uses of the Bay that must be protected, including non-contact recreation; wildlife habitat; preservation of rare and endangered species; estuarine habitat; warm freshwater and cold freshwater fish habitat; fish spawning and migration; industrial service supply; navigation; and commercial and sport fishing.

Lands to the south of the SCPL are mainly upland grasslands. A few creeks cross the alignment. These creeks receive most of their water from rainfall. Freshwater falling to the ground as rain flows north towards Suisun Bay, either underground, across the ground, or through seeps and creek channels. Lands to the north of the SCPL are mostly marshes that receive the majority of their water from tidal movement of brackish water in the adjacent Suisun Bay. Twice a day, rising tides force bay water up Hastings Slough and other creek channels. Water eventually exceeds the capacity of the slough and creek channels, causing them to overflow and flood the surrounding marshlands. The high tidal water in creek channels also retards the flow of freshwater moving downstream, causing these creeks to overflow as well. Lowering tides draw the water away from the marshes through the same creek and slough channels. The pipeline alignment is generally less moist during the dry summer and fall months.

Several creeks cross the pipeline. Seal Creek and Mt. Diablo Creek are located near the eastern end of the pipeline (Site 10). Both are small drainages that appear to have been channelized upstream of the pipeline. One of the small channels of Hastings Slough is also crossed by the pipeline about mid-way along the alignment in the Tesoro Refinery (Site 7). The remaining two creeks, lower Walnut Creek and upper Pacheco Creek, are larger channelized features in the industrialized areas contained within well developed levee systems. The pipeline crosses under these creeks just upstream of their intersection.

Water Quality

a) Less Than Significant Impact with Mitigation Incorporation. *CCWD obtains its water supply exclusively from the Sacramento-San Joaquin Delta (Delta) and serves treated and raw (untreated) water to approximately 500,000 people in central and eastern Contra Costa County. All of CCWD's intakes are subject to variations in water quality caused by salinity intrusion, Delta hydrodynamics, and discharges into the Delta and its tributary streams from both point and non-point sources.*

The SCPL Improvement Project involves only minor excavation that may touch upon shallow groundwater. Valve excavation depths are estimated to be approximately 10 feet from the surface and may encounter shallow groundwater. Groundwater resources do not provide a significant amount of the water supplied in the CCWD service area. The District operates shallow groundwater wells adjacent to Mallard Reservoir, approximately 1 mile from the SCPL. The water wells adjacent to Mallard Reservoir are used to supply process water to the Foster Wheeler Power Plant located on the Tesoro Golden Eagle Refinery.

The SCPL Improvement Project is not expected to impact groundwater aquifers. The Project may need to dispose of shallow groundwater encountered during valve excavation and will need to ensure that new access roads do not adversely impact drainage patterns.

Based on the above findings, there would be potentially significant impacts to water quality from the Project. These would be reduced to less-than-potentially significant through the implementation of the following mitigation measures:

HYD–1: The District will follow all RWQCB requirements as appropriate to the extent that ground water disposal is required during construction.

HYD–2: The District shall complete hydrology analysis that determines the effect of the Project on drainage and on the floodplain. All access roadways and roadway drainage facilities/culverts shall be designed to pass water without substantially altering the existing drainage pattern of the SCPL alignment, without contributing to flooding, and without affecting the currently mapped limits of the 100 year flood zone. All drainage design calculations and drawings shall be stamped and signed by a California-licensed Civil Engineer.

Groundwater Resources and Hydrology

b) Less Than Significant Impact. *The Project site is located in the San Francisco Bay Hydrologic Region that covers approximately 2.88 million acres and includes all of San Francisco and portions of Marin, Sonoma, Napa, Solano, San Mateo, Santa Clara, Contra Costa, and Alameda Counties.*[40] *The region has 28 identified groundwater basins. Two of those, the Napa-Sonoma Valley and Santa Clara Valley groundwater basins are further divided into 3 and 4 sub-basins, respectively. Groundwater use accounts for about 5 percent (68,000 acre-feet) of the region's estimated average water supply for agricultural and urban uses. In general, the freshwater-bearing aquifers are relatively thin in the smaller basins and moderately thick in the more heavily utilized basins. The more heavily utilized basins in this region include the Santa Clara Valley, Napa-Sonoma Valley, and Petaluma Valley groundwater basins.*

[40] Department of Water Resources (DWR), 2003. California's Groundwater. Bulletin 118; update 2003.

The Project is located near the northern end of the Ygnacio Valley Sub-basin. This sub-basin occupies a structural depression between the Berkeley Hills and the Mt. Diablo Range and is bounded by Suisun Bay on the north, by Highway 680 and Taylor Road on the west, by the Concord Fault, which separates this basin from the Clayton Valley Groundwater Basin, on the east, and by the City of Walnut Creek on the south. Water-bearing units consist primarily of Quaternary alluvial deposits on top of faulted and folded Cretaceous and Tertiary bedrock. Usable groundwater resources along the SCPL project are not extensive due to the predominantly fine-grained nature of the geologic materials that underlie the pipeline. In the Project area, the depth to groundwater typically varies from near the ground surface to about 5 feet below the ground surface. Impacts to groundwater from the Proposed Action would be less than significant.

c) Less Than Significant Impact with Mitigation Incorporation. *Certain activities conducted as part of the Proposed Action could have the potential to result in increased erosion and sedimentation leading to decreased water quality, which would be a potentially significant impact. Such activities include excavation, scraping, grading, access road construction, and stockpiling of rock and soil. As a result of these activities, erosion rates could be potentially accelerated because of equipment loading, surface disturbance, and vegetation removal. Conducting these activities when the ground is wet also creates potential for increased runoff, which in turn, could lead to increased erosion. Because the Proposed Action is considered maintenance and repair to existing facilities and takes place on the existing ROW, it is exempt from general NPDES storm water construction permit coverage.*

Minor amounts of construction dewatering and possibly the discharge of accumulated precipitation are expected to be required at locations where excavations below the existing shallow groundwater table would be necessary.[41] *A National Pollutant Discharge Elimination System (NPDES) permit will not be required for discharge of groundwater from dewatered excavations, because the work is considered maintenance of an existing utility line to restore and maintain its original purpose. Maintenance also includes work to restore existing facilities including access roads. The only work that may be subject to a General Construction NPDES permit would be the construction of new access roads where none previously existed. Typical dewatering scenarios for the SCPL project would include:*

- *Dewatering of accumulated precipitation free of pollutants other than sediment. These discharges must comply with the Construction General NPDES Permit.*
- *Dewatering of accumulated precipitation commingled with shallow groundwater or other non-storm water.*
- *Dewatering groundwater free of pollutants other than sediment.*
- *Dewatering any water containing pollutants other than sediment.*

*See mitigation measures **HYD-1** and **HYD-2** in **a)** above.*

Flooding

d) Less Than Significant Impact. *The Project will be designed to allow existing drainage patterns to remain the same as existing conditions. Maintenance roads will only be elevated*

[41] These locations include: Site 10, Site b, Site 4, and Site 3.

slightly (1-2 feet) so in the event of high water in the area, access roads will be inundated. A number of areas within Contra Costa County, including portions of the proposed Project area, are subject to flooding. According to records maintained by the Federal Emergency Management Agency (FEMA), the majority of the County's creeks and shoreline areas lie within the 100-year flood zone, an area subject to flooding in a storm which has a 1 percent annual probability of being equaled or exceeded. In the West and Central County, these areas include portions of the shoreline in the vicinity of Richmond, Hercules, Rodeo, Crockett, and Martinez. Contra Costa County Flood Control and Water Conservation District (CCCFCWCD) administers flood and storm water throughout the county. The CCCFCWCD develops drainage plans for entire watersheds that cross-jurisdictional boundaries. Flooding impacts of the Proposed Action would be less than significant.

Sea Level Rise

Tidal gauge measurements collected over the last 100 years indicate that the sea level is rising relative to the land surface in many locations throughout the world.[42] Over the last 100 years, the temperature of the earth's surface has risen approximately 0.6 degree Celsius.[43] It is widely believed that sea level will continue to rise in response to global warming. Global warming causes thermal expansion of the upper layers of the ocean (increasing the volume of water) and melting of the earth's glaciers and polar ice fields. Such increases in sea level, if sustained over long periods of time, could create flooding problems (or exacerbate existing problems) for those areas currently protected from flooding with only minimal freeboard. Long-range projections of the behavior of physical systems are difficult because of the uncertainties involved. Since the EPA released their first major study on sea level rise in 1983, estimates for the amount of predicted sea level rise have steadily decreased. EPA's most recent prediction for the expected total sea level rise vicinity is 18 centimeter (cm) (0.6 foot) by the year 2050 and 59 cm (2 feet) by the year 2100.[44] (See Section 3.9, Global Climate Change, for additional discussion on sea level rise.)

e) Less Than Significant Impact. *The Proposed Action would not generate a new supply of water; rather, it would improve the long-term reliability of CCWD's provision of untreated water supplies to City of Martinez and the Shell Oil Martinez refinery. The Proposed Action would not increase utilization of either surplus surface water or groundwater; it would have no effect on existing water supplies. Operationally, the Proposed Action would have no adverse impacts on water quality or surface hydrology. The Proposed Action would not result in creation of new impervious surfaces beyond a negligible amount of concrete platform surfaces around some of the new or replacement valves, and would not significantly contribute to storm water run-off.*

Replacement and installation of new valves conducted as part of Phase 2 work or future O&M activities would require some segments of the SCPL to be drained, with raw (untreated) water discharged via the Blow-off Valves to Walnut Creek, Pacheco Creek, Seal Creek, or nearby storm water conveyance structures. The U.S. EPA has determined that the discharge of untreated water to waters of the U.S. is exempt from the need to obtain a discharge permit

[42] Bay Conservation and Development Commission (BCDC), *Sea Level Rise: Predictions and Implications for San Francisco Bay*, December 1987.

[43] United States Environmental Protection Agency (EPA), *The Probability of Sea Level Rise*, EPA 230-R-95-008, October 1995.

[44] Intergovernmental Panel on Climate Change (IPCC), *Climate Change 2007: Impacts, Adaptation and Vulnerability*, Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change, 2007.

pursuant to the National Pollutant Discharge Elimination System (NPDES) established under the federal Clean Water Act of 1972.[45]

f) Less Than Significant Impact with Mitigation Incorporation. *Depending on location and subsurface conditions at each SCPL work area, groundwater may need to be removed to support accessing the valves. If this water is free of pollutants other than sediment, typical management options would include: (i) reusing the water on site for dust control or compaction during earthwork activities; (ii) treating the water for sediment removal and discharging it on site; (iii) retaining the water on site in a grassy or porous area and allowing it to infiltrate/evaporate; (iv) discharging the water to a neighboring property (by agreement) that may have irrigation needs or sufficient land for infiltration; and/or (v) discharge to a sanitary sewer. Water from areas of known or suspected soil contamination or that has unusual visual features or odor, may contain pollutants other than sediment. If other pollutants are suspected, water quality testing may be required, and depending on the quality of the water, possible management options include: (i) discharge to a sanitary sewer; or transportation off site for disposal at a commercial recycling or disposal facility. Uncontrolled discharge of this water could have adverse effects on water quality and would be a significant impact. With implementation of the environmental protection measures listed in* ***a)*** *above and restated below, water quality impacts would not be significant.*

HYD–1: The District will follow all RWQCB requirements as appropriate to the extent that ground water disposal is required during construction.

