Revised Environmental Assessment Appendices

Recycled Water System Expansion Project

U.S Department of the Interior
Bureau of Reclamation

November 2015

Environmental Assessment for the Delta Diablo Sanitation District Recycled Water System Expansion Project

NEPA Lead Agency Name and Address

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Delta Diablo Sanitation District

Appendix A - Air Quality Analysis Model Results

Road Construction Emissions Model, Version 7.1.2

Emission Estimates for -> Escondido RW Project Phases (English Units)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	Total PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	CO2 (lbs/day)
Grubbing/Land Clearing	3.2	13.9	36.1	2.6	1.6	1.0	1.6	1.4	0.2	3,006.4
Grading/Excavation	4.0	19.1	46.8	3.1	2.1	1.0	2.1	1.9	0.2	4,195.6
Drainage/Utilities/Sub-Grade	3.6	15.2	37.9	2.9	1.9	1.0	2.0	1.7	0.2	3,144.8
Paving	1.5	9.1	14.0	0.8	0.8	-	0.7	0.7	-	1,535.6
Maximum (pounds/day)	4.0	19.1	46.8	3.1	2.1	1.0	2.1	1.9	0.2	4,195.6
Total (tons/construction project)	0.1	0.6	1.5	0.1	0.1	0.0	0.1	0.1	0.0	131.5

Notes:

Project Start Year ->	2013
Project Length (months) ->	4
Total Project Area (acres) ->	5
Maximum Area Disturbed/Day (acres) ->	0
Total Soil Imported/Exported (yd^3/day)->	39

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns H and I. Total PM2.5 emissions shown in Column J are the sum of exhaust and fugitive dust emissions shown in columns K and L.

Emission Estimates for -> Escondido RW Project Phases (Metric Units)	ROG (kgs/day)	CO (kgs/day)	NOx (kgs/day)	Total PM10 (kgs/day)	Exhaust PM10 (kgs/day)	Fugitive Dust PM10 (kgs/day)	Total PM2.5 (kgs/day)	Exhaust PM2.5 (kgs/day)	Fugitive Dust PM2.5 (kgs/day)	CO2 (kgs/day)
Grubbing/Land Clearing	1.4	6.3	16.4	1.2	0.7	0.5	0.7	0.6	0.1	1,366.6
Grading/Excavation	1.8	8.7	21.3	1.4	0.9	0.5	0.9	0.9	0.1	1,907.1
Drainage/Utilities/Sub-Grade	1.6	6.9	17.2	1.3	0.9	0.5	0.9	0.8	0.1	1,429.5
Paving	0.7	4.1	6.3	0.4	0.4	-	0.3	0.3	-	698.0
Maximum (kilograms/day)	1.8	8.7	21.3	1.4	0.9	0.5	0.9	0.9	0.1	1,907.1
Total (megagrams/construction project)	0.1	0.6	1.3	0.1	0.1	0.0	0.1	0.1	0.0	119.3

Notes:

Project Start Year ->	2013
Project Length (months) ->	4
Total Project Area (hectares) ->	2
Maximum Area Disturbed/Day (hectares) ->	0
Total Soil Imported/Exported (meters^3/day)->	30

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns H and I. Total PM2.5 emissions shown in Column J are the sume of exhaust and fugitive dust emissions shown in columns K and L.

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Urbemis 2007 Version 9.2.4

Summary Report for Annual Emissions (Tons/Year)

File Name: C:\Urbemis\DDSD Storage Tank 20121210.urb924

Project Name: DDSD RW Tank

Project Location: Bay Area Air District

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2013 TOTALS (tons/year unmitigated)	0.08	0.61	0.44	0.00	0.06	0.03	0.10	0.01	0.03	0.04	85.70
2013 TOTALS (tons/year mitigated)	0.08	0.55	0.44	0.00	0.06	0.02	0.09	0.01	0.02	0.04	85.70
Percent Reduction	0.00	9.77	0.00	0.00	0.00	25.03	8.49	0.00	25.06	17.32	0.00

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (tons/year, unmitigated)							

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (tons/year, unmitigated)	0.00	0.00	0.02	0.00	0.00	0.00	2.48

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SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (tons/year, unmitigated)	0.00	0.00	0.02	0.00	0.00	0.00	2.48

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Urbemis 2007 Version 9.2.4

Summary Report for Winter Emissions (Pounds/Day)

File Name: C:\Urbemis\DDSD Storage Tank 20121210.urb924

Project Name: DDSD RW Tank

Project Location: Bay Area Air District

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2013 TOTALS (lbs/day unmitigated)	2.62	21.25	12.22	0.00	5.01	1.01	6.02	1.05	0.93	1.98	2,478.24
2013 TOTALS (lbs/day mitigated)	2.62	21.25	12.22	0.00	5.01	1.01	6.02	1.05	0.93	1.98	2,478.24

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)							

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	0.01	0.02	0.13	0.00	0.03	0.00	12.29

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SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	0.01	0.02	0.13	0.00	0.03	0.00	12.29

Appendix B - GHG Emissions Estimate for the Buildout Project

Technical Memorandum

Subject: **Estimating GHG Emission from Construction of DDSD Buildout Project**

Prepared For: Delta Diablo Sanitation District

Prepared by: Eric Wang

Reviewed by: Suet Chau

Date: February 13, 2013

1 Background and General Assumptions

Delta Diablo Sanitation District (DDSD) is assessing the potential climate change impact from their recycled water system expansion project. Greenhouse gas (GHG) emissions from construction activities of the Near-Term Project have been quantified as part of the General Conformity Air Quality Analysis. Because of the the conceptual and speculative nature of the Buildout Project, such an analysis was not completed for the Buildout Project. This TM addresses construction GHG emissions from the Buildout Project by correlating the sizes of its components to those of the Near-Term Project. This method provides for a conservative estimate.

