AGENDA
IRVINE RANCH WATER DISTRICT
ENGINEERING AND OPERATIONS COMMITTEE
THURSDAY, FEBRUARY 23, 2012

CALL TO ORDER 4:00 P.M., Second Floor Committee Room
15600 Sand Canyon Avenue, Irvine, California

ATTENDANCE Committee Chair: Douglas Reinhart ____ Committee Member: John Withers ____

ALSO PRESENT

Paul Cook	_____	Greg Heiertz	_____
Dave Pedersen	_____	Kevin Burton	_____
Kelly Lew	_____	Steve Malloy	_____
Wayne Posey	_____	Mike Hoolihan	_____
Patricia Uematsu	_____	Eric Akiyoshi	_____
Malcolm Cortez	_____	Paul Weghorst	_____
Bruce Newell	_____	Carl Spangenberg	_____
Joe McGehee	_____	Lars Oldewage	_____
Harry Cho	_____	_____	_____

COMMUNICATIONS

1. Notes: Burton
2. Public Comments
3. Determine the need to discuss and/or take action on item(s) introduced that came to the attention of the District subsequent to the agenda being posted.
   Determine which items may be approved without discussion.

INFORMATION

4. UPCOMING PROJECTS – STATUS REPORT – CORTEZ/HOOLIHAN/ MALLOY/UEMATSU/BURTON

   Recommendation: Receive and file.

5. MICHELSON WATER RECYCLING PLANT PHASE 2 EXPANSION AND FLOOD PROTECTION IMPROVEMENTS- CONSTRUCTION STATUS QUARTERLY REPORT – MALLOY/BURTON

   Recommendation: Receive and file.

6. SYPHON RESERVOIR FEASIBILITY STUDY UPDATE – HOOLIHAN/ BURTON

   Recommendation: Receive and file.

7. RESEARCH BUSINESS PLAN UPDATE – KALINSKY/OLDEWAGE PEDERSEN

   Recommendation: Receive and file

ACTION

8. DOMESTIC AND RECYCLED VAULT LIDS REHABILITATION EXPENDITURE AUTHORIZATIONS AND CONSULTANT SELECTION – CHO/CORTEZ/BURTON

That the Committee recommend the Board approve an Expenditure Authorization in the amount of $154,600 for the Domestic Vault Lid Rehabilitation, Project 11358 (1800); approve an Expenditure Authorization in the amount of $115,500 for the Recycled Vault Lid Rehabilitation, Project 31358 (1065); and authorize the General Manager to execute a professional services agreement in the amount of $43,964 with Arcadis-US, Inc. for the Domestic Vault Lid Rehabilitation, Project 11358 (1800).

9. WELL 115 REPLACEMENT CAPITAL BUDGET ADDITION, EXPENDITURE AUTHORIZATION, AND VARIANCE NO. 1 – MOEDER/SPANGENBERG/BURTON

Recommendation: That the Committee recommend the Board authorize the addition of Project 11627 (3717) in the amount of $3,685,600 to the FY 2011-12 Capital Budget for Well 115 replacement; approve an Expenditure Authorization in the amount of $551,300 for Project 11627 (3717); and approve a no-cost Variance No. 1 with Tetra Tech for the Well 115 Replacement, Project 11627 (3717).

10. BAKER WATER TREATMENT PLANT DESIGN VARIANCE NO. 6 – MCGEHEE/BURTON

Recommendation: That the Committee recommend the Board authorize the General Manager to execute Variance No. 6, in the amount of $73,000, with RBF Consulting for the Baker Water Treatment Plant, Project 11218 (1417).

11. PLANNING AREA 9B JEFFREY ROAD PIPELINES EXPENDITURE AUTHORIZATIONS AND POTENTIAL CHANGE OF WORK WITH IRVINE COMMUNITY DEVELOPMENT COMPANY – LEW/CORTEZ/ BURTON

Recommendation: That the Committee recommend the Board approve Expenditure Authorizations for Project 10423 (1519) in the amount of $38,100 and Project 30422 (1024) in the amount of $47,400; and approve a Potential Change of Work in the amount of $83,146 to the Reimbursement Agreement with the Irvine Community Development Company for Planning Area 9B to construct PA 9B Jeffrey Road IRWD Capital Facilities, Projects 10423 (1519) and 30422 (1024).

ACTION - Continued

12. ALTON PARKWAY EXTENSION PROJECT CONTRACT CHANGE ORDER NO. 6 TO REIMBURSEMENT AGREEMENT WITH THE CITY OF LAKE FOREST – STANEART/CORTEZ/BURTON

Recommendation: That the Committee approve Contract Change Order No. 6 in the amount of $72,205 to the Reimbursement Agreement with the City of Lake Forest for the Alton Parkway Extension Project and IRWD Capital Facilities, Projects 11467 (1506), 21467 (1159) and 31467 (1226).

13. EMERGENCY DOMESTIC WATER INTERCONNECTION AGREEMENT WITH SANTA MARGARITA WATER DISTRICT – BURTON

Recommendation: That the Committee recommend the Board authorize the General Manager to execute an Agreement with Santa Margarita Water District that terminates the 1979 capacity agreement and provides for an emergency domestic water interconnect; authorize the District officers to execute a Quitclaim Deed to transfer IRWD's capacity ownership in various pipelines and the Alicia Reservoir A to Santa Margarita Water District; and adopt a resolution approving the execution of the Quitclaim Deed.

14. MICHELSON WATER RECYCLING PLANT PHASE 2 EXPANSION AND FLOOD PROTECTION IMPROVEMENTS – CHANGE ORDERS, VARIANCE, AND REDUCTION OF RETENTION – MALLOY/BURTON

Recommendation: That the Committee recommend the Board approve Contract Change Order No. 57 in the amount of $116,206.53 with J. R. Filanc Construction Co. to install a 5-ton crane for Michelson Water Recycling Plant Phase 2 Expansion, Projects 20214 (1599) and 30214 (1706); approve Contract Change Order No. 58 in the credit amount of $669,030.20 with J. R. Filanc Construction Co. due to final quantity adjustment of the structure piles within Michelson Water Recycling Plant Phase 2 Expansion, Projects 20214 (1599) and 30214 (1706); authorize the General Manager to execute Variance No. 2 in the amount of $24,700 with Ninyo and Moore for supplemental construction phase services for pile installation for the Michelson Water Recycling Plant Phase 2 Expansion, Projects 20214 (1599) and 30214 (1706) and Flood Protection Improvement, Projects 20542 (1150) and 30542 (1118); find that satisfactory progress is being made on the Michelson Water Recycling Plant Phase 2 Expansion and Flood Protection Improvements contract; authorize the reduction of retention from 10% to 5% of the contract amount; and release funds in excess of 5% of the contract amount from retention currently held for MWRP Phase 2 Expansion and Flood Protection Improvements, Projects 20214 (1599), 20542 (1150), 30214 (1706), and 30542 (1118).

OTHER BUSINESS

15. Directors' Comments:

16. Adjourn

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Availability of agenda materials: Agenda exhibits and other writings that are disclosable public records distributed to all or a majority of the members of the above-named Committee in connection with a matter subject to discussion or consideration at an open meeting of the Committee are available for public inspection in the District's office, 15600 Sand Canyon Avenue, Irvine, California ("District Office"). If such writings are distributed to members of the Committee less than 72 hours prior to the meeting, they will be available from the District Secretary of the District Office at the same time as they are distributed to Committee Members, except that if such writings are distributed one hour prior to, or during, the meeting, they will be available at the entrance of the meeting room at the District Office.

February 23, 2012
Prepared by: M. Cortez/M. Hoolihan/
S. Malloy/P. Uematsu
Submitted by: K. Burton
Approved by: Paul Cook

ENGINEERING AND OPERATIONS COMMITTEE

UPCOMING PROJECTS STATUS REPORT

SUMMARY:

A status report of Irvine Ranch Water District's Upcoming Projects is presented to the Committee for information.

BACKGROUND:

The information, which is attached as Exhibit "A", is a status report submitted quarterly to the Committee and Board for their review.

FISCAL IMPACTS:

Not applicable.

ENVIRONMENTAL COMPLIANCE:

Not applicable.

RECOMMENDATION:

Receive and file.

LIST OF EXHIBITS:

Exhibit "A" – Upcoming Projects Status Report

IRWD UPCOMING PROJECTS STATUS REPORT

Project Name	Planning Start	Start Design	Construction Award	Construction Final Acceptance
OPA PRVs and Fire Flow Improvements				Spring 2012
Trabuco Road Bridge DW and RW Upsizing				Spring 2012
Newport Blvd. (SAH) Waterline Relocation				Fall 2012
RMS at 5 DW Reservoirs		Winter 2013		
SCWD BPS Generators/Walls			Spring 2012	Fall 2012
NTS Site 62 & SAMS1			Spring 2012	Winter 2013
Syphon Reservoir Interim Facilities		Spring 2012		
Portola Hills LS Abandonment & Sewer Installation		Summer 2012		
Jamboree Center Miscellaneous Improvements for Sewer Maintenance		Summer 2012		
Modjeska Canyon DW Pipeline Relocation		Summer 2012		
University Drive Pipelines Cathodic Protection				Summer 2012
Santiago Dam and Outlet Tower Seismic Stability Study	On-going			
Alton Parkway, Commercentre to Towne Centre (City)				Spring 2012
Alton Parkway, Irvine Boulevard to Commercentre (County)				Spring 2012
OPA 16" Pipeline Replacement				Summer 2012
Barranca-Dyer Redhill Widening -Misc Relocations (RA w/ COI)				Spring 2012
Zone C Pipeline Relocation Lake Forest Glass Creek Sports Park (RA w/ LF)			Spring 2012	Spring 2013
Lake Forest Rancho Parkway Extenstion (RA w/ LF)			Spring 2012	Winter 2013
PA 40 Capital Pipelines DW & RW, Phase 2 (RA w/ ICDC)				Fall 2012
Capital Pump Sta Zone A to B (completion concurrent w/ PA 40 Phz 3)		Summer 2012	Winter 2013	Fall 2013
PA 39 Phase I Capital Pipelines S & RW, (RA w/ ICDC)				Summer 2012
PA-6 PH2 Neighborhood 3 MCAS RW Zone C 12" (RA w/ ICDC)			Summer 2012	Summer 2013
PA-9B Jeffrey Road Zones 3, A, B and C Pipelines (RA w/ICDC)			Summer 2012	Summer 2013
Tustin Ranch Road (RA w/Tustin)			Spring 2012	Winter 2013
Bee Canyon Pump Station			Spring 2012	Winter 2013
Bake Pkwy S.D. Creek to Future Lake Forest RA w/ ICDC 12" DW 24" RW				Summer 2012
Lake Forest Drive, Bake Pkwy to Romano RA w/ ICDC 12" DW 24" RW				Summer 2012
MWRP Biosolids and Energy Recovery Facilities			Fall 2012	Fall 2015
MWRP Phase 2 Expansion				Fall 2012
Lake Forest (LAWD) PLC Replacement and Control System Upgrades			Summer 2012	Winter 2013
Water Operations Transdyn Replacement				Spring 2012
Sand Canyon Avenue Grade Separation				Fall 2014

IRWD UPCOMING PROJECTS STATUS REPORT

Project Name	Planning Start	Start Design	Construction Award	Construction Final Acceptance
Well 21 & 22 Wellhead Facilities				Summer 2012
Well 21 & 22 Pipelines				Summer 2012
Well 21 & 22 Treatment Plant (Design/Build)				Summer 2012
Baker Water Treatment Plant			Summer 2013	Winter 2014
PA 18 Zone 3 to 4 and B to C Booster Pump Stations		Spring 2012		
Well 78 Replacement				Spring 2012
Well LF-2 Wellhead Facilities				Fall 2012
Well OPA-1 Drilling			Summer 2012	Fall 2013
LAWRP Zone A & B Pump Station Upgrades			Summer 2012	Winter 2013
Well 107 Replacement				Fall 2012
Well 115 Replacement		Spring 2012	Fall 2012	
LAWRP Solids Handling Facility		Fall 2012		
Poseidon Water Purchase Agreement	On-going			
DW System Hydraulic Modeling	Summer 2012			
RW System Hydraulic Modeling	Fall 2012			
Anaheim Well Field Implementation Plan	Spring 2013			
Groundwater Development Program / OCWD Annexation	On-going			
MCWD, NB, SA, IRWD Interconnection Study	In-Process			
Sewer System Emergency Response Plan	Summer 2012			
Syphon Reservoir Engineering Feasibility Study	In-Process			
Syphon Reservoir Environmental Analysis	In-Process			
Zone A and Green Acres Project Supply Hydraulic Modeliing Analysis	In-Process			
UCI/NIST Advanced SCADA Research and Development	In-Process			
2012-13 Capital Budget	In-Process			
WRMP Update for 2010 UWMP - Chap 2,3,4,5	In-Process			
	Category	**Months**		
	Winter	Jan. Feb. & Mar.		
	Spring	Apr. May & June		
	Summer	Jul. Aug. & Sep.		
	Fall	Oct. Nov. & Dec.		

A-2

February 23, 2012
Prepared by: S. Malloy
Submitted by: K. Burton
Approved by: Paul Cook

ENGINEERING AND OPERATIONS COMMITTEE

MICHELSON WATER RECYCLING PLANT PHASE 2 EXPANSION AND FLOOD PROTECTION IMPROVEMENTS – CONSTRUCTION STATUS QUARTERLY REPORT

SUMMARY:

This item is the November 2011 through January 2012 quarterly construction status report regarding the Michelson Water Recycling Plant (MWRP) Phase 2 Expansion and Flood Protection Improvements.

BACKGROUND:

Construction of the MWRP Phase 2 Expansion and Flood Protection Improvements project was awarded to J. R. Filanc Construction Company (Filanc) in July 2009 in the amount of $87,479,450. This project will expand the recycled water production capacity of MWRP to 28 million gallons per day and protect the MWRP from San Diego Creek flooding. The project is scheduled to be completed on or before January 15, 2013.

As of January 31, 2012, 72.2% of the construction time has elapsed and 72.5% of the revised construction contract has been invoiced. The total contract change order amount is 3.3% of the original construction contract, of which a significant portion was approved by the Board for installation of pipelines to convey sludge to the future biosolids facilities. Through Contract Change Order No. 56, the following summarizes the types of change orders and their associated costs:

District Convenience/Initiation - Project Related	$ 75,428
Differing Site Conditions	$ 298,931
Design Oversight	$ 147,449
District Convenience/Initiation - Non-Project Related	$2,358,823
Total Change Orders	$2,880,631

The quarterly report, which is attached as Exhibit "A", summarizes the progress of the construction project. Filanc has constructed a significant portion of the Headworks, Primary Sedimentation Tanks, Membrane Bioreactors, Coagulant Facility, Central Electrical Building, and MPS-2 Electrical Building. Filanc has recently started the Magnesium Hydroxide Facility. The Sodium Hypochlorite Facility has been in service since June 2011. Additionally, Filanc has completed construction of the Ultraviolet Disinfection Facility and High Rate Clarifier. Both of these facilities are scheduled to be tested in the upcoming quarter. A major portion of the North Influent Sewer has been installed. Filanc has installed the great majority of the production piles for the flood protection improvements and has constructed a significant portion of the flood wall.

FISCAL IMPACTS:

Not applicable.

ENVIRONMENTAL COMPLIANCE:

Not applicable.

RECOMMENDATION:

Receive and file.

LIST OF EXHIBITS:

Exhibit "A" – MWRP Phase 2 Expansion and Flood Protection Improvements Quarterly Report

EXHIBIT "A"

MWRP Phase 2 Expansion and Flood Protection Improvements

Construction Quarterly Report – February 2012
(Activities November 2011 through January 2012)

Irvine Ranch Water District

IRVINE RANCH WATER DISTRICT

Overview of MWRP Phase 2 Expansion

Key Information / Dates

Contractor:	J.R. Filanc Construction Company, Inc.
Contractor Bid:	$87,479,450
Contractual Calendar Days:	1,094
Additional Days thru Change Orders:	167
Notice of Award:	Aug 3, 2009
Notice to Proceed:	Sept. 10, 2009
Original Project Completion:	Aug. 1, 2012
Revised Project Completion:	Jan. 15, 2013
Time Elapsed thru Jan 31, 2012:	72.2%

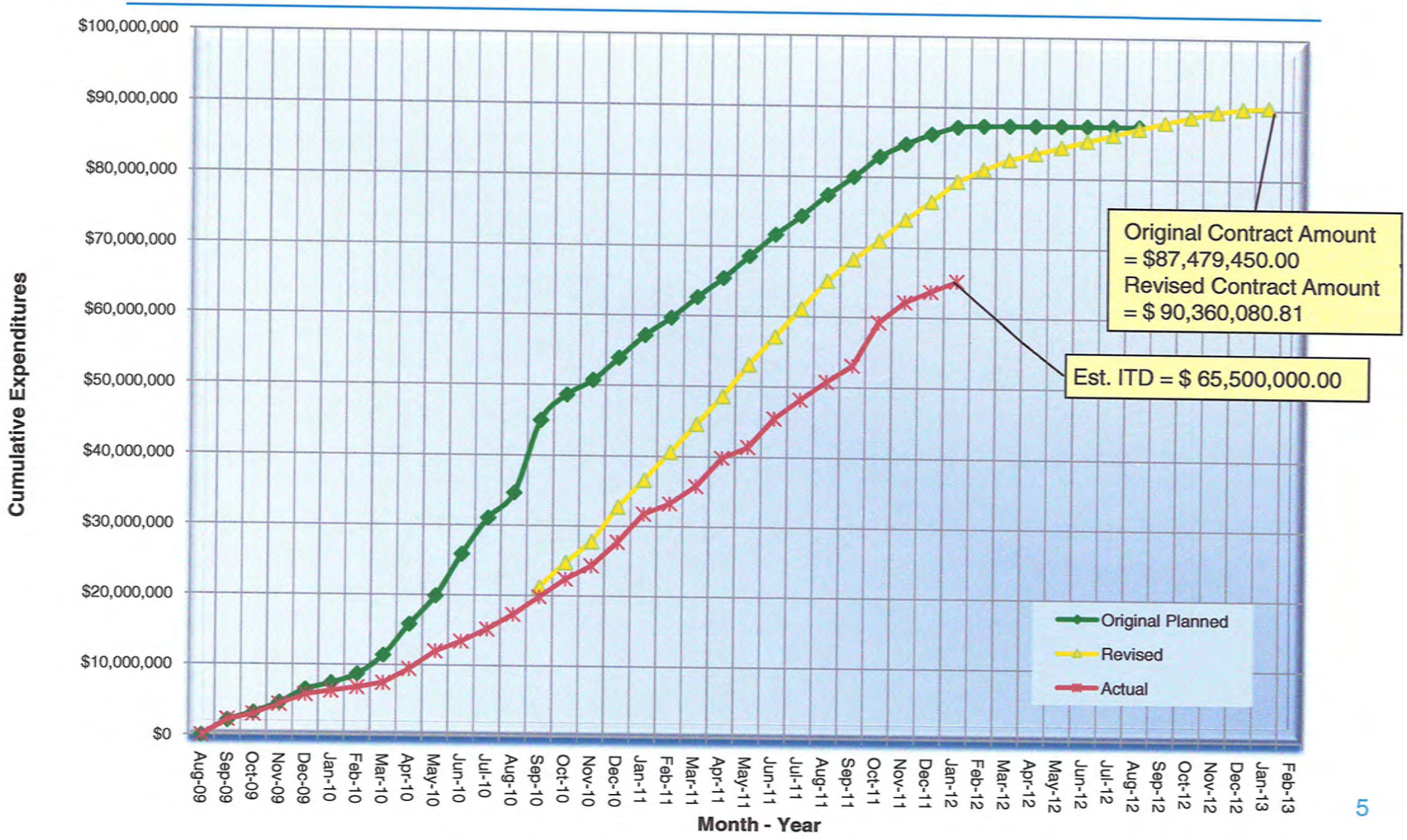
Financial - Filanc Budget & Progress

Original Contract	**$ 87,479,450.00**
Approved Change Orders	**$ 2,880,630.81**
Revised Contract Amount	**$ 90,360,080.81**
Estimated Invoiced to Date	**$ 65,500,000.00**
Estimated Percent Invoiced to Date, 01/12	**72.5%**

***Change Order Category (through CO #56)**

A - District Convenience/Initiation - Project Related	$	75,427.63	
B - Differing Site Conditions	$	298,930.53	
C - Design Oversight	$	147,449.58	
D - District Convenience/Initiation - Non-Project Related	$	2,358,823.07	
Total Change Order	$	2,880,630.81	3.3% of Original Contract Amount

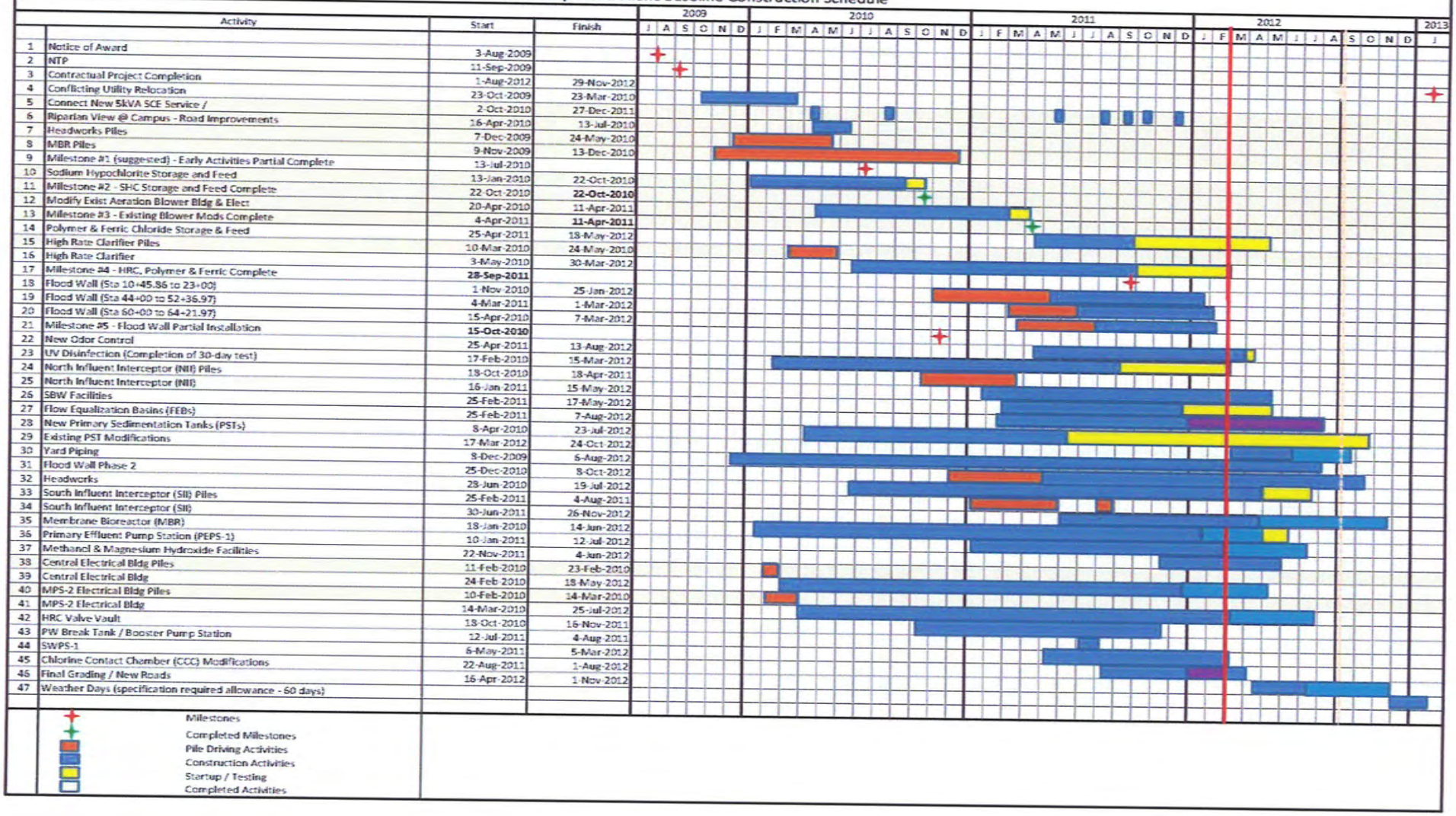
Financial - Filanc Cumulative Expenditures



Schedule

Michelson Water Recycling Plant Phase 2 Expansion
Summary of J.R. Filanc Baseline Construction Schedule

	Activity	Start	Finish
1	Notice of Award	3-Aug-2009	
2	NTP	11-Sep-2009	
3	Contractual Project Completion	1-Aug-2012	29-Nov-2012
4	Conflicting Utility Relocation	23-Oct-2009	23-Mar-2010
5	Connect New 5kVA SCE Service /	2-Oct-2010	27-Dec-2011
6	Riparian View @ Campus - Road Improvements	16-Apr-2010	13-Jul-2010
7	Headworks Piles	7-Dec-2009	24-May-2010
8	MBR Piles	9-Nov-2009	13-Dec-2010
9	Milestone #1 (suggested) - Early Activities Partial Complete	13-Jul-2010	
10	Sodium Hypochlorite Storage and Feed	13-Jan-2010	22-Oct-2010
11	Milestone #2 - SHC Storage and Feed Complete	22-Oct-2010	**22-Oct-2010**
12	Modify Exist Aeration Blower Bldg & Elect	20-Apr-2010	11-Apr-2011
13	Milestone #3 - Existing Blower Mods Complete	4-Apr-2011	**11-Apr-2011**
14	Polymer & Ferric Chloride Storage & Feed	25-Apr-2011	18-May-2012
15	High Rate Clarifier Piles	10-Mar-2010	24-May-2010
16	High Rate Clarifier	3-May-2010	30-Mar-2012
17	Milestone #4 - HRC, Polymer & Ferric Complete	**28-Sep-2011**	
18	Flood Wall (Sta 10+45.86 to 23+00)	1-Nov-2010	25-Jan-2012
19	Flood Wall (Sta 44+00 to 52+36.97)	4-Mar-2011	1-Mar-2012
20	Flood Wall (Sta 60+00 to 64+21.97)	15-Apr-2010	7-Mar-2012
21	Milestone #5 - Flood Wall Partial Installation	**15-Oct-2010**	
22	New Odor Control	25-Apr-2011	13-Aug-2012
23	UV Disinfection (Completion of 30-day test)	17-Feb-2010	15-Mar-2012
24	North Influent Interceptor (NII) Piles	18-Oct-2010	18-Apr-2011
25	North Influent Interceptor (NII)	16-Jan-2011	15-May-2012
26	SBW Facilities	25-Feb-2011	17-May-2012
27	Flow Equalization Basins (FEBs)	25-Feb-2011	7-Aug-2012
28	New Primary Sedimentation Tanks (PSTs)	8-Apr-2010	23-Jul-2012
29	Existing PST Modifications	17-Mar-2012	24-Oct-2012
30	Yard Piping	8-Dec-2009	6-Aug-2012
31	Flood Wall Phase 2	25-Dec-2010	8-Oct-2012
32	Headworks	28-Jun-2010	19-Jul-2012
33	South Influent Interceptor (SII) Piles	25-Feb-2011	4-Aug-2011
34	South Influent Interceptor (SII)	30-Jun-2011	26-Nov-2012
35	Membrane Bioreactor (MBR)	18-Jan-2010	14-Jun-2012
36	Primary Effluent Pump Station (PEPS-1)	10-Jan-2011	12-Jul-2012
37	Methanol & Magnesium Hydroxide Facilities	22-Nov-2011	4-Jun-2012
38	Central Electrical Bldg Piles	11-Feb-2010	23-Feb-2010
39	Central Electrical Bldg	24-Feb-2010	18-May-2012
40	MPS-2 Electrical Bldg Piles	10-Feb-2010	14-Mar-2010
41	MPS-2 Electrical Bldg	14-Mar-2010	25-Jul-2012
42	HRC Valve Vault	18-Oct-2010	16-Nov-2011
43	PW Break Tank / Booster Pump Station	12-Jul-2011	4-Aug-2011
44	SWPS-1	6-May-2011	5-Mar-2012
45	Chlorine Contact Chamber (CCC) Modifications	22-Aug-2011	1-Aug-2012
46	Final Grading / New Roads	16-Apr-2012	1-Nov-2012
47	Weather Days (specification required allowance - 60 days)		



Key Information / Dates

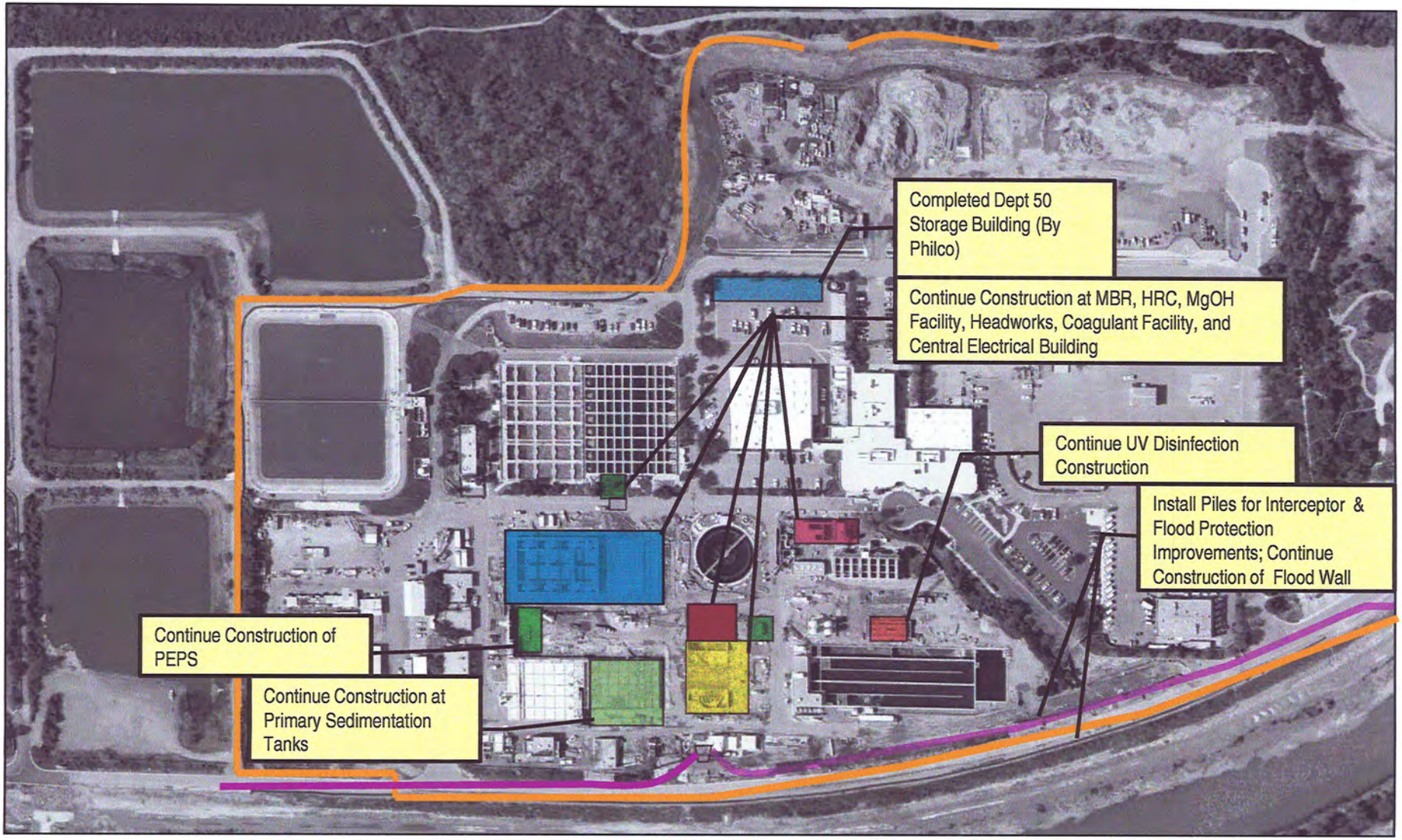
Process Area	Estimated Completion Date
UV 30-day Testing	February 6, 2012 to March 6, 2012
High Rate Clarifier	March 30, 2012
Shutdown/Rehabilitation of Chlorine Contact Tanks and Flow Equalization Basins	April 2012 to May 2012
New Electric 5 kV Service	April 19, 2012
North Influent Interceptor	May 15, 2012
Central Electrical Building	May 17, 2012
Membrane Bioreactors	June 14, 2012
Primary Effluent Pump Station	July 4, 2012
Headworks	July 19, 2012
New Primary Sedimentation Tanks	July 23, 2012
New MPS-2 Electrical Building	July 25, 2012
UV Validation Testing w/ MBR Effluent	August 24, 2012
Flood Protection Improvements	October 8, 2012
Existing PST Modifications	October 24, 2012
South Influent Interceptor	November 24, 2012