HYD–2: The District shall complete a hydraulic and hydrologic analysis that determines the effect of the Project on drainage and on the floodplain. All access roadways and roadway drainage facilities/culverts shall be designed to pass water without substantially altering the existing drainage pattern of the SCPL alignment, without contributing to flooding, and without affecting the currently mapped limits of the 100 year flood zone. All drainage design calculations and drawings shall be stamped and signed by a California-licensed Civil Engineer.

g, h, i) No Impact. *Since the Proposed Action would involve no new construction, no housing or other structures would be placed within a designated 100-year floodplain; the Project would not alter the floodplain or have the potential to redirect flood flows. The Project would not expose personnel to risk due to flooding as a result of a catastrophic levee or dam failure. Therefore, no flooding or inundation impacts are anticipated from the Proposed Action.*

j) No Impact. *The Proposed Action is not located downstream of a dam or levee and is not located within a dam failure inundation area. Tsunamis (seismic sea waves) are long period waves that are typically caused by underwater disturbances (landslides), volcanic eruptions, or seismic events. Areas that are highly susceptible to tsunami inundation tend to be located in low-lying coastal areas such as tidal flats, marshlands, and former bay margins that have been artificially filled but are still at or near sea level. Tsunami inundation maps for the San Francisco Bay show areas potentially affected by tsunamis in the vicinity of the SCPL project are located on the immediate margins of the Carquinez Straight.*[46] *At its closest point, the SCPL project is about 1.7 miles south of the Carquinez Straight and therefore is not subject to inundation by tsunami.*

[45] California Regional Water Quality Control Board, Central Valley Region, "Notice of Termination: General Waste Discharge Requirements Order No. 5-00-175 (General Order), NPDES No. CAG995001; Contra Loma Reservoir, Contra Costa Water District, Contra Costa County" [letter], June 25, 2009.

[46] California Emergency Management Agency, California Geological Survey and University of Southern California, Tsunami Inundation Map for Emergency Planning, State of California, San Francisco Bay Area, 2009.

A seiche is a free or standing wave oscillation(s) of the surface of water in an enclosed or semi-enclosed basin that may be initiated by an earthquake. The Project is not located next to any significant closed or semi-enclosed surface water bodies. Therefore, the potential for seisches affecting the site is negligible.

Debris flows, mudslides, and mudflows begin during intense rainfall as shallow landslides on steep slopes. The rapid movement and sudden arrival of debris flows can pose a hazard to life and property during and immediately following a triggering rainfall. The Project is not located down slope of unstable areas that would be subject to mudflows.

3.11 Indian Trust Assets

Indian Trust Assets are not a CEQA requirement but are a NEPA requirement.

Indian Trust Assets (ITA) are legal interests in assets that are held in trust by the United States (U.S.) for federally recognized Indian tribes or individuals. The trust relationship usually stems from a treaty, executive order, or act of Congress. The Secretary of the Interior is the trustee for the U.S. on behalf of federally recognized Indian tribes. "Assets" are anything owned that holds monetary value. "Legal interests" means there is a property interest for which there is a legal remedy, such a compensation or injunction, if there is improper interference. ITA cannot be sold, leased or otherwise alienated without the U.S.' approval. Assets can be real property, physical assets, or intangible property rights, such as a lease, or right to use something; which may include lands, minerals and natural resources in addition to hunting, fishing, and water rights. Indian reservations, Rancherias, and public domain allotments are examples of lands that are often considered trust assets. In some cases, ITA may be located off trust land. Reclamation shares the Indian Trust responsibility with all other agencies of the Executive Branch to protect and maintain ITA reserved by or granted to Indian tribes, or Indian individuals by treaty, statute, or Executive Order.

3.11.1 Affected Environment

The U.S. Government's trust responsibility for Indian resources requires Reclamation and other agencies to take measures to protect and maintain trust resources. These responsibilities include taking reasonable actions to preserve and restore tribal resources. ITA are legal interests in property and rights held in trust by the U.S. for Indian tribes or individuals. Indian reservations, Rancherias, and allotments are common Indian trust assets. During preparation of this environmental document, it was determined that no Indian trust assets exist within the CCWD service area.[47]

3.11.2 Environmental Consequences

3.11.2.1 No Action Alternative

Under the No Action Alternative, the reliability of the CCWD water supply would be compromised for customers such as the City of Martinez and the Shell Oil Refinery and could be completely cut off in the event of rupture of the pipeline.

[47] Final Environmental Assessment, Long Term Renewal Contract, CCWD, U.S. Bureau of Reclamation, Fresno, February, 2005.

The Proposed Action involves minor modifications to an existing pipeline as well as the construction of access roads to the pipeline. Because there are no ITA in the CCWD service area, the Proposed Action and the No Action alternatives would have no impact to ITA.

3.11.2.2 Cumulative Impacts

The Proposed Action would have no impacts to ITA; therefore, there would subsequently be no cumulative impacts to ITA.

3.12 Land Use and Planning

The following section combines both CEQA and NEPA line items. *All CEQA findings are indicated in italics.*

Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Physically divide an established community?	☐	☐	☐	☒
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the General Plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	☒
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☐	☒

3.12.1 Affected Environment

The Contra Costa Water District has a service area of approximately 137,127 acres in north, central, and east Contra Costa County. The District serves a wide variety of end users, including municipal, residential, commercial, industrial, landscape irrigation, and agricultural users. It supplies water to 10 major industries, including oil refineries, along with 36 smaller industries, and approximately 50 agricultural users. Most of the area where the SCPL is located is zoned as Industrial.

The SCPL supplies water to the City of Martinez and Martinez Shell Oil Refinery. Land use in the project area consists of single-family residential development, undeveloped open space fields, industrial facilities, and commercial businesses. The eastern end of the SPCL runs adjacent to an existing residential neighborhood at the northern edge of the unincorporated community of Clyde. The eastern terminus of the SCPL begins at the Contra Costa Canal. Approximately 950 feet west of the Contra Costa Canal, the alignment crosses under the Port Chicago Highway and, continuing westward, passes through open fields containing salt marsh and low-lying grasslands. Approximately 4000 feet west of the Port Chicago Highway, the alignment turns to the southwest and follows Monsanto Way, a private road on the Tesoro Martinez Refinery property.

Within Monsanto Way, the alignment passes between two electrical substations, then between two petroleum storage tanks, then crosses under Walnut Creek. The buried SCPL continues west across flat fields that are reclaimed former liquid waste storage ponds, then crosses under Pacheco Creek. West of this second creek, the alignment crosses property of the Martinez Gun Club, which consists of flat open fields. Turning to the southwest, the SCPL passes between a concrete plant and a solid waste transfer station, then passes adjacent to single-family residential development, following Waterbird Way, Arthur Road, and Service Road, before crossing under Interstate 680 (I–680).

West of I–680, the SCPL crosses the Shell Oil Refinery property, passing under Vine Hill Road between a series of petroleum product storage tanks located on Vine Hill and a wastewater treatment plant and ponds. Turning south, the alignment continues under Thead Road, crosses Pacheco Boulevard and passes between two commercial properties under a private service road owned by the CCWD. The western end of the SCPL terminates at Martinez Reservoir.

3.12.2 Environmental Consequences

3.12.2.1 No Action Alternative

Under the No Action Alternative, the reliability of the CCWD water supply would be compromised for customers such as the City of Martinez and the Shell Oil Refinery and could be completely cut off in the event of rupture of the pipeline. Reliability of supplies to users along eh entire Contra Costa Canal would also be compromised because the use of the Martinez Reservoir for balancing daily flows could be adversely affected.

Under the No Action Alternative, the CCWD would continue to maintain the SCPL using existing access roads and, when necessary, cross-country routes. The portions of existing wetland, grassland, and other habitats at Sites 3, 4, 5, 7, and 10 would not be converted to urban access roads.

3.12.2.2 Proposed Action

The Proposed Action would result in the conversion of relatively small areas of natural habitat to gravel access roads. The main purpose of the Proposed Action is to improve long-term reliability of the water supply delivered to Martinez Reservoir by CCWD; therefore, no impacts to land use are anticipated.

a) No Impact. *Relative to the extensive areas of similar adjacent habitats that would remain unaffected, this conversion of land use would not be significant and would not adversely affect existing land uses in the project vicinity. The Proposed Action would not divide an established community. No residences or other land uses would be displaced or adversely affected by the Proposed Action. The Proposed Action would not develop new sources of water that would support new housing or new permanent population growth that would exceed official regional or local population projections in the CCWD service area.*

Existing residents living in proximity to Sites 2, 3, and 10 could experience minor noise annoyance during temporary construction activities at these sites, but the noise levels would not be excessive and would be of limited duration. (Noise effects are addressed further in ***Section 3.14.****)*

The Proposed Action would not convert any agricultural lands to non-agricultural uses. As discussed in more detail in ***Section 3.2****, although the California Department of Conservation designates land in or around Sites 2, 3, 6, 9, and 10 as farmland or grazing land, there is no current agricultural use of the lands encompassed by these project areas.*

b) No Impact. *The Proposed Action would not conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the General Plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect.*

c) No Impact. *The Proposed Action would not conflict with any applicable habitat conservation plan or natural community conservation plan.*

3.12.2.3 Cumulative Impacts

The Proposed Action would not displace or convert active agricultural lands or other existing land uses. Therefore, the Proposed Action would not contribute to any cumulative impacts to land use.

3.13 Mineral Resources

The following section combines both CEQA and NEPA line items. *All CEQA findings are indicated in italics.*

Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☒

Discussion

No regionally significant mineral deposits have been mapped in the vicinity of the SCPL alignment. The majority of the alignment is classified Mineral Resource Zone MRZ–1 by the California Department of Conservation's Division of Mines and Geology (DMG).[48] The MRZ–1 designation is assigned to areas where sufficient data exists for a determination that no significant mineral deposits exists, or where it is judged that little likelihood exists for their presence. In the vicinity of Sites 2 and 3, the alignment crosses an area classified Mineral Resource Zone MRZ–3. The MRZ–3 designation is assigned to areas containing mineral deposits the significance of which cannot be evaluated from available data. East of Site 2 and south of Site 5, the alignment passes areas classified by the DMG as Mineral Resource Zone MRZ–4, which denotes areas where there is inadequate information available to evaluate the significance of mineral deposits and assign a more explicit Mineral Resource Zone (MRZ) category.