2 Methodology and Result

GHG Emissions from Construction of Pipeline.

Given: Near-Term Pipeline Construction GHG emission: 131.5 MT CO2e/year
Near-Term Pipeline Length: 10,510 LF of installation and rehabilitation
Unit emissions per LF: 131.5 MT CO2e/year/10,510 LF = 0.0125

Buildout Pipeline Length: 85,500 LF of installation and rehabilitation
Assuming construction emissions is proportional with pipe length
Maximum construction rate is 200 LF/day, 5 working days per week
Annual working days = 5 x 52 = 260 days
Construction period: 85,500 LF/200LF/day = 428 days > 260 days
Maximum Annual install/rehab = 260 days x 200 LF/day = 52,000 LF
Emission Estimate: 0.0125 x 52,000 LF
= **650 MT CO2e/year**

GHG Emissions from Construction of Pump Station.

Given: Near-Term Storage Tank Construction GHG emission: 85.7 MT CO2e/year
Near-Term Storage Tank disturbed acreage: 1 Acre
Buildout Pump Station disturbed acreage: 1 Acre
Assuming emission from construction is proportional to disturbed acreage
Result: Emission Estimate: **86 MT CO2e/year**

GHG Emissions from Construction of the tertiary treatment train and the HPWTF.

Given: Near-Term Storage Tank Construction GHG emission: 85.7 MT CO2e/year
Near-Term Storage Tank disturbed acreage: 1 acre
Buildout HPWTF disturbed acreage: 4 acres
Assuming emission from construction is proportional to disturbed acreage

Result: Emission Estimate: 85.7 MT CO2e/year x 4 = **343 MT CO2e/year**

Total GHG Emissions from Buildout Project Construction: 1080 MT CO2e/year

Appendix C - Hazardous Materials Database Search Results

DDSD Recycled Water Project - Geotracker Database Search Results

GEOTRACKER ID	PROJECT	SITE NAME	CLEANUP STATUS	ADDRESS	CITY	LATITUDE	LONGITUDE
T0601300155	Buildout	JOSE'S SERVICE STATION	COMPLETED - CASE CLOSED	394 10TH ST W	PITTSBURG	38.0294257	-121.8913149
T0601300320	Buildout	UNION CARBIDE CORP	COMPLETED - CASE CLOSED	2000 LOVERIDGE RD	PITTSBURG	38.014486	-121.864448
T0601300344	Buildout	US STEEL POSCO INDUSTRIES	COMPLETED - CASE CLOSED	900 LOVERIDGE RD	PITTSBURG	38.0206813	-121.8567426
T0601300425	Buildout	TRENCH PLATE 2	COMPLETED - CASE CLOSED	522 10TH ST W	PITTSBURG	38.029869	-121.89457
T0601300441	Buildout	PITTSBURG ST RDEVELOPMENT #3	COMPLETED - CASE CLOSED	1300 RAILROAD AVE	PITTSBURG	38.02296404	-121.886758
T0601300477	Buildout	CATALINE BUILT HOMES INC	COMPLETED - CASE CLOSED	1050 LOS MEDANOS ST	PITTSBURG	38.0270501	-121.8832143
T0601300530	Buildout	FAULTLESS CLEANERS	COMPLETED - CASE CLOSED	427 10TH ST E	PITTSBURG	38.027094	-121.88068
T0601300589	Buildout	BANISTER ELECTRIC	COMPLETED - CASE CLOSED	498 10TH ST	PITTSBURG	38.0294469	-121.8935439
T0601300794	Buildout	ANTIOCH PAVING COMPANY	COMPLETED - CASE CLOSED	2540 WILBUR AVE	ANTIOCH	38.0116749	-121.771962
T0601359176	Buildout	CITY OF PITTSBURG	COMPLETED - CASE CLOSED	985 RAILROAD AVE	PITTSBURG	38.028043	-121.8849151
SL20208826	Buildout	US STEEL POSCO - PITTSBURG	OPEN - INACTIVE	900 LOVERIDGE ROAD	PITTSBURG	38.01295	-121.862456
SLT2O207310	Buildout	MEXICO AUTO WRECKERS	OPEN - INACTIVE	610 10TH ST W	PITTSBURG	38.029437	-121.89353
SL0601314468	Buildout	GAYLORD CONTAINER CORPORATION-EAST MILL	OPEN - REMEDIATION	2603 WILBUR AVE	ANTIOCH	38.014833	-121.77047
T0601300541	Buildout	BELL GAS	OPEN -	998 RAILROAD	PITTSBURG	38.02823494	-121.885275