Financial - Consultants Construction Phase Services

Consultant	Scope	Purchase Order		Variance		Total Authorization	Total Invoice to Date	Percent of Total
		Number (Oracle)	Amount	Total Number	Amount			
HDR	Engineer of Record	117518-04 (503570)	$5,672,465.00	4	$ 2,162,664.00*	$ 7,835,129.00	(12/11) $4,442,443.73	56.6%
Arcadis-US/ Malcolm Pirnie	Construction Management	117279-02 (501694)	$1,684,108.00	2	$ 538,302.64+	$ 2,222,410.64	(01/12) $1,817,016.06	82.0%
Delta (formerly DLT&V)	SCADA Programming	123872-01 (501691)	$1,131,041.13	1	$ 98,389.00#	$ 1,229,430.13	(11/11) $ 942,243.60	76.6%
Ninyo & Moore	Geotechnical – Piles	122073 (501695)	$ 304,944.00	1	$ 121,595.00=	$ 426,539.00	(11/11) $ 380,652.25	89.2%
NMG	Geotechnical – Materials	122086 (501714)	$ 379,530.00	0	$ -	$ 379,530.00	(11/11) $ 201,971.60	53.2%
Borchard Surveying	Surveying	122035 (501972)	$ 187,740.00	3	$ 46,362.50&	$ 234,102.50	(12/11) $ 180,517.00	77.1%
VA Consulting	Flood Improvements	108149-11 (502492)	$ 78,662.00	2	$ 123,500.00^	$ 202,162.00	(12/11) $ 127,664.85	63.2%
Harper	Coating	123714 (501689)	$ 30,000.00	1	$ 30,000.00<	$ 60,000.00	(12/11) $ 40,964.75	67.8%
SAIC (formerly R. W. Beck)	Cost Estimating	123677 (501687)	$ 30,000.00	0	$ -	$ 30,000.00	(05/11) $ 16,785.00	56.0%
SGS	Blower Inspection	124695-00 (501969)	$ 16,225.00	0	$ -	$ 16,225.00	(06/11) $ 9,231.25	56.0%
Element (formerly Stork)	Materials Testing	123928-00 (501948)	$ 5,000.00	0	$ -	$ 5,000.00	(06/11) $ 2,000.00	40.0%
Total			**$9,519,715.13**	**14**	**$ 3,120,813.14**	**$12,640,528.27**	**$8,161,490.09**	**64.6%**

* Variance 1 is for System Integration Management Support ($249,800); Variance 2 is for Additional Design Services, Public Relations Assistance, and Supplemental Field Engineering Services ($831,288); Variance 3 is for Additional Construction Inspection ($476,616); Variance 4 is for Additional Engineering Services During Construction ($604,960); + Variance 1 is for Additional Construction Inspection Variance 2 is Construction Management and Inspection Services for Biosolids Project ^Variance 11 is for Additional Engineering Services during Construction #Variance 1 is for Additional SCADA Programming &Variance 1 is for San Joaquin Marsh Campus Wall Surveying, Variance 2 is for surveying services to establish survey control for the flood protection improvements project and Variance 3 is for additional surveying services for Flood Protection Improvements.<Variance 1 is for additional coating inspection services=Variance 1 is for supplemental construction phase pile foundation services

Construction Activities – Nov 2011 to Jan 2012



Concrete Work for the East Wall of Headworks Building

Rebar and Concrete Work of Primary Sedimentation Splitter Box

Diffuser Installation for Membrane Bioreactor Complex Aeration Basins

Masonry Placement for the Membrane Bioreactor Blower Building Walls

Completed Architectural Modifications – High Rate Clarifier

East Side

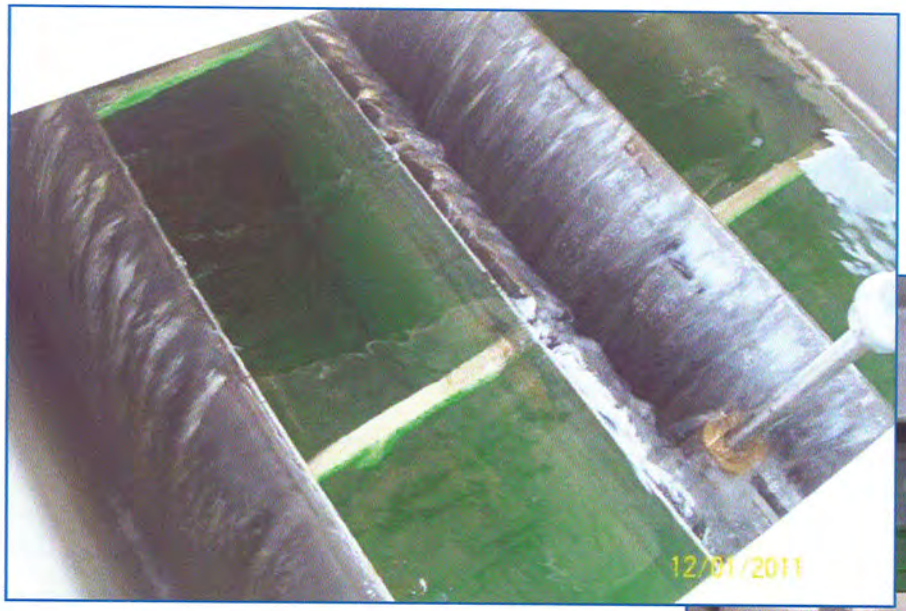
North Side

Window and Door Installation – Central Electrical Building

Ultraviolet Disinfection Facility

Installation of Ultraviolet Modules

Preliminary Testing of Ultraviolet Disinfection Facility



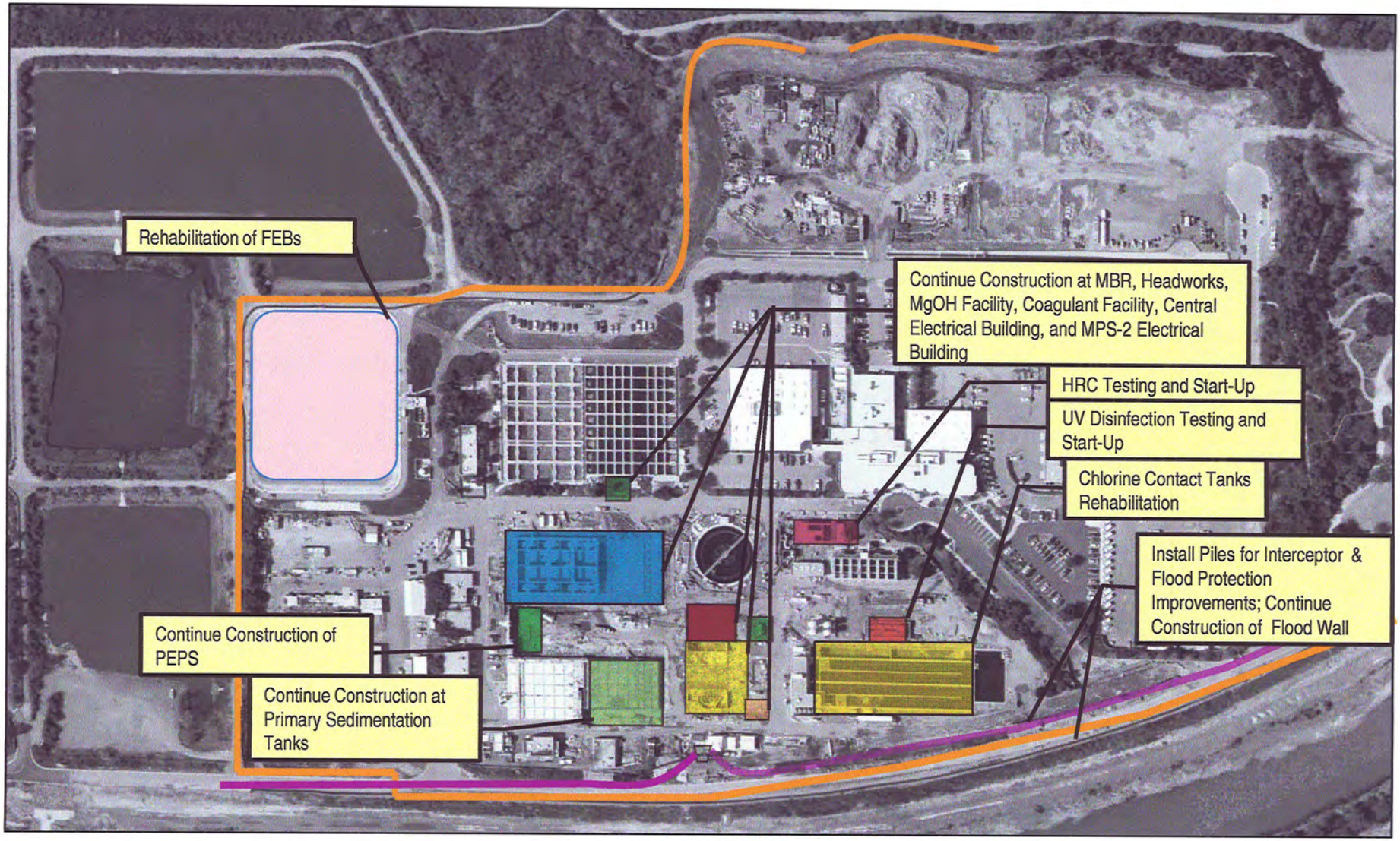
Installation of 54-Inch Raw Sewer Line (North Influent Interceptor)

Installation of 36-Inch Biosolids Storm Drain

Fusion Bonding of 36-Inch HDPE Biosolids Storm Drain

Installation of Liner for Flood Wall near Tree Hill

Planned Construction Activities – Feb 2012 to Apr 2012



February 23, 2012
Prepared by: E. Akiyoshi / M. Hoolihan
Submitted by: K. Burton
Approved by: Paul Cook

ENGINEERING AND OPERATIONS COMMITTEE:

SYPHON RESERVOIR FEASIBILITY STUDY UPDATE

SUMMARY:

This item is a status report regarding the engineering and environmental feasibility studies that are evaluating the potential expansion of the Syphon Reservoir. Staff will provide a presentation on the feasibility study findings.

BACKGROUND:

In January 2010, IRWD completed the purchase of Syphon Reservoir from the Irvine Company and has been working with GEI (geotechnical / engineering) and Dudek (environmental) to evaluate the feasibility of expanding the capacity of Syphon Reservoir. Both the engineering and environmental feasibility studies have been substantially completed. The major findings of the feasibility study are as follows:

- The existing dam can be expanded from the existing 450 acre-feet to approximately 5,000 acre-feet (approximately 4,500 acre-feet of useable capacity);
- The feasibility study recommends an earthen embankment dam with a spillway elevation of 456 feet (76 feet higher than the existing dam); and
- Though a number of challenges will need to be addressed, no fatal flaws were indentified in the study.

Dam Characteristics: An analysis of site constraints and geotechnical exploration program was completed. The information was used to develop the proposed earthen embankment dam with a spillway elevation of 456-feet (existing spillway elevation is 380-feet) that completely replaces the existing reservoir. The toe of the expanded reservoir would extend only slightly beyond the downstream toe of the existing dam. The total capacity of the proposed dam would be approximately 5,000 acre-feet with a useable capacity of approximately 4,500 acre-feet.

System Integration: Integrating the reservoir into the non-potable water distribution system would be accomplished by the construction of the following:

- A multi-zone pumping facility (fill pumps sized to supplement the Zone "B" and Zone "C" distribution systems). Both the Zone "B" and Zone "C" pump stations have been identified in previous planning reports: these facilities are needed regardless of the potential future Syphon Reservoir expansion. This study estimated the costs associated with these facilities at approximately $2.0 and $2.9 million respectively.
- Disinfection and filtration equipment.

Environmental Regulatory Evaluation: The environmental feasibility identified that the expansion of Syphon Reservoir would have habitat impacts that could be mitigated through a combination of: 1) Natural Communities and Conservation Program take authorization and 2) development of an acceptable and negotiated habitat mitigation program with resource agencies (U. S. Fish and Wildlife Service and the California Department of Fish and Game).

Draft executive summaries for the two studies are attached as Exhibit "A". Staff will make a presentation of the findings, as shown in Exhibit "B", at the Committee meeting.

FISCAL IMPACTS:

Concurrent to the feasibility study evaluations, staff is pursuing funding opportunities such as the Water Resources Development Act. A feasibility level project cost summary is presented below (preliminary and final design and construction administration (CA&I) were estimated based on past IRWD projects):

		$ Millions
1.	Embankment Dam	$39.2
2.	Reservoir Water Quality	$2.0
3.	System Integration and Conveyance[1]	$9.9
4.	Environmental Mitigation	$5.1 - $10.7
	Construction Subtotal	**$56.2 - $61.8**
5.	Preliminary and Final Design and CA&I (15%)	$9.3
	Total Estimated Cost	**$65.5 – $71.1**

[1] The Zone "B" and "C" pump stations were identified in previous planning reports. The $2.0 million for the Zone "B" facility and $2.9 million for the Zone "C" facility have been excluded from the system integration and conveyance costs; costs will be included in separate projects in the IRWD capital program.

ENVIRONMENTAL COMPLIANCE:

This project is subject to the California Environmental Quality Act (CEQA). In conformance with the California Code of Regulations Title 14, Chapter 3, Section 15004, the appropriate environmental document will be prepared when "meaningful information" becomes available.

RECOMMENDATION:

Receive and File.

LIST OF EXHIBITS:

Exhibit "A" – Feasibility Study Executive Summaries
Exhibit "B" – Syphon Reservoir Update presentation

Syphon Reservoir Feasibility Update

Engineering and Operations Committee

February 23, 2012

Irvine Ranch Water District

Presentation Outline

- Dam Design Process
- Update on Feasibility Analysis
  - Syphon Reservoir Expansion Overview
  - Dam Design Considerations
  - Recycled Water System Integration
  - Preliminary Environmental Analysis
  - Costs
- Next Steps

Syphon Reservoir Expansion Overview

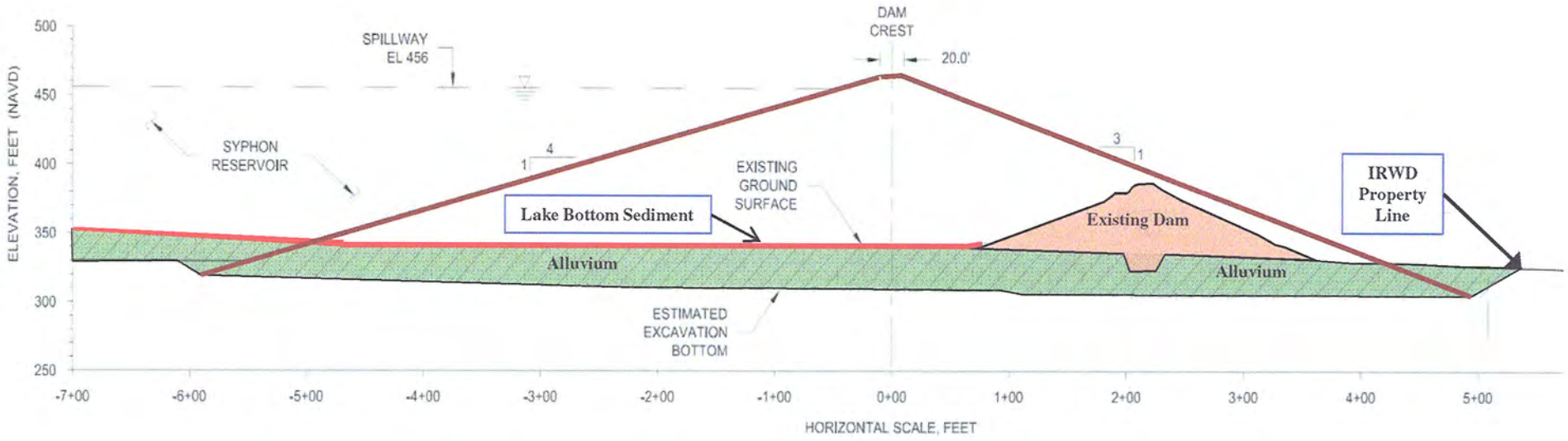
Irvine Ranch Water District

Existing dam

- Earth Embankment Dam
- Spillway elevation = 380 ft
- Total Capacity = 578 acre-ft

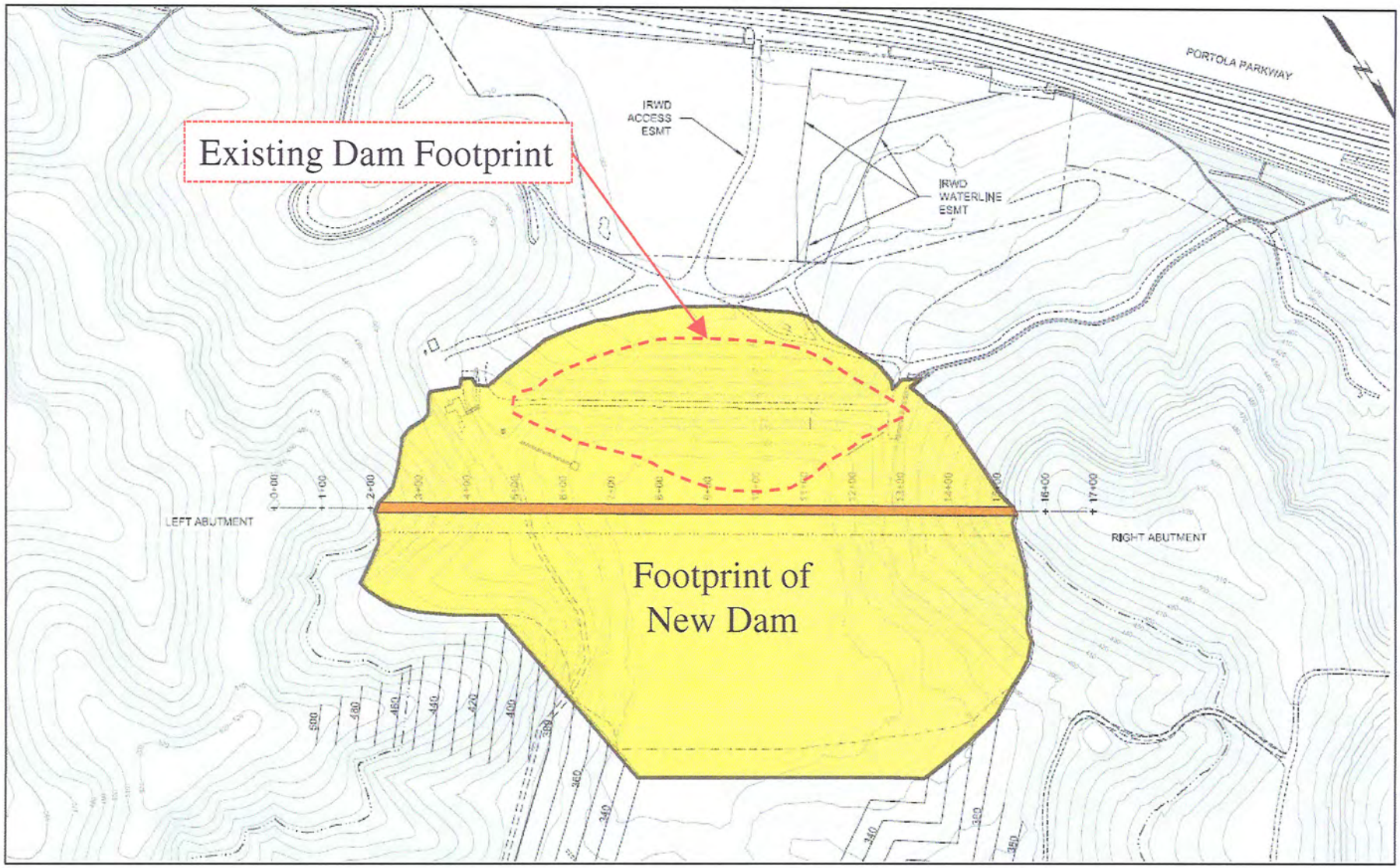
Proposed expansion

- **Earth Embankment Dam**
- **Spillway elevation = 456 ft**
- **Total Capacity = 4,950 acre-ft**



Syphon Reservoir Expansion Project

Irvine Ranch Water District



Syphon Reservoir Expansion 4,950 AF

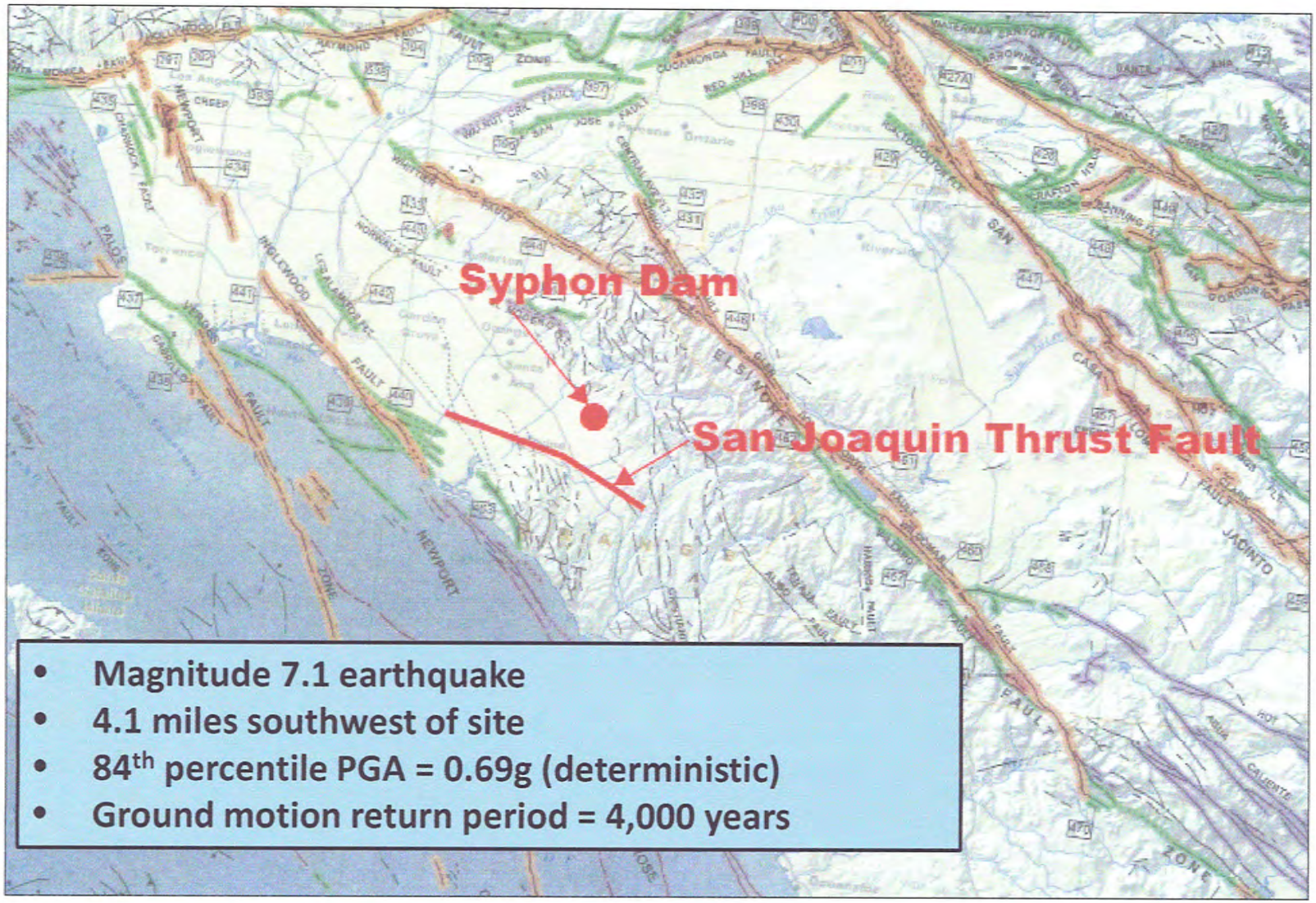
Irvine Ranch Water District

Dam Design Considerations

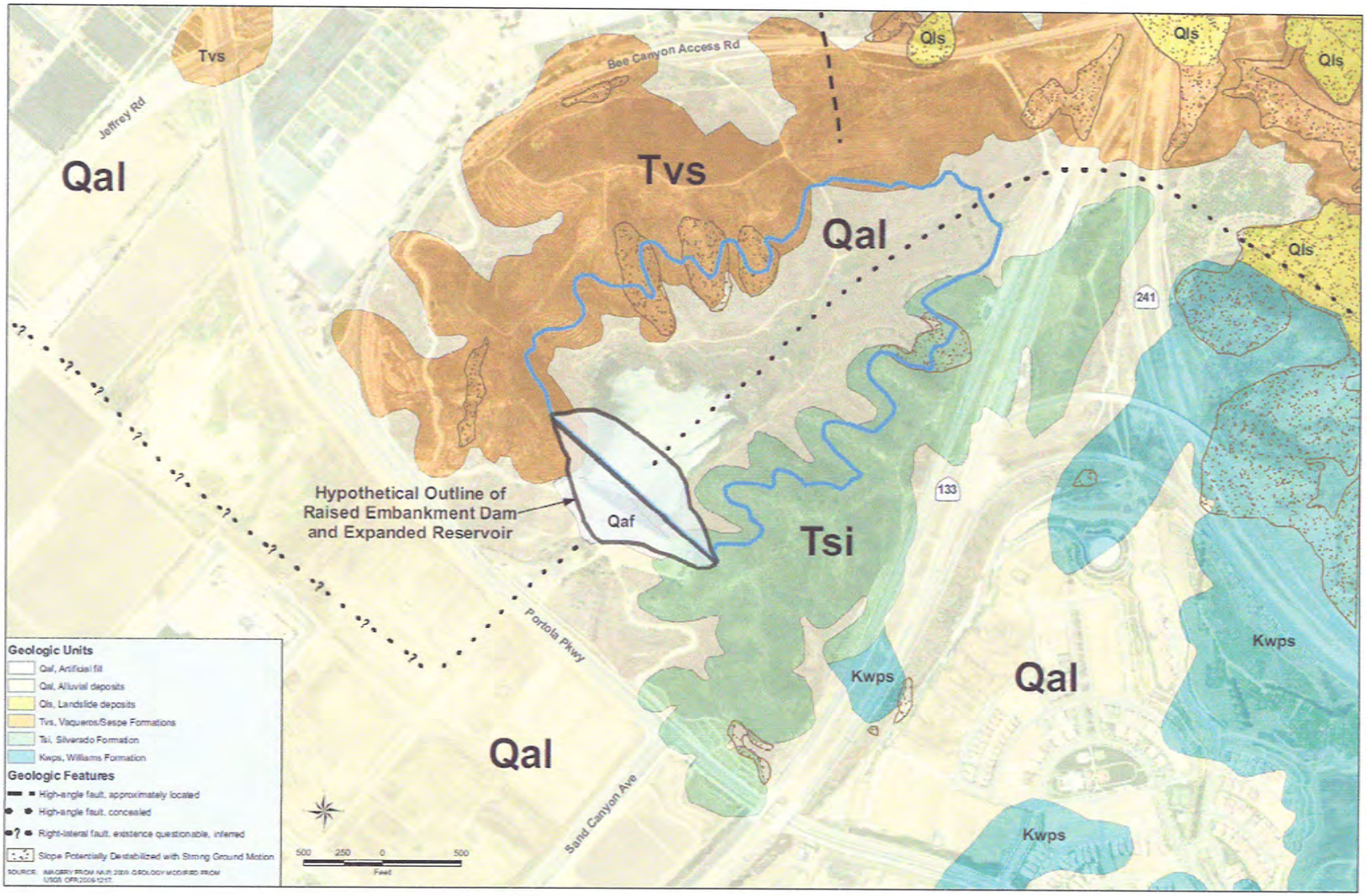
- Seismicity
- Site Geology
- Phase 1 Geotechnical Investigation
- Conceptual Design
  - Dam
  - Spillway and Outlet Works
- Inundation Analysis