In addition, none of the mineral resources mapped by Contra Costa County are located in the project area.[49] Given the lack of known mineral resources anywhere within the project area, there is no evidence that significant mineral deposits are present on the site.

a. No Impact. *The proposed Project would not have any effect on the availability of mineral resources in the region and State.*

[48] California Department of Conservation, Division of Mines and Geology, Generalized Mineral Land Classification Map of the South San Francisco Bay Production–Consumption Region (Plate 1 of 29), 1996.

[49] Contra Costa County, *Contra Costa County General Plan 2005-2020*, Figure 8–4: Mineral Resource Areas, map created August 25, 2004.

b. No Impact. *The proposed Project would not result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan.*

3.14 Noise

The following section combines both CEQA and NEPA line items. *All CEQA findings are indicated in italics.*

Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☒	☐
b) Exposure of persons to or generation of excessive ground borne vibration or ground borne noise levels?	☐	☐	☒	☐
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☒	☐
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☒	☐
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

Discussion

Some new noise would be generated by the proposed Project during construction and during long-term O&M activities, although infrequently. The SCPL is located in an area that is generally not noise–sensitive, with the majority of the alignment located in isolated open space areas or on industrial properties. Portions of the alignment are located in proximity to residential development in 3 locations; residences are generally considered noise–sensitive receptors.

From west to east, the first residential receptors are located to the east of Martinez Reservoir, with the nearest residence located approximately 370 feet south of Site 1. The next group of residences is located to the south of Service Road and Waterbird Way, between Sites 2 and 3. In this neighborhood the nearest residences to proposed construction are located at the west end of Cabrilho Drive, about 600 feet east of Site 2. Within this same residential neighborhood, the closest homes to Site 3 are located on the east end of Donna Drive and the north end of Irene Drive, about 700 feet away from proposed construction.

The third and final group of residential receptors is located to the east of Site 10, on Warwick Lane, Kilburn Street, and Norman Avenue, in the community of Clyde. The closest residences are approximately 400 feet east of the eastern most portion of Site 10.

Operations and maintenance activities would primarily consist of District personnel driving trucks to valve sites and testing them, as well as periodic right–of–way maintenance (e.g., right-of-way mowing, minor road reconditioning, etc.). These activities would be infrequent, of short–term duration, and generally not noise intrusive. The activities would occur on weekdays during normal business hours. Therefore, noise generated by O&M activities would not be significant.

The primary construction activities with the potential to generate noise would be clearing, grubbing, grading, and over–excavation of the access roads, as well as placement and compaction of fill and gravel road surface. At more localized sites, noise would be generated to excavate around existing valves and at new valve sites and to backfill the valve sites following refurbishment, replacement, or installation. Typical construction equipment would include backhoes, dozers, excavators, loaders, compactors, dump trucks, and other heavy trucks. Diesel–powered generators, concrete mixers, and welders would also be other equipment sources of noise during construction. Typical noise levels generated by this type of construction equipment at various distances from the noise source, listed as A-weighted decibels (dBA),[50] are listed below in **Table 13**.

Table 13
Typical Noise Levels from Construction Equipment

Construction Equipment Noise Source	dBA at 50 ft	dBA at 100 ft	dBA at 1.0 mile
Truck (e.g. dump, water)	88	82	48
Concrete mixer (truck)	85	79	45
Bulldozer	87	81	47
Backhoe	85	79	45
Generator	76	70	36

Source: Borba Farms Dairy EIR, BASELINE Consulting, 1999, Cunniff 1977

Noise levels generated by the equipment would range from 76 to 88 dBA at a distance of 50 feet from the noise source; at 100 feet, the noise levels would range from 70 to 82 dBA. Over open ground without intervening terrain or structures, noise levels typically attenuate (fall off) by 6 dBA with each doubling of distance.

a) Less Than Significant Impact. *At the nearest residential receptor (i.e., at a distance of approximately 370 feet from Work Site #10), the upper limit noise level during construction would be less than 72 dBA. This is 2 dBA above the conditionally acceptable exterior noise exposure limit for residential use established in the Contra Costa County General Plan. However, the land-use compatibility noise standards established in the General Plan apply to permanent noise levels, not temporary construction noise. Temporary construction noise is typically regulated at the local level by the Noise Ordinance and generally occurs through restrictions on construction hours. Because construction activities in proximity to residences*

[50] The noise levels discussed in this section are measured in decibels (dB), which are units of measurable sound energy intensity. More specifically, the noise levels used in this discussion are based on an A–weighted decibel (dBA), which is a decibel corrected for the variation in frequency response to the typical human ear at commonly encountered noise levels.

would occur during daytime hours on weekdays, would not be excessive, and would be temporary and very brief in duration, noise impacts during construction would be less than significant.

Although Butterfly Valve construction could occur 24 hours a day for few days, the nearest residence to a Butterfly Valve site is east of Work Site 10, and is about 400 feet away. At this distance, construction noise could range from 58 dBA to 70 dBA. Noise of this magnitude would not be expected to result in a substantial disturbance, and would occur for a few days only. This temporary construction noise would not cause a significant impact on neighboring residents.

Operational noise could be generated by trucks driving to valves and other locations along the SCPL alignment, by mowing equipment, and by various other equipment used for maintenance purposes. Similar to construction noise, noise generated during O&M activities would be temporary and short-term in duration. In addition, O&M activities would only be performed periodically. Therefore, operational noise impacts would not be significant.

b) Less Than Significant Impact. *The Proposed Action would not result in exposure of persons to or generation of excess ground borne vibration or ground borne noise levels. The project noise impacts are temporary no vibration generating equipment such as pile drivers would be used on the project.*

c) Less Than Significant Impact. *The Proposed Action would be carried out over a several year time frame. No permanent ambient noise impacts are anticipated from the project. Phase 2 road construction of the project could take place as early as the fall of 2013 and 2014, and Phase 3 pipeline inspection and repair could take place as early as 2013 and 2014. Routine operations and maintenance activities would take place after the repairs and improvements are completed.*

d) Less Than Significant Impact. *The Proposed Action would not result in substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.*

e) No Impact. *The area of the Proposed Action is not located within an airport land use plan. Although the project is within 2 miles of Buchanan Field in Concord, the project would not expose people residing or working in the project area to excessive noise levels.*

3.15 Population/Housing

The following section combines both CEQA and NEPA line items. *All CEQA findings are indicated in italics.*

Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☐	☒
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

Discussion

The project does not involve the addition of any new housing or commercial facilities that could directly induce new population growth. The proposed access roads would be limited in extent, closed to public access, and would not lead to potentially developable land; they would therefore have no potential to indirectly induce population growth. The proposed Project would not increase water supply, expand infrastructure, or include any other characteristics with the potential to induce population growth or increase the demand for housing.

a) No Impact. *Because the access roads to be improved and developed in the Proposed Action would be limited and not lead to potentially developable land, they would not influence population growth.*

b) No Impact. *The Proposed Action would not displace any existing housing or other land uses, and would therefore have no potential to necessitate the construction of replacement housing elsewhere. The project would have no impact on housing or the demand for housing.*

c) No Impact. *The Proposed Action would not displace people, and would therefore have no potential to necessitate the construction of replacement housing elsewhere.*

3.16 Public Services

The following section combines both CEQA and NEPA line items. *All CEQA findings are indicated in italics.*

Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
Fire protection?	☐	☐	☐	☒
Police protection?	☐	☐	☐	☒
Schools?	☐	☐	☐	☒
Parks?	☐	☐	☐	☒
Other public facilities?	☐	☐	☐	☒

Discussion

The primary physical change that would occur with implementation of the Proposed Action is the creation of approximately 1 mile of new gravel access roads that would be utilized on a periodic and infrequent basis for maintenance of the SCPL.

a) No Impact. *These changes would not result in increased demand for police or fire services or have any impact on those departments' abilities to provide service. The Proposed Action would not induce population growth, and would therefore have no potential to affect schools or classroom capacity, or cause increased use of parks or otherwise adversely affect parks in the project area. The Proposed Action would not adversely affect any other public services or facilities or generate a need for new services or facilities.*

3.17 Recreation

The following section combines both CEQA and NEPA line items. *All CEQA findings are indicated in italics.*

Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☒
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☐	☒

Discussion

The Proposed Action does not involve the addition of any new housing or commercial facilities or have any other features that could directly or indirectly induce new population growth.

a) No Impact. *With no potential for new population, there would be no potential for increased demand for existing recreation facilities as a result of project implementation.*

b) No Impact *The Proposed Action would not require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment.*

3.18 Socioeconomic Resources

The following section combines both CEQA and NEPA line items. *All CEQA findings are indicated in italics.*

Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Would the project negatively impact the local economy dependent on a continuous water supply?	☐	☐	☐	☒

3.18.1 Affected Environment

The socioeconomic setting is dependent upon population, employment, housing, and revenues earned by the primary private employers. The area of benefit of the Proposed Action is considered to be the City of Martinez because the Proposed Action would ensure continued reliability of the primary water supply for the City. Based on California Department of Finance estimates, the 2010 population of the City of Martinez is 36,663 residents. Eleven major public and private employers provide the majority of jobs within the City, including the Shell Oil Refinery, which also derives its water supply from the SCPL. As the county seat for Contra Costa County, Martinez provides a substantial number of public sector jobs (5,079 as of 2007) for County employees. Martinez's economy is based on jobs in oil, health care, government services, big-box and other retail, electrical contracting, and gambling.

3.18.2 Environmental Consequences

3.18.2.1 No Action Alternative

Under the No Action Alternative, the District would be unable to ensure an uninterrupted long-term water supply to the City of Martinez and the Shell Oil Martinez refinery. Reliability of supplies to users along the entire Contra Costa Canal would also be compromised because the use of the Martinez Reservoir for balancing daily flows would also be adversely affected. Absent necessary improvements and continuing maintenance, there would be increased risk for failure of the SCPL. If such a failure occurred during the annual dewatering of the Contra Costa Canal for maintenance, the District would be unable to maintain deliveries of raw water to the Martinez Reservoir. Depending on how long water deliveries were interrupted, the Shell refinery could be rendered unable to continue production. Similarly, other businesses within the City of Martinez could be forced to cease or curtail operations. Socioeconomic impacts from an interrupted water supply could include lost revenue, increased operational costs, job losses, inability to maintain continuing services to the Martinez population, loss of local agriculture and landscaping, and other economic impacts. Depending on the duration and severity of lost water supply, socioeconomic effects from the No Action Alternative could be moderate to severe.