			REMEDIATION	AVE			
T0601382732	Buildout	REDDING PETROLEUM	OPEN - REMEDIATION	1001 RAILROAD AVENUE	PITTSBURG	38.027526	-121.8849338
T0601300347	Buildout	USS INDUSTRIAL PARK SITE #2	OPEN - SITE ASSESSMENT	1101 LOVERIDGE RD	PITTSBURG	38.0225	-121.8547
T0601341681	Buildout	A STREET EXTENSION	OPEN - VERIFICATION MONITORING	A STREET EXTENSION	ANTIOCH	38.015655	-121.8078304
T0601300788	Buildout-rehab pipe	PROSPECTS	COMPLETED - CASE CLOSED	820 2ND ST	ANTIOCH	38.01702695	-121.8173656
SLT5SOO33597	Buildout-rehab pipe	ANCHOR GLASS	OPEN	1400 WEST 4TH STREET	ANTIOCH	38.015531	-121.811412
SL186423613	Buildout-rehab pipe	HICKMONT CANNERY (FORMER)	OPEN - INACTIVE	999 B ST	ANTIOCH	38.015858	-121.806506
SLT2O209312	Buildout-rehab pipe	GWF POWER SYSTEMS INC	OPEN - INACTIVE	UNKNOWN 3RD ST E	PITTSBURG	38.0140182	-121.8913753
T0601300776	Buildout-rehab pipe	HICKMOTT CANNERY (FORMER)	OPEN - VERIFICATION MONITORING	5TH & B ST	ANTIOCH	38.015858	-121.806506
SL0601301206	Near-Term	1810 W. 10TH STREET	COMPLETED - CASE CLOSED	1810 W. 10TH STREET	ANTIOCH	38.013084	-121.829887
SL0601397790	Near-Term	695 EAST THIRD STREET	COMPLETED - CASE CLOSED	695 EAST THIRD STREET	PITTSBURG	38.032237	-121.874421
SL18301721	Near-Term	ACME STEEL PROPERTY	COMPLETED - CASE CLOSED	855 NORTH PARKSIDE DR	PITTSBURG	38.02502196	-121.9005203
T0601300607	Near-Term	PITTSBURG GOLF COURSE	COMPLETED - CASE CLOSED	2222 GOLF CLUB DR	PITTSBURG	38.010741	-121.911024
T0601300769	Near-Term	AL EAMES FORD	COMPLETED - CASE CLOSED	1400 10TH ST W	ANTIOCH	38.0116	-121.82395
T0601300774	Near-Term	SHELL	COMPLETED - CASE CLOSED	2838 LONE TREE WY	ANTIOCH	37.993946	-121.808214

T0601300795	Near-Term	DELTA DODGE	COMPLETED - CASE CLOSED	1725 10TH ST W	ANTIOCH	38.0111683	-121.8247697
T0601306725	Near-Term	SHELL SERVICE STATION CASE #2	COMPLETED - CASE CLOSED	2838 LONE TREE	ANTIOCH	37.99391333	-121.8081533
SLT2O208311	Near-Term	MANVILLE SALES CORP	OPEN - INACTIVE	UNKNOWN 3RD & HARBOR ST	PITTSBURG	38.0318843	-121.8770027
T0601300782	Near-Term	CHEVRON #9-4585	OPEN - REMEDIATION	2413 A ST	ANTIOCH	38.0000886	-121.8058588
T0601359797	Near-Term	OLYMPIAN TEXACO STATION	OPEN - REMEDIATION	2310 A STREET	ANTIOCH	38.00021339	-121.8061272
T0601391420	Near-Term	PETRO EXPRESS	OPEN - REMEDIATION	1800 10TH ST W	ANTIOCH	38.012637	-121.82974
SL0601387949	Near-Term	KOCH CARBON BAY AREA BULK TERMINAL	OPEN - VERIFICATION MONITORING	707 E. 3RD. ST.	PITTSBURG	38.031444	-121.8721
T0601300669	Near-Term & Buildout	GLENN MARTELL & SON	COMPLETED - CASE CLOSED	1818 LOVERIDGE RD	PITTSBURG	38.01491	-121.860445
SLT2O214316	Near-Term & Buildout	FORMER SHELL SERVICE STATION	OPEN - INACTIVE	2980 WILLOW PASS ROAD	PITTSBURG	38.01848	-121.858313
T0601300432	Near-Term & Buildout	USS INDUSTRIAL PARK	OPEN - SITE ASSESSMENT	1501 LOVERIDGE RD	PITTSBURG	38.0153	-121.8587
SLT2O210313	Near-Term & Buildout	FORMER CROWN CORK AND SEAL COMPANY, INC	OPEN - VERIFICATION MONITORING	1300 LOVERIDGE ROAD	PITTSBURG	38.01848	-121.858313