Seismicity – Controlling Earthquake

Irvine Ranch Water District



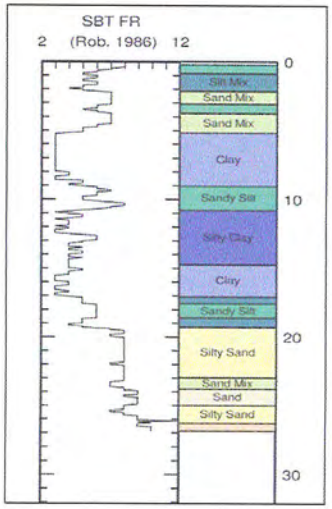
Site Geology



Phase 1 Geotechnical Investigation

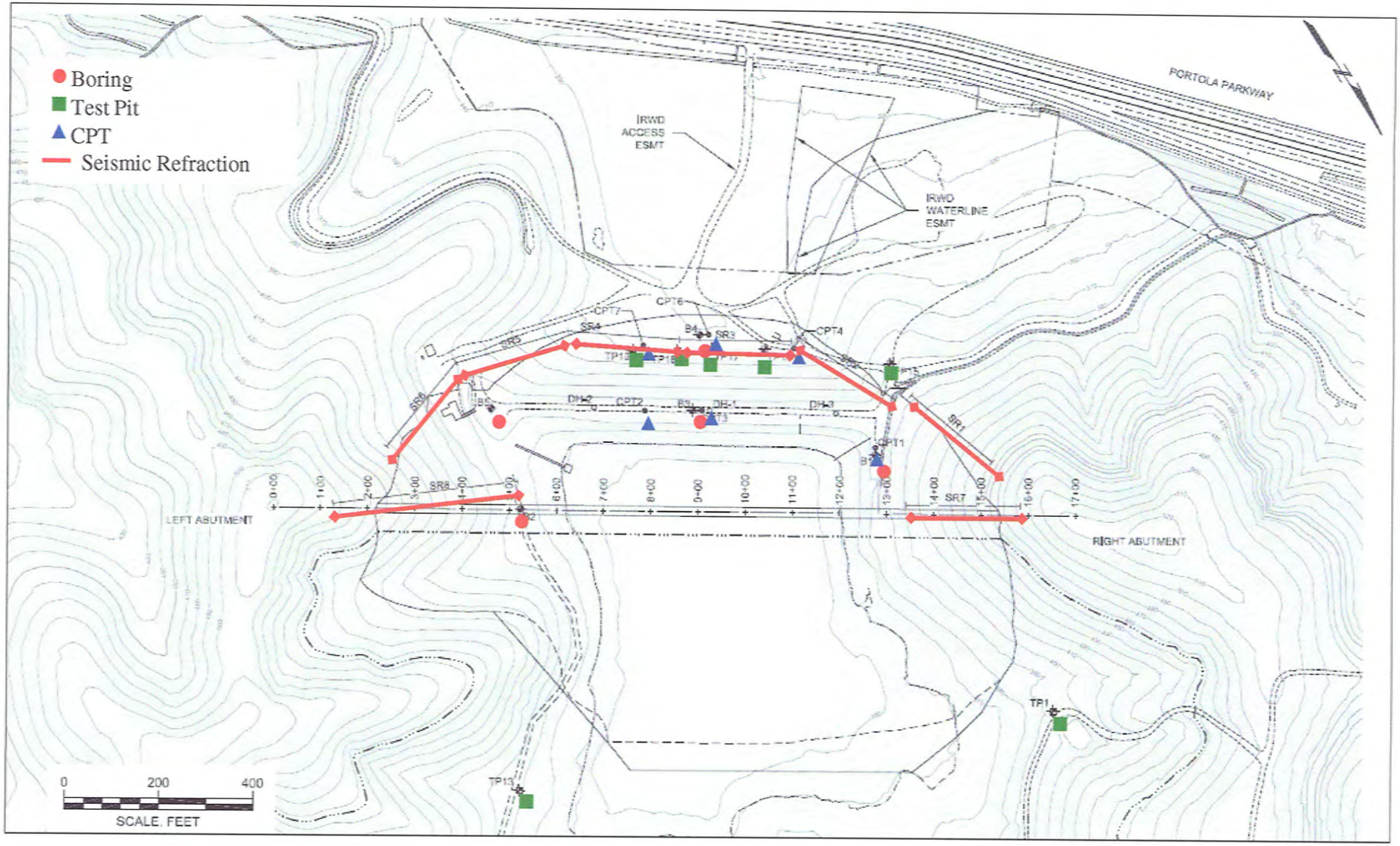
Irvine Ranch Water District

- Test Pits
- Cone Penetration Test
- Seismic Refraction Surveys
- Borings



Geotechnical Exploration – Existing Dam

Irvine Ranch Water District

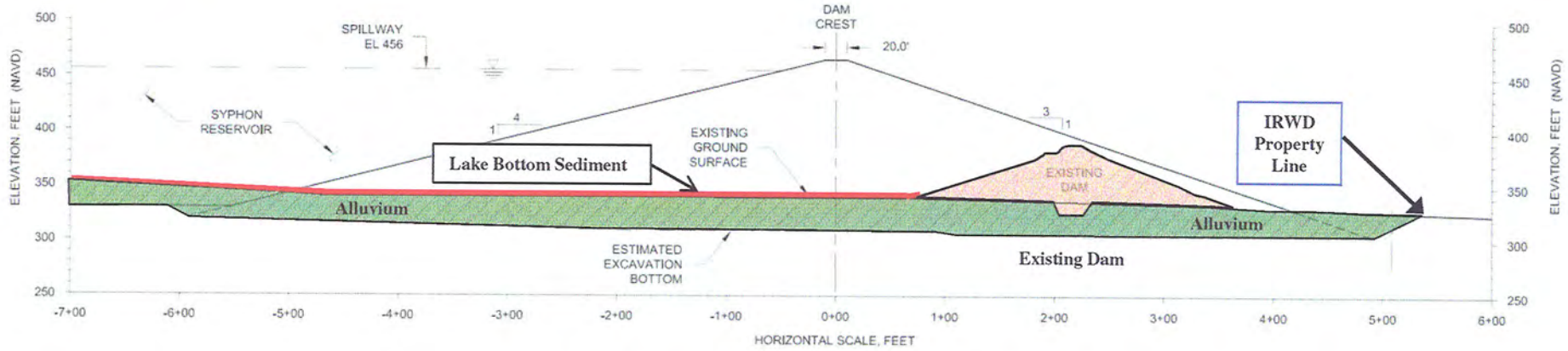


Geotechnical Exploration – Reservoir Site

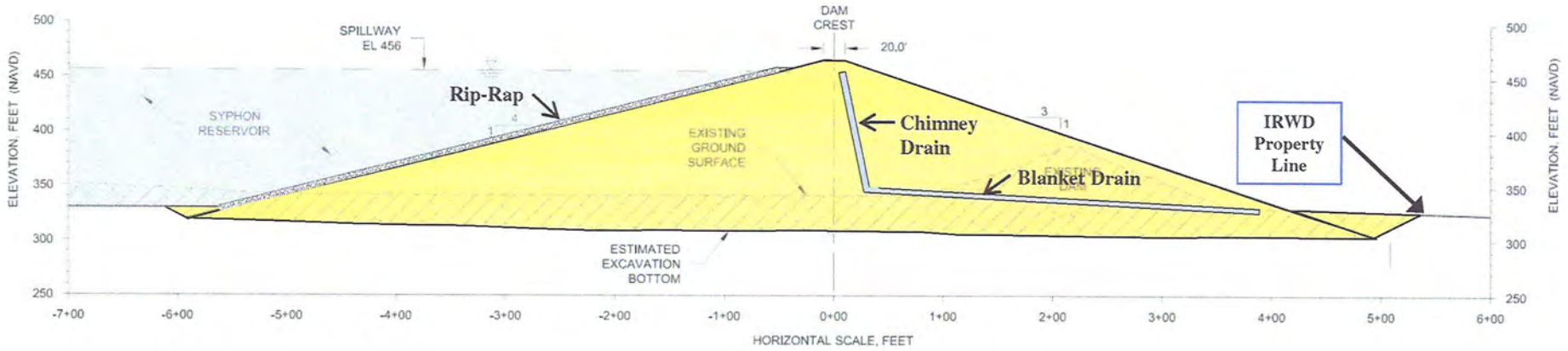
Irvine Ranch Water District

Conceptual Design of Dam

Irvine Ranch Water District



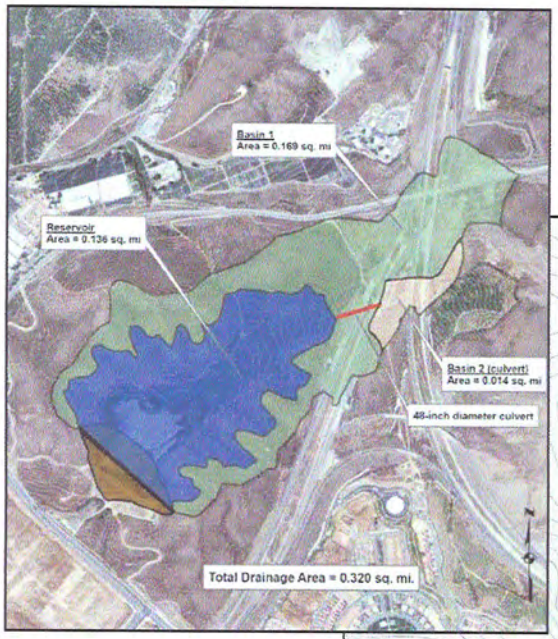
Removal of Alluvium below Dam

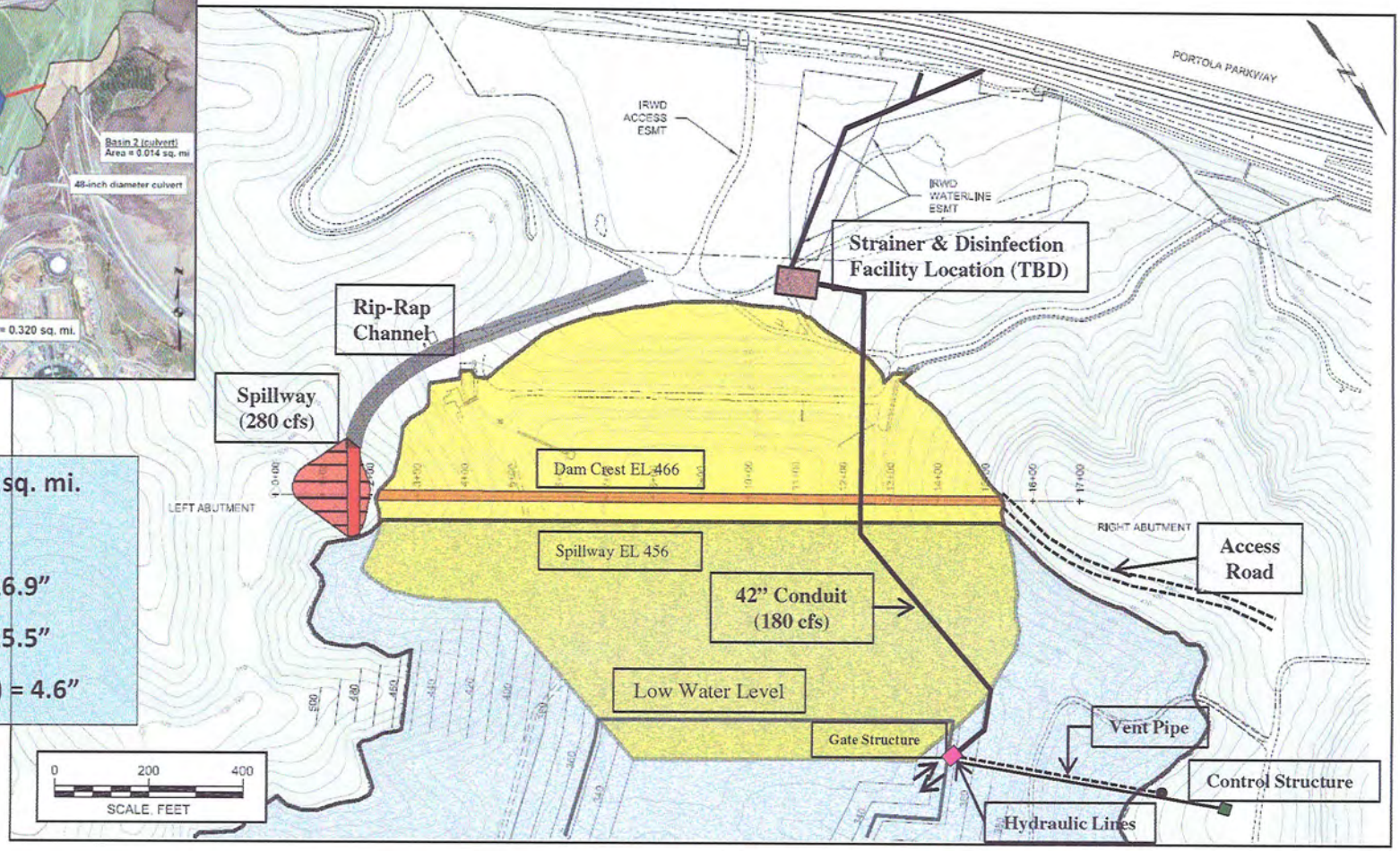


New Dam Cross Section

Spillway & Outlet Works

Irvine Ranch Water District





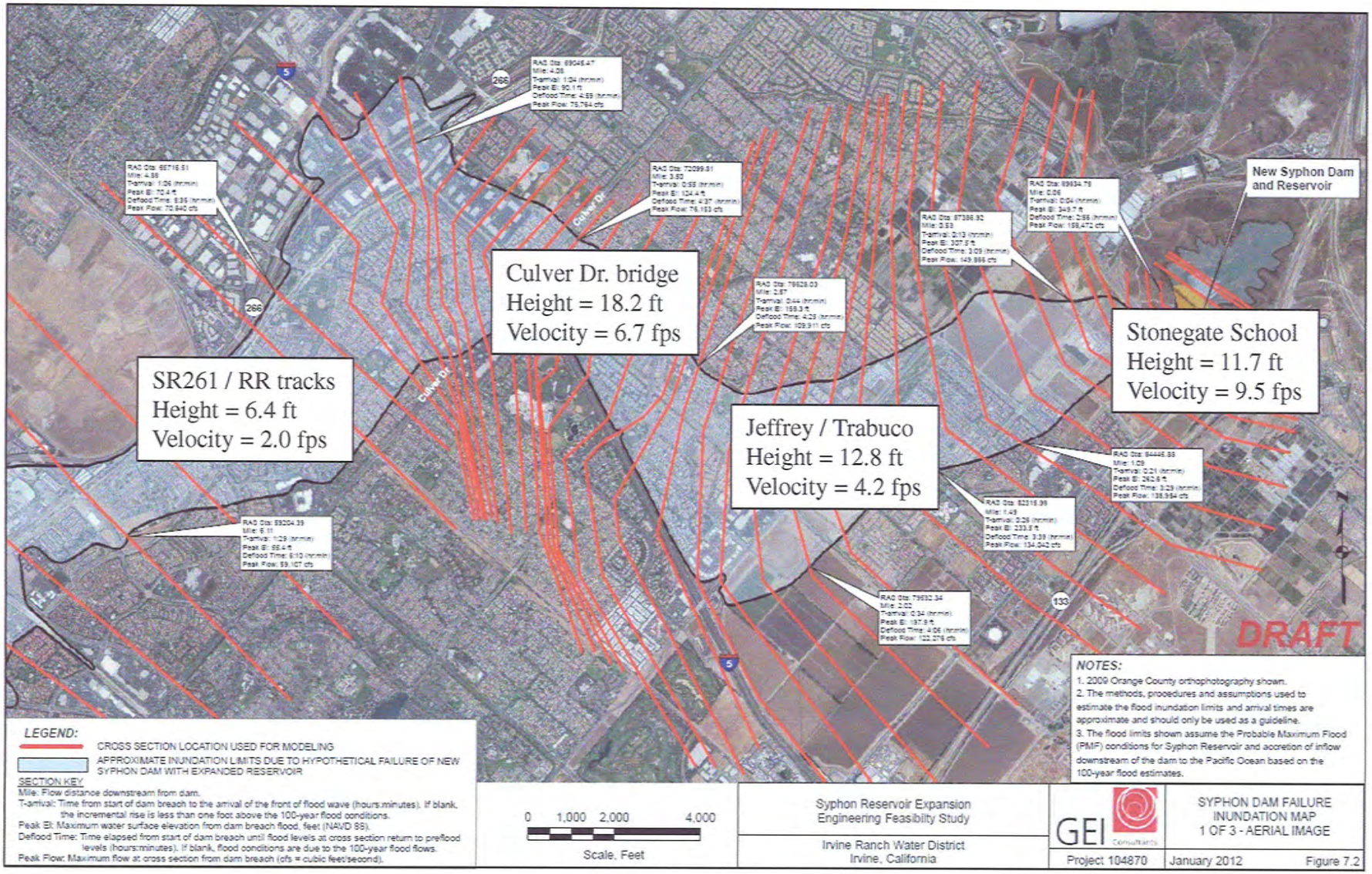
Watershed area = 0.32 sq. mi.

Rainfall

- **PMP – 72 hour = 26.9"**
- **PMP – 24 hour = 15.5"**
- **100 year (24 hour) = 4.6"**

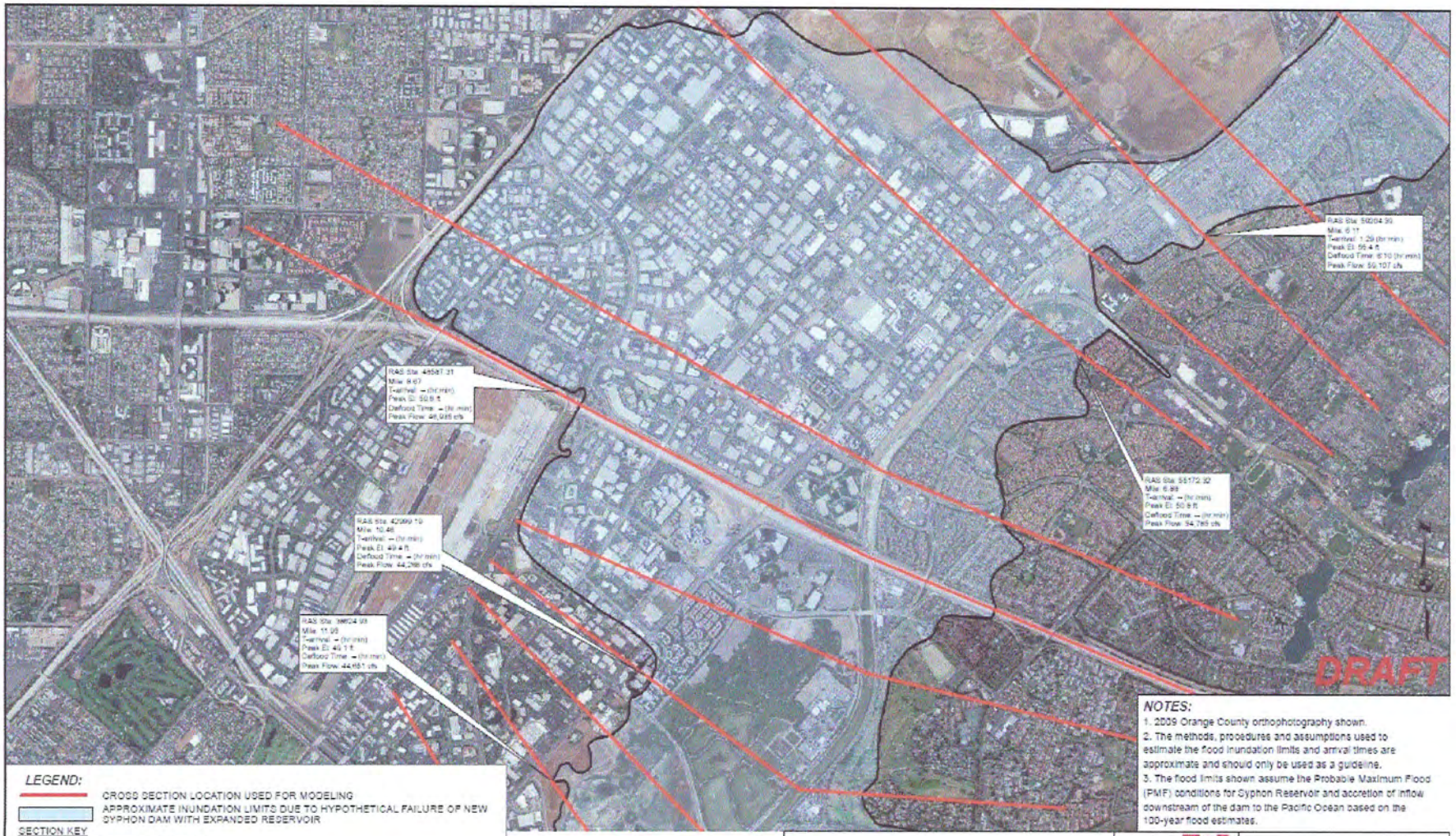
Inundation Analysis – Upstream Area

Irvine Ranch Water District



Inundation Analysis – Central Area

Irvine Ranch Water District



LEGEND:

CROSS SECTION LOCATION USED FOR MODELING

APPROXIMATE INUNDATION LIMITS DUE TO HYPOTHETICAL FAILURE OF NEW SYPHON DAM WITH EXPANDED RESERVOIR

SECTION KEY

Mile: Flow distance downstream from dam.

T-arrival: Time from start of dam breach to the arrival of the front of flood wave (hours:minutes). If blank, the incremental rise is less than one foot above the 100-year flood conditions.

Peak El: Maximum water surface elevation from dam breach flood, feet (NAVD 88).

Defood Time: Time elapsed from start of dam breach until flood levels at cross section return to prefood levels (hours:minutes). If blank, flood conditions are due to the 100-year flood flows.

Peak Flow: Maximum flow at cross section from dam breach (cfs = cubic feet/second).

NOTES:

1. 2009 Orange County orthophotography shown.
2. The methods, procedures and assumptions used to estimate the flood inundation limits and arrival times are approximate and should only be used as a guideline.
3. The flood limits shown assume the Probable Maximum Flood (PMF) conditions for Syphon Reservoir and accretion of inflow downstream of the dam to the Pacific Ocean based on the 100-year flood estimates.

0 1,000 2,000 4,000

Scale, Feet

Syphon Reservoir Expansion
Engineering Feasibility Study

Irvine Ranch Water District
Irvine, California

GEI Consultants

Project 104870

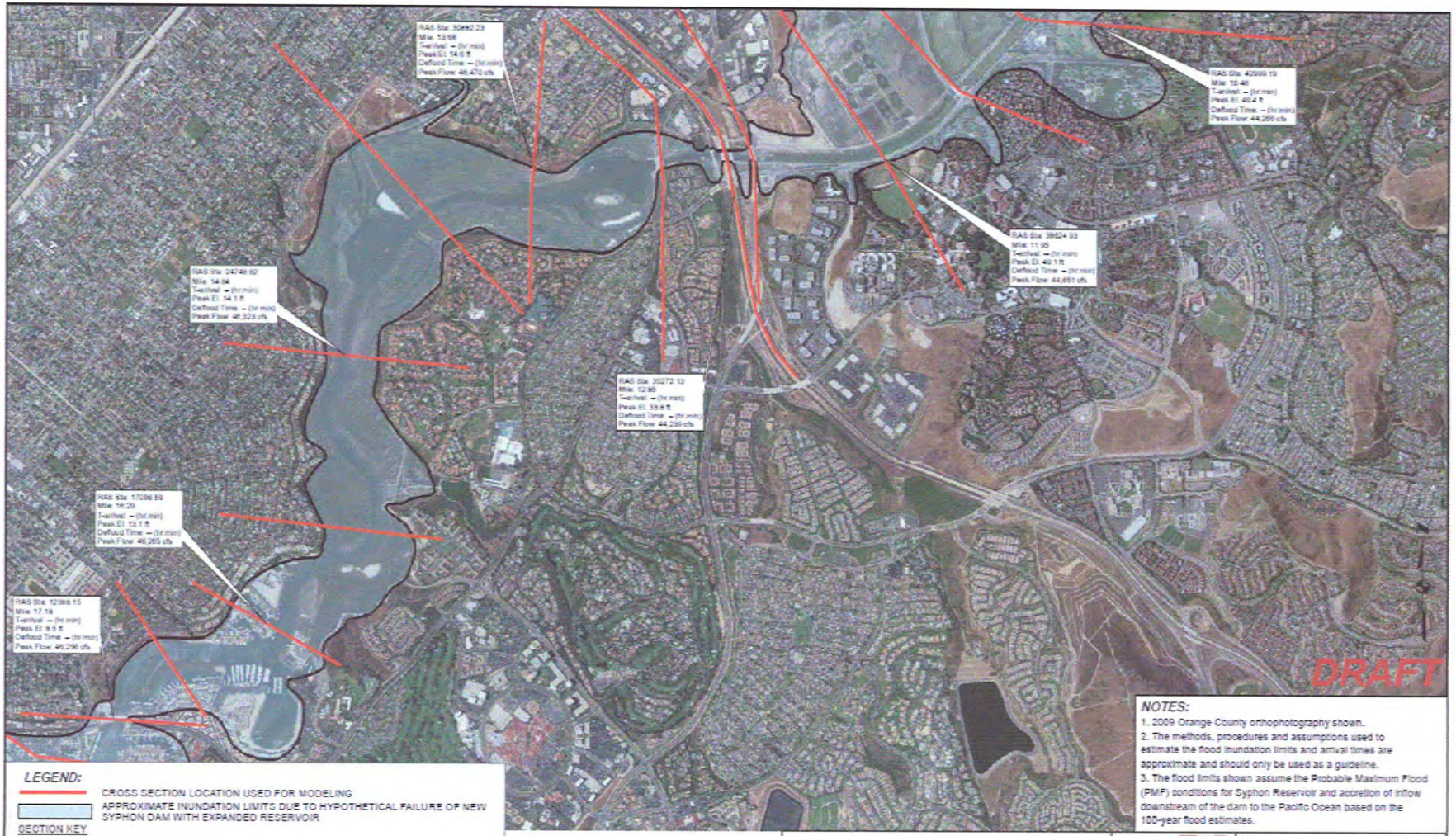
SYPHON DAM FAILURE
INUNDATION MAP
2 OF 3 - AERIAL IMAGE

January 2012

Figure 7.3

Inundation Analysis – Downstream Area

Irvine Ranch Water District



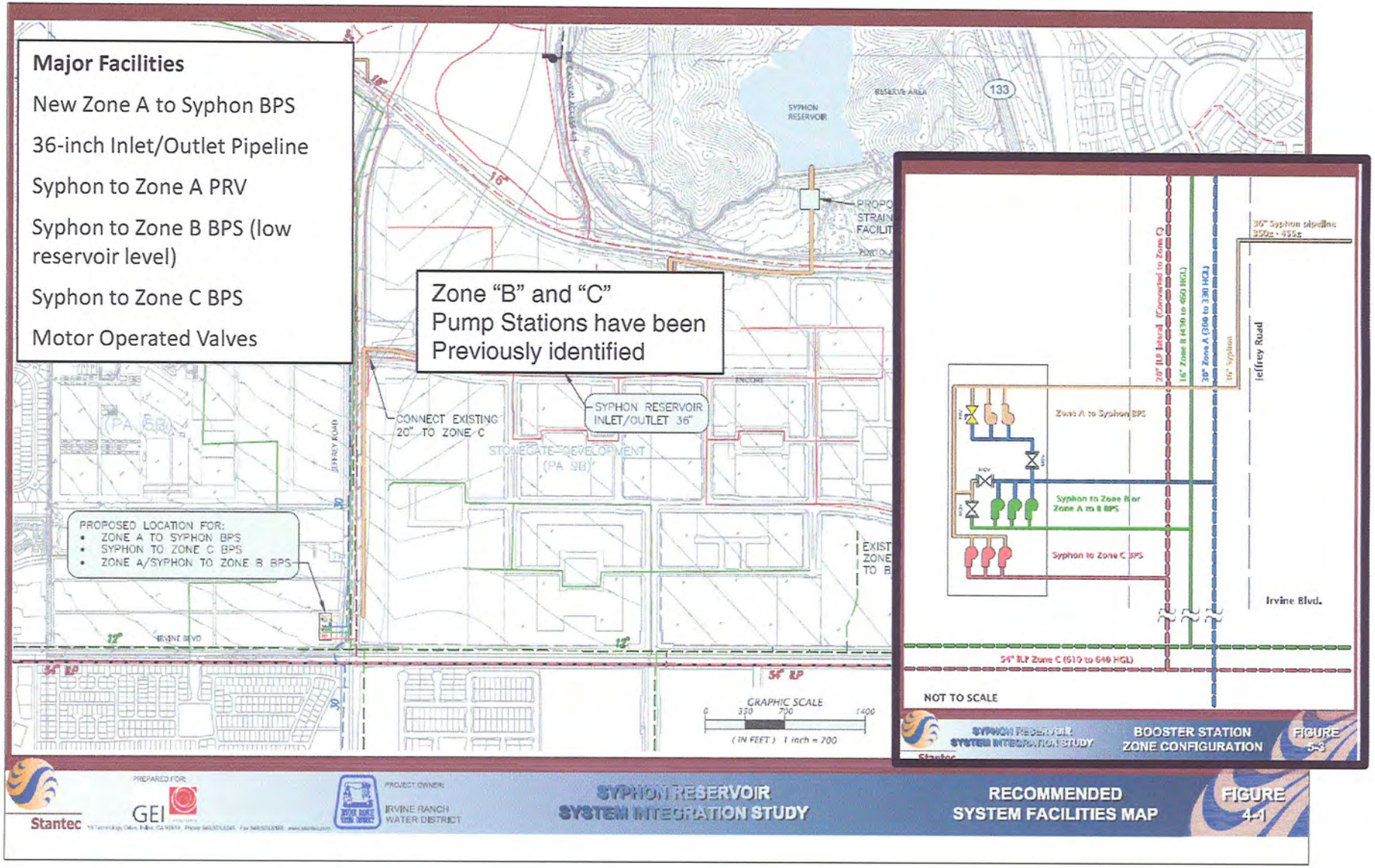
Recycled Water System Integration

Irvine Ranch Water District

- Major Facilities
  - Three pump stations, two PRVs, and 36-inch transmission main
  - The Zone "B" and Zone "C" stations have been identified in previous planning reports
- Hydraulic profiles for fill and drain cycles