Proposed Action

Over the long term, the Proposed Action would facilitate an increase in the reliability of CCWD'S provision of untreated water supply to the City of Martinez and for customers depending on the Contra Costa Canal. This would subsequently help to maintain the economic viability of the Shell Oil Martinez refinery and all other businesses whose operations are

dependent on a continuous municipal water supply. In comparison with existing conditions, there would be no impacts to socioeconomic resources under the Proposed Action. Rather, the potentially adverse impacts of the No Action Alternative would be avoided.

3.18.2.2 Cumulative Impacts

a) No Impact. *The Proposed Action would result in an increase in the District's water supply reliability, which would help sustain an economy dependent in varying degrees on a continuous water supply. When added to other similar existing and proposed actions, the Proposed Action would contribute to beneficial cumulative impacts to socioeconomic resources.*

3.19 Transportation/Traffic

The following section combines both CEQA and NEPA line items. *All CEQA findings are indicated in italics.*

Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?	☐	☐	☒	☐
b) Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?	☐	☐	☐	☒
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	☐	☐	☐	☒
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☒
e) Result in inadequate emergency access?	☐	☐	☐	☒
f) Result in inadequate parking capacity?	☐	☐	☐	☒
g) Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?	☐	☐	☐	☒

Discussion

The Proposed Action would generate the greatest amount of traffic during construction. Up to approximately 50 round–trip truck trips per day would be generated during road construction. An additional 32 daily trips would be generated by construction workers. The haul trips would occur throughout the work day, while the worker commute trips would be concentrated during the AM and PM commute periods. Although, more specific information on haul trips was not available for this analysis, a worst-case assumption is that 25 haul trips could occur during the AM or PM peak hours, along with half of the worker commute trips. The addition of 41 vehicle trips to the AM or PM peak hour would be a negligible amount of traffic and would not substantially alter existing traffic patterns or levels of service.

a) Less Than Significant Impact. *The Proposed Action would not cause an increase in traffic, that is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume-to-capacity ratio on roads, or congestion at intersections).*

b) No Impact. *The Proposed Action would not exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways.*

c) No Impact. *The Proposed Action would not result in a change in air traffic patterns.*

d) No Impact. *The Proposed Action would not substantially increase hazards to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).*

e) No Impact. *The Proposed Action would not result in inadequate emergency access. The Project would be limited for the most part to the immediate area of the SCPL and no alterations of existing surrounding paved roadways will be required. New access roadways would be constructed to ensure necessary repair to the pipeline and related equipment as well as operations and maintenance activities.*

f) No Impact. *The areas designated for storage, loading, and handling of construction equipment have sufficient parking capacity to accommodate the Proposed Action. No additional parking will be required. Therefore, no parking capacity impacts are anticipated from the Proposed Action.*

g) No Impact. *The Proposed Action would not conflict with any alternative transportation policies.*

3.20 Utilities/Service Systems

The following section combines both CEQA and NEPA line items. *All CEQA findings are indicated in italics.*

Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☐	☒
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☒	☐
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☒	☐
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☐	☒
e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☐	☒
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☐	☒
g) Comply with federal, state, and local statutes and regulations related to solid waste?	☐	☐	☐	☒

Discussion

a) No Impact. *The Proposed Action would be limited to pipeline and related equipment repair and the construction of pipeline access roads and would not generate any wastewater. Therefore, the Proposed Action would not result in discharges that exceed wastewater treatment requirements of the Regional Water Quality Control Board. Therefore, no wastewater impacts are anticipated from the Proposed Action.*

b) Less Than Significant Impact. *The Proposed Action would not require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects. Therefore, no impacts related to water or wastewater treatment are anticipated from the Proposed Action. The District will consult with EBMUD regarding access along the Mokelumne Aqueduct ROW at site 10. The District will adhere to any permit or license requirements pertaining to construction access.*

c) Less Than Significant Impact. *The Proposed Action would not require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects. There would be no increase in the amount of storm water runoff as a result of the project. Therefore, the Proposed Action would not necessitate the construction or expansion of storm water drainage facilities. The District will consult with Contra Costa County Public Works regarding construction access over levee roads. The District will adhere to any permit or license requirements pertaining to construction roads. Therefore, no impacts from construction of such facilities are anticipated from the Proposed Action.*

d) No Impact. *The Proposed Action would be limited to pipeline and related equipment repair and the construction of pipeline access roads and will contain no elements that would require additional water supply. Therefore, no impacts on water supply are anticipated from the Proposed Action.*

e) No Impact*. The Proposed Action would not increase the amount of wastewater discharged into the existing sewer system. Therefore, no impacts on wastewater treatment capacity are anticipated from the Proposed Action.*

f) No Impact. *Solid waste would be taken to the Acme Landfill and recyclable waste would be taken to the Contra Costa Transfer and Recovery Center. Both facilities have adequate capacity to serve the Proposed Action. Therefore, no impacts on solid waste capacity are anticipated from the Proposed Action.*

g) No Impact. *The Proposed Action would not conflict with applicable federal, state, and local statutes and regulations related to solid waste. Therefore, no solid waste disposal impacts are anticipated from the Proposed Action.*

3.21 Mandatory Findings of Significance

The analysis conducted in this IS/MND results in a determination that the Project would have a less-than-significant effect on the environment. As described above, the potential for impacts to biological resources from the road and valve construction would be less than significant following implementation of the provided mitigation measures. Accordingly, the Project would involve no potential for significant impacts through the degradation of the quality of the environment, the reduction in the habitat or population of fish or wildlife, including endangered plants or animals, the elimination of a plant or animal community or example of a major period of California history or prehistory. The Project would not result in substantial adverse effects on human beings, either directly or indirectly. Adverse effects on human beings resulting from implementation of the Project would be less than significant. Refer to **Appendix A** for the CEQA Checklist signature page.

3.22 Summary of CEQA Mitigation Measures

To fully mitigate the potential environmental impacts of the proposed project, the project sponsor shall implement all of the mitigation measures listed below in **Table 14.**

Table 14
Summary of CEQA Mitigation Measures

Measure Number	Mitigation Requirements
Air Quality	
AIR-1	The District will implement the following BAAQMD mitigation measures to achieve emission reductions through the use of improved equipment, operational measures and the best available technology: – Minimize the idling time of diesel powered construction equipment to 2 minutes. – Develop a plan demonstrating that the off-road equipment (more than 50 horsepower) to be used in the construction project (i.e., owned, leased, and subcontractor vehicles) would achieve a project wide fleet-average 20 percent NOx reduction and 45 percent PM reduction compared to the most recent ARB fleet average. Acceptable options for reducing emissions include the use of late model engines, low-emission diesel products, alternative fuels, engine retrofit technology, after-treatment products, add-on devices such as particulate filters, and/or other options as such become available. – Require that all construction equipment, diesel trucks, and generators be equipped with Best Available Control Technology for emission reductions of NOx and PM. – Require all contractors use equipment that meets California ARB's most recent certification standard for off-road heavy duty diesel engines.
Biological Resources	
BIO-1	**Burrowing Owl:** Pre-construction surveys will be conducted within 14 days prior to ground-disturbing and vegetation removal activities. Due to the potential for burrowing owls utilizing nests outside the breeding season (February 1 through August 31), surveys will be conducted at all times of the year when required. To the extent possible, road construction will be schedule to avoid the breeding season altogether. Once eggs have been laid, a buffer of at least 100 feet, or other CDFG approved buffer, must be established around the nest site and the site protected until August 31 or until the young have fledged.
BIO-2	**Hoary Bat:** Pre-construction bat surveys would be conducted by a qualified biologist at Sites 3 and 10 no more than seven days prior to vegetation removal that will occur between February 1 and October 31.
BIO-3	**Oak and Riparian Trees:** The District will comply with all provisions of the County's Tree Protection Ordinance and the Conservation Element of the Contra Costa County General Plan.
BIO-4	**Other Protected Birds:** Pre-construction breeding bird surveys will be conducted at Sites 3, 7, or 10 within 14 days prior to ground disturbance or impacts to on-site shrubs, trees, and wetland and marsh vegetation during the breeding season (February 1 through August 31). The surveys will encompass suitable nesting habitat on and within 200 feet of the work site(s). To the extent possible, road construction will be schedule to avoid the breeding season altogether. Once eggs have been laid, a buffer of at least 100 feet, or other CDFG approved buffer, must be established around the nest site and the site protected until August 31 or until the young have fledged.
BIO-5	**Raptors:** Pre-construction breeding bird surveys will be conducted within 14 days prior to ground disturbance and vegetation removal activities at Sites 3, 7, or 10. Due to the potential for ground nesting raptors utilizing nests outside the breeding season (February 1 through August 31), surveys will be conducted at all times of the year when required. Surveys will encompass nesting habitat on and within 200 feet of the work site(s). To the extent possible,

Table 14 Summary of CEQA Mitigation Measures	
Measure Number	**Mitigation Requirements**
	road construction will be schedule to avoid the breeding season altogether. Once eggs have been laid, a buffer of at least 100 feet, or other CDFG approved buffer, must be established around the nest site and the site protected until August 31 or until the young have fledged.
BIO-6	**Salt Marsh Harvest Mouse:** Prior to initiation of construction at Sites 2, 3, 4, 5, 7, 9 and 10, the project sponsor shall install a black silt fence barrier around pickleweed habitat for the salt-marsh harvest mouse (SMHM) to prevent the possible intrusion of this species into the work area during construction activities. The silt fence shall be installed six inches deep into the ground, so as to have no openings at the bottom of the fence, and shall stand 30 to 36 inches in height. In addition, all of the additional SMHM protection measures listed in Appendix C shall be implemented.
BIO-7	**Special-Status Plant Species:** Prior to initiation of construction, a qualified plant biologist shall conduct focused plant surveys at Site 10 for Congdon's tarplant (blooms June through November) and at all sites for soft bird's-beak (blooms April to July), Delta tule pea (blooms May to September), Mason's lilaeopsis (blooms April to December), and Suisun marsh aster (blooms May to November). Focused surveys for each of these plants shall be conducted during their respective blooming seasons to determine presence or absence on each site. Any special-status plants identified within any site will be protected during construction by construction barrier fencing around the special-status plant populations, and appropriate avoidance and mitigation measures would be developed and implemented in consultation with CDFG and/or USFWS.
BIO-8	**Western Pond Turtle:** Pre-construction surveys at Sites 3, 4, 5, and 7 will be performed to identify any turtles encountered within sites, and installation of silt fencing surrounding upland pond turtle nesting areas to act as a barrier during the breeding season (March 1 – April 30), would avoid impacts to this species. Impacts at the other sites are not anticipated, and pre-construction surveys are not warranted. At Site 2, the proposed work would occur outside a seasonally inundated drainage (and when the drainage would be dry) and well separated from a permanent pond located more than 180 feet to the northeast. There are no drainage channels or pond habitat in the work areas at Sites 9 and 10, so the potential for impacts to pond turtles is very remote at these work sites.
BIO-9	**Wetlands and Waters of U.S. and State:** To the extent feasible, all planned activities will be designed to avoid and minimize disturbances to wetlands as verified by the USACE. Prior to the placement of fill into wetlands or any alteration or modification of an existing creek, wetland, drainage or other jurisdictional feature, the project sponsor shall obtain permits under Sections 401 and 404 of the Clean Water Act. These permits, administered by the San Francisco Bay Regional Water Quality Control Board (RWQCB) and the U.S. Army Corps of Engineers (USACE), respectively, will identify specific mitigation measures that would be imposed on the project as permit conditions. Additionally, a Streambed Alteration Agreement from the California Department of Fish and Game (CDFG) may be required. The District will comply with all permit conditions of the regulatory agencies, including the implementation of an appropriate compensatory mitigation plan for unavoidable impacts to wetlands.
BIO-10	**Wetlands and Waters of U.S. and State:** Road construction work in wetlands and waters of the U.S. shall only occur between April 15 and October 15 to minimize the potential for erosion and sedimentation in downstream waters. Prior to road construction at Sites 3, 4, 5, 7, 9 and 10, the District will erect exclusion fencing around all wetlands to protect adjacent wetlands from incursion by equipment and vehicles.
Cultural Resources	