DDSD Recycled Water Project - Envirostor Database Search Results

ENVIROSTOR ID	Term	PROJECT NAME	STATUS	PROJECT TYPE	ADDRESS	CITY
CAT000624809	Near-Term and Buildout	CROWN CORK & SEAL CO INC	RCRA	Non-Operating	1300 LOVERIDGE ROAD	PITTSBURG
CAD000626572	Near-Term and Buildout	KEMWATER NORTH AMERICA	RCRA	Non-Operating	LOVERIDGE ROAD & PITTS-ANT HGY	PITTSBURG
CAD076528678	Long-Term	THE DOW CHEMICAL COMPANY	RCRA	Operating	901 LOVERIDGE RD	PITTSBURG
CAD009150194	Long-Term	USS-POSCO INDUSTRIES	RCRA, State Only	Post Closure	900 LOVERIDGE RD	PITTSBURG
80001830	Long-Term	Contra Costa Power Plant	Active	Corrective Action	3201 WILBUR AVENUE	ANTIOCH
70000118	Near-Term and Buildout	Burlington Northern Santa Fe Railway Company	Active	Voluntary Cleanup	Adjoining USS Posco Steel Facility	Pittsburg
7290042	Near-Term and Buildout	UNION CARBIDE, PITTSBURG	Certified	State Response	2000 LOVERIDGE ROAD	PITTSBURG
7260003	Long-Term	EAST MILL	Active	Voluntary Cleanup	2603 WILBUR AVENUE	ANTIOCH
80001806	Near-Term and Buildout	CROWN CORK & SEAL CO INC	Inactive - Needs Evaluation	Corrective Action	1300 LOVERIDGE ROAD	PITTSBURG
7520001	Near-Term and Buildout	ANTIOCH BUILDING MATERIALS	Inactive - Needs Evaluation	Evaluation	1375 CALIFORNIA AVENUE	PITTSBURG
7990013	Long-Term	INDUSTRIAL LOT WITH TANK	Certified	Voluntary Cleanup	WILBUR AVENUE	ANTIOCH
7260002	Long-Term	WEST MILL	Certified	Voluntary Cleanup	2301 WILBUR AVENUE	ANTIOCH
7790001	Long-Term	Gaylord Tracts	Certified / Operation & Maintenance	Voluntary Cleanup	1030 APOLLO COURT	ANTIOCH
7550006	Near-Term and Buildout	ABB DAMILER	No Further Action	Evaluation	1461 LOVERIDGE ROAD	PITTSBURG
70000149	Near-Term and Buildout	Continental Can Company-Plant 80	Refer: RWQCB	Evaluation	1300 Loveridge Road	Pittsburg

7280165	Near-Term and Buildout	KEMWATER PITTSBURG PLANT	Refer: RWQCB	Evaluation	1401 LOVERIDGE ROAD	PITTSBURG
7750026	Near-Term	DELTA AUTO WRECKER	Active	State Response	6 INDUSTRY ROAD	PITTSBURG
7490047	Near-Term	GWF POWER SYSTEMS	Backlog	Evaluation	895 E. 3RD STREET	PITTSBURG
7390022	Near-Term	JOHNS MANVILLE	Certified / Operation & Maintenance	Voluntary Cleanup	420 EAST 3RD STREET	PITTSBURG
70000066	Long-Term	Marina School Expansion	No Further Action	School Investigation	East 8th and East 10th Streets	Pittsburg
80000959	Near-Term	ANTIOCH BOMB TARGET	Inactive - Action Required	State Response	Latitude: N 38" 01.596' Longitude: W 121' 36.727	Antioch
7750025	Near-Term	K AND S BODY SHOP	No Further Action	Evaluation	600 E. 3RD STREET	PITTSBURG
60000879	Near-Term	Pittsburg High School - Main/North Campus	No Further Action	School Investigation	250 School Street	Pittsburg
7750009	Long-Term	ANTIOCH RADIATOR EXCHANGE	Refer: Other Agency	Evaluation	908 WEST SECOND ST.	ANTIOCH
71003523	Long-Term	PG&E, Contra Costa Power Plant	Refer: Other Agency	Tiered Permit	3201 Wilbur Avenue	Antioch
71002583	Long-Term	The Dow Chemical Co.	Refer: Other Agency	Tiered Permit	Foot of Loveridge Road	Pittsburg
7650003	Near-Term	RANGE ROAD MIDDLE SCHOOL SITE	No Further Action	School Investigation	Range Road/Leland Road	Pittsburg
7070001	Near-Term	CONTRA COSTA COUNTY FAIR	Refer: Local Agency	Voluntary Cleanup	1201 WEST 10TH STREET	ANTIOCH
7290043	Near-Term	KOCH CARBON INC.	Refer: RWQCB	Evaluation	700- 707 E. 3RD STREET	PITTSBURG

Appendix D - Endangered Species Concurrence Letter

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Sacramento Fish and Wildlife Office
2800 Cottage Way, Room W-2605
Sacramento, California 95825-1846

In Reply Refer To:
08ESMF00-2013-I-0392

MAY 16 2013

Memorandum

To: Anastasia T. Leigh, Regional Environmental Officer, U.S. Bureau of Reclamation, Sacramento, California

From: for Eric Tattersall, Deputy Assistant Field Supervisor, Sacramento Fish and Wildlife Office, Sacramento, California

Subject: Informal Consultation Under Section 7(a)(2) of the Endangered Species Act for the Delta Diablo Sanitation District Recycled Water System Expansion Project, Contra Costa County, California

This memorandum is in response to the U.S. Bureau of Reclamation (Bureau) March 28, 2013, memorandum requesting consultation with the U.S. Fish and Wildlife Service (Service) on the proposed Delta Diablo Sanitation District Recycled Water System Expansion Project, Contra Costa County (Proposed Project) in the cities of Pittsburg and Antioch, Contra Costa County, California (Reclamation reference MP-150, ENV-7.00). Your request for consultation was received in our office on April 1, 2013. At issue are the effects of the Proposed Project on the federally threatened California red-legged frog (*Rana draytonii*) (frog), California tiger salamander (*Ambystoma californiense*) (salamander), and giant garter snake (*Thamnophis gigas*) (snake). The Proposed Project is not within any designated critical habitat for the frog or the salamander, and no critical habitat has been designated for the snake. Therefore, critical habitat will be unaffected by the Federal action. This document is issued under the authority of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 *et seq.*) (Act).