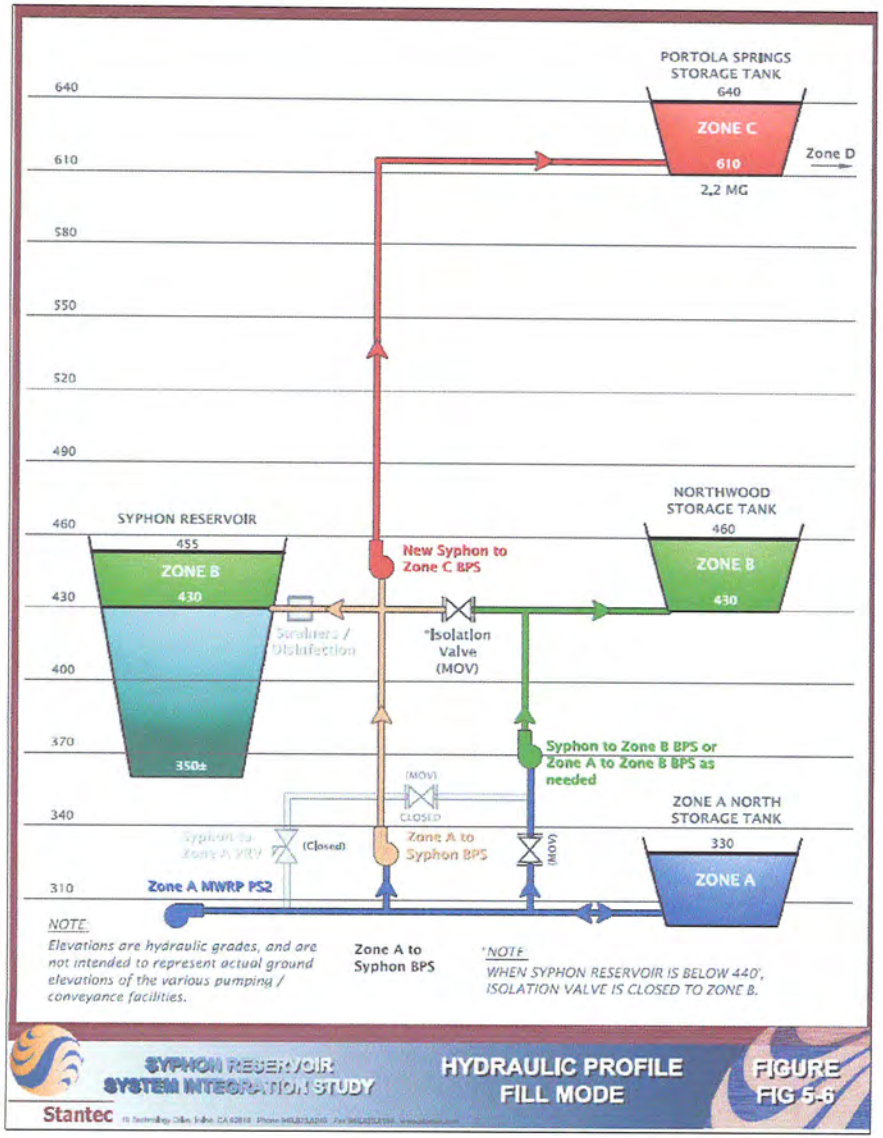
Recycled Water System Integration

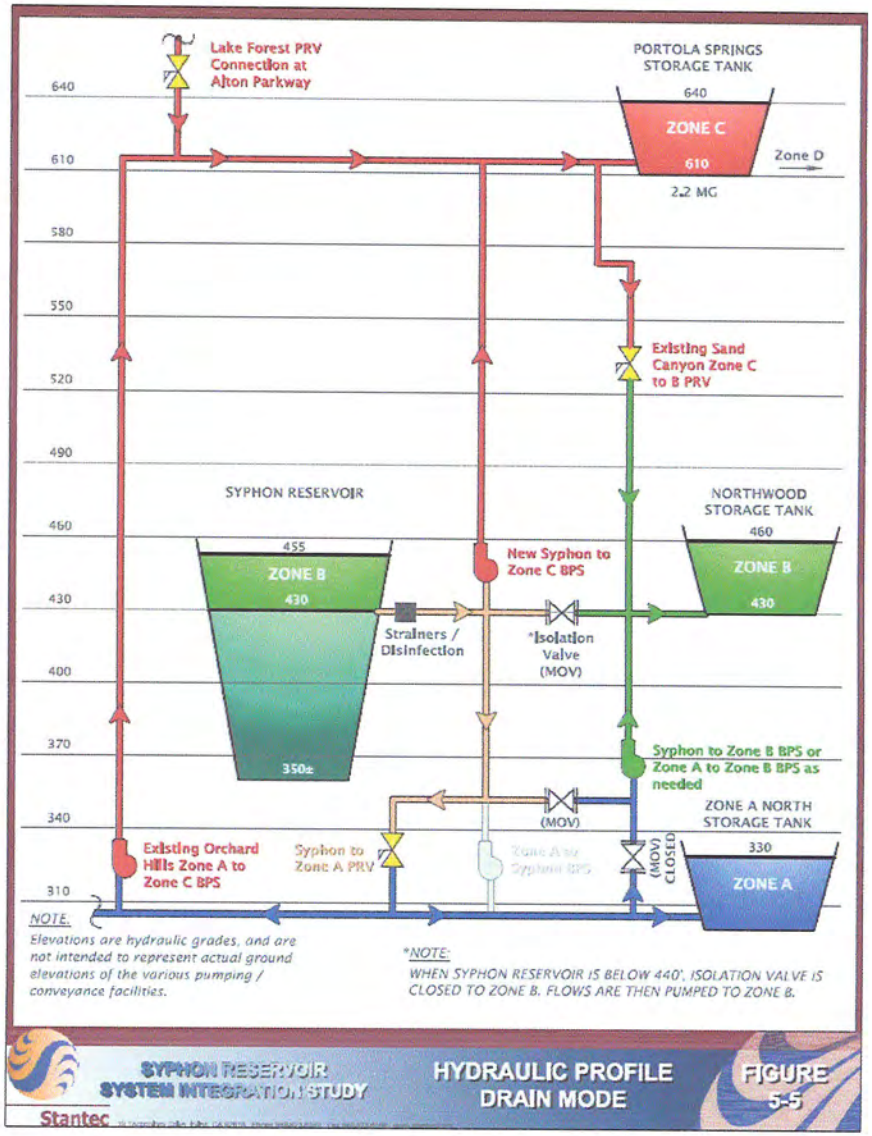
Irvine Ranch Water District



Recycled Water System Integration

Irvine Ranch Water District



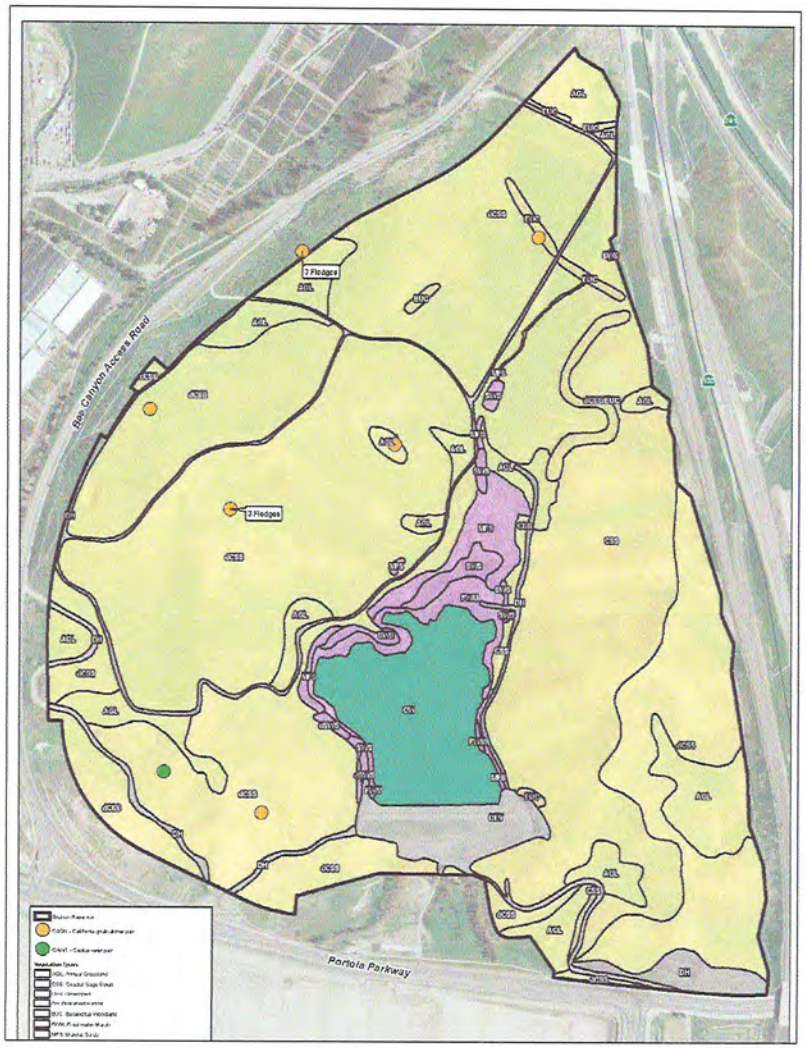


Preliminary Environmental Analysis

- Identification of habitat impacts
- Development of mitigation strategies
- Preliminary meetings with environmental stakeholders (USFWS, DFG, Nature Reserve of Orange County, Transportation Corridor Agencies)

Preliminary Environmental Analysis

Irvine Ranch Water District



Syphon Reservoir

CAGN - California gnatcatcher pair

CAWR - Cactus wren pair

Vegetation Types

- AGL, Annual Grassland
- CSS, Coastal Sage Scrub
- DEV, Developed
- DH, Disturbed Habitat
- EUC, Eucalyptus Woodland
- FWM, Freshwater Marsh
- MFS, Mulefat Scrub
- OW, Open Water
- SWS, Southern WillowScrub
- dCSS, disturbed Coastal Sage Scrub
- dCSS/EUC, disturbed Coastal Sage Scrub/Eucalyptus Woodland
- dSWS, disturbed Southern WillowScrub

Vegetation Communities

- Open Water
- Wetland
- Upland
- Disturbed/Developed

Estimated Impacts to Sensitive Vegetation Communities (Acres)

Sensitive Vegetation Communities	Impacts Below Existing Spillway Elevation	Impacts Above Existing Spillway Elevation	Total Permanent Impacts	Additional Temporary Impacts
Upland	**0.6**	**66.6**	**67.2**	**12**
Coastal Sage Scrub	0.6	62.7	63.3	12
Grassland	0	3.9	3.9	—
Wetland	**7.4**	**3.5**	**10.9**	**—**
Freshwater Marsh	3.3	0	3.3	—
Mulefat Scrub	2.1	2.5	4.6	—
Southern Willow Scrub	2.0	1.0	3.0	—

Project Costs - Summary

Irvine Ranch Water District

Name	Estimated Cost ($ millions)	Primary Estimator
1. Embankment Dam	39.2	GEI Consultants
2. Reservoir Water Quality	2.0	Flow Science
3. System Integration and Conveyance	9.9*	Stantec
4. Environmental Mitigation	5.1 – 10.7	Dudek
Construction Subtotal	**56.2 – 61.8**	
5. Preliminary and Final Design and CA&I (15%)	9.3	
Total	**65.5 – 71.1**	

* The Zone "B" and Zone "C" pump station costs are excluded ($2.0 M and $2.9 M)

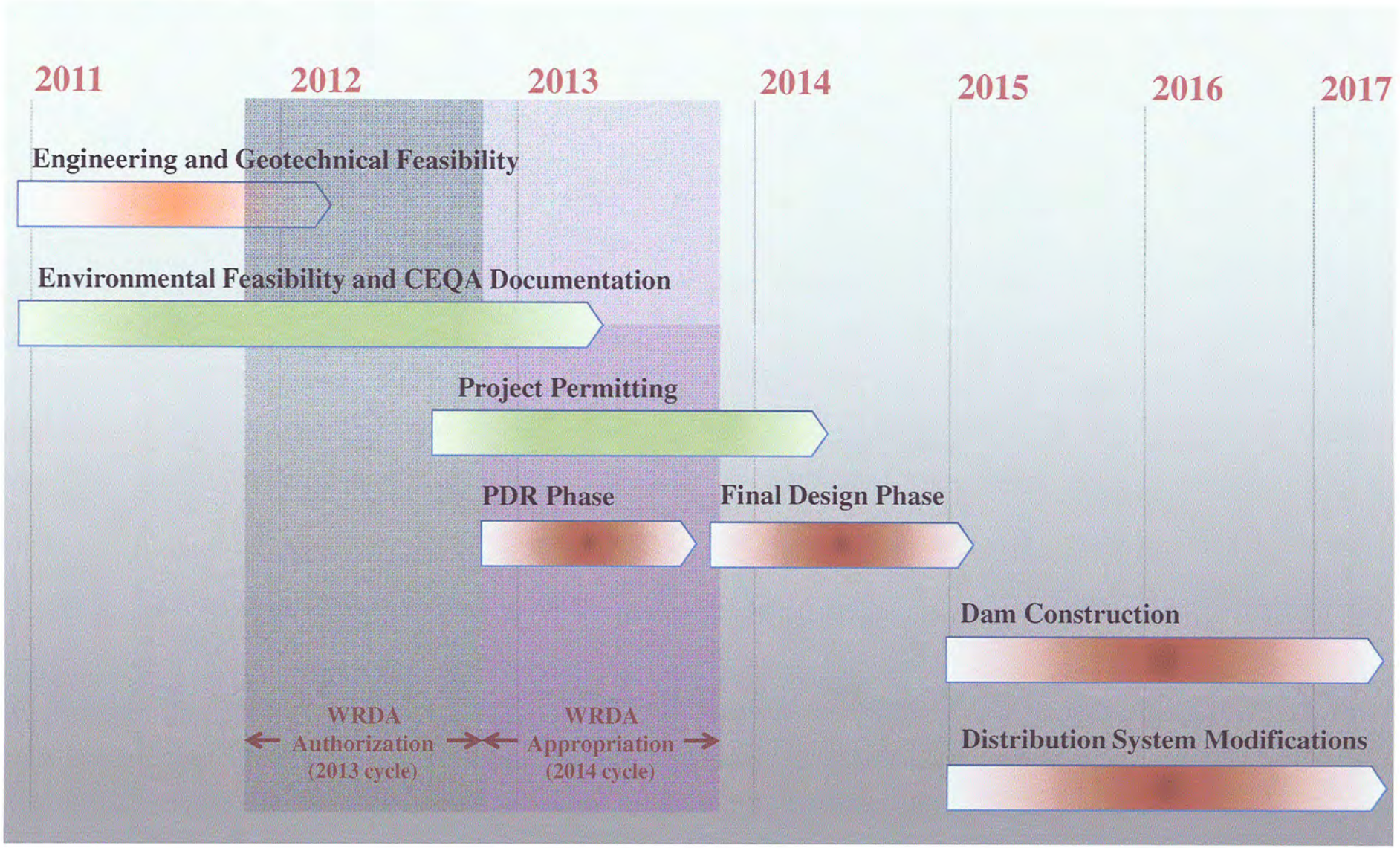
Dam Design Process

Irvine Ranch Water District

Feasibility Study	Preliminary Design	Final Design	Design During Construction
Phase 1 geotechnical investigations	Phase 2 geotechnical investigations	Phase 3 geotechnical investigations	Observe & test materials
Geologic constraints	Detailed engineering analysis	Final engineering analyses	Confirm design objectives met
Evaluation of alternatives	30% level designs	Midpoint thru 100% design	Modify design as appropriate
Conceptual designs	Preliminary plan drawings	Construction plans & specs	Document as-built conditions
Baseline budget	Update construction cost opinion	Engineer's estimate of bids	
Support environmental process			

Syphon Reservoir – Project Schedule

Irvine Ranch Water District



Next Steps

- Present findings to USACE
  - Continue coordination with USACE and other agencies
- Initiate "NEPA Ready" CEQA Process
  - Awarded CEQA contract at December 11, 2010 Board of Directors meeting
  - Explore options to find federal partner for EIR/EIS documentation
- Conduct constructability analysis prior to preliminary design phase

By the Numbers

Total Days Expended (through Jan 31, 2012)	911
Total Days Left to Go	350
Total Number of Submittals	1,214
Total Number of RFIs	533
Total Number of Change Requests	215
Total Number of Change Orders	56
Volume of Concrete Placed (Cubic Yards)	12,000
Total Number of Piles Driven	2,774
Total Length of Piles Driven (feet)	90,653
Total Length of Piles Driven (miles)	17.2
Est. Number of Construction Workers (Peak)	140
Total Number of Construction Progress Meetings	114
Total Number of Weather Days (60 Allowable)	28

February 23, 2012
Prepared by: L. Oldewage/A. Kalinsky
Submitted by: D. Pedersen
Approved by: Paul Cook

ENGINEERING AND OPERATIONS COMMITTEE

RESEARCH BUSINESS PLAN UPDATE

SUMMARY:

The purpose of this item is to provide an update to the Engineering and Operations Committee regarding the individual research projects in which IRWD is currently involved.

BACKGROUND:

IRWD receives numerous requests to participate in, through direct funding or staff resources, various research projects pertaining to emerging technologies. The District has developed guidelines to assist staff with its evaluation and response to those requests. These guidelines were incorporated into the IRWD Research Business Plan which also provides a tracking mechanism for the various requests and the ongoing research projects and programs in which IRWD is participating. The underlying purpose of the Research Business Plan is to ensure that IRWD's research resources are being prioritized and utilized effectively.

One of the components of the Research Business Plan is for staff to provide a status update to the Engineering and Operations Committee on a quarterly basis on IRWD's research projects. This status update is attached as Exhibit "A".

FISCAL IMPACTS:

The Fiscal Year 2011-12 Capital Budget included $110,000 for staff time associated with the research projects. In addition, approximately $75,000 was also included in the Fiscal Year 2011-12 Capital Budget for IRWD's annual memberships in research organizations such as National Water Research Institute, the WateReuse Foundation, the Water Research Foundation and the Water Environment Research Foundation.

ENVIRONMENTAL COMPLIANCE:

Not applicable.

RECOMMENDATION:

Receive and file.

LIST OF EXHIBITS:

Exhibit "A" – Research Projects Summary Table

Exhibit "A" Research Projects Summary Table

No.	Project Title	Project Description	IRWD Contact	Organizations Involved	Type of Research	IRWD Participation Resource	Start Date	Projected Completion Date	Comments/Next Steps
1	Ammonia Oxidizing Bacteria	Identify the optimal level of Ammonia Oxidizing Bacteria required in order to produce the highest water quality level of secondary treatment .	Kalinsky	NWRI/University of California, Irvine	Applied	Direct funding @ $115K	Jun-08	Feb-12	In December 2011 UCI addressed IRWD comments and provided additional Thiothrix details. Next steps: (1) UCI to finalize and reformat report; (2) Submit final report to IRWD (March 2012).
2	Cienega Rock Filter	Construct, operate and evaluate a single full size rock filter cell to remove selenium and nitrogen.	Kalinsky	IRWD	Demonstration	Direct funding @ $6.1 M	Aug-06	Feb-13	Feed pump and new infiltration gallery installation completed in February 2012. The rock filter switched from recirculation to flow through mode in February 2012. PCW creek widening to be completed in April 2012. City of Irvine seeking to extend the rock filter operation for the entire year of 2013. Next Steps: (1) Prepare a new Agreement with City of Irvine - March 2012; (2) Verify system bioactivity after 2 months in recirculation mode - March 2012
4	Retrospective Analysis of Performance of Dual Distribution Systems, Project 4333	Evaluate and develop guidelines and policies for implementing dual water systems.	Spangenberg	WateReuse/WRF/USEPA/Colorado State University, Dr. Neil S. Grigg	Applied	In-Kind Service @ $5K (staff time)	Apr-11	Apr-12	Staff completed its review of the draft report in October 2011 with the final report scheduled for completion in April 2012.
5	National Institute of Standards and Technology Advanced SCADA Project	Evaluate advanced pipeline pressure and vibration sensors.	Akiyoshi	UCI/SAWPA/OCSD/IRWD	Applied	Staff time to be reimbursed through the project.	Apr-09	Mar-13	The project has been shortened due to budget cuts in the NIST program. Staff will continue to provide support to UCI through the use of the demonstration project.
6	Demonstration Project for Nitrification Prevention using Sodium Chlorite	Evaluate the costs and performance of an alternative disinfectant process at a domestic water reservoir for nitrification prevention	Pedersen	IRWD	Demonstration	N/A	May-11	Dec-11	Operation of the demonstration project was completed in November 2011. In early September 2011, a nitrification event occurred in the control cell of the reservoir while the chlorite-treated cell of the reservoir maintained acceptable water quality. This event provided initial evidence that the chlorite treatment supported nitrification prevention. A draft final report for the demonstration project has been prepared and is currently being reviewed.

Exhibit "A" Research Projects Summary Table

No.	Project Title	Project Description	IRWD Contact	Organizations Involved	Type of Research	IRWD Participation Resource	Start Date	Projected Completion Date	Comments/Next Steps
7	Attenuation of PPCP/EDCs Through Golf Courses Using Recycled Water	Evaluate the fate and transport of pharmaceutical, personal care products and endocrine disrupting compounds in recycled water applied to golf course turf grass.	Kalinsky	Water Environment Research Foundation Northern California Golf Association Numerous Water Recycling Agencies	Applied	Direct Funding @ $5K	May-08	Dec-11	In October 2011 WERF technical advisory committee has reviewed and approved the draft report and comments. Final report is being published by WERF and will be completed in February 2012. IRWD will receive a copy.
8	Oxygen-ozone infusion technology to control H2S at UCI Lift Station	Demonstrate the effectiveness of oxygen-ozone alternative for controlling H2S odor (Forse5 control system) and evaluate cost effectiveness of this method vs. existing BioMagic injection	Springman	Anue Water Technologies	Demonstration	In-Kind Service @ $5K (staff time)	Oct-11	Feb-13	ANUE's Mobile demonstration unit was set at University Lift station on February, 2012. On day 2 of the test, the ozone injection was stopped due to a leak at the connection point of the ANUE's diffusion mixer. The test is currently stopped until safety concerns are resolved and safeguards to prevent ozone leaks are implemented (TBD). IRWD collection staff will be trained accordingly (TBD).
9	Low fouling nanofiltration system LFNano	Low fouling secondary or tertiary treated wastewater pretreatment	Posey	DXV Water Technologies	Demonstration	In-Kind Service @ $5K (staff time)	Dec-11	Jul-12	DXV pilot unit installed in December 2011. Initiated primary influent run through the system in the beginning of January 2012. Initial "filter shakedown test" lasted for 10 days. System was shut down in the end of January 2012 for modifications to extend the membranes run time. Testing will be resumed in March 12 when modifications are complete.
				Projects under review					
				Declined Projects					
10	WaterRF Tailored Collaboration project with Carollo	Develop stainless steel piping application guidelines and standards for water treatment applications	N/A	WaterRF, Carollo Engineers (lead), USBR	National Study with IRWD as sponsoring utility	None	N/A	N/A	Reviewed by IRWD Emerging Technologies Review Committee on 9/29/11. Status: declined
11	In-Pipe Treatment Using Precisely Dosed Liquid Bacteria Culture	Evaluate proprietary liquid bacteria culture effects in the collection system with emphasis on Hydrogen Sulfide and sewage strength reduction.	Posey	In-Pipe Technology Wheaton, Illinois	Pilot Project	Entry Permit	N/A	N/A	Received results from SMWD. As a result, IRWD will not be evaluating the technology. Status: declined
12	Wellhead TCE treatment at the IDP Principal aquifer well ET-1	Demonstrate the effectiveness of a new method of wellhead VOC removal using microporous polypropylene membrane contactor	Kalinsky	WMI Water Process Engineering	Demonstration	In-Kind Service @ $5K (staff time)	N/A	N/A	WMI proposal to perform pilot testing of proprietary hollow fiber membrane contactors at PAP received in December 2011. Proposal review completed by IRWD and the DON in January 2012. The DON identified significant regulatory issues in performing the pilot test pertaining to the IDP Settlement Agreement. Status: declined.

Updated: 2/16/2012

February 23, 2012
Prepared by: H. Cho/M. Cortez
Submitted by: K. Burton
Approved by: Paul Cook

ENGINEERING AND OPERATIONS COMMITTEE

DOMESTIC AND RECYCLED VAULT LIDS REHABILITATION
EXPENDITURE AUTHORIZATIONS AND CONSULTANT SELECTION

SUMMARY:

The Domestic and Recycled Vault Lids Rehabilitation Projects will replace 13 corroded vault lids and two vaults located throughout the IRWD service area. Staff recommends that the Board:

- Approve an Expenditure Authorization in the amount of $154,600 for the Domestic Vault Lid Rehabilitation Project; and
- Approve an Expenditure Authorization in the amount of $115,500 for the Recycled Vault Lid Rehabilitation Project.

Staff also recommends the Committee authorize the General Manager to execute a professional services agreement with Arcadis-US, Inc. in the amount of $43,964 for the Domestic Vault Lids Rehabilitation Project.

BACKGROUND:

The Domestic Vault Lids Rehabilitation Project and Recycled Vault Lids Rehabilitation Project will replace 13 corroded meter and valve vault lids throughout the IRWD service area. Additionally, the project will replace two existing domestic water facility vaults in their entirety. These vaults are the IRWD and Trabuco Canyon Water District (TCWD) intertie meter vault and intertie valve vault on Santiago Canyon Road. Larger replacement vaults are required to provide adequate space for maintenance. A project location map is attached as Exhibit "A".

To expedite the lid replacements, staff separated the project into two phases. Phase 1 consists of replacing nine of the 13 facility vault lids with lids in kind, without any alterations to the existing vaults. These installations do not require engineering design plans. Phase 1 was advertised to 15 contractors with six contractors submitting bids. GCI Construction, Inc. was the apparent low bidder with a bid of $90,100. The bid summary is attached as Exhibit "B". An informal construction contract will be awarded to GCI Construction, Inc. under the authority of the General Manager for Phase 1.

Phase 2 consists of the remaining four vault lids and two IRWD/TCWD intertie vaults. These facilities require an engineering design. Staff issued a Request-for-Proposal to APD Consultants, Inc., Atkins Global, Arcadis-US, Inc. and URS Corporation. Each consultant submitted a proposal. Staff evaluated the proposals and recommends the selection of Arcadis-US, Inc. based on their project understanding and project team. Arcadis-US, Inc.'s fee is $43,964. The consultant selection matrix is attached as Exhibit "C", and Arcadis-US, Inc.'s proposal is attached as Exhibit "D".

FISCAL IMPACTS:

The Domestic Vault Lid Rehabilitation, Project 11358 (1800), and the Recycled Vault Lid Rehabilitation, Project 31358 (1065), are included in the FY 2011-12 Capital Budget. Approval of Expenditure Authorizations is requested as shown in the table below and in Exhibit "E".

Project No.	Current Budget	Addition <Reduction>	Total Budget	Existing EA	This EA Request	Total EA Request
11358 (1800)	$297,600	$-0-	$297,600	$-0-	$154,600	$154,600
31358 (1065)	$297,600	$-0-	$297,600	$-0-	$115,500	$115,500
TOTAL	$595,200	$-0-	$595,200	$-0-	$270,100	$270,100

ENVIRONMENTAL COMPLIANCE:

This project is exempt from the California Environmental Quality Act (CEQA) as authorized under the California Code of Regulations, Title 14, Chapter 3, Section 15301 which provides exemption for minor alterations of existing public or private structures, facilities, mechanical equipment, or topographical features, involving negligible or no expansion of use beyond that existing at the time of the lead agency's determination.

RECOMMENDATION:

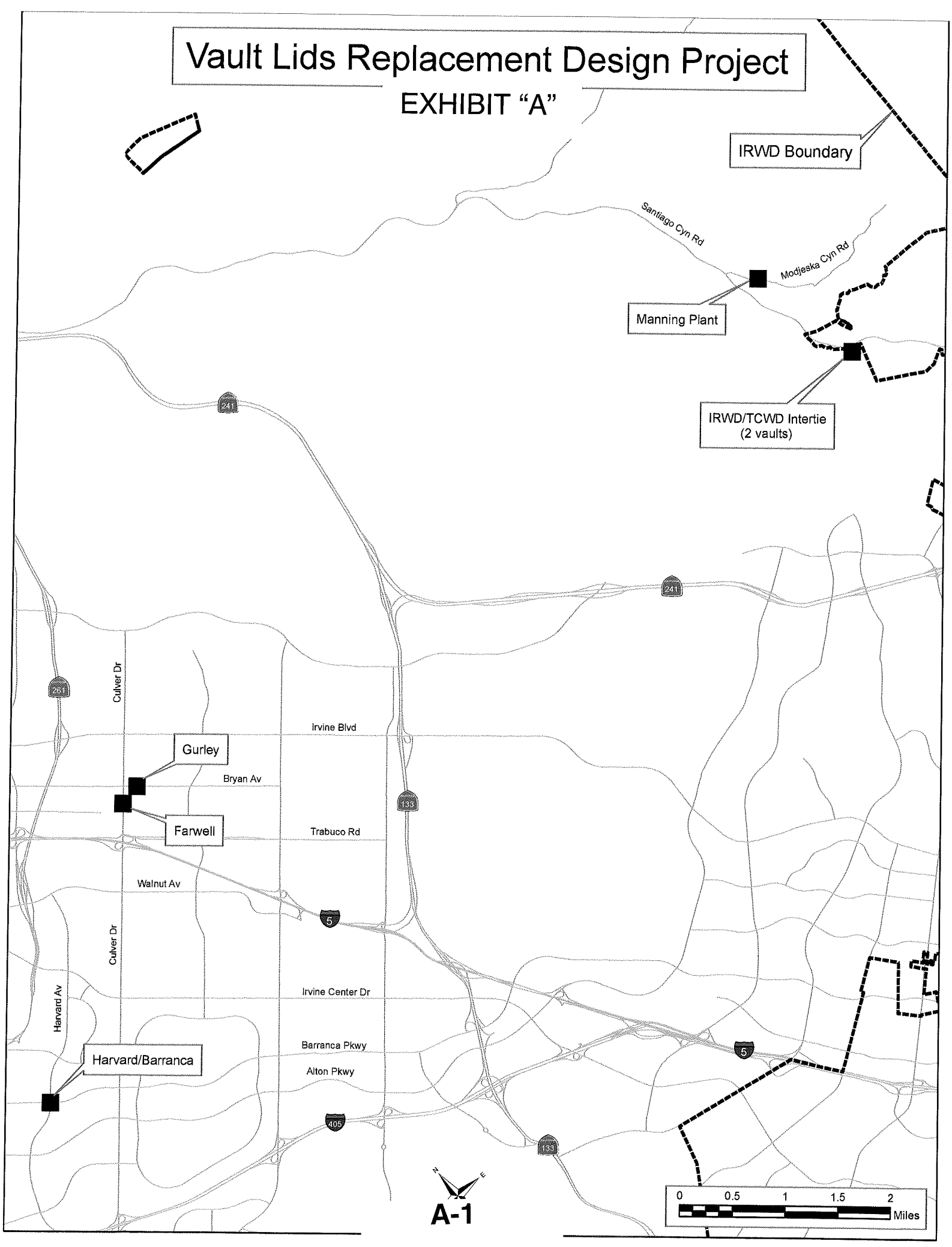
That the Committee recommend the Board approve an Expenditure Authorization in the amount of $154,600 for the Domestic Vault Lid Rehabilitation, Project 11358 (1800); approve an Expenditure Authorization in the amount of $115,500 for the Recycled Vault Lid Rehabilitation, Project 31358 (1065); and authorize the General Manager to execute a professional services agreement in the amount of $43,964 with Arcadis-US, Inc. for the Domestic Vault Lid Rehabilitation, Project 11358 (1800).

LIST OF EXHIBITS:

Exhibit "A" – Location Map
Exhibit "B" – Bid Summary for Phase 1
Exhibit "C" – Consultant Selection Matrix
Exhibit "D" – Arcadis-US, Inc. Proposal
Exhibit "E" – Expenditure Authorizations

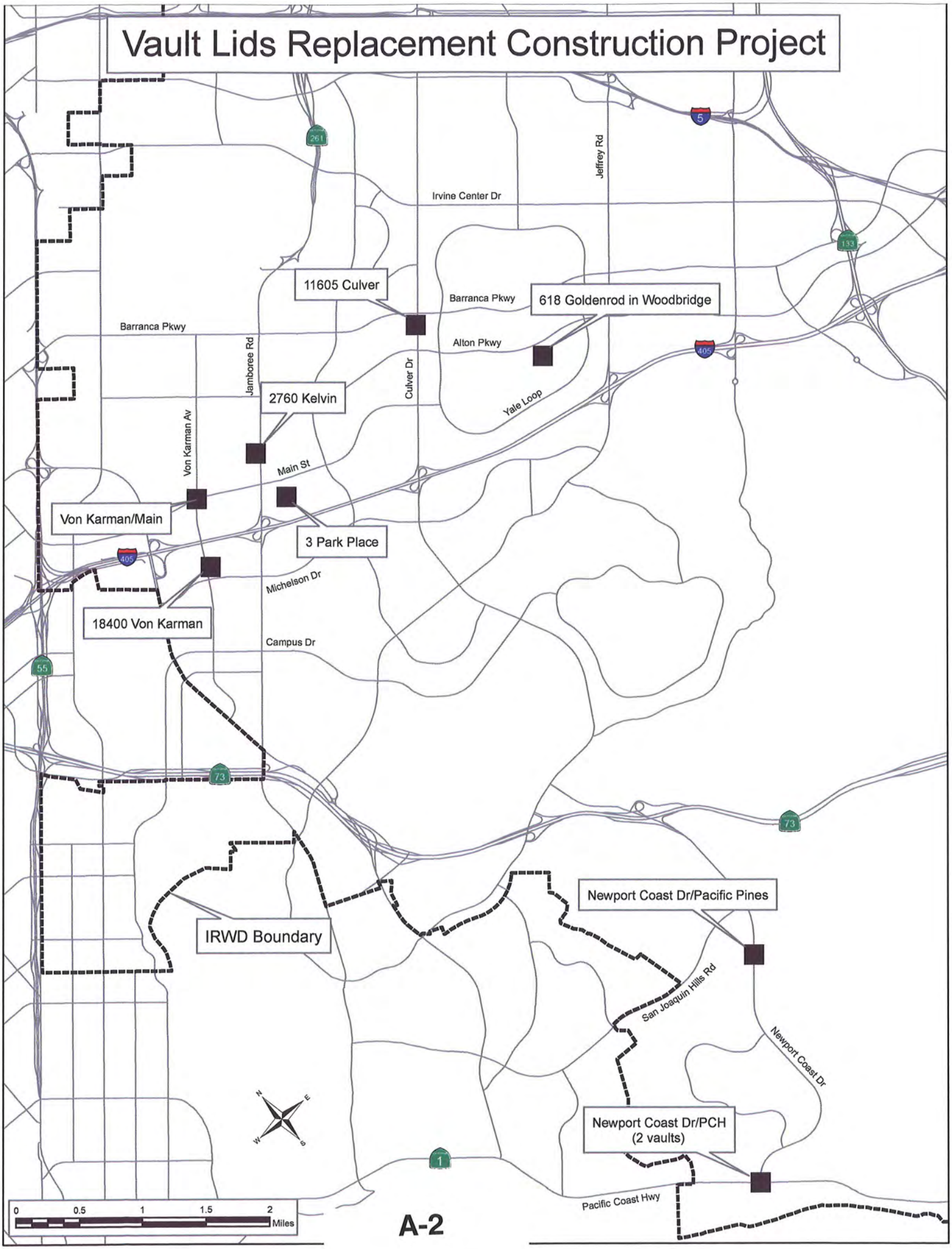
Vault Lids Replacement Design Project

EXHIBIT "A"



A-1

Vault Lids Replacement Construction Project



A-2

Bid Opening: Tuesday, January 31, 2012 @ 1:30 p.m.