Table 14 Summary of CEQA Mitigation Measures	
Measure Number	**Mitigation Requirements**
CR-1	If any cultural artifacts are encountered during site grading or other construction activities, all ground disturbance in the vicinity shall be halted until a qualified archaeologist can identify and evaluate the resource(s) and, if necessary, recommend mitigation measures to document and prevent any significant adverse effects on the resource(s).
CR-2	In the event that any human remains are encountered during site disturbance, all ground–disturbing work shall cease immediately and a qualified archaeologist shall notify the Office of the Contra Costa County Coroner and advise that office as to whether the remains are likely to be prehistoric or historic period in date. If determined to be prehistoric, the Coroner's Office will notify the Native American Heritage Commission of the find, which, in turn, will then appoint a "Most Likely Descendant" (MLD). The MLD in consultation with the archaeological consultant and the project sponsor, will advise and help formulate an appropriate plan for treatment of the remains, which might include recordation, removal, and scientific study of the remains and any associated artifacts.
CR-3	If any paleontological resources are encountered during site grading or other construction activities, all ground disturbance shall be halted until the services of a qualified paleontologist can be retained to identify and evaluate the resource(s) and, if necessary, recommend mitigation measures to document and prevent any significant adverse effects on the resource(s).
Geology and Soils	
GEO–1	The summer construction season is April 15 through October 15. Access road grading activities should be conducted during extended dry periods to provide better support for construction equipment. All site preparation activities shall conform to the recommendations of the project Geotechnical Engineer.
GEO–2	To the extent practicable, existing topsoil in areas to be graded shall be stockpiled and re-used in the project areas for backfill, erosion control, or other purposes.
Greenhouse Gas Emissions	
GGE-1	Minimize the idling time of diesel powered construction equipment to 2 minutes.
GGE-2	Require all contractors use equipment that meets California ARB's most recent certification standard for off-road heavy duty diesel engines.
Hazards and Hazardous Materials	
HAZ-1	Prior to construction the District shall follow the procedures for handling of hazardous waste described at the end of Section 3.9 Hazards and Hazardous Materials (see Procedures to Follow in Handling of Hazardous Waste).
HAZ–2	Prior to construction, the District shall perform a review of each site and excavation area to evaluate the potential for encountering hazardous materials during work activities. Where applicable, the District will prepare site-specific Worker Safety & Hygiene Plans known generally as Initial Site Assessment or Phase I Environmental Site Assessment. Additional special provisions for soil reuse/disposal management and construction dewatering shall be developed for sites where pollutants are present in soils and/or groundwater in accordance with "Procedures to Follow in Handling of Hazardous Waste."
Hydrology and Water Quality	
HYD-1	The District will follow all RWQCB requirements as appropriate to the extent that ground water disposal is required during construction.
HYD-2	The District shall complete a hydrology analysis that determines the effect of the project on drainage and on the floodplain. All access roadways and roadway drainage facilities/culverts shall be designed to pass water without substantially altering the existing drainage pattern of

Table 14 Summary of CEQA Mitigation Measures		
Measure Number		**Mitigation Requirements**
	the SCPL alignment, without contributing to flooding, and without affecting the currently mapped limits of the 100 year flood zone. All drainage design calculations and drawings shall be stamped and signed by a California-licensed Civil Engineer.	

Section 4 Consultation and Coordination

Several federal, state, and local laws, permits, licenses and policy requirements have directed, limited or guided the NEPA analysis and decision making process of this IS.

4.1 Fish and Wildlife Coordination Act (16 USC § 651 et seq.)

The Fish and Wildlife Coordination Act (FWCA) requires that Reclamation consult with fish and wildlife agencies (Federal and State) on all water development projects that could affect biological resources. The amendments enacted in 1946 require consultation with the FWS and State fish and wildlife agencies where the "waters of any stream or other body of water are proposed or authorized, permitted or licensed to be impounded, diverted or otherwise controlled or modified" by any agency under a Federal permit or license. Consultation is to be undertaken for the purpose of "preventing the loss of and damage to wildlife resources."

Reclamation is proposing to fund the Project, and is issuing the district neither a permit nor license; therefore, the FWCA does not apply.

4.2 Endangered Species Act (16 USC § 1531 et seq.)

Section 7 of the Endangered Species Act (ESA) requires Federal agencies to ensure that discretionary federal actions do not jeopardize the continued existence of threatened or endangered species or result in the destruction or adverse modification of the critical habitat of these species.

Reclamation has determined that the Proposed Action would have No Effect to species listed and critical habitats designated under the ESA, and no consultation with the USFWS is required. This determination is based on the information presented previously in Section 3.3.2 and is largely reliant on the absence of listed species from areas that would be affected by the Proposed Action. Pre-construction biological surveys would be conducted before any ground-disturbing activities are to begin. If the surveys find that no special-status species are present within the project area, Reclamation's determination would remain. If the surveys detect the presence of listed species, then the Proposed Action would be paused while Reclamation revisits the ESA determination and completes any consultation that might be necessary with the USFWS.

4.3 National Historic Preservation Act (16 USC § 470 et seq.)

The NHPA of 1966, as amended, is the primary Federal legislation that outlines the Federal Government's responsibility to consider the effects of their actions on historic properties. The 36 CFR Part 800 regulations that implement Section 106 of the NHPA describe how Federal agencies address these effects. Additionally, Native American human remains, cultural objects, and objects of cultural patrimony are protected under the Native American Graves Protection and Repatriation Act of 1990 (25 USC 32) and its implementing regulation outlined at 43 CFR Part 10. The Archaeological Resources Protection Act of 1979 (16 USC 470aa), as amended, and its implementing regulations at 43 CFR 7, protects archaeological resources on Federal land.

Pending SHPO concurrence, the Proposed Action is anticipated to not have any impacts on historic properties based on conclusions in Section 3.4.2.

4.4 Indian Trust Assets

ITA are legal interests in property held in trust by the U.S. for Federally-recognized Indian tribes or individual Indians. An Indian trust has 3 components: (1) the trustee, (2) the beneficiary, and (3) the trust asset. ITA can include land, minerals, federally-reserved hunting and fishing rights, federally-reserved water rights, and in-stream flows associated with trust land. Beneficiaries of the Indian trust relationship are federally-recognized Indian tribes with trust land; the U.S. is the trustee. By definition, ITA cannot be sold, leased, or otherwise encumbered without approval of the U.S. The characterization and application of the U.S. trust relationship have been defined by case law that interprets Congressional acts, executive orders, and historic treaty provisions.

The Proposed action would not affect ITA. There are no ITA in the CCWD service area (see also **Section 3.11, Indian Trust Assets.**

4.5 Migratory Bird Treaty Act (16 USC § 703 et seq.)

The MBTA implements various treaties and conventions between the U.S., Canada, Japan, Mexico, and the former Soviet Union for the protection of migratory birds. Unless permitted by regulations, the MBTA provides that it is unlawful to pursue, hunt, take, capture or kill, possess, offer to or sell, barter, purchase, deliver or cause to be shipped, exported, imported, transported, carried or received any migratory bird, part, nest, egg or product, manufactured or not. Subject to limitations in the MBTA, the Secretary of the Interior may adopt regulations determining the extent to which, if at all, hunting, taking, capturing, killing, possessing, selling, purchasing, shipping, transporting or exporting of any migratory bird, part, nest or egg will be allowed, having regard for temperature zones, distribution, abundance, economic value, breeding habits and migratory flight patterns.

The Proposed Action would not change the land use patterns of the seasonal wetland, panne, and marsh habitats in the project area that do have some value to listed species of birds protected by the MBTA; therefore, it is anticipated that the Proposed Action would have no effect on birds protected by the MBTA.

4.6 Executive Order 11988 (Floodplain Management) & Executive Order 11990 (Protection of Wetlands)

Executive Order 11988 requires Federal agencies to prepare floodplain assessments for actions located within or affecting flood plains, and similarly, Executive Order 11990 places similar requirements for actions in wetlands.

Executive Order 11990 does not apply to the issuance by Federal agencies of permits, licenses, or allocations to private parties for activities involving wetlands on non-Federal property. Because the Proposed Action would take place on privately owned or other non-Federal property, it is not subject to Executive Order 11990. However, this EA/IS identifies measures to protect wetlands and provide compensation habitat at a 3:1 ratio for wetlands that would be filled as part of the Proposed Action.

This IS/MND and EA/FONSI complies with Executive Order 11988 through the following findings described in greater detail in Sections 2.1 and 3.1:

1. Portions of the Proposed Action would take place in the base floodplain.

2. Early public review and public notice of the Proposed Action are provided by this IS/MND, which will be subject to public review in compliance with CEQA. Reclamation will also provide for public review of its EA/FONSI under NEPA.
3. Alternatives to the Proposed Action were considered and evaluated. No practical alternatives that would not result in work occurring within the base floodplain were identified.
4. The potential impacts of the Proposed Action are fully evaluated and disclosed in this IS/MND and EA/FONSI.
5. Where potential impacts to the floodplain cannot be avoided, environmental protection measures are identified in this IS/MND and EA/FONSI to preserve and protect the floodplain are identified.
6. With implementation of the environmental protection measures identified in Table 2, the impacts of the Proposed Action on floodplains would not be significant.