Project Background and Description

The Delta Diablo Sanitation District established a recycled water system (system) in 2001, primarily to deliver water to the Delta Energy Center and Los Medanos Energy Center power plants. Since its inception, the system has been expanded over time to provide water to 20 different use sites. Because incremental expansions have not been planned systematically, the opportunity exists to optimize the system with respect to cost, functionality, and service.

The Delta Diablo Sanitation District Recycled Water Facility (recycled water facility) and Wastewater Treatment Facility (wastewater facility) are located adjacently along the Pittsburg-Antioch Highway in the City of Pittsburg (Figure 1). After treatment at the wastewater facility, water is generally discharged into the nearby New York Slough, although a portion of the treated water is diverted to the recycled water facility, depending upon demand. At the recycled water

facility water is clarified, filtered, and disinfected before it is conveyed along the system for usage at the power plants, as well as golf courses and other irrigation needs. From the recycled water facility the system consists of about 4 miles of pipeline to the west, and another 4 miles of pipeline to the east.

The Proposed Project involves the upgrading of the recycled water system infrastructure. The upgraded system infrastructure will include the installation of new pipelines, pump stations, and a storage tank to level supply with demand. Additionally, existing pipelines will be rehabilitated. In all, 6,600 linear feet of new pipeline, a 0.9 million gallon storage tank, 15 new customer meters, and new isolation valves will be installed. Additionally, 3,090 linear feet of parallel 8-inch diameter existing pipelines will be tested and rehabilitated.

Construction and rehabilitation of the pipeline is scheduled to begin in the late winter or spring of 2015. Construction of the storage tank would be concurrent with pipeline work. Construction activities would generally occur weekdays from 7 a.m. to 7 p.m., yet night work may be necessary on some occasions. The Proposed Project will require about 3.5 months of construction.

The action area is defined in 50 CFR §402.02, as "all areas to be affected directly or indirectly by the federal action and not merely the immediate area involved in the action." For the Proposed Project, the Service considers the action area to include the footprints of the project components to be constructed, as outlined below and shown in Figure 1. For the purposes of possible noise and ground disturbance (i.e., vibrations), the action area also extends 300 feet from each project component to be constructed, including any staging.

New Pipeline Installation

Fifteen new pipeline segments will be installed, each within paved roadways or areas that have been previously disturbed. The standard work rate is about 100 feet per day, with an overall linear work zone of about 200 feet. The construction zone for each segment would be about 25 to 30 feet wide. Generally, pipeline segments will be installed by open-trench methods, with 30-foot long trenches about 6 to 8 feet deep. However, in instances where open trenches are impractical (e.g., busy intersections, railroad crossings) jack-and-bore or directional drilling will be used to install pipelines.

With the jack-and-bore method, the jacking pit is excavated about 12 to 15 feet wide, 30 to 35 feet long, and 8 to 10 feet deep. An additional pipe storage area of 2,000 square feet also is necessary. An auger is used to bore a hole that is then lined with a casing. The pipeline is fitted inside the casing. A smaller, receiving pit also is dug at the opposite end of the boring to complete the process.

With directional drilling a small diameter hole is drilled at an angle that arcs to a final bore pit 500 to 1,000 from the entry point. Progressively larger reamers are pulled through the hole, followed ultimately by the pipeline. During excavation, drilling mud is injected into the hole and collected for reuse at both ends of the hole. Excavated spoils will be used to backfill holes. The drilling equipment and materials require an area of about 2,500 square feet, while an additional 2,000 square feet is needed for removing bore materials.

After construction all areas will be resurfaced to match the surrounding material. Damage to all-road and non-paved areas will be repaired. Previously vegetated areas will be reseeded with native grasses.

Storage Tank Installation

An above-ground steel tank up to 90 feet in diameter and 30 feet high will be installed along the recycled water system. Two sites for the tank are under consideration: the first site is a vacant lot adjacent to the Los Medanos Energy Center; the second site is vacant space within the recycled water facility. The first site is about one acre (including staging) and would be purchased by the Delta Diablo Sanitation District for use (Figure 1). The second site is adjacent to an existing tank at the recycled water facility; various spots throughout the facility would be used for staging.

Construction includes the tank, new piping, connections to the existing system, a tank control valve, and a tank pad with drainage modifications. Emergency overflow would drain into the existing sanitary sewer. A radio control tower also will be necessary onsite to relay telemetry information for electrical control of tank functions. Lighting will be installed for security.

Pipeline Testing and Rehabilitation

The Proposed Project also includes the testing and rehabilitation of about 3,090 linear feet of two existing, parallel 8-inch diameter pipelines. These pipelines are currently not used and will be transferred to the Delta Diablo Sanitation District from Praxair, an industrial gases company that previously used the pipes for conveying oxygen and nitrogen. The proposed rehabilitation pipeline connection point to the existing system is along the Pittsburg-Antioch Highway, which generally runs east-west (Figure 1). A proposed pipeline crosses from that connection point below Kirker Creek and ties into the proposed rehabilitated pipelines on the north side of Kirker Creek. After running parallel to Kirker Creek and Pittsburg-Antioch Highway, the proposed rehabilitated pipelines bend northward adjacent to Loveridge Road. The pipeline rehabilitation will allow future expanded use of the recycled water system.