Irvine Ranch Water District Bid Summary For
Meter and Valve Vault Lid Replacement Project
PR 11358 and 31358

Entered By: J.K. Irey

Item No.	Description	Qty	Unit	Engineer's Estimate Unit Price	Engineer's Estimate Total Amount	1 GCI Construction, Inc. Costa Mesa, CA Unit Price	1 GCI Construction, Inc. Costa Mesa, CA Total Amount	2 L&S Construction, Inc. Orange, CA Unit Price	2 L&S Construction, Inc. Orange, CA Total Amount	3 Paulus Engineering, Inc. Anaheim, CA Unit Price	3 Paulus Engineering, Inc. Anaheim, CA Total Amount	4 Leatherwood Construction Fountain Valley, CA Unit Price	4 Leatherwood Construction Fountain Valley, CA Total Amount	5 Kennedy Pipeline Co. Aliso Viejo, CA Unit Price	5 Kennedy Pipeline Co. Aliso Viejo, CA Total Amount	6 Vido Artukovich & Son So. El Monte, CA Unit Price	6 Vido Artukovich & Son So. El Monte, CA Total Amount
1	Mobilization, Demobilization, and Clean Up	1	LS	$0.00	$0.00	$6,000.00	$6,000.00	$20,000.00	$20,000.00	$5,000.00	$5,000.00	$25,400.00	$25,400.00	$3,500.00	$3,500.00	$20,000.00	$20,000.00
2	Remove and Replace Vault Lid At 6664 Pacific Coast Hwy in Newport Beach	1	LS	$15,000.00	$15,000.00	$9,000.00	$9,000.00	$12,000.00	$12,000.00	$13,500.00	$13,500.00	$18,700.00	$18,700.00	$22,065.00	$22,065.00	$25,000.00	$25,000.00
3	Remove and Replace Vault Lid At 6684 Pacific Coast Hwy in Newport Beach	1	LS	$15,000.00	$15,000.00	$11,000.00	$11,000.00	$12,000.00	$12,000.00	$13,500.00	$13,500.00	$16,000.00	$16,000.00	$20,613.00	$20,613.00	$25,000.00	$25,000.00
4	Remove and Replace Vault Lid At Newport Coast Dr., & Pacific Pines Dr. in Newport Beach	1	LS	$15,000.00	$15,000.00	$8,000.00	$8,000.00	$9,500.00	$9,500.00	$12,000.00	$12,000.00	$13,300.00	$13,300.00	$13,750.00	$13,750.00	$25,000.00	$25,000.00
5	Remove and Replace Vault Lid At 11605 Culver Dr. in Irvine	1	LS	$15,000.00	$15,000.00	$18,000.00	$18,000.00	$18,000.00	$18,000.00	$25,000.00	$25,000.00	$13,700.00	$13,700.00	$35,700.00	$35,700.00	$22,500.00	$22,500.00
6	Remove and Replace Vault Lid At 618 Goldenrod in Irvine	1	LS	$15,000.00	$15,000.00	$8,000.00	$8,000.00	$9,500.00	$9,500.00	$11,000.00	$11,000.00	$12,600.00	$12,600.00	$18,660.00	$18,660.00	$22,500.00	$22,500.00
7	Remove and Replace Vault Lid At 2760 Kelvin in Irvine	1	LS	$15,000.00	$15,000.00	$8,000.00	$8,000.00	$10,000.00	$10,000.00	$9,900.00	$9,900.00	$13,400.00	$13,400.00	$20,830.00	$20,830.00	$22,500.00	$22,500.00
8	Remove and Replace Vault Lid At 3 Park Plaza in Irinve	1	LS	$15,000.00	$15,000.00	$8,000.00	$8,000.00	$10,000.00	$10,000.00	$9,800.00	$9,800.00	$12,800.00	$12,800.00	$17,595.00	$17,595.00	$20,000.00	$20,000.00
9	Remove and Replace Vault Lid At 17903 Von Karman in Irvine	1	LS	$15,000.00	$15,000.00	$8,000.00	$8,000.00	$9,500.00	$9,500.00	$9,800.00	$9,800.00	$12,700.00	$12,700.00	$17,212.00	$17,212.00	$20,000.00	$20,000.00
10	Remove and Replace Vault Lid At 18400 Von Karman in Irvine	1	LS	$15,000.00	$15,000.00	$7,500.00	$7,500.00	$9,500.00	$9,500.00	$9,700.00	$9,700.00	$14,300.00	$14,300.00	$18,376.00	$18,376.00	$20,000.00	$20,000.00
	Subtotal				$135,000.00	$0.00	$91,500.00	$0.00	$120,000.00	$0.00	$119,200.00	$0.00	$152,900.00	$0.00	$188,301.00	$0.00	$222,500.00
	Adjustment (+ or -)				$0.00	$0.00	$0.00	$0.00	($7,000.00)	$0.00	$3,000.00	$0.00	$0.00	$0.00	($5,000.00)	$0.00	$0.00
	TOTAL AMOUNT OF BID				**$135,000.00**		**$91,500.00**		**$113,000.00**		**$122,200.00**		**$152,900.00**		**$183,301.00**		**$222,500.00**
						Item Delivery Dates:		**Item Delivery Dates:**		**Item Delivery Dates:**		**Item Delivery Dates:**		**Item Delivery Dates:**		**Item Delivery Dates:**	
						Vault Lids: 4 Weeks		Vault Lids: 40 Days		Vault Lids: 28 Days		Vault Lids: 56 Days		Vault Lids: 45 Days		Vault Lids: 6 Weeks	
						Manufacturers:		**Manufacturers:**		**Manufacturers:**		**Manufacturers:**		**Manufacturers:**		**Manufacturers:**	
						Vault Lids: USF		Vault Lids: Jensen		Vault Lids: USF Fabrication		Vault Lids: Olson Precast		Vault Lids: Olson Precast		Vault Lids: Olson Precast	
						Subcontractors:		**Subcontractors:**		**Subcontractors:**		**Subcontractors:**		**Subcontractors:**		**Subcontractors:**	
						Concrete Vaults: U&R Concrete Products		None Listed		None Listed		None Listed		None Listed		Olson Precast: Vault Lids/Set Tops	

EXHIBIT "B"

IRWD
Valve Vault and Vault Lids Replacement Project
Consultant Selection Matrix
PR 11358, 31358

	Weights	APD	Arcadis	Atkins	URS
TECHNICAL APPROACH	60%				
*Project Approach	40%	4	1	2	3
*Scope of Work	30%	4	1	2	3
*Man Hour Estimates	30%	1	1	1	1
Weighted Score (Technical Approach)		3.10	1.00	1.70	2.40
EXPERIENCE	40%				
*Firm/Team	20%	4	1	3	2
*Project Manager	40%	4	1	3	2
*Project Engineer	20%	4	3	2	1
*Structural Engineer	20%	4	1	3	2
Weighted Score (Experience)		4.00	1.40	2.80	1.80
		Yrs	Yrs	Yrs	Yrs
Project Manager		Robbie Mahmood 24	Dave May 22	M. Cenk Yavas 25	Eric Mawlawi 22
Project Engineer		Michael Palzes 29	Nick Pailma 6	Michael Guirguis 9	Bryan Paine 14
QC/QA					Joe Long 20
Structural Engineer		Hernan Montoya 34	Larry Tabat 42	Gail Masutani 21	Robert Trivison 35
COMBINED WEIGHTED SCORE		3.46	1.16	2.14	2.16
		Man-hours	Man-hours	Man-hours	Man-hours
Task 1 Design		225	204	435	658
Task 2 Construction Services		35	74	52	118
TOTAL HOURS		260	278	487	776
FEE					
Final Design		$50,440	$32,378	$50,374	$70,000
Services During Construction		$9,525	$11,586	$8,425	$12,500
Total - Design/Const. Ser.		**$59,965**	**$43,964**	**$58,799**	**$82,500**
Professional Liability Insurance		YES	YES	YES	YES
General Liability Insurance		YES	YES	YES	YES
FORCED RANKINGS:		4 - Four	1 - First	2 - Second	3 - Third

Exhibit "C"

1. Project Approach and Scope

Malcolm Pirnie, the Water Division of ARCADIS U.S., Inc. (Pirnie/ARCADIS), welcomes the opportunity to assist Irvine Ranch Water District (IRWD) by providing Engineering Services for the Valve Vault and Vault Lids Replacement Project (PR 11358). We have carefully reviewed the Request for Proposal (RFP), attended the pre-proposal meeting, and performed investigations into the effort and cost required to perform the work in developing our proposal.

We offer the following detailed scope of work and methodology that define our work tasks and activities. Our approach is offered with the overlying objectives of excellent technical service and strong and responsive project management.

We accept as written the Scope of Work provided by IRWD in the RFP. We have no modifications or exclusions and will perform that scope as described in this section of the proposal and as clarified in the Budget, Schedule, and Team sections of this proposal. Collectively our Approach, Budget, Schedule, and Team sections define our technical proposal and can be used as a basis for later contract negotiations.

The engineering services are divided into design and construction support services. Our specific approach for both of these work phases are as follows:

Table of Contents

Design Services

IRWD is requesting bidding documents that include plans, project manual, a construction schedule, a construction cost estimate, and liquidated damages calculations. In addition, design services include a design schedule, meeting attendance, permit application completion and support, CEQA documentation support, and bid period assistance.

Bidding documents are to be developed for four separate vault lid replacements and two new vault installations to replace existing manhole structures. Our technical approach will consider structural, corrosion, noise, and maintenance ease of access to determine a best possible solution. Vault lids should be lockable and all components structurally capable of the actual loading that will be imposed upon them.

Table 1 - IRWD Functional Concerns by Location

#	Location	Strength / Durability	Noise	Corrosion	Accessibility	Comments
1	Farwell Avenue	✓	✓		✓	Lid -Noise
2	Gurley Street	✓	✓		✓	Lid - Duplicate Farwell
3	Harvard Avenue	✓			✓	Lid - Weight / Accessibility
4	Santiago Canyon Road (Location 1)	✓			✓	Vault & Lid – Replace MH
5	Santiago Canyon Road (Location 2)	✓			✓	Vault & Lid – Replace MH
6	Manning Water Treatment Plant	✓		✓	✓	Lid - Ammonia Resistant

Design Approach

Each valve vault location must have an access lid that is structurally sufficient for the loading that will be imposed upon it. This generally means H20 loading. Our experience suggests that aluminum hatches, such as those manufactured by Bilco, do not stand up to repeat loading from traffic. The durability of aluminum hatches is poor, especially the hinges. Because of the amount of traffic on Farley Avenue, Gurley Street, and both Santiago Canyon Road locations, these sites will need a vault lid that is structurally sufficient and durable. We suggest the use of steel since this material is the most durable and the fasteners and hinges are less likely to breakdown under traffic loads.

Since these locations are accessed on a regular basis for maintenance, a rectangular vault lid opening is desired. Pirnie/ARCADIS can either procure prefabricated steel or cast iron lid assemblies or we can design the vault lids and have the vault lids fabricated by the contractor. We will evaluate the best combination of strength, durability, weight, and ease of access to determine the best material or combination of materials to instal the replacement vault lids. Special attention to hinges, bolts and lid frames will be made to ensure durable materials are selected.

For noise control, noise can be minimized by reducing spacing between fastening locations. In addition, through custom fabrication procurement, or by designing the lids, we can allocate space for highly durable gasket materials that dampen noise.

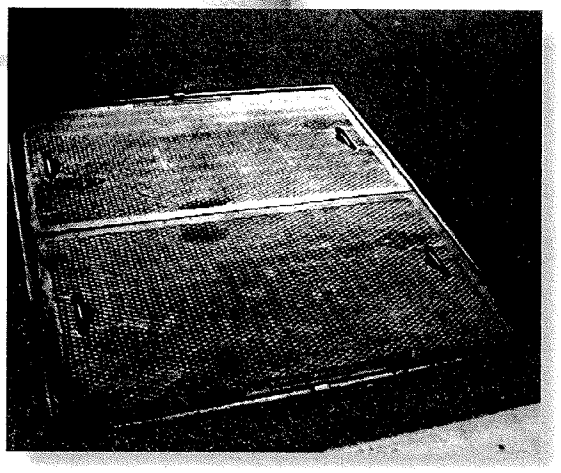
Noise concerns can be addressed by assuring adequate surface plate stiffening is achieved. We can use materials commonly applied to compressor, blower, and pump connections to structures in treatment plants to mitigate noise and vibration. Further, we can use similar noise damping materials on the underside of the lid plates to reduce noise emission similar to that used commonly in emergency generator rooms at outlying pump stations.

Although the issues of concern vary between these four locations, we believe that a design, procurement, and maintenance efficiency is gained if we have a commonly designed or procured lid for all four locations.

For the Harvard Avenue and Manning Water Treatment Plant (WTP) locations, we believe these lids should be replaced by 36-inch manhole lids. Both locations are accessed less frequently so a quicker, easier access is needed for those times when visual equipment inspection is needed, especially for Harvard.

Injection Vaults at Harvard Avenue and Manning Water Treatment Plants

At Manning WTP the manhole lid would replace the current polymer concrete lid. Steel and iron, typical manhole lid materials, both have good corrosion resistance to ammonia, which may potentially be present in this location. Additionally, one person can use a manhole pick to remove the lid to gain access so accessibility is improved.



At Harvard WTP, the manhole lid would replace the existing heavy rectangular steel vault lid. The access opening would be reduced; however, this location does not have frequent maintenance visits. Further, when visits are required, a lift truck or crane is needed to remove the rectangular steel lids. This requires a large traffic control setup to perform visual inspection or minor maintenance. A manhole lid would allow easier, less traffic control intense access for visual and minor maintenance. A manhole lid would only require one operator with a manhole pick to open. Major maintenance would require that the full concrete vault roof be removed whether the current rectangular lid or a new manhole lid. Therefore, A manhole lid would not add any disadvantage to major maintenance events.

Permits

We investigated which permits would be required in order to construct the vault lid and new vault improvements. There are two total permits required - an Engineering / Miscellaneous Permit by the City of Irvine to cover work at Farwell, Gurley, and Harvard and a Road Encroachment Permit issued by the County of Orange to cover work on Santiago Canyon Road. There is no permit required for work at the Manning WTP site. Table 2 summarizes the important permit requirements and costs.

Table 2 - Permit Summary

Permit	Issuing Agency	Work Areas Covered	Requirements	Contact	Cost
Engineering/ Misc.	City of Irvine	Farwell, Gurley, Harvard	Plan Check for road restoration and traffic control	Tran Tran 949.724.6378	Initiation Fee = $65 Plan Check / Sheet = $426 for first 4 sheets + $106 / sheet each extra sheet = $106 x 2 = $212 Inspection Fee = $954 USA Fee = $109 Permit Issue Fee = $37 TOTAL ~$1738, say $2000
Road Encroachment	County of Orange	Santiago Canyon Road (2)	Plan Check for road restoration and traffic control and possible WQMP for project if master WQMP for IRWD doesn't cover work area**	Dean Capalleti 714.667.8836 Andy Boce 714.667.8839	Initiation Fee = $65 Plan Check / Sheet = ~$100 x 4 sheets = ~$400 $1000 refundable surety Inspection Fees ~$500 TOTAL ~$865 +$1000 REFUNDABLE SURETY, say $2,000 with $1000 refundable.

** Existing IRWM Master WQMP covering project area assumed for proposal. Proposed budget has not been included for preparation of WQMP nor are any permit fees associated with review of a project specific WQMP / NPDES permit provided.

Construction Services

IRWD is requesting construction support services including site visits, meeting attendance, response to RFIs, shop drawing reviews, and record drawing preparation.

Our approach is to assign our project engineer to provide the construction services requested. This will provide design intent / bid document continuity, and record drawing preparation continuity. Both will make our team efficient in the delivery of these services. Oversight on specific technical or regulatory issues is provided by our Project Manager and Senior Technical Advisors.

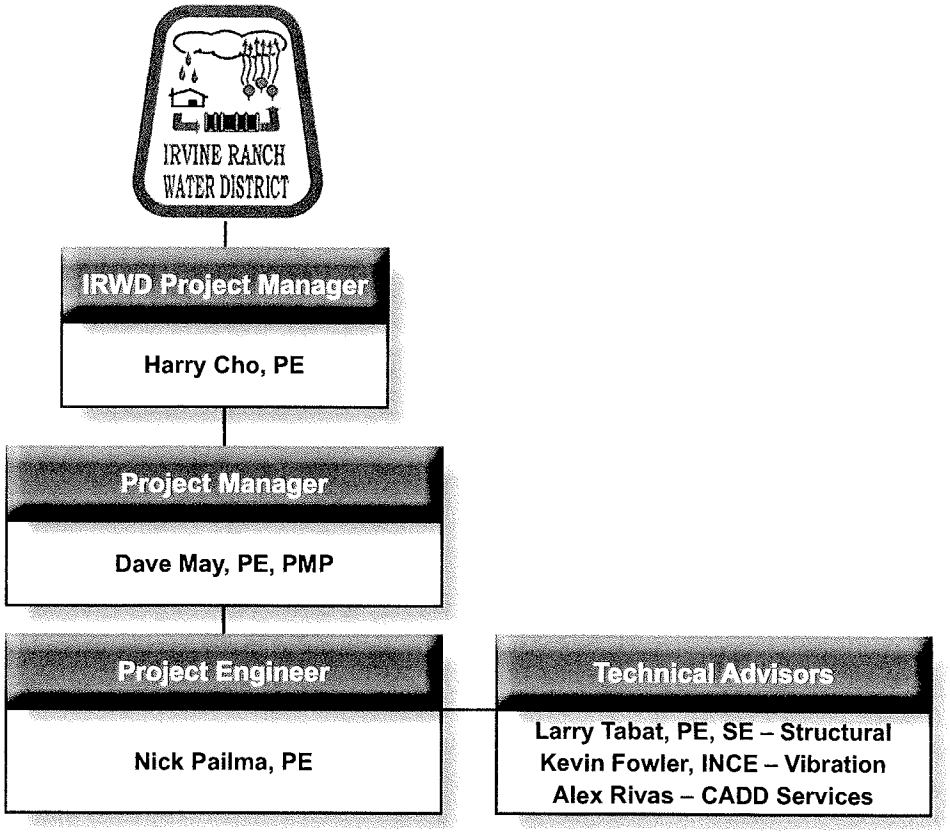
2. Project Team

Key personnel assigned to the project shall not be reassigned without prior IRWD written approval.

Pirnie/ARCADIS understands that the key to any successful project begins with a qualified leadership team — we have carefully selected our project coordination team. We propose David May, PE as Project Manager for this design services project, because of his 22 years of municipal engineering, design and construction experience. David will be the primary point of contact and will have overall responsibility for negotiating and executing the design services contract. He will provide senior oversight over the preparation of project deliverables. The relationship that David continues to develop with IRWD will be based on collaboration and a mutual understanding of your project requirements and operational parameters. He will function as an extension of your staff and be available and responsive to your needs on short notice.

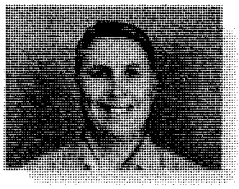
David will be supported by Nick Pailma, PE who will serve in the role of Project Engineer. With his experience in water and wastewater facility design and construction, Nick will develop all project deliverables, perform the construction services, and manage permitting and compliance requirements. As-needed technical oversight will be provided by Senior Technical Advisors for structural, noise and vibration, and CADD. Additionally, the structural design will be prepared by Larry Tabat, PE, SE, our structural engineer.

Our organizational chart indicating the roles and responsibilities of each team member is presented in the figure below. Brief experience summaries for each team member are also included in this section followed by a detailed Labor Estimate for each task. Comprehensive resumes for each team member are provided as an appendix.



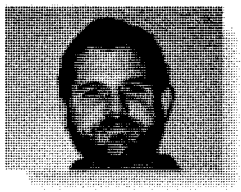
Project Team Experience

Team Member | Role	Years Experience	Registrations/Credentials	Time Available
Dave May | Project Manager	22	■ Professional Engineer ■ Certified Project Management Professional	25%



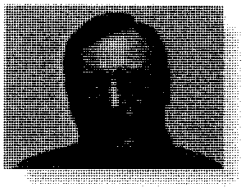
Mr. May has over 22 years of experience in civil engineering of various private and public works projects. His project experience includes managing traditionally bid or design/build of waterworks facilities including pumping stations, reservoirs, metering and pressure control facilities, and pipelines of various size and pressure classes. Additional project and design experience includes sewer and storm drain lift stations, piping, and appurtenances as well as foundation and geotechnical design, construction management, and construction inspection. His program management experience includes evaluation of organizational structures and production of strategic plans, capital improvement plans, assessment of program and project funding sources and options, and organization workforce planning, project and program risk assessments, and scheduling.

Nick Pailma | Project Engineer	6	■ Professional Engineer	50%



Mr. Pailma is a water and wastewater civil engineer. His experience includes design of a wastewater treatment plant as well as structural design projects. His courses of study have included water supply engineering, water quality engineering, hydraulics, CADD, fluid mechanics, vector dynamics, engineering geology, vector statics, reinforced concrete design, structural analysis, thermodynamics, computer programming, advanced surveying, highway engineering, structural steel design, and foundations and retaining walls.

Larry Tabat | Technical Advisor – Structural	42	■ Professional Engineer ■ Registered Structural Engineer	25%

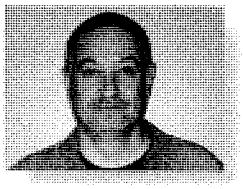


Mr. Tabat is responsible for the quality and coordination of structural design companywide. He is also responsible for development and maintenance of structural design guidelines, standards, and specifications to facilitate the design process and keep current with developments in the industry. He is a member and past secretary of Committee 350 of the American Concrete Institute which sets the standards for concrete environmental engineering structures and a member of that committee's seismic subcommittee. Mr. Tabat is involved in the scheduling, criteria selection, calculations, and review of the designs for all types of environmental structures.

Kevin Fowler | Technical Advisor – Vibration	7	■ Institute of Noise Control Engineering of the USA	25%

Mr. Fowler is a Certified Noise Professional with 7 years of acoustical consulting experience, and specific expertise in architectural and environmental acoustics. His experience includes field measurements; acoustical analysis; reporting; traffic, aircraft, and railway noise studies; mechanical and construction noise and vibration impact studies; wind turbine / wind farm noise impact studies; window, wall, and floor/ ceiling assembly design evaluations (STC/IIC); and architectural interior room performance design and recommendation evaluations. He also has experience with commercial and residential noise control and sound system design solutions. His technical responsibilities include field investigation work, sound and noise level measurements, data analysis, computer modeling, and conducting and managing Sound Transmission Class (STC) and Impact Isolation Class (IIC) testing for documenting building code compliance.

Team Member | Role	Years Experience	Registrations/Credentials	Time Available
Alex Rivas | CADD Services	34	■ N/A	25%



Mr. Rivas has been a CADD designer for water and wastewater treatment plants for 34 years. His expertise includes leading a CADD group in the production of plans for several multimillion dollar projects in the southern California area, including relief sewer/lift station and force mains, storm water lift stations, water and wastewater treatment plants, hazardous waste remediation designs, and construction administration.

Table 3 - Labor Estimate for Engineering and Construction Phase Services

Task	Task Description	2011 Labor Hours by Staff Classification					
		Principal in Charge / Project Mgr	Structural Engineer	Noise & Vibration Scientist	CADD Oversight	Project Engineer	Total Labor Hours per Task
101	Construction Drawings	0	16	4	4	96	120
102	Project Manual	8	0	4	0	24	36
103	Project Meetings	10	0	0	0	6	16
104	Project Schedule	0	0	0	0	2	2
105	Permits	2	0	0	0	4	6
106	CEQA Documentation	0	0	0	2	4	6
107	Liquidated Damages Calculations	0	0	0	0	2	2
108	Construction Cost Estimate	0	0	0	0	4	4
109	Bid Period Assistance	2	0	0	2	8	12
Design Sub Total		**22**	**16**	**8**	**8**	**150**	**204**
201	Project Meetings	6	0	0	0	8	14
202	Contractor's Request For Information	2	0	0	0	8	10
203	Minor Plan Revisions	0	0	0	0	16	16
204	Site Visits	0	0	0	0	4	4
205	Shop Drawing Reviews	4	0	0	0	16	20
206	Prepare Record Drawings	0	0	0	2	8	10
Constrution Services Sub Total		**12**	**0**	**0**	**2**	**60**	**74**
TOTAL		34	16	8	10	210	278

Irvine Ranch Water District

Project No. 11358

Valve Vault &Vault Lids Replacement Project

Fee Estimate for Engineering & Construction Phase Services

Task	Task Description	2011 Labor Hours by Staff Classification						Total Labor Cost	Direct Costs	TOTAL COSTS
		Principal in Charge / Project Mgr $230	Structural Engineer $230	Noise & Vibration Scientist $170	CADD Oversight $165	Project Engineer $137	Total Labor Hours per Task			
101	Construction Drawings	0	16	4	4	96	120	$ 18,172	$ 221	$ 18,393
102	Project Manual	8	0	4	0	24	36	$ 5,808	$ 110	$ 5,918
103	Project Meetings	10	0	0	0	6	16	$ 3,122	$ 22	$ 3,144
104	Project Schedule	0	0	0	0	2	2	$ 274	$ -	$ 274
105	Permits	2	0	0	0	4	6	$ 1,008	$ -	$ 1,008
106	CEQA Documentation	0	0	0	2	4	6	$ 878	$ -	$ 878
107	Liquidated Damages Calculations	0	0	0	0	2	2	$ 274	$ -	$ 274
108	Construction Cost Estimate	0	0	0	0	4	4	$ 548	$ -	$ 548
109	Bid Period Assistance	2	0	0	2	8	12	$ 1,886	$ 55	$ 1,941
	Design Sub Total	**22**	**16**	**8**	**8**	**150**	**204**	**$ 31,970**	**$ 408**	**$ 32,378**
201	Project Meetings	6	0	0	0	8	14	$ 2,476	$ 22	$ 2,498
202	Contractor's Request For Information	2	0	0	0	8	10	$ 1,556	$ -	$ 1,556
203	Minor Plan Revisions	0	0	0	0	16	16	$ 2,192	$ 34	$ 2,226
204	Site Visits	0	0	0	0	4	4	$ 548	$ -	$ 548
205	Shop Drawing Reviews	4	0	0	0	16	20	$ 3,112	$ 220	$ 3,332
206	Prepare Record Drawings	0	0	0	2	8	10	$ 1,426	$ -	$ 1,426
	Constrution Services Sub Total	**12**	**0**	**0**	**2**	**60**	**74**	**$ 11,310**	**$ 276**	**$ 11,586**
	TOTAL	**34**	**16**	**8**	**10**	**210**	**278**	**$ 43,280**	**$ 684**	**$ 43,964**

EXHIBIT "E"

IRVINE RANCH WATER DISTRI

Expenditure Authorization

Project Name: RECYCLED VAULT LID REHABILITATION
EPMS Project No: 31358 **EA No:** 1
Oracle Project No:
Project Manager: CORTEZ, MALCOLM
Project Engineer: CHO, HARRY
Request Date: February 6, 2012

ID Split: Miscellaneous

Improvement District (ID) Allocations

ID No.	Allocation %	Source of Funds
210	100.0	REPLACEMENT FUND**
Total	**100.0%**	

Summary of Direct Cost Authorizations

Previously Approved EA Requests:	$0
This Request:	$115,500
Total EA Requests:	$115,500
Previously Approved Budget:	$297,600
Budget Adjustment Requested this EA:	$0
Updated Budget:	$297,600
Budget Remaining After This EA	$182,100

Comments:

Phase	This EA Request	Previous EA Requests	EA Requests to Date	This Budget Request	Previous Budget	Updated Budget	Start	Finish
ENGINEERING DESIGN - IRWD	0	0	0	0	10,000	10,000	7/11	6/13
ENGINEERING DESIGN - OUTSIDE	0	0	0	0	20,000	20,000	7/11	6/13
DESIGN STAFF FIELD SUPPORT	0	0	0	0	5,000	5,000	7/11	6/13
ENGINEERING - CA&I IRWD	10,000	0	10,000	0	10,000	10,000	3/12	6/14
ENGINEERING - CA&I OUTSIDE	10,000	0	10,000	0	20,000	20,000	3/12	6/14
CONSTRUCTION FIELD SUPPORT	5,000	0	5,000	0	5,000	5,000	3/12	6/14
CONSTRUCTION	80,000	0	80,000	0	200,000	200,000	3/12	6/14
LEGAL	0	0	0	0	500	500	7/11	6/14
Contingency - 10.00% Subtotal	$10,500	$0	$10,500	$0	$27,100	$27,100		
Subtotal (Direct Costs)	$115,500	$0	$115,500	$0	$297,600	$297,600		
Estimated G/A - 180.00% of direct labor*	$27,000	$0	$27,000	$0	$54,000	$54,000		
Total	$142,500	$0	$142,500	$0	$351,600	$351,600		
Direct Labor	$15,000	$0	$15,000	$0	$30,000	$30,000		

*EA includes estimated G&A. Actual G&A will be applied based on the current ratio of direct labor to general and administrative costs.

EA Originator: _____ 2/8/12

Department Director: _____ 2/10/12

Finance: _____

Board/General Manager: _____

** IRWD hereby declares that it reasonably expects those expenditures marked with two asterisks to be reimbursed with proceeds of future debt to be incurred by IRWD in a maximum principal amount of $359,0[illegible]. The above-captioned project is further described in the attached staff report and additional documents, if any, which are hereby incorporated [illegible] official intent to reimburse costs of the above-captioned project is made under Treasury Regulation Section 1.150-2.

IRVINE RANCH WATER DISTRICT

Expenditure Authorization

Project Name: DOMESTIC VAULT LID REHABILITATION
EPMS Project No: 11358 **EA No:** 1
Oracle Project No:
Project Manager: CORTEZ, MALCOLM
Project Engineer: CHO, HARRY
Request Date: February 6, 2012

ID Split: Miscellaneous

Improvement District (ID) Allocations

ID No.	Allocation %	Source of Funds
101	100.0	REPLACEMENT FUND**
Total	**100.0%**	

Summary of Direct Cost Authorizations

Previously Approved EA Requests:	$0
This Request:	$154,600
Total EA Requests:	$154,600
Previously Approved Budget:	$297,600
Budget Adjustment Requested this EA:	$0
Updated Budget:	$297,600
Budget Remaining After This EA	$143,000

Comments:

Phase	This EA Request	Previous EA Requests	EA Requests to Date	This Budget Request	Previous Budget	Updated Budget	Start	Finish
ENGINEERING DESIGN - IRWD	25,000	0	25,000	15,000	10,000	25,000	7/11	12/12
ENGINEERING DESIGN - OUTSIDE	45,000	0	45,000	25,000	20,000	45,000	7/11	12/12
DESIGN STAFF FIELD SUPPORT	5,000	0	5,000	0	5,000	5,000	7/11	12/12
ENGINEERING - CA&I IRWD	10,000	0	10,000	0	10,000	10,000	3/12	6/14
ENGINEERING - CA&I OUTSIDE	10,000	0	10,000	0	20,000	20,000	3/12	6/14
CONSTRUCTION FIELD SUPPORT	5,000	0	5,000	0	5,000	5,000	3/12	6/14
CONSTRUCTION	40,000	0	40,000	(40,000)	200,000	160,000	3/12	6/14
LEGAL	500	0	500	0	500	500	7/11	6/14
Contingency - 10.00% Subtotal	$14,100	$0	$14,100	$0	$27,100	$27,100		
Subtotal (Direct Costs)	$154,600	$0	$154,600	$0	$297,600	$297,600		
Estimated G/A - 180.00% of direct labor*	$81,000	$0	$81,000	$27,000	$54,000	$81,000		
Total	$235,600	$0	$235,600	$27,000	$351,600	$378,600		
Direct Labor	$45,000	$0	$45,000	$15,000	$30,000	$45,000		

*EA includes estimated G&A. Actual G&A will be applied based on the current ratio of direct labor to general and administrative costs.