4.7 Clean Air Act (42 USC § 176 et seq.)

Section 176 (c) of the Clean Air Act (CAA) (42 USC 7506 (c)) requires that any entity of the Federal government that engages in, supports, or in any way provided financial support for, licenses or permits, or approves any activity to demonstrate that the action conforms to the applicable State Implementation Plan (SIP) required under Section 110 (a) of the CAA (42 USC 7401 (a)) before the action is otherwise approved. In this context, conformity means that such federal actions must be consistent with a SIP'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 will, in fact conform to the applicable SIP before the action is taken.

As described in Section 3.8.2, the Proposed Action would not result in air quality impacts that would exceed Federal thresholds.

4.8 Clean Water Act (16 USC § 703 et seq.)

4.8.1 Section 401

Section 401 of the Clean Water Act (CWA) (33 USC § 1311) prohibits the discharge of any pollutants into navigable waters, except as allowed by permit issued under sections 402 and 404 of the CWA (33 USC § 1342 and 1344). If new structures (e.g., treatment plants) are proposed, that would discharge effluent into navigable waters, relevant permits under the CWA would be required for the project applicant(s). Section 401 requires any applicant for an individual COE dredge and fill discharge permit to first obtain certification from the state that the activity associated with dredging or filling will comply with applicable state effluent and water quality standards. The implementing state agency is the San Francisco Bay RWQCB. This certification must be approved or waived prior to the issuance of a permit for dredging and filling.

As described in Section 3.3.2, the Proposed Action would require the filling of jurisdictional wetlands, and would therefore require a permit from the RWQCB under Section 401 of the CWA. The required permit would be secured from the RWQCB prior to implementation of the Proposed Action.

4.8.2 Section 404

Section 404 of the CWA authorizes the COE to issue permits to regulate the discharge of "dredged or fill materials into waters of the United States" (33 USC § 1344).

As noted above and as described in Section 3.3.2, the Proposed Action would require the filling of jurisdictional wetlands and other waters of the U.S., and would therefore require a permit from the COE under Section 404 of the CWA. The required permit would be secured from the COE prior to implementation of the Proposed Action.

4.9 Regulations Governing Hazardous Materials

Soil and Groundwater Contamination

In Contra Costa County, remediation of contaminated sites is generally performed under the oversight of the Department of Toxic Substances Control (DTSC), the Regional Water Quality Control Board (RWQCB), and/or the Contra Costa County Health Services Dept (CCCHSD). Contra Costa County passed and Industrial Safety ordinance in 1999 regulating oil refineries and chemical plants in the County, including Tesoro Refinery and Shell Martinez refining Co. At sites where contamination is suspected or known to occur, the District is required to perform a site investigation and draw up a remediation plan, if necessary. For typical development projects, site remediation is completed either before or during the construction phase of the project. When site cleanup is satisfactorily completed, the lead regulatory agency issues a site closure letter stating that no further action is required and the case is closed.

Site remediation or development may also be subject to regulation by other agencies. For example, if dewatering of a hazardous waste site were required during construction, subsequent discharge to the sewer system could require a permit from the municipal sewer agency and discharge to the storm water collection system could require an NPDES permit from the RWQCB.

Emergency Response

California has developed an emergency response plan to coordinate emergency services provided by federal, state, and local government and private agencies. Responding to hazardous materials incidents is one part of this plan. The plan is administered by the State Office of Emergency Services (OES), which coordinates the responses of other agencies. The CCCHSD Emergency Response Team provides the capabilities for hazardous materials emergencies within the project area. ERT members respond and work with local fire and police agencies, California Highway Patrol, California Department of Fish & Game, California Department of Transportation, U.S. Coast Guard and National Marine Sanctuary personnel.

Worker Safety

Occupational safety standards exist in federal and state laws to minimize worker safety risks from both physical and chemical hazards in the work place. The California Division of Occupational Safety and Health (Cal OSHA) and the federal OSHA are the agencies responsible for ensuring worker safety in the workplace. Cal OSHA assumes primary responsibility for developing and enforcing standards for safe workplaces and work practices. At sites known or suspected to be contaminated by hazardous materials, workers must have training in hazardous materials operations and a Site Health and Safety Plan must be prepared. The Health and Safety

Plan establishes policies and procedures to protect workers and the public from exposure to potential hazards at the contaminated site.

Hazardous Materials Transportation

The U.S. Department of Transportation regulates hazardous materials transportation on all interstate roads. Within California, the state agencies with primary responsibility for enforcing federal and state regulations and for responding to transportation emergencies are the California Highway Patrol (CHP) and the California Department of Transportation (Caltrans). Together, federal and state agencies determine driver-training requirements, load labeling procedures, and container specifications. Although special requirements apply to transporting hazardous materials, requirements for transporting hazardous waste are more stringent, and hazardous waste haulers must be licensed to transport hazardous waste on public roads.

4.10 Local Permits

East Bay Municipal Utility District: (EBMUD): The Project will require an encroachment permit from EBMUD for access to Site 10 that borders the Mokelumne Aqueduct.

Contra Costa County Flood Control and Water Conservation District (CCCFC&WCD): Permission from the CCCFC&WCD is necessary to use levee roads along Pacheco Creek and Walnut Creek to access to Sites 3 and 4. A 10 year license agreement was completed in December 2010. CCCFC&WCD must also agree to a modification of its levee adjacent to the Blow-off Valve at Site 4. This will allow maintenance crews site access to this valve and a truck turnaround.

Section 5 List of Preparers and Reviewers

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Section 6 References

Acme Fill Corporation, 2010. Acme Landfill web site, accessed September 19, 2010. http://acmelandfill.com/Acme_Landfill/Home.html

Acme Fill Corporation, 1999. Deed Notice for 950 Waterbird Way Landfill Site in Martinez, Contra Costa County, California, April 15, 1999, (6 pp.). http://www.dtsc.ca.gov/HazardousWaste/Deeds/upload/HWMP_DeedRestriction_AcmeFill.pdf

Air Resources Board (ARB), 2007. Miscellaneous Process Methodologies, Section 7.7: Building Construction Dust, revised September 2002. http://www.arb.ca.gov/ei/areasrc/fullpdf/full7-7.pdf

Anderson, J., F., Chung, M. Anderson, L. Brekke, D. Easton, M. Ejeta, R. Peterson, and R. Snyder, 2008. *Progress on Incorporating Climate Change into Management of California's Water Resources*, Climatic Change 87:S91-S108, DOI 10.1007/s10584-007-9353-1.

ARB, 1997. Miscellaneous Process Methodologies, and Section 7.8, Road Construction Dust, updated August 1997. http://www.arb.ca.gov/ei/areasrc/fullpdf/full7-8.pdf

Association of Bay Area Governments (ABAG), 2001. Liquefaction Susceptibility Map of the San Francisco Bay Region, 2001.

Association of Bay Area Governments (ABAG), 1995, *Manual of Standards for Erosion & Sediment Control Measures, A Comprehensive Guide for Controlling Soil Erosion in California*, Second Edition, May.

Bay Area Air Quality Management District (BAAQMD), 2010. *Bay Area 2010 Clean Air Plan*, Final Clean Air Plan - Vol. I, adopted September 15, 2010. http://www.baaqmd.gov/~/media/Files/Planning%20and%20Research/Plans/2010%20Clean%20Air%20Plan/CAP%20Volume%20I%20%20Appendices.ashx

BAAQMD, 2010. *California Environmental Quality Act Air Quality Guidelines*, June 2010. http://www.baaqmd.gov/~/media/Files/Planning%20and%20Research/CEQA/BAAQMD%20CEQA%20Guidelines_June%202010.ashx

Bay Area Air Quality Management District (BAAQMD), 2010. *Community Risk Reduction Plans for Toxic Air Contaminants and Fine Particulate Matter: Community Development Guidelines*, Draft—Version 2, August 2010, (31 pp.). http://www.baaqmd.gov/~/media/Files/Planning%20and%20Research/CEQA/Draft_v2_Community_Risk_Reduction_Plan.ashx

BAAQMD, 2010. Contra Costa County Permitted Sources, compressed keyhole language (kmz) file, viewed using the Google Earth™ October 2010. http://www.baaqmd.gov/~/media/Files/Planning%20and%20Research/CEQA/Contra%20Costa%20Permitted%20Sources.ashx

BAAQMD, 2010. *Methods for Screening and Modeling Local Risks and Hazards*, May 2010, (83 pp.).

http://www.baaqmd.gov/~/media/Files/Planning%20and%20Research/CEQA/BAAQMD_CEQA_Modeling_Approach_May_2010.ashx

BAAQMD, 2010. *Screening Tables for Air Toxics Evaluation during Construction* (BAAQMD, May 2010. http://www.baaqmd.gov/~/media/Files/Planning%20and%20Research/CEQA/CEQA_Construction_Screening_Approach.ashx

Brown and Caldwell, 2009. *Draft Shortcut Pipeline – Valve Replacement and Access Road Improvements Project, Preliminary Design Report*, November 17, 2009.

California Department of Conservation, Division of Land Resource Protection, Farmland Mapping and Monitoring Program, 2009. "Contra Costa County Important Farmland 2008" (map), June 2009.

California Department of Conservation, Division of Mines and Geology, 1996. Generalized Mineral Land Classification Map of the South San Francisco Bay Production–Consumption Region (Plate 1 of 29), 1996.

California Department of Fish and Game. California Natural Diversity Data Base, computer listings and map locations of historic and current recorded occurrences of special-status species and natural communities of special concern for USGS 7.5 minute quadrangle maps: Vine Hill, October 2010.

California Department of Fish and Game (CDFG), 2009. California Wildlife Habitat Relationships. http://www.dfg.ca.gov/whdab/index.html

California Department of Fish and Game (CDFG), 2009. Special animals. http://ww.dfg.ca.gov/endangered/special_animals.html .

California Department of Fish and Game (CDFG), 2009. State and federally listed Endangered, Threatened, and Rare plants of California. http://www.dfg.ca.gov/endangered/t_eplnt.pdf.

California Department of Fish and Game (CDFG), 2009. State and federally listed Endangered and Threatened animals of California. http://www.dfg.ca.gov/endangered/t_e_animal.pdf.

California Department of Toxic Substances Control (DTSC), 2009a. Fact Sheet: Hazardous Waste Post-Closure Facility Permit Available for Review and Comment for Acme Fill Corporation, September 2009, (4 pp.). http://www.dtsc.ca.gov/HazardousWaste/Projects/upload/Acme_FS_0909.pdf

California DTSC, 2009b. *Renewal of Post-Closure Permit Proposed for the Golden Eagle Refinery, Tesoro Facility Waste Management Unit 17*, Fact Sheet, May 2009, (3 pp.). http://www.dtsc.ca.gov/HazardousWaste/Projects/upload/TesoroGoldenEagle_FS_Eng_0509.pdf

California DTSC, 2007. *Draft Permit for Shell Refinery in Martinez, California*, Fact Sheet, October 2007, (3 pp.). http://www.dtsc.ca.gov/HazardousWaste/Projects/upload/ShellMartinez_FS_dPermitRenew_1007.pdf

California Emergency Management Agency, California Geological Survey and University of Southern California. 2009. Tsunami Inundation Map for Emergency Planning, State of California, San Francisco Bay Area.