Rehabilitation primarily involves lining the existing uncoated steel pipe. To line the pipe, about 5 evenly-spaced pits along the pipelines will be necessary, each about 30 square feet and deep enough to fully expose the pipelines. No in-channel work will be required in Kirker Creek.

Conservation Measures

The Delta Diablo Sanitation District has proposed the following measures to avoid impacts to the frog, salamander, and snake:

- Conduct mandatory biological resources awareness training for all Proposed Project personnel and implement the following requirements:
    - Where suitable habitat is present for listed species, the Delta Diablo Sanitation District will clearly delineate the construction limits through the use of survey tape, pin flags, orange barrier fencing, or other means, and prohibit any construction-related traffic outside these boundaries.
    - Proposed Project-related activities will observe a 15-mile-per-hour speed limit on unpaved roads within the limits of construction areas.

- Proposed Project-related vehicles and construction equipment will restrict off-road travel to the designated construction areas.
- The construction contractor hired by the Delta Diablo Sanitation District will provide closed garbage containers for the disposal of all food-related trash items. All garbage will be collected daily from construction areas and placed in a closed container that will be emptied weekly at an approved offsite location. Construction personnel will not feed or otherwise attract fish or wildlife.
- No pets will be allowed in the construction areas.
- No firearms will be allowed in the construction areas.
- If vehicle or equipment maintenance is necessary, it will be performed in the designated staging areas.
- Any worker who inadvertently takes a federally listed species or finds one dead, injured, or entrapped will immediately report the incident to the construction manager. The construction manager will immediately notify the Delta Diablo Sanitation District project Manager, who will provide verbal notification to the Service within one working day of the incident. The Delta Diablo Sanitation District will follow up with written notification to the Service within 5 working days of the incident. All observations of federally listed species will be recorded on California Natural Diversity Database occurrence sheets and sent to the California Department of Fish and Wildlife.

- Except at the recycled water facility potential tank site, all pipeline work will occur during the dry season, between May 1 and October 1.
- Retain a qualified biologist to monitor construction activities at the recycled water facility potential tank work site for work during rain events that extend beyond October 1. If a salamander is found, work will immediately stop and the Service will be contacted to determine appropriate actions.
- Install sediment fencing and construction barrier fencing around aquatic habitats for federally listed species. A qualified biologist will identify the areas that will be avoided during construction and the proper fencing locations. Fencing will be maintained throughout the construction period.
- Staging areas will be located a minimum of 100 feet from all aquatic habitats.
- Prepare and implement a Construction Risk Management Plan pursuant to a National Pollutant Discharge Elimination System General Construction Permit. The plan will describe handling, transporting and storage procedures for hazardous materials, including any existing contamination encountered in spoil or groundwater, and will cover construction site housekeeping practices. The plan also will identify the parties responsible for inspections, spill response, and regulatory notifications, as applicable.
- Conduct pre-construction surveys for the frog, salamander, and snake. A qualified biologist will conduct surveys within 24 hours of ground-disturbing activities. If a listed species is found, work at the site where the individual is located will immediately stop and the Service will be contacted to determine appropriate actions.

- Provide escape ramps or cover open trenches at the end of each day to avoid entrapment of listed species. All excavated areas more than 1 foot deep will be provided with one or more escape ramps made of earth or wood materials. If escape ramps cannot be provided then holes will be covered with plywood or other hard material. If any federally listed species does become entrapped, work will stop that day and the Service will immediately be contacted to determine appropriate actions.
- All temporarily disturbed areas will be restored by reseeding with native grasses.

Concurrence Determination

The Proposed Project action area is largely developed areas within the cities of Pittsburg and Antioch. However, potential habitat for the frog, salamander, and the snake occur along waterways throughout the action area, including Kirker Creek, a tributary of the Contra Costa Canal, canals along the Antioch Little League fields and Antioch Fairgrounds, and a drainage ditch by Rancho Medanos Junior High School. Kirker Creek is channelized and bordered by roadways and other developed areas. Similarly, the other drainage canals are intermittent to perennial and flow within an urbanized setting.

California tiger salamanders require slow-moving or temporary waterways within grassland habitats for breeding. The water regime of Kirker Creek and the other canals within the action area may be suitable for salamander breeding, yet the developed nature of the surrounding habitat provides little opportunity for necessary nearby upland refugia.

California red-legged frogs can inhabit riparian areas of intermittent or ephemeral inundation. However, frogs would likely move to areas of more permanent inundation during rainy nights. It is unlikely that the urbanized setting of the Proposed Project would allow for safe frog movement between aquatic habitats.

Giant garter snakes occupy wetlands with permanent water and adequate emergent vegetation for cover during summer months. The water regime of Kirker Creek and other canals within the Proposed Project area, in conjunction with amount of emergent vegetation, is probably inadequate to support snakes during summer months. Furthermore, snakes also require upland refuge sites within 200 feet of aquatic habitat. Again, the urbanized setting of the Proposed Project is unlikely to provide adequate upland habitat alongside the small pockets of potential aquatic habitat.