EA Originator: Hg Cho 2/8/12

Department Director: Kevin F Burton 2/10/12

Finance:

Board/General Manager:

** IRWD hereby declares that it reasonably expects those expenditures marked with two asterisks to be reimbursed with proceeds of future debt to be incurred by IRWD in a maximum principal amount of $38[illegible]t is further described in the attached staff report and additional documents, if any, which are hereby incorporat[illegible]f official intent to reimburse costs of the above-captioned project is made under Treasury Regulation Section 1.150-

February 23, 2012
Prepared by: J. Moeder/C. Spangenberg
Submitted by: K. Burton
Approved by: Paul Cook

ENGINEERING AND OPERATIONS COMMITTEE

WELL 115 REPLACEMENT – CAPITAL BUDGET ADDITION, EXPENDITURE AUTHORIZATION, AND VARIANCE NO. 1

SUMMARY:

IRWD pursued replacement of Wells 106 and 107 in an effort to promptly augment flow to the Irvine Desalter Project Potable Treatment Plant (IDP-PTP). Tetra Tech was retained to provide design and construction phase services for both wells. Well 107 is currently under construction. Well 106 replacement was evaluated and deemed extremely difficult due to site constraints and extensive coordination required with the stakeholders. Staff recommends that Well 115 be substituted for the Well 106 replacement. Staff recommends that the Board:

- Authorize the addition of Well 115 Replacement Project 11627 (3717) in the amount of $3,685,600 to the FY 2011-12 Capital Budget;
- Approve an Expenditure Authorization in the amount of $551,300 for Well 115 Replacement Project; and
- Approve a no-cost Variance No. 1 with Tetra Tech for Well 115 preliminary design, final design, bid support, and construction phase services.

BACKGROUND:

Tetra Tech was retained in December 2009 to provide preliminary design, final design, bid support, and construction phase services for Well 106 and 107 replacements and for improvements to the IDP-PTP. Tetra Tech has completed the design phase services for Well 107 and is currently providing construction phase services for the project. Tetra Tech has also evaluated the need for installing a new cartridge filter, performing piping modifications at IDP-PTP, and supporting the District during construction of these improvements.

Pascal & Ludwig and Best Drilling & Pump are currently contracted to destruct Well 107 and replace the existing well based on Tetra Tech's completed well and wellhead facilities design. Well 107 is expected to be operational by Fall 2012 and supply approximately 1,000 gallons per minute (gpm) of raw water; Well 115 is expected to supply approximately 900 gpm. With the replacement of Wells 107 and 115, the IDP-PTP will have the needed 4,100 gpm of flow from IDP Wells 115, 110, 107, 77, and 76 (as shown in Exhibit "A") to operate two reverse osmosis (RO) treatment trains and optimize plant efficiency.

At the beginning of the replacement Well 107 construction, Well 115 was turned off due to casing integrity issues and high dissolved oxygen levels. This further reduced the raw water supply to IDP-PTP which was already operating at less than its design rated production capacity. As part of Tetra Tech's original scope, several Well 106 replacement options within the same site were evaluated, but due to the small site and limited access, drilling a new well on the same site was considered extremely difficult and would require extensive coordination with the stakeholders. Due to the challenges associated with relocating Well 106, Well 115 being turned

off, and the need for additional raw water supplies to meet production levels at the IDP-PTP, staff opened discussions with the stakeholders, the Irvine Company (TIC) and the City of Irvine (City) regarding the relocation and replacement of Well 115. Based on these meetings, both parties are amenable to relocating Well 115 within the existing parking lot in which the well is currently located. As the City has an encumbrance on the proposed Well 115 replacement site which is owned by TIC, both parties are involved in the relocation discussions.

Consultant Services Variance:

Tetra Tech is providing preliminary design, design, bid, and construction phase services for both Well 107 and Well 106. Additionally, Tetra Tech is providing modifications to the RO vessels and cartridge filters, modifications to pretreatment and post treatment chemicals, and modifications to the hypochlorite and de-chlorination facilities at IDP-PTP. Variance No. 1 with Tetra Tech includes:

- An additional $15,000 for additional preliminary design work for Well 106;
- Deletion of the Well 106 pipeline portion of the project;
- Deletion of Well 106 replacement design and construction services component; and
- The addition of Well 115 replacement project.

Variance No. 1 does not change Tetra's Tech existing scope to provide modifications to IDP-PTP. When Well 107 and Well 115 are replaced and all of the IDP wells are operational, the need for modifications at IDP-PTP will be examined to determine if the modifications will be required. Tetra Tech's original proposal for Well 106 and 107 assumed that the two well projects would be designed and constructed at the same time. Since the two projects are no longer concurrent, Tetra Tech will realize an increased level of effort to complete two separate bid packages. The deletion of the Well 106 project re-allocates these previously Board approved funds to the Well 115 replacement project and results in a no cost Variance No. 1, attached as Exhibit "C".

FISCAL IMPACTS:

Project 11627 (3717) requires inclusion into the FY 2011-12 Capital Budget. An Expenditure Authorization for preliminary design, final design, and bid phase services is requested as shown in the table below and in Exhibit "B".

Project No.	Current Budget	Addition <Reduction>	Total Budget	Existing EA	This EA Request	Total EA Request
11627 (3717)	$0	$3,685,600	$3,685,600	$0	$551,300	$551,300

ENVIRONMENTAL COMPLIANCE:

Well 115 replacement is subject to the California Environmental Quality Act (CEQA). A Notice of Exemption will be prepared and filed with the County of Orange. Project 11325 IDP-PTP

cartridge filter modifications is subject to CEQA and a Notice of Exemption will be prepared and filed with the County of Orange.

RECOMMENDATION:

That the Committee recommend the Board authorize the addition of Project 11627 (3717) in the amount of $3,685,600 to the FY 2011-12 Capital Budget for Well 115 replacement; approve an Expenditure Authorization in the amount of $551,300 for Project 11627 (3717); and approve a no-cost Variance No. 1 with Tetra Tech for the Well 115 Replacement, Project 11627 (3717).

LIST OF EXHIBITS:

Exhibit "A" – Project Location Map
Exhibit "B" – Expenditure Authorization
Exhibit "C" – Variance No. 1 with Tetra Tech

SITE MAP

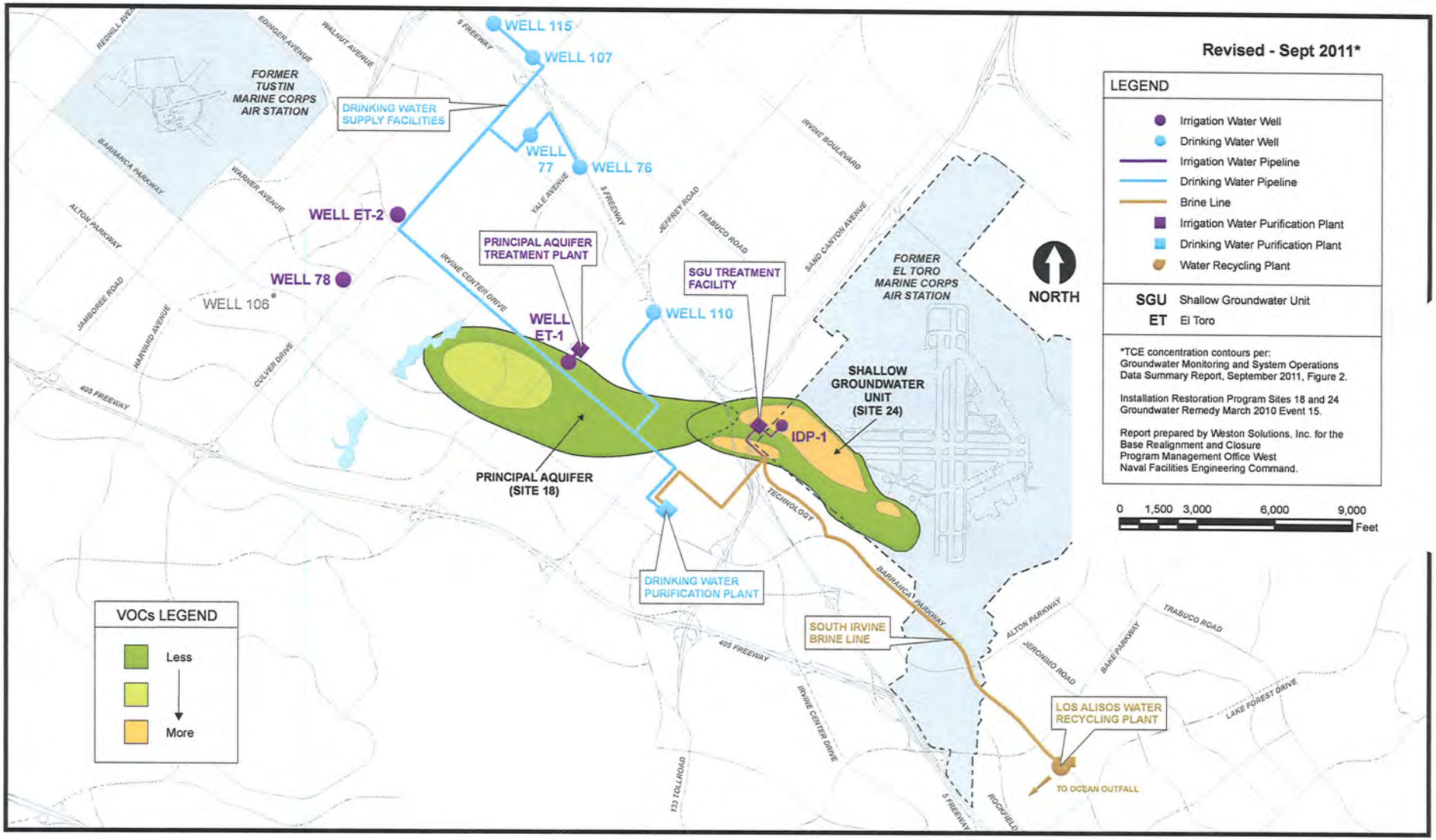


EXHIBIT "A"

IRVINE RANCH WATER DISTRICT

IRVINE DESALTER PROJECT

IRVINE RANCH WATER DIST EXHIBIT "B"

Expenditure Authorization

Project Name: WELL 115 REPLACEMENT WELL/WELLHEAD & SITE ACQUIS.
EPMS Project No: 11627 **EA No:** 1
Oracle Project No:
Project Manager: UEMATSU, PATRICIA
Project Engineer: MOEDER, JACOB
Request Date: February 7, 2012

ID Split: Miscellaneous

Improvement District (ID) Allocations

ID No.	Allocation %	Source of Funds
101	100.0	REPLACEMENT FUND**
Total	100.0%	

Summary of Direct Cost Authorizations

Previously Approved EA Requests:	$0
This Request:	$551,300
Total EA Requests:	$551,300
Previously Approved Budget:	$0
Budget Adjustment Requested this EA:	$3,685,600
Updated Budget:	$3,685,600
Budget Remaining After This EA	$3,134,300

Comments:

Phase	This EA Request	Previous EA Requests	EA Requests to Date	This Budget Request	Previous Budget	Updated Budget	Start	Finish
ENGINEERING - PLANNING IRWD	0	0	0	0	0	0	1/12	1/13
ENGINEERING - PLANNING OUTSIDE	0	0	0	0	0	0	1/12	1/13
ENGINEERING DESIGN - IRWD	30,000	0	30,000	30,000	0	30,000	1/12	1/13
ENGINEERING DESIGN - OUTSIDE	300,000	0	300,000	300,000	0	300,000	1/12	1/13
DESIGN STAFF FIELD SUPPORT	10,000	0	10,000	10,000	0	10,000	1/12	1/13
ENGINEERING - CA&I IRWD	0	0	0	20,000	0	20,000	7/13	6/14
ENGINEERING - CA&I OUTSIDE	0	0	0	160,000	0	160,000	7/13	6/14
CONSTRUCTION FIELD SUPPORT	0	0	0	5,000	0	5,000	7/13	6/14
CONSTRUCTION	0	0	0	2,800,000	0	2,800,000	7/13	6/14
LEGAL	5,000	0	5,000	5,000	0	5,000	1/12	6/14
LAND	150,000	0	150,000	150,000	0	150,000	1/12	1/13
WATER QUALITY	10,000	0	10,000	10,000	0	10,000	1/12	1/14
ENGINEERING ENVIRONMENTAL-OUTS	20,000	0	20,000	20,000	0	20,000	1/12	1/14
Contingency - 5.00% Subtotal	$26,300	$0	$26,300	$175,600	$0	$175,600		
Subtotal (Direct Costs)	$551,300	$0	$551,300	$3,685,600	$0	$3,685,600		
Estimated G/A - 180.00% of direct labor*	$90,000	$0	$90,000	$135,000	$0	$135,000		
Total	$641,300	$0	$641,300	$3,820,600	$0	$3,820,600		
Direct Labor	$50,000	$0	$50,000	$75,000	$0	$75,000		

*EA includes estimated G&A. Actual G&A will be applied based on the current ratio of direct labor to general and administrative costs.

EA Originator: _____ 2/13/12

Department Director: _____ 2/13/12

Finance: _____

Board/General Manager: _____

** IRWD hereby declares that it reasonably expects those expenditures marked with two asterisks to be reimbursed with proceeds of future debt to be incurred by IRWD in a maximum principal amount of $3,898,000. The above-captioned project is further described in the attached staff report and additional documents, if any, which are hereby incorporated by reference. This declaration of official intent to reimburse costs of the above-captioned project is made under Treasury Regulation Section 1.150-2.

Exhibit "C"

TETRA TECH

February 7, 2012

Mr. Jacob Moeder, P.E.
Associate Engineer – Capital Projects
Irvine Ranch Water District
15600 Sand Canyon Avenue
Irvine, CA 92619-7000

Reference: **Irvine Desalter Wells, Pipeline, and Treatment Plant Improvements, Project No. 11325 and No. 11432**
Request for Authorization of Additional Tasks and Reallocation of Overall Budget

Dear Mr. Moeder:

Tetra Tech has been working with the District on the Irvine Desalter Wells, Pipeline, and Treatment Plant Improvements since January 2010. Our proposal dated November 30, 2009 is the basis of our agreement for engineering services between the District and Tetra Tech. The original proposal budget amount for the project was $1,120,800. Tetra Tech has previously been authorized to perform specific tasks with a total budget of $593,012. Attached herewith is spreadsheet that provides a summary of the Contract Authorization Summary as of January 31, 2012, our additional requested authorization, and our recommended reallocation of the overall budget. We have also attached herewith our Variance Request for the scope of work re-allocation.

After extensive efforts to try to find an acceptable location for Well 106, the District has decided to place Well 106 on hold. Due to the poor condition of Well 115, the District is proceeding with obtaining a new site for Well 115. Once the site is approved by the City, the District is proposing to drill and equip a new replacement Well 115 as soon as possible. In addition, the District is requesting Tetra Tech to prepare plans and specifications for the installation of the cartridge filters on the CIP at the IDP-PTP site.

The following correspondence provides a brief summary of: the extra work that Tetra Tech has already performed; requested additional authorization for Well 115; requested authorization for the installation of the CIP cartridge filters and piping modifications at the IDP PTP; and our recommended reallocation of the original budget due to the deletion of Well 106 and the corresponding conveyance pipeline improvements.

SUMMARY OF REQUESTED AUTHORIZATION

Extra Work Already Completed

Task No. 1: Additional Work for Well 106 Siting Evaluation

Tetra Tech was required to perform additional work in evaluating alternative sites for the replacement Well 106. Tetra Tech prepared a draft Memorandum that evaluated five alternative sites for Well 106 and four alternative sites for Well 107. Subsequent to this memo, Tetra Tech performed the following additional tasks: worked with the City of Irvine to confirm parking requirements for the site across the channel from the existing well site; prepared exhibits for the well facility at this building site; evaluated several additional locations within the commercial center at Culver and Harvard; and re-evaluated locating the replacement well at the existing site including several optional layouts and relocation of an existing cable facility. We are requesting an additional $15,000 to compensate us for this additional work.

Tetra Tech, Inc.
17885 Von Karman Avenue, Suite 500, Irvine, CA 92614-6213
Tel 949.809.5000 Fax 949.809.5010 www.tetratech.com

Task No. 2: Well 115 Siting Evaluation

Due to placing Replacement Well 106 on hold, the District requested Tetra Tech and Richard C Slade and Associates (RCS) to evaluate alternative sites for a Replacement Well 115. Tetra Tech has prepared a total of twelve (12) versions of the exhibits showing the various feasible site locations for the replacement well. This additional work included the preparation of the exhibits, investigating the power service requirements for each site; and meeting with the District and TIC to reach an acceptable well location. For the final submittal to the City of Irvine, we are assuming that Tetra Tech will assist the District in submitting the application which will include the preparation of renderings and possibly attending the public meeting. We are recommending a total of $20,000 for this additional work ($17,000 for Tetra Tech and $3,000 for RCS).

Requested New Authorization

Task No. 3: Well 115 Drilling and Equipping Final Design

Our original proposal included the final design of the drilling and equipping (including drilling construction support) for two new wells. We are requesting that the final design of Well 115 replace the original scope for Well 106. However, the original proposal assumed both of the wells would be completed at the same time within the same construction plans and specifications bid package. Therefore, we are requesting an increase to design the Well 115 to account for separating the two wells into two different bid packages, the additional general sheets and bid schedules, the difficulties of the new Well 115 site, and the additional processing and review times. The requested increase comes to about a 20% increase from the original proposal amount. We may also have to include landscape and irrigation plans to install about 14 eucalyptus trees along the back of the well site. We are requesting the following authorization for the Well 115 drilling and equipping final design:

- Well 115 Drilling and Destruction Plans, Specifications and Construction Support (RCS): $108,000 or an additional authorization of $48,236 above the original proposal budget. This budget request includes the additional amount of construction support (not full time but more than the time assumed in the original proposal) that has been requested by IRWD during the drilling and destruction of Well 107.
- Well 115 Drilling and Equipping Plans and Specifications (Tetra Tech): $101,713 or an additional $40,085 above the original proposal budget;
- Well 115 Landscape & Irrigation Plans: $9,000 (not included within the original proposal budget);
- Well 115 Meetings/Processing/etc. for additional bid package (Tetra Tech): $5,580 (same cost as in the original proposal)

Task No. 4: Final Design of IDP Well Pump Modifications

Based on the anticipated new well capacities for both Well 107 and Well 115, Tetra Tech will confirm the necessary modifications (if any) of the existing IDP Wells. This will include providing the necessary specifications for the modifications. We are requesting an authorization of $5,000 for this task (an additional $3,308 from the original proposal due to adding the site locations and specifications that would have been included within the pipeline general sheets).

Task No. 5: ***CIP Cartridge Filter Modifications at IDP PTP Final Design***

Our original proposal included the installation of a CIP cartridge filter and corresponding piping modifications at the IDP-PTP plant. We are requesting the District authorize a portion of the work included within the IDP-PTP Modification construction plan set. The following is a summary of our request:

- CIP Cartridge Filter addition and piping modifications plan and specifications (general sheets, overall site plan, addition of the CIP cartridge filter and piping modifications including SPI support, and specifications from the original proposal) for a total requested authorization of $28,386.
- CIP Cartridge Filter Meetings/Processing/etc. for additional bid package: $5,581.

Task No. 6: ***Bid Phase for Well 115***

Tetra Tech is requesting authorization for the bid phase services for the Well 115 drilling and equipping contract: $3,100 (about the same as for Well 107).

Task No. 7: ***Bid Phase for CIP Cartridge Filter***

Tetra Tech is requesting authorization for the bid phase services for the CIP Cartridge Filter contract: $4,904 (the same as for Well 107 plus the additional support of SPI).

Task No. 8: ***Additional IDP Water Quality Forensics***

Tetra Tech is requesting authorization to perform the following additional IPD Water Quality Forensics. Based on the anticipated flows from Replacement Wells 107 and 115, Tetra Tech will prepare a final IDP Water Quality Forensics Summary Report including monitoring and testing recommendations (update the previous prepared Memorandum). Once the anticipated water quality is determined from the replacement wells, SPI will prepare a modified IDP treatment assessment for the future operations of the IDP plant. We are recommending a total of $25,000 for this additional work ($10,000 for Tetra Tech, $10,000 for SPI, and $5,000 for RCS).

Recommended Reduction of Original Scope

Since Well 106 is on hold and is no longer within our scope of work, we are recommending that the portion of our original design for the 106 conveyance pipeline be deleted from our remaining budget. This will reduce the original budget by $119,693. In addition, due to only a small incremental increase in flows from the Replacement Wells 107 and Well 115, we are also recommending that the District delete the replacement of the existing Navy Line within Irvine Center Drive. This will reduce the original budget by an additional $64,113. We will confirm this recommendation once the anticipated flow from Well 115 is verified. As a result of deleting these items, the District will then have an unallocated budget (contingency) of $7,000 remaining in the original approved budget.

It should also be noted that the following tasks that are still remaining within the recommended revised budget may or may not be required since the replacement wells will only result in a small incremental increase in flows:

- Final Design of IDP-PTP Modifications (additional RO vessels and cartridge filter, modifications to pretreatment and post treatment chemicals, hypochlorite and de-chlorination facilities): $79,868;
- Final Design of IDP-PTP Modifications Specifications: $3,176;
- Meetings/Processing of the IDP-PTP Modifications Contract: $5,580.
- Post Construction Phase (including SPI): $24,400.

If these tasks are not required, the District will have an additional contingency budget of $113,024.

SUMMARY

Tetra Tech is requesting the District to authorize the above items of work.

Item No.	Description of the Work	Requested Budget
Extra Work Already Completed		
1	Additional Work for Well 106 Siting Evaluation	$ 15,000
2	Well 115 Siting Evaluation	$ 20,000
Requested New Authorization		
3	Well 115 Drilling and Equipping Final Design	$ 224,293
4	Final Design of IDP Well Pump Modifications	$ 5,000
5	CIP Cartridge Filter Modifications at PTP Final Design	$ 33,967
6	Bid Phase for Well 115	$ 3,100
7	Bid Phase for CIP Cartridge Filter Modifications	$ 4,904
7	Bid Phase for CIP Cartridge Filter Modifications	$ 25,000
	Total Requested Amount	**$ 331,264**

We are requesting the District authorize the above tasks for $331,264. This will increase our authorization amount from $593,012 to **$924,276.** We have included herewith a summary of the Project Authorization including the recommended deletions in the proposed overall budget. In addition, we have attached our Variance Request for this re-allocation of the scope of work.

Sincerely,

Tom Epperson, P.E.
Project Manager
TLE/te

P:\Project\09368-10002\WordproDrafts\IDP Well 115 Authorization request

IRVINE RANCH WATER DISTRICT

Irvine Desalter Wells, Pipeline Treatment Plant Improvements Project

Project Authorization Summary

	Task Description	Original Proposal Budget	Prior Authorization	Requested Authorization	Total Requested Authorization	Recommended Revised Budget	Delta from Original Proposal Budget	Remaining Budget
1	***Project Management***	***$ 46,200.00***	***$ 46,200.00***	$ -	***$ 46,200.00***	***$ 46,200.00***	$ -	$ -
2	Permitting Labor/Reimbursables	$ 39,200.00	$ 39,200.00	$ -	$ 39,200.00	$ 39,200.00	$ -	$ -
	Permit Fee Allowance	$ 15,000.00	$ 15,000.00	$ -	$ 15,000.00	$ 15,000.00	$ -	$ -
	Permitting Total	***$ 54,200.00***	***$ 54,200.00***	$ -	***$ 54,200.00***	***$ 54,200.00***	$ -	$ -
3	Preliminary Design TT - Well 106 and Well 107	$ 4,169.00	$ 4,169.00	$ 15,000.00	$ 19,169.00	$ 19,169.00	***$ 15,000.00***	$ -
	Preliminary Design RCS - Wells 106 and Well 107	$ 16,666.00	$ 16,666.00	$ -	$ 16,666.00	$ 16,666.00	$ -	$ -
	Preliminary Design TT - Well 115	$ -	$ -	$ 17,000.00	$ 17,000.00	$ 17,000.00	***$ 17,000.00***	$ -
	Preliminary Design RCS - Well 115	$ -	$ -	$ 3,000.00	$ 3,000.00	$ 3,000.00	***$ 3,000.00***	$ -
	Preliminary Design TT - Additional Pipeline	$ 6,912.00	$ 6,912.00	$ -	$ 6,912.00	$ 6,912.00	$ -	$ -
	Flow Science - Pipeline Surge Analysis	$ 10,010.00	$ 10,010.00	$ -	$ 10,010.00	$ 10,010.00	$ -	$ -
	Preliminary Design TT - Well Pump Mods	$ 4,728.00	$ 4,728.00	$ -	$ 4,728.00	$ 4,728.00	$ -	$ -
	Preliminary Design TT - IDP-PTP Mods	$ 20,220.00	$ 20,220.00	$ -	$ 20,220.00	$ 20,220.00	$ -	$ -
	SPI - Membrane Preliminary Design	$ 21,043.00	$ 21,043.00	$ -	$ 21,043.00	$ 21,043.00	$ -	$ -
	PDR Preparation - Tetra Tech	$ 21,452.00	$ 21,452.00	$ -	$ 21,452.00	$ 21,452.00	$ -	$ -
	Preliminary Design Total	***$ 105,200.00***	***$ 105,200.00***	***$ 35,000.00***	***$ 140,200.00***	***$ 140,200.00***	***$ 35,000.00***	$ -
4	Final Design - Well 107 Drilling and Equipping	$ 112,992.00	$ 112,992.00		$ 112,992.00	$ 112,992.00	$ -	$ -
	Well 107 - RCS (assumed 60% of original)	$ 109,140.00	$ 109,140.00	$ -	$ 109,140.00	$ 109,140.00	$ -	$ -
	Meetings/Processing/ect. - Well 107	$ 5,580.00	$ 5,580.00		$ 5,580.00	$ 5,580.00	$ -	$ -
	Final Design - 2nd Well (Well 115)	$ 61,615.00	$ -	$ 110,713.00	$ 110,713.00	$ 110,713.00	***$ 49,098.00***	$ -
	2nd Well (Well 115) - RCS	$ 59,764.00	$ -	$ 108,000.00	$ 108,000.00	$ 108,000.00	***$ 48,236.00***	$ -
	Meetings/Processing/ect. - 2nd Well (Well 115)	$ -	$ -	$ 5,580.00	$ 5,580.00	$ 5,580.00	***$ 5,580.00***	$ -
	Final Design Well Pump Modifications	$ 1,692.00	$ -	$ 5,000.00	$ 5,000.00	$ 5,000.00	***$ 3,308.00***	$ -
	Final Design Pipeline	$ 74,260.00	$ -	$ -	$ -	$ -	***$ (74,260.00)***	$ -
	Potholing Subconsultant	$ 5,500.00	$ -		$ -	$ -	***$ (5,500.00)***	$ -
	Traffic Control	$ 39,600.00	$ -		$ -	$ -	***$ (39,600.00)***	$ -
	Geotechnical - Leighton	$ 32,450.00	$ -		$ -	$ -	***$ (32,450.00)***	$ -
	Survey and Mapping - Coast Survey	$ 24,860.00	$ -		$ -	$ -	***$ (24,860.00)***	$ -
	Easements	$ 7,136.00	$ -		$ -	$ -	***$ (7,136.00)***	$ -
	Final Design IDP-PTP Mods (General Sheets)	$ 5,224.00	$ -	$ 5,224.00	$ 5,224.00	$ 5,224.00	$ -	$ -
	Final Design IDP-PTP Mods (CIP Cartridge Filter)	$ 3,564.00	$ -	$ 3,564.00	$ 3,564.00	$ 3,564.00	$ -	$ -
	Membrane Final Design - SPI	$ 15,598.00	$ -	$ 15,598.00	$ 15,598.00	$ 15,598.00	$ -	$ -
	Final Design IDP-PTP (CIP Cartridge Filter) Specs	$ 4,000.00	$ -	$ 4,000.00	$ 4,000.00	$ 4,000.00	$ -	$ -
	Meetings/Processing/etc. - CIP Cartridge	$ 5,581.00	$ -	$ 5,581.00	$ 5,581.00	$ 5,581.00	$ -	$ -
	Final Design IDP-PTP Modifications (remaining)	$ 79,868.00	$ -		$ -	$ 79,868.00	$ -	***$ 79,868.00***
	Final Design IDP-PTP (Remaining Work) Specs	$ 3,176.00	$ -		$ -	$ 3,176.00	$ -	***$ 3,176.00***
	Meetings/Processing/etc - Rest of Work	$ -	$ -		$ -	$ 5,580.00	***$ 5,580.00***	***$ 5,580.00***
	Final Design Total	***$ 651,600.00***	***$ 227,712.00***	***$ 263,260.00***	***$ 490,972.00***	***$ 579,596.00***	***$ (72,004.00)***	***$ 88,624.00***
5	Bid Phase - 1st Package	$ 3,200.00	$ 3,200.00	$ -	$ 3,200.00	$ 3,200.00	$ -	$ -
	Bid Phase - 2nd Bid Package	$ 1,196.00	$ -	$ 3,100.00	$ 3,100.00	$ 3,100.00	***$ 1,904.00***	$ -
	Bid Phase - 3rd Bid Package	$ -	$ -	$ 3,100.00	$ 3,100.00	$ 3,100.00	***$ 3,100.00***	$ -
	Bid Phase - SPI	$ 1,804.00	$ -	$ 1,804.00	$ 1,804.00	$ 1,804.00	$ -	$ -
	Bid Phase Total	***$ 6,200.00***	***$ 3,200.00***	***$ 8,004.00***	***$ 11,204.00***	***$ 11,204.00***	***$ 5,004.00***	$ -
6	Construction Phase - 1st Package	$ 76,500.00	$ 76,500.00	$ -	$ 76,500.00	$ 76,500.00	$ -	$ -
	Construction Phase - 2nd Package	$ 66,127.00	$ -		$ -	$ 66,127.00	$ -	***$ 66,127.00***
	Construction Phase - 3rd Package	$ -	$ -		$ -	$ -	$ -	$ -
	Construction Phase - SPI	$ 10,373.00	$ -		$ -	$ 10,373.00	$ -	***$ 10,373.00***
	Construction Phase Total	***$ 153,000.00***	***$ 76,500.00***	$ -	***$ 76,500.00***	***$ 153,000.00***	$ -	***$ 76,500.00***
7	Post Construction Phase	$ 22,090.00			$ -	$ 22,090.00	$ -	***$ 22,090.00***
	Post Construction Phase - SPI	$ 2,310.00			$ -	$ 2,310.00	$ -	***$ 2,310.00***
	Post Construction Phase Total	***$ 24,400.00***	$ -	$ -	$ -	***$ 24,400.00***	$ -	***$ 24,400.00***
8	***IDP Water Quality Forensics***	***$ 80,000.00***	***$ 80,000.00***	***$ 25,000.00***	***$ 105,000.00***	***$ 105,000.00***	***$ 25,000.00***	$ -
	Unallocated Budget (Contingency)	$ -	$ -	$ -	$ -	***$ 7,000.00***	***$ 7,000.00***	***$ 7,000.00***
	Totals	$ 1,120,800.00	$ 593,012.00	$ 331,264.00	$ 924,276.00	$ 1,120,800.00	$ -	$ 196,524.00

Contract Authorizabon Summary as of February 7, 2012

IRVINE RANCH WATER DISTRICT
PROFESSIONAL SERVICES VARIANCE

Project Title: IDP Wells, Pipeline & Treatment Plant Imp.
File No.: 11325
Date: February 7, 2012
Variance No.: 1
Project No.: 11325 and 11432
Project No. 11325 and 11432
Purchase Order No.: 123049-02 and PO# 500908

Originator: [X] IRWD [X] ENGINEER/CONSULTANT [ ] Other (Explain)_____

Description of Variance (*attach any back-up material*): District requested the following deletions in the original scope of work: Well 106 drilling and equipping final design; and the final design of Well 106 conveyance pipeline and the replacement of the existing Navy Line within Irvine Center Drive. The District has added the following additional scope of services: additional Well 106 siting evaluation; Well 115 siting evaluation; Well 115 drilling and equipping final design; and additional IDP water quality forensics. The above changes are summarized in the attached February 7, 2012 correspondence prepared by Tetra Tech. The variance request is a zero cost variance.