California Environmental Protection Agency (Cal/EPA), 2004. *Corrective Action Consent Order for IT Panoche Facility (Panoche Facility), Vine Hill Complex (VHC), Montezuma Hills Facility, and Benson Ridge Facility*, June 1, 2004, (22 pp.). http://www.dtsc.ca.gov/HazardousWaste/Projects/upload/IT_ENF_CO.pdf

California Geological Survey, 2007. *Guidelines for Evaluating and Mitigating Seismic Hazards in California*, California Division of Mines and Geology Special Publication 117, 2007.

California Native Plant Society (CNPS), 2010. Inventory of Rare and Endangered Plants (online edition, v6-04d1). California Native Plant Society. Sacramento, CA. Accessed on September 1, 2010 from http://www.cnps.org/inventory.

California Regional Water Quality Control Board, Central Valley Region, 2009. "Notice of Termination: General Waste Discharge Requirements Order No. 5-00-175 (General Order), NPDES No. CAG995001; Contra Loma Reservoir, Contra Costa Water District, Contra Costa County" [letter dated June 25, 2009].

Concord, City of, 2007. *Concord 2030 Urban Area General Plan*, Chapter 7: Safety and Noise, adopted October 2, 2007, (32 pp.), Figure 7-5, p. 7-14. http://www.ci.concord.ca.us/pdf/dept/planning/generalplan/ch7-safety.pdf

Contra Costa County, 2000. *Contra Costa County Airport Land Use Compatibility Plan*, December 2000.

Contra Costa County, 2003. General Plan – Conservation Element. Accessed on September 13, 2010. Available online at http://www.co.contra-costa.ca.us/ and http://danr.ucop.edu/ihrmp/county/CONTRACOSTA.pdf.

Contra Costa County, 2009. *Contra Costa County Municipal Climate Action Plan*, December 2008, (49 pp.). http://ca-contracostacounty.civicplus.com/DocumentView.aspx?DID=2905

Contra Costa County, 2010. GIS Mapping Information Center, accessed October 2010. http://ccmap.us/gis/

Contra Costa County, undated. Chapter 5: Background Data—Buchanan Field Airport. http://www.co.contra-costa.ca.us/DocumentView.aspx?DID=854

Contra Costa County Clean Water Program, 2006. *Stormwater C.3 Guidebook*, Third Ed., March.

Contra Costa Water District, 2005. *Urban Water Management Plan*, December 2005.

Contra Costa Water District, 2009. *Your Drinking Water: Annual Water Quality Report for 2009*, 2009.

Contra Costa Water District, 2010. *Categorical Exclusion Checklist: CCWD Shortcut Pipeline Valve Rehabilitation–Phase 1*, January 21, 2010.

Contra Costa Water District, 2010. *San Miguel Pump Station & Reservoir Solar Project Initial Study/Mitigated Negative Declaration*, January 2010, (64 pp.) http://www.ccwater.com/files/sanmiguelsolar.pdf

Cunniff, P. F., 1977. *Environmental Noise Pollution* (New York: Wiley).

DCM GeoEngineers, 2009. *Draft Geotechnical Engineering Evaluation, Contra Costa Water District, Shortcut Pipeline Access Road, Contra Costa County, California*, 2009.

ENSR/AECOM, 2006. *Health Risk Assessment for the CO Boilers at the Shell Martinez Refinery, Martinez, California*, October 2006, (157 pp.). http://www.dtsc.ca.gov/HazardousWaste/Projects/upload/Shell_HRA_Txt.pdf

Environmental Service, 2010. *Greenhouse Gas Information Bulletin No. 9, Pipeline Construction*, (12 pp.).

EPA (Environmental Protection Agency), 2009. Final Mandatory Reporting of Greenhouse Gases Rule. Website: http://www.epa.gov/climatechange/emissions/ghgrulemaking.html. Accessed: December 10, 2009.

Ehrlich, P.R., D.S. Dobkin, and D. Wheye, 1988. *The Birder's Handbook: A Field Guide To The Natural History Of North American Birds*. Simon & Schuster, Inc., New York. 785 pp.

Federal Emergency Management Agency, 2009, Flood Insurance Rate Map, Contra Costa County, California and Incorporated Areas, Panels 90 and 95 of 602, Map Numbers 06013C0090F and 06013C0095F, June 16.

Goals Project, 1999. Baylands Ecosystem Habitat Goals. A report of habitat recommendations prepared by the San Francisco Bay Area Wetlands Ecosystem Goals Project. U.S. Environmental Protection Agency, San Francisco, California/S.F. Bay Regional Water Quality Control Board, Oakland, California.

Hickman, J. C. (ed.), 1993. *The Jepson Manual: Higher Plants Of California*. University of California Press, Berkeley, CA. 1400 pp.

Holland, 1986. *Preliminary Description of the Natural Communities of California.* CDFG.

Interior (U.S. Department of the Interior), 2009. News Release: Secretary Salazar announces $260 million in economic recover investments to help California address long-term water supply challenges and devastating drought conditions. April 15, 2009. Website: http://www.doi.gov/. Accessed: January 13, 2010.

Intergovernmental Panel on Climate Change (IPCC), 1998. *The Regional Impacts Of Climate Change: An Assessment Of Vulnerability*. Watson RT, Zinyowera MC, Moss RH (eds) Cambridge University Press, New York.

Intergovernmental Panel on Climate Change (IPCC), 2007. *Climate Change 2007: Impacts, Adaptation and Vulnerability*, Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change, 2007.

Local Reuse Authority (LRA), May 2008. *Draft Environmental Impact Report for the Concord Community Reuse Project*, State Clearinghouse # 2007052094, Appendix 4B, Traffic Volumes by Turning Movement, (20 pp.). http://www.concordreuseproject.org/library/deir/Appendices/Appendix_04B.pdf

LSA, 2008. *Initial Study and Mitigated Negative Declaration for the Buchanan Field Airport Master Plan Update and General Plan Amendment*, July 2008 (69 pp.). http://www.cccounty.us/depart/cd/current/advance/Buchanan/ISMNDBUCHANANFIELD.pdf

Marine Research Specialists, December 2003. *Nacimiento Water Project Final Environmental Impact Report*, SCH #2001061022, Final EIR, prepared for the San Luis Obispo County Department of Building and Planning, p. 5.4-13. http://www.mrsenv.com/nwp_05.pdf

Mayer, K. E. and Laudenslayer W.F., 1988. *A Guide to Wildlife Habitats of California.* California.

Northwest Information Center, Sonoma State University, 2010. *Record Search Results for the Proposed Contra Costa Water District's Short-Cut Pipeline Repair and Maintenance Project*, September 13, 2010.

Olberding Environmental, Inc., 2010. *Biological Resources Analysis Report for the Shortcut Pipeline Study Area, Contra Costa County, California*, November 2010.

Rahmstorf, Stefan, January 19, 2007. *A Semi-Empirical Approach to Projecting Future Sea-Level Rise*, Science, Vol. 315, pp. 368-370. http://www.pik-potsdam.de/~stefan/Publications/Nature/rahmstorf_science_2007.pdf

Regional Water Quality Control Board, San Francisco Bay Region of California, (RWQCB), 2010. *Executive Officer's Report*, a monthly report to the Board and public, February 3, 2010, (7 pp.). http://www.swrcb.ca.gov/rwqcb2/board_info/agendas/2010/February/2-10EOrpt.pdf

RWQCB, 2009. Order No. R2-2005-0041, Re-Issuing Waste Discharge Requirements for Tesoro Refining & Marketing Company Golden Eagle Refinery, Martinez, Contra Costa County, (64 pp.). http://www.waterboards.ca.gov/sanfranciscobay/board_decisions/adopted_orders/2009/R2-2009-0041.pdf

RWQCB, 2006. Fact Sheet for Reviewing Wetland and Riparian Projects, December 1, 2006, (26 pp.). http://www.swrcb.ca.gov/sanfranciscobay/water_issues/programs/stream_wetland/factsheetwetlandprojects2006.pdf

RWQCB, 2004. Updated Waste Discharge Requirements and Rescission of Order 99-083, R2-2004-0056, Tesoro Refining and Marketing Company, adopted July 21, 2004. http://www.swrcb.ca.gov/sanfranciscobay/board_info/agendas/2004/july/tesoroto.doc

RWQCB, 1990. Order No. 90-083: *Waste Discharge Requirements for Tosco Refining Company and Tosco Corporation, Avon Refinery, Contra Costa County, California*, (19 pp.). http://swrcb2.waterboards.ca.gov/sanfranciscobay/board_decisions/adopted_orders/1990/R2-1990-083.pdf

Sacramento Metropolitan Air Quality Management District (SMAQMD), 2010. Construction Mitigation Calculator Version 6.0.5, updated by TIAX LLC for SMAQMD, May 4, 2010. http://www.airquality.org/ceqa/ConstructionEmissionsMitigationCalculator_v605-2010May04.xls

San Francisco Bay Conservation and Development Commission (BCDC), 2010. *A Climate Change Strategy for the San Francisco Bay Region*, web page accessed September 17, 2010. http://www.bcdc.ca.gov/planning/climate_change/strategy_SF_bay_region.shtml

San Francisco BCDC, 2008. *A Sea Level Rise Strategy for the San Francisco Bay Region*, revised September 2008, (7 pp.). http://www.bcdc.ca.gov/planning/climate_change/SLR_strategy.pdf

San Francisco BCDC, 2008. *Background Report for the Commission's Strategic Planning Workshop*, for Commission consideration at the 13th annual strategic planning workshop on September 18, 2008, internal memorandum dated September 5, 2008 (12 pp.) http://www.bcdc.ca.gov/meetings/commission/2008/2008-09-05_cspw_report.pdf

San Francisco BCDC, 1987. *Sea Level Rise: Predictions and Implications for San Francisco Bay*, December 1987.

San Francisco Public Utilities Commission, December 10, 2009. *Draft EIR for the Crystal Springs Pipeline No. 2 Replacement Project*, SCH# 2008112050, Volume 2 of 2: Appendices, (231 pp.), Appendix E: URBEMIS2007 Model Output, pp. E-1 through E-80. http://www.sf-planning.org/Modules/ShowDocument.aspx?documentid=7826

San Francisco Public Utilities Commission, December 10, 2009. *Draft EIR for the Crystal Springs Pipeline No. 2 Replacement Project*, SCH# 2008112050, EIR prepared by ESA, Volume 1 of 2, (108 pp.), Table 5.7-5 and Table 5.7-6, p. 5.7-22. http://www.sf-planning.org/Modules/ShowDocument.aspx?documentid=7832

San Francisco Public Utilities Commission, December 10, 2009. *Draft EIR for the Crystal Springs Pipeline No. 2 Replacement Project*, SCH# 2008112050, Volume 2 of 2: Appendices, (231 pp.), Appendix E: URBEMIS2007 Model Output, pp. E-1 through E-80. http://www.sf-planning.org/Modules/ShowDocument.aspx?documentid=7826

San Luis Obispo, County of, 2010. Nacimiento Water Project, web page visited October 16, 2010. http://www.mrsenv.com/nacimiento_water_project.htm

Sawyer and Keeler-Wolf, 1995. *A Manual of California Vegetation.* California Native Plant Society.