The Service concurs with your determination that the proposed Delta Diablo Sanitation District Recycled Water System Expansion Project, may affect, but is not likely to adversely affect the California Tiger Salamander, California red-legged frog, and the giant garter snake. Our concurrence is based on the fact that within the Proposed Project area, wetland and riparian habitats are of marginal quality for each species. Also, the urbanized landscape setting provides poor associated upland habitat for the salamander, frog and the snake as well. Furthermore, the physical properties of Kirker creek and all canals will not be altered by the Proposed Project. However, because movements of the salamander, frog, and snake are largely unpredictable and poor aquatic habitat for each species does exist with the Proposed Project action area, the proposed conservation measures must be followed.

Unless new information reveals effects of the proposed action that may affect listed species in a manner or to an extent not considered; or the project is modified in a manner that causes an effect to the listed species that was not considered; or a new species or critical habitat is designated that may be affected by the proposed action, no further action pursuant to the Act is necessary.

If you have any questions regarding this response on the proposed Delta Diablo Sanitation District Recycled Water System Expansion Project, please contact Harry Kahler, Biologist, or Ryan Olah, Coast Bay/Forest Foothills Division Chief, at the letterhead address, telephone (916) 414-6600, or electronic mail at Harry_Kahler@fws.gov or Ryan_Olah@fws.gov.

Attachment

cc:
Doug Kleinsmith, Bureau of Reclamation, Sacramento, CA

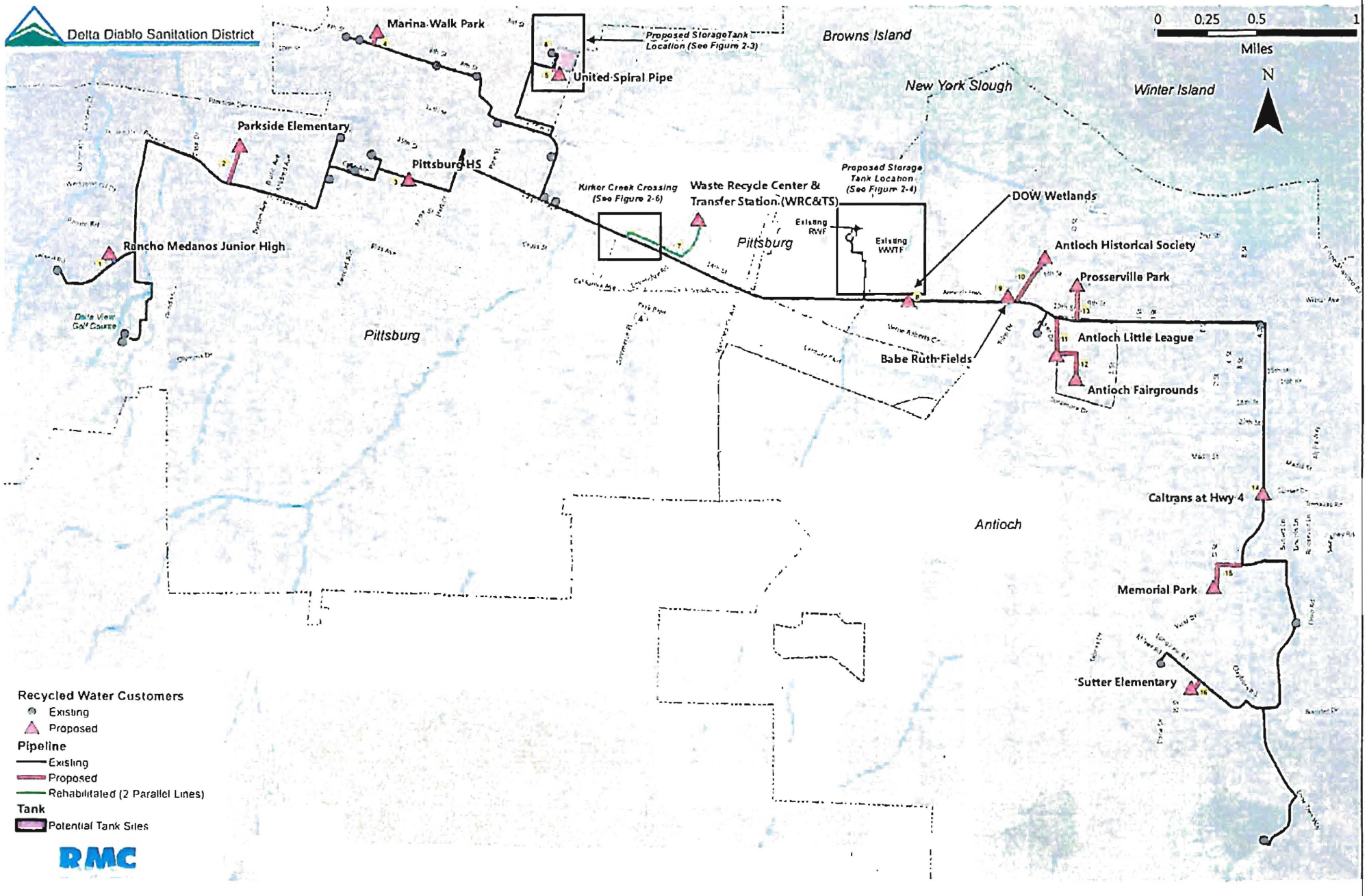

Figure 1
Components of the Proposed Action

Appendix E - National Historic Preservation Act Concurrence Letter

OFFICE OF HISTORIC PRESERVATION
DEPARTMENT OF PARKS AND RECREATION
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(916) 445-7000 Fax: (916) 445-7053
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www.ohp.parks.ca.gov