Engineering & Management Cost Impact:

Classification	Manhours	Billing Rate	Labor $	Direct Costs	Subcon. $	Total $
					Total $ =	**$0**

Schedule Impact:

Task No.	Task Description	Original Schedule	Schedule Variance	New Schedule
4,5&8	Well 115 final design	NA	1 year from City approval of site	1 year from City approval of site

Required Approval Determination:

Total Original Contract	$ 1,120,800	[ ] General Manager: Single Variance less than or equal to $30,000.
Previous Variances $ 0 This Variance $ 0		[ ] Committee: Single Variance greater than $30,000, and less than or equal to $60,000.
Total Sum of Variances New Contract Amount	$ 0 $ 1,120,800	[ ] Board: Single Variance greater than $60,000.
Percentage of Total Variances to Original Contract	0.0%	[X] Board: Cumulative total of Variances greater than $60,000, or 30% of the original contract, whichever is higher.

ENGINEER/CONSULTANT: Tetra Tech
Company Name

Tom Eppe — 2/13/12
Project Engineer/Manager — Date

[illegible] 2/14/12 — 2/13/12
Engineer's/Consultant's Management — Date

IRVINE RANCH WATER DISTRICT

Kevin L Burton — 2/14/12
Department Director — Date

General Manager/Comm./Board — Date

IRVINE RANCH WATER DISTRICT

PROFESSIONAL SERVICES VARIANCE REGISTER

Project Title: IDP Wells, Pipeline & Treatment Plant Improvements

PO# 123049-02 and PO# 500908

Project No.: 11325 Project Manager: Jacob Moeder, P.E.

Variance No.	Description	Dates		Variance Amount
		Initiated	Approved	
1	Deletion of final design of Well 106 and pipelines. Add final design of Well 115 and miscellaneous additional work (RCS and Tetra Tech)	2/07/12		$0

February 23, 2012
Prepared by: J. McGehee/R. Mori
Submitted by: K. Burton
Approved by: Paul Cook

ENGINEERING AND OPERATIONS COMMITTEE

BAKER WATER TREATMENT PLANT DESIGN VARIANCE NO. 6

SUMMARY:

Staff recommends that the Board authorize the General Manager to execute Variance No. 6, in the amount of $73,000, with RBF Consulting (RBF) for the design of the Baker Water Treatment Plant (Baker WTP) project. The variance proposal includes additional design tasks that were identified through the development of the final design that were not included in RBF's original contract scope of work.

BACKGROUND:

At the onset of the project, the Baker WTP residuals were planned to be delivered to the Los Alisos Water Recycling Plant (LAWRP) for processing if available sewer capacity between Baker WTP and LAWRP could be confirmed. Through hydraulic modeling efforts, sewer capacity was confirmed, provided that a new 16-inch sewer be constructed from the plant to an existing sewer crossing the Serrano Creek Trail. The construction of that 16-inch sewer, the non-reclaimable waste (NRW) pipeline, was incorporated into the project at the start of the final design process and the decision to deliver plant residuals to LAWRP was confirmed.

Two sources of supply are planned for the Baker WTP. The primary raw water supply to the Baker WTP will be untreated Metropolitan Water District of Southern California (MWD) water from the Santiago Lateral. During unplanned outages of MWD untreated water or the availability of excess water in Irvine Lake, Irvine Lake Water (ILW) can be used as an alternative supply. For planning purposes, staff anticipates that untreated MWD water will be delivered to the plant for 10 months per year while ILW will be delivered to the plant for two months per year.

As the costs associated with delivering residuals to LAWRP were being developed, a detailed review of the residuals production estimates and the water quality characteristics of the Baker WTP residuals associated with each source of supply was conducted. The projected residual flow rates and residuals production estimates vary greatly depending upon which source of supply is delivered to the Baker WTP. The lowest residual flow rates and residuals production estimates are associated with untreated MWD water, while the highest residual flow rates and residuals production estimates are associated with ILW. For untreated MWD water, at a design turbidity level of 3 NTU, RBF/Carollo estimated that 1,800 dry pounds per day of residuals would be produced. For ILW, at a design turbidity level of 15 NTU, RBF/Carollo estimated that 7,400 dry pounds per day of residuals would be produced. The residuals quantities generated from coagulant addition are included within the previous estimates and are based upon anticipated coagulant dosages provided by RBF/Carollo. Typically, the design criteria for residuals handling facilities are governed by the maximum anticipated residual flow rate and residuals loading scenarios, which in this case would be governed by ILW.

LAWRP and MWRP Residuals Handling Concerns:

With the RBF/Carollo residuals production estimates defined, staff became concerned about LAWRP's ability to process the residuals, especially when ILW is used as the source of supply to the Baker WTP, while continuously meeting plant effluent discharge requirements. More significantly though, staff realized that the current method of sludge disposal at LAWRP is being modified. Currently, LAWRP solids are mechanically dewatered onsite and delivered to a composting facility in Arizona. When the Michelson Water Recycling Plant (MWRP) biosolids project is online, which is anticipated for Fall 2015, the LAWRP solids will no longer be trucked to Arizona, but rather to MWRP, where they will be processed through the solids processing facilities currently in design.

With LAWRP residuals being trucked to MWRP in the future, staff coordinated with the MWRP biosolids engineering design consultant, Black & Veatch, to identify potential impacts associated with introducing the Baker WTP residuals into the proposed solids processing facilities. Black & Veatch has expressed concerns regarding the potential impacts to the proposed facilities including:

- Lower quality pellet produced from the dryer due to the high concentration of inorganics (primarily silt and coagulation chemicals) present in the Baker WTP residuals. The composition of the pellet will become more variable and the overall BTU content of the pellet will decrease.
- Concerns associated with pellet formation and pellet stabilization during transport.
- Increased digested sludge production of 5 to 20 percent depending on the source water quality to the Baker WTP.
- Increased drying and disposal costs given the anticipated 5 to 20 percent increase in solids production.
- Increased complexities associated with operation of the acid phase digestion process.
- Extensive operational impacts associated with variable incoming solids loading (as a result of the Baker WTP residuals) to the primary sludge thickening processes.

All of these issues pose significant risks to the overall success of the proposed MWRP biosolids project. To avoid these risks, staff is evaluating the construction of onsite residuals handling facilities at the Baker WTP.

Onsite Residuals Handling:

Staff requested RBF/Carollo to perform a high-level analysis to identify a conceptual treatment process that would be capable of processing and dewatering the Baker WTP residuals onsite. The goal of the analysis was to identify a conceptual residuals handling process and to estimate the associated order-of-magnitude capital cost of those facilities. Carollo identified a conceptual treatment process consisting of residuals thickening and mechanical dewatering facilities that included a sludge pumping station, primary and secondary thickeners, thickened sludge pumping station, polymer storage and feed facility, mechanical dewatering with centrifuges, and a truck

loading facility. RBF/Carollo based the size of the conceptual facilities on historical water quality and turbidity data for both MWD untreated water and ILW.

RBF/Carollo developed initial estimates for the capital and operations and maintenance (O&M) costs associated with the conceptual facilities. The capital cost estimates range from $5.5 to $9 million and the O&M cost estimates range from $500,000 to $600,000 per year. Due to the preliminary level of the analysis, the capital cost estimates include 30 percent for contingency and 20 percent for engineering and administrative costs.

The current cost of water estimate includes costs associated with the transmission and treatment of the plant residuals at LAWRP including a sewer connection fee, the 16-inch NRW sewer line construction, and the annual sewer disposal costs. With the implementation of onsite residuals handling facilities, these costs may be eliminated and/or reduced in magnitude. If these costs can be completely eliminated, the unit cost of water could be decreased and that reduction could then help to offset the cost increase resulting from the implementation of onsite residuals handling facilities. Using the range of capital and O&M costs provided above along with the offset for the eliminated items, the unit cost of treated water from the Baker WTP is anticipated to increase between $11 and $18/AF with the implementation of onsite residuals handling facilities. This equates to an increase in the overall unit cost of treated water of between 1 to 2%.

As part of Variance No. 6, RBF/Carollo will refine the design criteria for the residuals handling facilities in an effort to further reduce the size and cost of the facilities. At the completion of the variance work, the unit cost of water estimates will be updated and refined.

RBF Design Variance for First Phase of Solids Handling Facilities Analysis:

Staff proposes to proceed with the incorporation of onsite residuals handling facilities in a two-phased approach. The first phase, which is addressed by Variance No. 6, will identify the recommended residuals handling facilities, define the design criteria, site the facilities, identify the impacts of those facilities on the current design, and update the overall capital and O&M costs for the project. The second phase, which will be addressed by a future design variance, will be the development of the final design and the incorporation of the residuals handling facilities into the overall project.

RBF/Carollo submitted Variance No. 6, in the amount of $73,000, to complete the first phase of the work described above. Staff has reviewed the variance and finds it to be acceptable. Staff recommends that the Board approve Variance No. 6 to RBF's agreement, in the amount of $73,000, as summarized in Exhibit "A".

Stakeholder Coordination:

Throughout this entire process, staff has closely coordinated with the Baker Project Committee stakeholders. An initial meeting with the stakeholders was held December 21, 2011 to present the issues and to obtain concurrence on proceeding with the evaluation of onsite residuals handling facilities. A second meeting was held January 26, 2012 to present the approach to completing the evaluation and RBF/Carollo's preliminary scope of work and fee to complete the

work. The stakeholders concur with the two-phased approach defined above and are planning to take the variance to their respective Boards in February and March.

Schedule:

RBF/Carollo submitted the 100 percent design plans February 6, 2012. Staff is currently reviewing the plans. The work included in Variance No. 6 is scheduled for completion in March 2012. RBF/Carollo has indicated that an additional six months will be needed to develop the design of the recommended facilities and to incorporate the facilities into the overall project. As a result, the bid advertisement will be delayed from March 2012 to September 2012.

FISCAL IMPACTS:

Project 11218 (1417) is included in the FY 2011-12 Capital Budget. The existing budget and Expenditure Authorizations are sufficient to fund Variance No. 6.

ENVIRONMENTAL COMPLIANCE:

This project is subject to the California Environmental Quality Act (CEQA) and an Environmental Impact Report (EIR) was prepared in conformance with California Code of Regulations Title 14, Chapter 3, Article 7. The Final EIR was certified and adopted by the Board in April 2011.

RECOMMENDATION:

That the Committee recommend the Board authorize the General Manager to execute Variance No. 6, in the amount of $73,000, with RBF Consulting for the Baker Water Treatment Plant, Project 11218 (1417).

LIST OF EXHIBITS:

Exhibit "A" – Professional Services Variance – Variance No. 6

EXHIBIT "A"

RBF CONSULTING

February 2, 2012 JN 10-106232

Mr. Richard Mori, P.E.
Senior Project Manager
IRVINE RANCH WATER DISTRICT
15600 Sand Canyon Avenue
Irvine, CA 92618

Subject: Baker Water Treatment Plant – Variance No. 6

Dear Rich:

RBF/Carollo appreciates the opportunity to provide this proposal to IRWD and the Stakeholders to add mechanical dewatering facilities to the Baker Water Treatment Plant (WTP). What follows is our proposed scope of work, schedule, and budget that outlines the level of effort needed to identify the recommended mechanical dewatering facilities, site the facilities, and determine the impacts of those facilities on the current design. In summary, we anticipate eight (8) weeks to complete the project, and our estimated fee is $73,000.

PROJECT UNDERSTANDING

The Baker Water Treatment Plant (WTP) is currently approaching completion of the final design stage. Originally, solids from the WTP were planned to be discharged to the sewer. Recently, it was decided by IRWD and the Stakeholders to include design of mechanical dewatering facilities at the Baker Site.

SCOPE OF WORK

The Scope of Work is for determining the recommended mechanical dewatering facilities, siting the facilities, and determining the impact on the current design. The Scope for final design, which is not included herein, will be developed at the completion of this scope of work when the solids handling facility criteria are fully defined. Individual scope items are defined below.

Task 1: Selection of Mechanical Dewatering Facilities

Mechanical dewatering facilities at the Baker Water Treatment Plant (Baker) will be developed. The desired outcome of the task is a recommendation for solids dewatering facilities for Baker including design criteria, process elements, redundancy, and a site layout. Task 1 is expected to last eight weeks. Key tasks in the development of this work will include:

Task 1.1 Stakeholder Meeting

The first activity within this task will be a workshop with the project stakeholders to present and discuss the preliminary concepts and design criteria for mechanical dewatering facilities. It is the intent of this workshop to select a preferred option that will be further evaluated by the design team.

Task 1.2: Alternatives Evaluation

Alternatives will be evaluated over the range of solids loads anticipated at the plant. The solids load will be based on Irvine Lake Water data provided by IRWD from Irvine Lake Park as well as Lake Matthews water.

Capital and Operations & Maintenance Costs - Estimates for operating costs including, but not limited to, energy, chemical, dewatered solids disposal, and labor costs will be developed for each alternative. The capital cost evaluations will include impacts to estimated sewer connection fees used in the current project cost estimates and ongoing operating costs associated with sewer disposal.

Plant Sewer Discharge Analysis - Sewer discharges will be tabulated for the mechanical dewatering facilities and for all other project facilities on the Baker site. A capacity study of the existing residential sewer collection system adjacent to the site will be performed to determine whether the anticipated sewer dischargers can be discharged through the existing collections system. In addition, water quality projections will be performed to determine the anticipated constituents for all sewer discharges. The projections will be used to coordinate and confirm with IRWD LAWRP Operations staff that the sewer discharges can be accommodated at LAWRP.

Level of Redundancy - Dewatering facility redundancy is dependent on the selected design solids loading. For example, solids equipment sized for full redundancy for the 80th percentile load will not provide full redundancy at the 90th percentile load. The maximum solids loading capacity of the dewatering equipment and possible impacts on plant capacity will be evaluated for the scenarios listed previously. Options for temporarily increasing the solids handling capacity in the event the installed solids handling is exceeded will be identified.

Operational Philosophy - The solids loading to the plant will vary with the surface water source and water quality. Operating the dewatering facilities under these conditions will require dewatering equipment run time to be coordinated with available sludge storage. Impacts to run times and operations labor will be included in the evaluation.

Identify Necessary Changes to the Current Design - Key impacts to the current design will be identified for the recommended alternative. These impacts will then be quantified, and a final design scope of work will be prepared that includes the solids handling facilities and the associated changes to the existing design.

The evaluation will also consider the following options:

1. Role of the currently designed membrane filter waste washwater (MFWW) basins; i.e., keep both, eliminate both, or eliminate one.
2. Role and number of sludge thickeners needed, if any.
3. Comparison of centrifuge versus filter belt press for solids processing.

Task 1.3: Deliverables

Draft and final reports will be delivered to IRWD for review. The schedule assumes a one-week review period for each submission. This report will include evaluation and refinement of the following:

- Process flow diagrams
- Site plans
- Hydraulic profiles
- Process performance
- Benefits & drawbacks
- Cost estimates
- Alternatives Evaluation
- Plant sewer discharge analysis
- Scope/Fee/Schedule for second phase work
- Updated cost estimate for total project
- Sewer connection fees
- Sewer disposal costs
- Unit cost of water projections ($/AF)
- Project O&M costs

Results of the evaluation will be presented in a draft and final report. A draft report review workshop will take place one to two weeks after submission. The final report will be presented to IRWD at a final review workshop.

Task 2: Meetings and Workshops

A project kickoff meeting, two four-hour workshops, and bi-weekly coordination meeting will be conducted for the project. Carollo will prepare agendas, handouts, and minutes for each meeting and workshop. RBF will provide input to Carollo for preparation of agendas, handouts and minutes.

ITEMS NOT INCLUDED IN SCOPE OF WORK

In preparing this Scope of Work, the following were not included:

- Additional geotechnical investigations
- Additional surveying
- Architectural
- HVAC
- Hazardous materials testing
- Landscaping
- OCFA Coordination
- Preparation of a separate bidding package for the mechanical dewatering facilities
- Potholing
- Permitting
- CEQA
- Final Design

SCHEDULE

The proposed project schedule is shown below. The project duration is estimated to be 8 weeks.

Task		Jan-12	Feb-12	Mar-12
Stakeholder Participation	1/26/2012			
Task 1 - Development and Evaluation of Mechanical Dewatering Alternatives				
Draft Report	28 days			
IRWD Review	7 days			
Review Workshop	3/1/2012			
Final Report	14 days			
Review Workshop	3/23/2012			
Task 2 - Meetings and Workshops				
Bi Weekly Coordination Meetings				

BUDGET

Projected labor hours and fee are shown in the table below.

	Labor Hours	Estimated Fee
Task 1 - Selection of Mechanical Dewatering Facilities	312	$57,000
Task 2 - Meetings and Workshops	76	$16,000
TOTALS	**388**	**$73,000**

We appreciate your consideration of this request for variance and look forward to the opportunity to provide ongoing service to the District and Project Stakeholders for the Baker WTP project. Should you require additional information or have any questions, please do not hesitate to contact me at 949.855.3616.

Sincerely,

Cindy L. Miller, P. E.
Vice President
Water Resources

Pc: Joseph McGehee, IRWD
Jim Meyerhofer, Carollo

IRVINE RANCH WATER DISTRICT
PROFESSIONAL SERVICES VARIANCE

Project Title: Baker Water Treatment Plant
File No.:
Date: February 2, 2012
Variance No.: 6
Project Purchase Order No.: 503424
Project No.: PR 11218 (1417)
Originator: [X] IRWD [X] ENGINEER/CONSULTANT [ ] Other (Explain)
Description of Variance (*attach any back-up material*):
Variance No.6 is for completion of a study to determine the recommended mechanical dewatering facilities, siting the facilities, and determining the impact on the current design for the Baker Water Treatment Plant.

Engineering & Management Cost Impact:

Classification	Man Hours	Billing Rate	Labor $	Direct Costs $	Subcon. $	Total $
Task 1 – Selection of Mechanical Dewatering Facilities	312	Varies				$57,000
Task 2 – Meetings and Workshops	76	Varies				$16,000
					Total $ =	$73,000

Schedule Impact:

Task No.	Task Description	Original Schedule	Schedule Variance	New Schedule
1 & 2	See attached Scope & Fee Table	Final Design by March 2012	56 days for study completion	Final Design by Sept 2012

Required Approval Determination:

Total Original Contract	$4,047,164	[ ] General Manager: Single Variance less than or equal to $30,000.
Previous Variances $ 1,205,755 This Variance $ 73,000		[ ] Committee: Single Variance greater than $30,000, and less than or equal to $60,000.
Total Sum of Variances New Contract Amount	$ 1,278,755 $ 5,325,919	[ ] Board: Single Variance greater than $60,000.
Percentage of Total Variances to Original Contract	31.6%	[X] Board: Cumulative total of Variances greater than $60,000, or 30% of the original contract, whichever is higher.

ENGINEER/CONSULTANT: RBF Consulting

Cindy Miller — Project Manager — Date

Engineer's/Consultant's Management — Date

IRVINE RANCH WATER DISTRICT

for Kevin L Burton — Department Director — 2/13/12 — Date

General Manager/Comm./Board — Date

IRVINE RANCH WATER DISTRICT

PROFESSIONAL SERVICES VARIANCE REGISTER

Project Title: Baker Water Treatment Plant

Project No.: PR 11218 (1417) Project Manager: Richard K. Mori

Variance No.	Description	Dates		Variance Amount
		Initiated	Approved	
1	Baker Pipeline Flow Test	12/11/08	1/15/09	$29,974
2	- Forebay - Feedwater PS - TCWD PS - Hazardous Material Inspection Testing	01/26/10	02/11/10	$361,000
3	-MWD / TCWD Surge Analysis - SWPPP & WQMP - Potholing	01/13/11	01/24/11	$95,370
4	- Add'l Design Effort - Air Valves - Legal Descriptions - Membrane & UV - MWD Coordination - Project Mgmt - South County Pipeline	06/24/2011	07/25/11	$710,096
5	- Potholing- Design / Engineering Coordination - Field Survey	12/28/2011	01/3/2012	$9,315
6	- Mechanical Dewatering Facilities Study	02/01/2012		$73,000

February 23, 2012
Prepared by: K. Lew/M. Cortez
Submitted by: K. Burton
Approved by: Paul Cook

ENGINEERING AND OPERATIONS COMMITTEE

PLANNING AREA 9B JEFFREY ROAD PIPELINES
EXPENDITURE AUTHORIZATIONS AND POTENTIAL CHANGE OF WORK WITH
IRVINE COMMUNITY DEVELOPMENT COMPANY

SUMMARY:

Irvine Community Development Company (ICDC) is proceeding with Planning Area 9B (Stonegate) Jeffrey Road Improvements from Irvine Boulevard to Portola Parkway. As part of the project, ICDC will design and construct IRWD's domestic water and recycled water capital facilities under a Supplemental Reimbursement Agreement. Staff recommends that the Board:

- Approve Expenditure Authorizations for Project 10423 in the amount of $38,100 and Project 30422 in the amount of $47,400; and
- Approve a Potential Change of Work in the amount of $83,146 to the Supplemental Reimbursement Agreement with ICDC for Planning Area 9B to design the Jeffrey Road IRWD Capital Pipelines.

BACKGROUND:

IRWD and ICDC have had a Reimbursement Agreement (RA) for design and construction of IRWD capital facilities in place since May 1997. Under this RA, a Supplemental Reimbursement Agreement serves to define the improvements to be designed and constructed within a specific Planning Area as well as the estimated reimbursable costs. A Supplemental Reimbursement Agreement was previously approved for all IRWD Capital pipelines within Planning Area 9. All required IRWD Capital Improvements are documented in the Planning Area 9B and 9C Sub-Area Master Plan, dated March 2006, prepared by Stantec. The improvements are shown in Exhibit "A".

In November 2006 the Board authorized the Jeffrey Road pipelines design under the Supplemental Reimbursement Agreement. The selected consultant was Penco Engineering (Penco) in the amount of $209,518. The design was nearly complete when the project was put on hold by ICDC in September 2007 due to the development slowdown. The project remained on hold until August 2011, when ICDC decided to restart the design. Staff met with ICDC, Penco, and Penco's subconsultant SAIC to discuss several IRWD required revisions to the design including:

- Upsizing the 16-inch Zone B recycled water main to a 36-inch main from Irvine Boulevard to Encore including a new valve vault and connection detail modifications;
- Preparing exhibits for valve vault location alternatives due to the congestion of existing and proposed utilities;
- Preparing plans for the realignment of the proposed 16-inch Zone B recycled water main;
- Extending and updating the 12-inch Zone 3 domestic water plans to include a connection to a proposed 12-inch domestic water main located at Jeffrey and Encore;

- Additional coordination and meetings; and
- Updating the technical specifications.

Staff has reviewed the Potential Change of Work in the amount of $83,146 as shown in Exhibit "B" and finds the scope of work and fee to be acceptable.

FISCAL IMPACTS:

Projects 10423 (1519) and 30422 (1024) are included in the FY 2011-12 Capital Budget. Approval of Expenditure Authorizations are requested in the amounts shown in the table below and in Exhibit "C".

Project No.	Current Budget	Addition <Reduction>	Total Budget	Existing EA	This EA Request	Total EA Request
10423 (1519)	$1,755,600	$-0-	$1,755,600	$227,000	$ 38,100	$265,100
30422 (1024)	$3,499,100	$-0-	$3,499,100	$305,700	$ 47,400	$353,100
Total	$5,254,700	$-0-	$5,254,700	$532,700	$85,500	$618,200

ENVIRONMENTAL COMPLIANCE:

The construction of the capital facilities for Planning Area 9B is subject to the California Environmental Quality Act (CEQA) and in conformance with the California Code of Regulations Title 14, Chapter 3, Article 7, an Environmental Impact Report, SCH #2001051010, was certified by the lead agency, the City of Irvine.

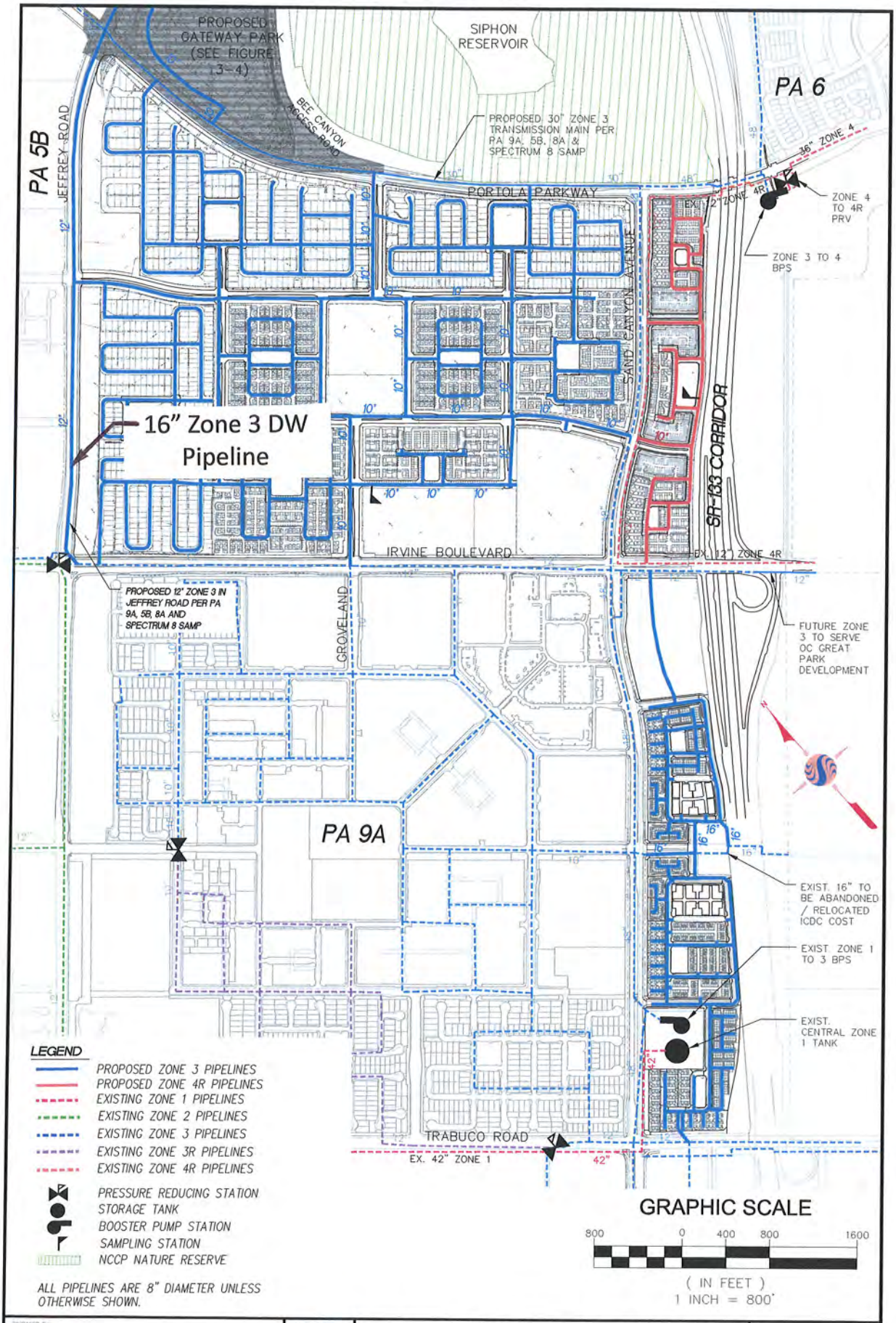
RECOMMENDATION:

That the Committee recommend the Board approve Expenditure Authorizations for Project 10423 (1519) in the amount of $38,100 and Project 30422 (1024) in the amount of $47,400; and approve a Potential Change of Work in the amount of $83,146 to the Reimbursement Agreement with the Irvine Community Development Company for Planning Area 9B to construct PA 9B Jeffrey Road IRWD Capital Facilities, Projects 10423 (1519) and 30422 (1024).

LIST OF EXHIBITS:

Exhibit "A" – Project Location Map
Exhibit "B" – Potential Change of Work
Exhibit "C" – Expenditure Authorizations

EXHIBIT "A"

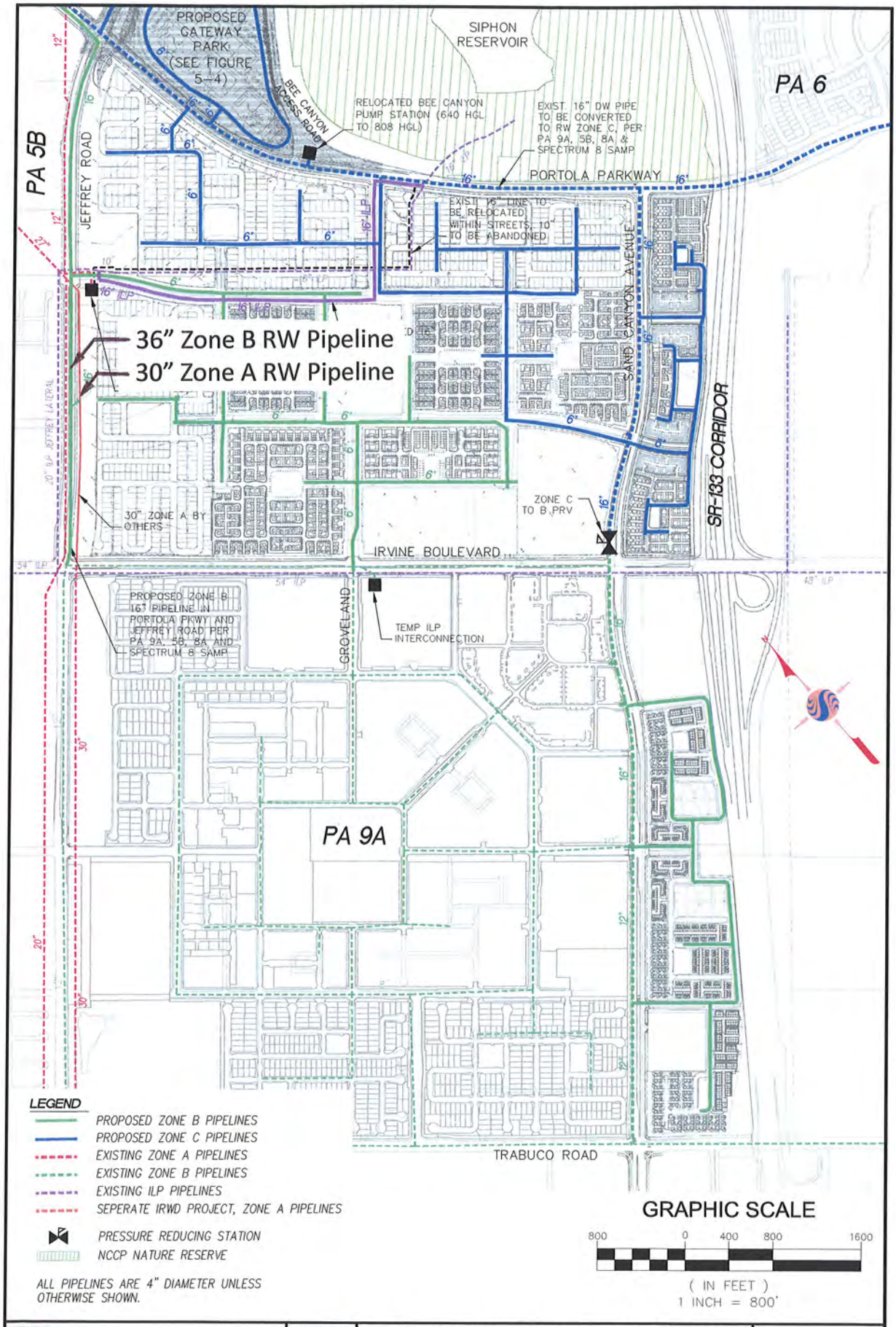


PREPARED BY:
Stantec
STANTEC CONSULTING INC.
19 TECHNOLOGY DRIVE
IRVINE, CA 92618
949.923.6000
stantec.com

PREPARED FOR:
IRVINE RANCH WATER DISTRICT

PLANNING AREA 9B, 9C SAMP
DOMESTIC WATER FACILITIES

FIGURE 3-3



PREPARED BY

STANTEC CONSULTING INC.
19 TECHNOLOGY DRIVE
IRVINE, CA 92618
949.923.6000
stantec.com

PREPARED FOR

IRVINE RANCH WATER DISTRICT

PLANNING AREA 9B, 9C SAMP
NON-POTABLE WATER

FIGURE 5-3

EXHIBIT "B"

CHANGE NO.: _____
DATE: 11/23/2011

POTENTIAL CHANGE OF WORK ACKNOWLEDGEMENT & VALUE (FOR IRWD CAPITAL IMPROVEMENTS)

The purpose of this form is to acknowledge a change in work for the intent of reimbursement of costs. Upon acceptance a change order will be issues.