Sibley, D.A., 2000. *The Sibley Guide to Birds.* Alfred Knopf, New York.

Sibley, C.G., and B.L. Munroe, Jr., 1990. *Distribution and Taxonomy of Birds of the World.* Yale University Press, New Haven and London. 1111 pp.

Skinner, M. W. and B. M. Pavlik (eds.), 1994. *Inventory of Rare and Endangered Vascular Plants of California.* California Native Plant Society Special Publication No. 1 (5th edition). California Native Plant Society, Sacramento, CA. 338 pp.

SMAQMD, 2009. RCEMv6.3.2, and Excel spreadsheet tool for calculating road construction emissions, July 2009. http://www.airquality.org/ceqa/RoadConstructionModelVer6.3-2.xls

SMAQMD, 2008. Fact Sheet: *Sacramento Metropolitan Air Quality Management District Construction Air Quality Mitigation Plan Protocol*, July 7, 2008, (2 pp.). http://www.airquality.org/ceqa/ConstructionMitigationProtocol.pdf

Sutley, Nancy H. (Chair), Council on Environmental Quality (CEQ), February 18, 2010. *Draft NEPA Guidance on Consideration of the Effects of Climate Change and Greenhouse Gas Emissions*, (12 pp.). http://ceq.hss.doe.gov/nepa/regs/Consideration_of_Effects_of_GHG_Draft_NEPA_Guidance_FINAL_02182010.pdf

TerraServer, 2010. Historical aerial photographs, accessed October 2010 at www.Terraserver.com. for 1987, 1988, 1993, 2000, and 2004.

Texas Parks and Wildlife Department (TPWD), 2007. Wildlife Fact Sheets. Texas Parks and Wildlife Department, 4200 Smith School Road, Austin, TX 78744. Available online at http://www.tpwd.state.tx.us/huntwild/wild/species/. Accessed on 10/24/2010.

T.H. Nilsen and V.A. Frizzell, 1975. P*reliminary Photointerpretation Map of Landslide and Other Surficial Deposits of the Port Chicago 7-1/2' Quadrangle, Contra Costa and Solano Counties*, USGS Open-File Map 75-277-45.

Urbemis, 2007 for Windows Users' Guide, Version 9.2, 2007. Appendix A – Construction Emissions, November 2007. http://www.urbemis.com/software/URBEMIS9%20Users%20Manual%20Appendices.pdf

URS, 2009. *Post-Closure Permit Renewal Application for the Golden Eagle Tesoro Refinery Waste Management Unit 17, 150 Solano Way, Martinez, California*, EPA Region IX: CA0000072751, prepared for the Golden Eagle Tesoro Refinery, April 23, 2009, (51 pp.). http://www.dtsc.ca.gov/HazardousWaste/Projects/upload/TesoroGoldenEagle_PartABApp_Part1pgsthru51.pdf

U.S. Army, 2005. *Lowering USAF Diesel Engine NOx Emission while Utilizing B20 Biodiesel Fuel*, Interim Report TFLRF No. 380, September 2005, (30 pp.) http://www.dtic.mil/cgi-bin/GetTRDoc?AD=ADA462800&Location=U2&doc=GetTRDoc.pdf

U.S. Census Bureau, 2010. Fact Sheet: Census 2000 Demographic Profile Highlights, Clyde CDP, California, accessed November 15, 2010 at: http://factfinder.census.gov/servlet/SAFFFacts?_event=Search&geo_id=&_geoContext=&_street=&_county=Clyde&_cityTown=Clyde&_state=04000US06&_zip=&_lang=en&_sse=on&pctxt=fph&pgsl=010&show_2003_tab=&redirect=Y

U.S. Census Bureau, 2010. Fact Sheet: Census 2000 Demographic Profile Highlights, Pacheco CDP, California, accessed November 15, 2010 at: http://factfinder.census.gov/servlet/SAFFFacts?_event=Search&geo_id=16000US0614232&_geoContext=01000US|04000US06|16000US0614232&_street=&_county=Pacheco&_cityTown=Pacheco&_state=04000US06&_zip=&_lang=en&_sse=on&ActiveGeoDiv=geoSelect&_useEV=&pctxt=fph&pgsl=160&_submenuId=factsheet_1&ds_name=DEC_2000_SAFF&_ci_nbr=null&qr_name=null&reg=null%3Anull&_keyword=&_industry=

U.S. Census Bureau, 2010. Census 2000 Summary File 3 (SF-3), Table DP-3: Profile of Selected Economic Characteristics: 2000, Martinez city, California, accessed November 15, 2010 at: http://factfinder.census.gov/servlet/QTTable?_bm=y&-geo_id=16000US0646114&-qr_name=DEC_2000_SF3_U_DP3&-ds_name=DEC_2000_SF3_U&-_lang=en&-redoLog=false&-_sse=on

U.S. Environmental Protection Agency (EPA), 2009. *Final Mandatory Reporting of Greenhouse Gases Rule*, accessed December 10, 2009 at: http://www.epa.gov/climatechange/emissions/ghgrulemaking.html.

U.S. EPA, 2005. Emission Facts: *Average Carbon Dioxide Emissions Resulting from Gasoline and Diesel Fuel*, EPA420-F-05-001, February 2005, (3 pp.). http://www.epa.gov/oms/climate/420f05001.pdf

U.S. EPA, 1988. *Hazardous Waste Ground Water Task Force Evaluation of IT Corporation Vine Hill and Baker Facilities, Martinez, California*, EPA-330/2-89-006, November 1988, (185 pp.). http://www.google.com/url?sa=t&source=web&cd=1&ved=0CBQQFjAA&url=http%3A%2F%2Fnepis.epa.gov%2FExe%2FZyPURL.cgi%3FDockey%3D2000GA30.txt&ei=cEyUTKiaB43QsAOT-9i_Cg&usg=AFQjCNHJjUFqDjQ7e7BSQxkC4DiKYNNfYA

U.S. EPA, 1988. *Hazardous Waste Ground Water Task Force Evaluation of Acme Fill Corporation [Landfill], Martinez, California*, EPA-330/2-88-042, July 1988, (154 pp.). http://www.google.com/url?sa=t&source=web&cd=1&ved=0CBIQFjAA&url=http%3A%2F%2Fnepis.epa.gov%2FExe%2FZyPURL.cgi%3FDockey%3D2000G9U9.txt&ei=cjWWTJ6kKYGgsQOChfy_Cg&usg=AFQjCNGupxpI-Y-00kkQo77Ky2n83fTpTQ

U.S. EPA, 1986. *RCRA Compliance Investigation of IT Corporation Vine Hill Facility, Martinez, California*, EPA-330/2-86-014, September 1986, (232 pp.). http://www.google.com/url?sa=t&source=web&cd=1&sqi=2&ved=0CBIQFjAA&url=http%3A%2F%2Fnepis.epa.gov%2FExe%2FZyPURL.cgi%3FDockey%3D9100FTM4.txt&ei=MUyUTOqIA4qosAPzrKjACg&usg=AFQjCNHNZLOwHZARROwLpxeR0cTx5cZIQg

U.S. EPA, 1995. *The Probability of Sea Level Rise*, EPA 230-R-95-008, October 1995.

U.S. Department of the Interior, Fish and Wildlife Service (FWS), 2003. *Interim Guidance on Site Assessment and Field Surveys for Determining Presence or a Negative Finding of the California Tiger Salamander,* October 2003. http://www.fws.gov/sacramento/es/documents/cts_survey_protocol.PDF.

U.S. FWS, 2005. *Formal Endangered Species Consultation on the Operations and Maintenance Program Occurring on Bureau of Reclamation lands within the South-Central California Area Office*, U.S. Fish & Wildlife Service, February 17, 2005.

U.S. FWS, 2009a. Endangered and threatened plants. http://www.fws.gov/r9endspp/cfr1712.pdf.

U.S. FWS, 2009b. Endangered and threatened wildlife and plants; review of plant and animal taxa that are Candidates or Proposed for listing as Endangered or Threatened; annual notice of findings on recycled petitions; annual description of progress on listing actions; proposed rule. Federal Register 64(205): 57534-57547.

U.S. FWS, 2009c. Endangered and threatened wildlife. http://www.fws.gov/r9endspp/cfr1711.pdf.

U.S. Geological Survey (USGS), 2003. Working Group on California Earthquake Probabilities (WG02), *Open File Report 03-214: Earthquake Probabilities in the San Francisco Bay Region: 2002-2031*. http://pubs.usgs.gov/of/2003/of03-214/.

U.S. FWS, Sacramento Fish and Wildlife Office, 2009. *Biological Opinion for the Proposed Natural Gas Pipeline Maintenance and Repair Project by the Chevron Pipe Company, City of Richmond, Contra Costa County, California* (COE File No. 2009–00392S), August 5, 2009.

Vermeer, Martin, and Stefan Ramstorf, December 2009. *Global Sea Level Linked to Global Temperature*, Proceedings of the National Academy of Sciences, Vol. 106, No. 51, pp. 21527-21532. http://www.pnas.org/content/106/51/21527.full.pdf

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Appendix A – CEQA Checklist Signature Page

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Environmental Factors Potentially Affected

The environmental factors checked below could be potentially affected by the proposed Project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages:

☐	Aesthetics	☐	Agriculture Resources	☒	Air Quality
☒	Biological Resources	☒	Cultural Resources	☒	Geology/Soils
☒	Hazards and Hazardous Materials	☒	Hydrology/Water Quality	☐	Land Use/Planning
☐	Mineral & Energy Resources	☒	Noise	☐	Population/Housing
☐	Public Services	☐	Recreation	☐	Transportation / Circulation
☐	Utilities and Service Systems	☐	Mandatory Findings of Significance	☒	Greenhouse Gas Emissions

DETERMINATION (to be completed by lead agency)

On the basis of this initial evaluation

I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.	☐
I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A Mitigated NEGATIVE DECLARATION will be prepared.	☒
I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.	☐
I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.	☐
I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.	☐

Mark A. Seedall — September 22, 2011

Signature — Date

Mark A. Seedall — Contra Costa Water District

Printed Name — For

Appendix B – Work Site Figures