July 15, 2015

In reply refer to: BUR_2015_0615_002

Ms. Anastasia T. Leigh
Regional Environmental Officer
Bureau of Reclamation
Mid-Pacific Regional Office
2800 Cottage Way
Sacramento, CA 95825-1898

Re: National Historic Preservation Act (NHPA) Section 106 Consultation for the Delta Diablo Sanitation District (DDSD) Recycled Water System Expansion Project, Contra Costa County, California (13-MPRO-028)

Dear Ms. Leigh:

Thank you for your letter dated June 9, 2015, requesting my review and comment with regard to the proposed Delta Diablo Sanitation District (DDSD) Recycled Water System Expansion Project in Contra Costa County, California. The Bureau of Reclamation (Reclamation) is consulting with me pursuant to Section 106 of the National Historic Preservation Act and its implementing regulations found at 36 CFR Part 800 (as amended 8-05-04), for the proposed expansion of a recycled water system. Along with your consultation letter, you also provided the following documents:

- *Delta Diablo Recycled Water System Expansion Project, Archaeological Inventory Report* (ICF International, April 2015); and
- *Delta Diablo Recycled Water System expansion Project, Historical Resources Inventory and Evaluation Report* (ICF International, April 2015).

Reclamation proposes to provide funding to the DDSD through their Water Reclamation and Reuse Program for this drought-related project. DDSD proposes to expand and optimize its existing recycled water system to meet build-out demands. Specifically, DDSD proposes to install new pipelines, rehabilitate existing pipelines, construct a new 0.9-million gallon storage tank, and conduct other improvements at the existing recycled water facility. In total, 6,600 linear feet of new recycled water pipeline will be constructed, primarily within open trenches; 3,090 linear feet of existing, parallel 8-inch pipeline will be tested and rehabilitated; 22,500 linear feet of 8-inch feed water supply pipeline will be rehabilitated; interconnection will be made between the Praxair pipelines and existing City of Antioch raw water pipeline at the intersection of A Street and East 6th Street in Antioch; and the construction of 6,000 linear feet of new 6-inch water distribution pipeline will be installed.

Reclamation has determined that the area of potential effects (APE) for this undertaking is approximately 10 acres consisting of 14 discontiguous locations (as illustrated in the provided technical documents) and includes all ground-disturbing activities associated with project implementation, construction staging areas, and access routes. The vertical APE varies depending upon construction activity and extends to a maximum depth of 10 feet to account for all trenching and trenchless horizontal drilling activities.

The cultural resources identification effort included a records search, cultural resources survey, and Native American coordination performed by ICF International (Consultant), and Native American consultation initiated by Reclamation. A records search completed on December 4, 2012 indicated that one previously recorded historic property, the Riverview Union High School, was identified within the APE. The building is listed on the National Register of Historic Places (NRHP) under Criterion A. A cultural resource pedestrian survey conducted in April 2014 did not result in the identification of additional cultural resources within the APE.

The Native American Heritage Commission (NAHC) was contacted by the consultant on March 28, 2014 to request a search of the Sacred Lands File for known sacred sites in the project area and to request a list of Native American organizations and individuals who may have knowledge of cultural resources within the APE. NAHC records indicated that no previously identified sacred lands or areas of cultural importance are located within the APE. Likewise, Native American coordination initiated by the consultant on April 7, 2014 did not result in the identification of potential historic properties within the APE. Additionally, Reclamation initiated consultation with the Tuolumne Band of Me-Wuk Indians, the Tule River Indian Tribe, and six other Native American individuals/groups identified by the NAHC, to request their assistance in the identification of sites of religious or cultural significance or historic properties that may be affected by the proposed undertaking. Native American consultation efforts have not resulted in the identification of potential historic properties within the APE.

Based upon recommendations made by the consultant, Reclamation determined that the historic property would not be adversely affected by the proposed undertaking because the work proposed consists of connecting the new pipeline to an existing backflow preventer directly within the fence line of the property. The historic significance of the NRHP-listed building would be retained, and the original footprint, size, and location of the grounds and lawns will remain unaltered from their current state. Pursuant to 36 CFR 800.4(d)(1), Reclamation has found that no historic properties will be affected by the proposed undertaking. Reclamation is requesting my review and comment on the delineation of the APE and their efforts to identify historic properties. After reviewing your submission I have the following comments:

- Pursuant to 36 CFR 800.4(a)(1), I have no objections to the APE as defined.

- Pursuant to 36 CFR 800.4(b), I find that Reclamation has made a reasonable and good faith effort to identify historic properties within the area of potential effects.

- Pursuant to 36 CFR 800.4(d)(1)(i), **I do not object with your finding of no historic properties affected for this undertaking.**

Thank you for seeking my comments and considering historic properties as part of your project planning. Be advised that under certain circumstances, such as unanticipated discovery or a change in project description, Reclamation may have additional future responsibilities for this undertaking under 36 CFR Part 800. If you have any questions, please contact Patrick Riordan of my staff at (916) 445-7017 or Patrick.Riordan@parks.ca.gov or Kathleen Forrest at (916) 445-7022 or Kathleen.Forrest@parks.ca.gov.

Sincerely,

Jenan Saunders
(for) Julianne Polanco
State Historic Preservation Officer