IRWD P.O. No.: _____

ICDC Original Contract #: _____
ICDC Original SAP PO #: 4500034113
ICDC SAP CO PO #: _____

Owner: Irvine Community Development Company
Consultant: Penco Engineering
Design Engineer: _____
IRWD Mgr. Malcolm Cortez

Sewer	
Domestic Water	X
Reclaim Water	X
Other	

Project Description: PA9B 36" Syphon

PART A – POTENTIAL CHANGE OF WORK:

Plan Revision Required: [X] YES [ ] NO **Estimated Cost:** N/A

Change Initiated By: IRWD

Work Description: See attached change order.

1. Submitted by: _____
   Jamie Yoshida
   In IRWD's opinion the aforementioned work qualify as a potential change in work. **does** [ ] **does not** [ ]
2b. IRWD comments (required if representative does not concur with the potential change): _____
2c. Reviewed by: _____
   IRWD Representative / Date
3. Received and Recorded by: _____
   Owner Representative / Date

PART B – CHANGE OF WORK VALUE: $ 83,146.00

Detailed Backup Attached [X]

1. Submitted by: _____ 11/28/11
   Jamie Yoshida / Date
2. Recommended by: KNL _____ 2/28/12
   IRWD Representative / Date

S:\ICDC\COMMUNITY DEV & CONSTRUCTION\CONSTRUCTION\ENGINEERING OPERATIONS\PA9B\letters\irwd\2011\2011_1123_PCOW_Penco_Jeffrey Road Street Improvements_4500034113_IRWD.docx

Revised 5/8/08

PENCO Engineering, Inc.
Civil Engineering
Planning
Surveying

Revised November 14, 2011
October 26, 2011
Planning Area 9B
Contract No. 4500034113
PENCO Engineering Job No. 1790.19

Mr. Jamie Yoshida
THE IRVINE COMPANY
550 Newport Center Drive
Newport Beach, CA 92658

RE: ADDENDUM FOR ADDITIONAL ENGINEERING SERVICES FOR PLANNING AREA 9B JEFFREY ROAD STREET IMPROVEMENTS AND IRWD CIP PLANS

Dear Jamie:

PENCO Engineering, Inc. (PENCO) is pleased to submit this addendum for professional services to revise the Jeffrey Road Plan Specifications and Estimates. These changes have been originated by your request, field conditions and by request of the Irvine Ranch Water District (IRWD). We have classified the changes as AD work and IRWD CIP work. The following is an explanation of the specific tasks and associated budgets for completion of the Project.

I. IRWD – CIP WORK

Plan Revision Summary – IRWD CIP

The ICDC has requested that the Jeffrey Road Domestic and Recycled Water Main Plans be completed for construction. In September 2007, the Jeffrey Road Domestic and Recycled Water Min Plans were put on hold at the request of ICDC. SAIC met with the Irvine Ranch Water District (IRWD) on August 13, 2011 to discuss design changes to accommodate temporary and future connections to a proposed 36" Recycled Water (siphon line) where Hunsaker and Associates (Hunsaker) is designing near the intersection of Encore and Jeffrey Road. During the meeting IRWD decided that the proposed 16" Zone B Recycled Water Main would be upsized to a 36" from Irvine Boulevard to Encore and a new 36" valve and vault will be required for a future tie-over to a proposed 36" Zone A Recycled Water Main. In addition, a 12" Zone 3 Domestic Water connection will be added to connect to a proposed 12" Domestic Water line that Hunsaker is designing at the intersection of Encore and Jeffrey Road. A meeting at the offices of ICDC was held on September 1, 2011 to discuss a realignment of Encore and additional plan revisions to move an existing irrigation water filtering system to outside of the proposed Encore realignment. In this meeting, ICDC and IRWD directed that a new 10" irrigation water line be extended from an existing irrigation water line in Jeffrey Road to the newly proposed lateral location for the irrigation water filtering system. In addition, several existing irrigation valve structures currently located above ground on the west side of Jeffrey Road will be modified to below ground.

1. Recycled Water Plan Redesign and Updates **$46,959.00**

1.1 **Revise Plan and Profile of 16" Zone B to 36" Zone A**
PENCO shall work with SAIC to revise the plan and profile of approximately three (3) sheets (Sta. 10+00 to 36+00) of the 16" Zone B Recycled Water Main plans to upsize the Recycled Water Main from 16" to 36". In addition, the connection detail at Sta. 10+00 will need to be

revised to reflect connecting to a 36" Recycled Water Main. A tee will be added around Sta. 36+00 for future connection to the proposed 36" Zone A Recycled Water Main. The proposed 30" Zone A Recycled Water Main will need to be lowered to accommodate the future connection to the proposed Zone B 36" Recycled Water Main in Encore. A detail of the future connection may be necessary to illustrate how the future connection between the Zone A and Zone B Recycled Water Mains will be accomplished which is included in this task.

1.2 Revise Plan and Profile of 30" Zone A Main and Prepare Plan and Profile for 36" Zone A Connection at Encore

PENCO will work with SAIC to revise the plan and profile of one (1) sheet of the 30" Zone A Recycled Water Main plans to add a tee for connection to a proposed 36" Recycled Main (siphon line) that is currently being designed by Hunsaker. Additional plan and profile will be required to extend a newly proposed 36" Recycled Water Main from the proposed tee location to the connection point provided by Hunsaker.

1.3 Prepare Detail Sheets for 36" Valve and Vault

A valve vault will be required along the 36" Zone A Recycled water main to accommodate a new 36" isolation valve. A new valve and enlarged vault details will be designed, based on the Zone A 30" valve vault design that has been previously reviewed by IRWD, to accommodate the proposed 36" isolation valve. It is anticipated that new isolation valve vault details will require the addition of two (2) plan sheets.

1.4 Prepare Exhibit for Valve Vault Location Alternatives

Due to the congestion of existing and proposed utilities at the intersection of Jeffrey Road and Encore, IRWD has requested several valve vault alternative locations to choose from and development of these alternatives will be required. An exhibit of valve vault locations has been prepared and provided to IRWD for consideration.

1.5 Zone B Recycled Water Alignment and Plan and Profile Sheets

PENCO will work with SAIC to prepare a preliminary realignment of the proposed 16" Zone B Recycled Water Main. New plan and profile design sheets based on approval of the 16" realignment by IRWD will be prepared as well. This task is anticipated to require three (3) sheets of additional plan and profile between the connection point at Irvine Boulevard and the return to the originally proposed alignment on the northwest side of Encore in Jeffrey Road.

2. Domestic Water Plan Redesign and Updates **$5,518.00**

PENCO shall work with SAIC to revise the plan and profile of one (1) sheet of the 12" Zone 3 Domestic Water Main plans to add a tee for connection to a proposed 12" Domestic Main that is currently being designed by Hunsaker on the west side of Jeffrey Road at Encore. Additional plan and profile and connection details will be required to extend a newly proposed 12" Domestic Water Main from the proposed tee location to the connection point provided by Hunsaker.

3. Coordination and Meetings **$24,764.00**

Since the Jeffrey Road project began in March 2011, PENCO and SAIC have attended approximately five (5) coordination meetings. We anticipate additional coordination and meetings with SAIC, IRWD, Hunsaker and ICDC on the plan and connection detail revisions as mentioned above. This task also includes the preparation of several exhibits required for coordination meetings.

4. **Update Technical Specifications** **$5,085.00**

PENCO shall work with SAIC to update current technical specifications to reflect the revisions indicated in tasks 1 thru 3.

IRWD – CIP Work Subtotal $82,326

Reimbursables $820

GRAND TOTAL: **$83,146.00**

Our team is ready to start working on these Scope of Services described above upon receipt of your signed authorization. PENCO looks forward to working on successful completion of this project with ICDC. Should you have any questions regarding this document, please contact me at (949) 753-8111 or by email at Cpineda@pencoeng.com / Gjurica@pencoeng.com .

Sincerely,
PENCO *Engineering Inc.*

Carlos A. Pineda, P.E., LEED A.P.
Director of Engineering

Sincerely,
PENCO *Engineering Inc.*

George A. Jurica, P.E.
President

PENCO Engineering, Inc.
Civil Engineering
Planning
Surveying
"Client Success is Our Success"

COMPENSATION FOR SERVICES

FOR: IRWD CIP WORK JN #: 1790.19 DATE: 12/16/11

TASK	DEPT & PHASE	DESCRIPTION	P	SPM	TM	PM	SMM	SPE	PE	SR DE	DE	AE	ET	PA	PRO	SPS	PS	SST	ST	SC2	SC2 w/GPS	SC1	SUB	TOT. HRS.	TOTAL FEE
		SAIC	205	170	160	165	145	143	135	145	110	95	80	90	95	143	120	105	85	190	225	165			
		RECYCLED WATER PLAN REDESIGN & UPDATES																							
		1.1. REVISE PLAN & PROFILE 16 " ZONE B - 36" ZONE A	1.5			20				35				2										58.5	$ 8,862.50
		1.2. REVISE PLAN & PROFILE 30" ZONE A & 36" ZONE CONNECTION AT ENCORE	1.5			30				50				2										83.5	$ 12,687.50
		1.3. PREPARE DETAIL SHEETS FOR 36" VALVE & VAULT	0.5			10				30				1										41.5	$ 6,192.50
		1.4. PREPARE EXHIBIT FOR VALVE VAULT LOCATION ALT.	0.5			2				5														7.5	$ 1,157.50
		1.5. PREPARE NEW 16" ZONE B RECYCLED WATER ALIGN.	2			30				80				2										114	$ 17,140.00
		DOMESTIC WATER PLAN REDESIGN & UPDATES	2			10				20				5										37	$ 5,410.00
		MEETINGS AND COORDINATION	12			60				25				5										102	$ 16,435.00
		UPDATE TECHNICAL SPECIFICATIONS	2			25								5										32	$ 4,985.00
		TOTALS	22	0	0	187	0	0	0	245	0	0	0	22	0	0	0	0	0	0	0	0	$0	476	

Sub-Total	$72,870
Reimbursables	$1,456
TOTAL	$74,326

TASK	DEPT & PHASE	DESCRIPTION	P	SPM	TM	PM	SMM	SPE	PE	SR DE	DE	AE	ET	PA	PRO	SPS	PS	SST	ST	SC2	SC2 w/GPS	SC1	SUB	TOT. HRS.	TOTAL FEE
		PENCO Engineering, Inc.	180	170	160	155	145	143	135	145	110	95	80	80	95	143	120	105	85	190	225	165			
001	F000	PENCO COORDINATION AND MEETINGS	2			22				24				9.38										57.38	$8,000
		TOTALS	2	0	0	22	0	0	0	24	0	0	0	9.38	0	0	0	0	0	0	0	0	0	57.38	

Sub-Total	$8,000
Reimbursables	$820
GRAND TOTAL	$83,146

B-5

F:\JOB\2006\01790\Addendums\19\Compensation Final.xls

IRVINE RANCH WATER DIST Exhibit "C"

Expenditure Authorization

Project Name: PA9 JEFFREY RD 12" ZONE 3 - IRVINE BLVD TO PORTOLA
EPMS Project No: 10423 **EA No:** 3
Oracle Project No: 1519
Project Manager: CORTEZ, MALCOLM
Project Engineer: LEW, KELLY
Request Date: February 6, 2012

ID Split: Miscellaneous

Improvement District (ID) Allocations

ID No.	Allocation %	Source of Funds
150	100.0	BONDS YET TO BE SOLD**
Total	**100.0%**	

Summary of Direct Cost Authorizations

Previously Approved EA Requests:	$227,000
This Request:	$38,100
Total EA Requests:	$265,100
Previously Approved Budget:	$1,755,600
Budget Adjustment Requested this EA:	$0
Updated Budget:	$1,755,600
Budget Remaining After This EA	$1,490,500

Comments:

Phase	This EA Request	Previous EA Requests	EA Requests to Date	This Budget Request	Previous Budget	Updated Budget	Start	Finish
ENGINEERING DESIGN - IRWD	0	25,000	25,000	0	25,000	25,000	9/06	9/12
ENGINEERING DESIGN - OUTSIDE	25,000	185,000	210,000	25,000	185,000	210,000	9/06	9/12
DESIGN STAFF FIELD SUPPORT	0	3,000	3,000	0	3,000	3,000	9/06	9/12
ENGINEERING - CA&I IRWD	0	0	0	0	25,000	25,000	5/13	6/14
ENGINEERING - CA&I OUTSIDE	0	0	0	(25,000)	100,000	75,000	5/13	6/14
CONSTRUCTION FIELD SUPPORT	0	0	0	0	5,000	5,000	5/13	6/14
CONSTRUCTION	0	0	0	0	1,250,000	1,250,000	5/13	6/14
LEGAL	0	3,000	3,000	0	3,000	3,000	9/06	6/14
Contingency - 10.00% Subtotal	$13,100	$11,000	$24,100	$0	$159,600	$159,600		
Subtotal (Direct Costs)	$38,100	$227,000	$265,100	$0	$1,755,600	$1,755,600		
Estimated G/A - 180.00% of direct labor*	($1,500)	$51,900	$50,400	$0	$104,400	$104,400		
Total	$36,600	$278,900	$315,500	$0	$1,860,000	$1,860,000		
Direct Labor	$0	$28,000	$28,000	$0	$58,000	$58,000		

*EA includes estimated G&A. Actual G&A will be applied based on the current ratio of direct labor to general and administrative costs.

EA Originator: Kelly Lew 2/6/12

Department Director: Kevin L Burton 2/9/12

Finance: _____

Board/General Manager: _____

** IRWD hereby declares that it reasonably expects those expenditures marked with two asterisks to be reimbursed with proceeds of future debt to be incurred by IRWD in a maximum principal amount of $1 ect is further described in the attached staff report and additional documents, if any, which are hereby incorpora f official intent to reimburse costs of the above-captioned project is made under Treasury Regulation Section 1.150-

IRVINE RANCH WATER DISTRICT

Expenditure Authorization

Project Name: PA9 JEFFREY RD PIPELINES 16" ZNB, 6" ZNC, 30" ZNA
EPMS Project No: 30422 **EA No:** 3
Oracle Project No: 1024
Project Manager: CORTEZ, MALCOLM
Project Engineer: LEW, KELLY
Request Date: February 6, 2012

ID Split: Regional Reclaimed Water Split with LAWD (11/08)

Improvement District (ID) Allocations

ID No.	Allocation %	Source of Funds
211	2.1	CAPITAL FUND
212	13.2	BONDS YET TO BE SOLD**
213	4.8	BONDS YET TO BE SOLD**
215	.7	CAPITAL FUND
221	13.2	BONDS YET TO BE SOLD**
230	9.6	BONDS YET TO BE SOLD**
235	7.9	PREVIOUSLY SOLD BONDS
240	7.7	BONDS YET TO BE SOLD**
250	31.7	BONDS YET TO BE SOLD**
261	9.1	BONDS YET TO BE SOLD**
Total	**100.0%**	

Summary of Direct Cost Authorizations

Previously Approved EA Requests:	$305,700
This Request:	$47,400
Total EA Requests:	$353,100
Previously Approved Budget:	$3,499,100
Budget Adjustment Requested this EA:	$0
Updated Budget:	$3,499,100
Budget Remaining After This EA	$3,146,000

Comments:

Phase	This EA Request	Previous EA Requests	EA Requests to Date	This Budget Request	Previous Budget	Updated Budget	Start	Finish
ENGINEERING DESIGN - IRWD	0	25,000	25,000	0	25,000	25,000	9/06	9/12
ENGINEERING DESIGN - OUTSIDE	30,000	260,000	290,000	30,000	270,000	300,000	9/06	9/12
DESIGN STAFF FIELD SUPPORT	0	3,000	3,000	0	3,000	3,000	9/06	9/12
ENGINEERING - CA&I IRWD	0	0	0	0	25,000	25,000	5/13	6/14
ENGINEERING - CA&I OUTSIDE	0	0	0	(30,000)	200,000	170,000	5/13	6/14
CONSTRUCTION FIELD SUPPORT	0	0	0	0	5,000	5,000	5/13	6/14
CONSTRUCTION	0	0	0	0	2,650,000	2,650,000	5/13	6/14
LEGAL	0	3,000	3,000	0	3,000	3,000	9/06	6/14
Contingency - 10.00% Subtotal	$17,400	$14,700	$32,100	$0	$318,100	$318,100		
Subtotal (Direct Costs)	$47,400	$305,700	$353,100	$0	$3,499,100	$3,499,100		
Estimated G/A - 180.00% of direct labor*	($1,500)	$51,900	$50,400	$0	$104,400	$104,400		
Total	$45,900	$357,600	$403,500	$0	$3,603,500	$3,603,500		
Direct Labor	$0	$28,000	$28,000	$0	$58,000	$58,000		

*EA includes estimated G&A. Actual G&A will be applied based on the current ratio of direct labor to general and administrative costs.

EA Originator: Kelly Lew 2/6/12

Department Director: Brian G Burton 2/9/12

Finance: _____ _____

Board/General Manager: _____ _____

** IRWD hereby declares that it reasonably expects those expenditures marked with two asterisks to be reimbursed with proceeds of future debt to be incurred by IRWD in a maximum principal amount of $3,676,000. The above-captioned project is further described in the attached staff report and additional documents, if any, which are hereby incorporated by reference. This declaration of official intent to reimburse costs of the above-captioned project is made under Treasury Regulation Section 1.150-

February 23, 2012
Prepared by: J. Staneart/M. Cortez
Submitted by: K. Burton
Approved by: Paul Cook

ENGINEERING AND OPERATIONS COMMITTEE

ALTON PARKWAY EXTENSION PROJECT
CONTRACT CHANGE ORDER NO. 6 TO REIMBURSEMENT AGREEMENT WITH
THE CITY OF LAKE FOREST

SUMMARY:

The City of Lake Forest is proceeding with the Alton Parkway Extension Project to build a new arterial roadway and construct certain underground utility lines. The project improvements from Towne Centre Drive to Commercentre Drive include capital facilities for IRWD. As part of the project, Lake Forest and IRWD entered into a Reimbursement Agreement to design and construct IRWD's domestic water, recycled water and sewer capital facilities. Staff recommends that the Engineering and Operations Committee approve Contract Change Order No. 6 in the amount of $72,205 to the Reimbursement Agreement with the City of Lake Forest for the Alton Parkway Extension Project.

BACKGROUND:

IRWD and the City of Lake Forest entered into a Reimbursement Agreement for design and construction of IRWD capital facilities related to the Alton Parkway Extension Project. The limits of the project are shown in Exhibit "A". As a part of the required project improvements, the existing IRWD sewer improvements District need to be connected to the new sewers constructed as part of the City's project and the County of Orange's project segment to the south. When the final connections to the new and existing sewers are made, the Borrego Sewer Lift Station near the intersection of Alton Parkway and Towne Centre Drive will be abandoned.

The Reimbursement Agreement, dated August 24, 2010, authorized the project improvements and provided for implementing and reimbursing for changes. The Reimbursement Agreement is attached as Exhibit "B". At the time the project was awarded for construction, IRWD did not yet have detailed plans and specifications prepared for the abandonment, demolition and removal of the existing sewer lift station rendered unnecessary by the gravity sewers being constructed for the project. Subsequently, IRWD had the detailed demolition plans prepared by Hunsaker & Associates, Inc. IRWD provided the plans to the City's contractor, Sukut Construction, Inc. and requested a change order price quotation to perform the work. The price has been reviewed and negotiated with Sukut. The City, Hunsaker and IRWD have reviewed the negotiated price and all believe it is reasonable and appropriate for the scope of work proposed. The Contract Change Order in the amount of $72,205 is attached as Exhibit "C".

FISCAL IMPACTS:

Projects 11467 (1506), 21467 (1159) and 31467 (1226) are included in the FY 2011-12 Capital Budget. Existing budgets and Expenditure Authorizations are sufficient.

ENVIRONMENTAL COMPLIANCE:

The project is exempt from the California Environmental Quality Act (CEQA) as authorized under the California Code of Regulations Title 14, Chapter 3, Section 15061 (b) (3). The activity is covered by the general rule that CEQA applies only to projects which have the potential for causing a significant effect on the environment. Where it can be seen with certainty that there is no possibility that the activity in question may have a significant effect on the environment, the activity is not subject to CEQA.

In addition the project in the agreement is exempt from CEQA as authorized under the California Code of Regulations Title 14, Chapter 3, Section 15302 C, which provides exemption for "replacement or reconstruction" involving negligible or no expansion of capacity.

RECOMMENDATION:

That the Committee approve Contract Change Order No. 6 in the amount of $72,205 to the Reimbursement Agreement with the City of Lake Forest for the Alton Parkway Extension Project and IRWD Capital Facilities, Projects 11467 (1506), 21467 (1159) and 31467 (1226).

LIST OF EXHIBITS:

Exhibit "A" – Project Location Map
Exhibit "B" – Reimbursement Agreement
Exhibit "C" – Contract Change Order No. 6

EXHIBIT "A"

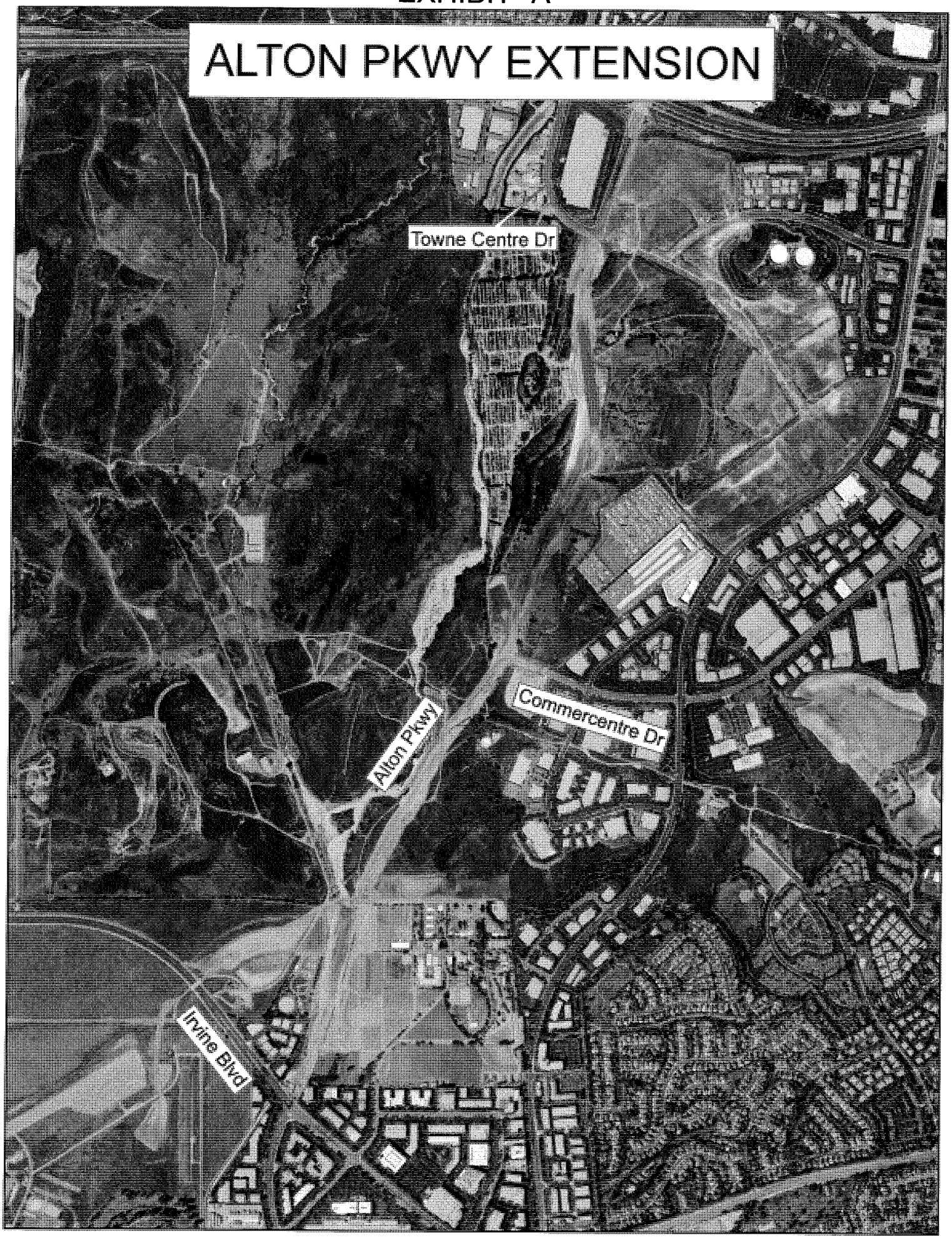

ALTON PKWY EXTENSION
Towne Centre Dr
Commercentre Dr
Alton Pkwy
Irvine Blvd

EXHIBIT "B"

CITY OF LAKE FOREST

DECEMBER 20, 1991

September 9, 2010

General Manager
Irvine Ranch Water District
15600 Sand Canyon Avenue
Irvine, CA 92618-3102

RE: Transmittal of Reimbursement Agreement

Dear General Manager:

Enclosed for your records, is a fully executed Reimbursement Agreement with the City of Lake Forest for the Alton Parkway Commercentre to Town Center Project (PW 2009.02), approved at the September 7, 2010, City Council meeting as Agenda Item Number 15.

If you should have any questions or require any additional information, please contact Ted Simon, Engineering Services Manager, at (949) 461-3480.

Sincerely,
CITY OF LAKE FOREST

Susan Gil

Susan Gil
Records Specialist
City Clerk's Division

Enclosures: Original Reimbursement Agreement

cc: Angel Fuentes
Ted Simon, Public Works Department
City Clerk
City Attorney

REIMBURSEMENT AGREEMENT
BETWEEN
IRVINE RANCH WATER DISTRICT
AND THE CITY OF LAKE FOREST
FOR THE INSTALLATION OF UTILITIES
AS PART OF THE CITY OF LAKE FOREST'S
ALTON PARKWAY PROJECT (PW 2009.02)

This Agreement is made and entered as of this 24TH day of AUGUST, 2010, by and between IRVINE RANCH WATER DISTRICT, a California Water District formed and existing pursuant to California Water District Law, hereinafter referred to as "IRWD," and the CITY OF LAKE FOREST a municipal corporation, hereinafter referred to as "CITY."

W I T N E S S E T H

WHEREAS, the CITY proposes the construction of Alton Parkway from Commercentre Drive to Towne Centre Drive, hereinafter referred as "Project"

WHEREAS, the IRWD proposes the construction of new domestic water, recycled water and sewer pipelines within the Project, herein referred to as "IRWD FACILITIES";

WHEREAS, the parties have determined that it would be more efficient for CITY, rather than IRWD, to carry out the construction of IRWD FACILITIES due to the complications of constructing IRWD FACILITIES and the Project with different contractors and construction scheduling of IRWD FACILITIES;

WHEREAS, IRWD and CITY are amenable to the preparation of plans and specifications for the construction of IRWD FACILITIES by IRWD at the cost of IRWD;

WHEREAS, IRWD is amenable to the construction of IRWD FACILITIES by CITY at CITY's cost, which cost is to be reimbursed to CITY by IRWD as provided herein; and

WHEREAS, all IRWD FACILITIES shall be the property of IRWD in accordance with the terms and conditions hereinafter set forth;

NOW, THEREFORE, the parties hereto, in consideration of the mutual promises and covenants hereinafter set forth, DO AGREE AS FOLLOWS:

SECTION 1. IRWD FACILITIES. CITY agrees to initiate and pursue to completion with its construction of the Project, the construction of the IRWD FACILITIES as shown on Plans and Specifications (defined below) for the subject Project, and IRWD agrees to cooperate with CITY with respect to the construction and schedules for completion of IRWD FACILITIES.

SECTION 2. CEQA COMPLIANCE. CITY agrees to be the lead agency for the construction-level California Environmental Quality Act (CEQA) compliance for the IRWD FACILITIES. CITY agrees to secure all necessary permits for construction, and provide monitoring and compliance as required by CEQA documentation and permits for the Project and IRWD FACILITIES.

SECTION 3. PLANS. CITY agrees that IRWD FACILITIES shall be completed pursuant to IRWD-approved plans and specifications (the "Plans and Specifications"). The Plans and Specifications for IRWD FACILITIES shall be prepared by IRWD and shall be deemed to incorporate applicable portions of IRWD's latest edition of "Construction Manual for the Construction of Water, Sewer, and Reclaimed Water Facilities" hereinafter referred to as "Construction Manual". Said Plans and Specifications for IRWD FACILITIES shall be delivered to the CITY 4 weeks prior to submittal of Project's plans and specifications to the CITY's City Council for approval and advertising.

The costs for IRWD FACILITIES will be shown as deletable bid items in the Project plans and specifications. Said deletable bid items and the estimated quantities are identified on Exhibit "A" and described in Exhibit "B" attached hereto. The IRWD FACILITIES shall be contracted by CITY together with CITY's non-reimbursable work to be completed by CITY within the Project pursuant to plans and specifications prepared by CITY's design engineer.

SECTION 4. BIDDING AND AWARD. The parties agree that the construction of IRWD FACILITIES shall be included in CITY's proposed Project plans and specifications. CITY will award a construction contract, which may include IRWD FACILITIES, for the Project received from the lowest responsive, responsible bidder. Upon opening of bids by CITY, CITY will submit a spreadsheet summary of the bids to IRWD for review and approval. CITY agrees that the bid prices received shall be subject to the review and approval of IRWD prior to the CITY's award of a construction contract. Should IRWD reject the bid received from the lowest responsive, responsible bidder for the CITY project for IRWD FACILITIES, CITY shall proceed with its project without the deletable bid items for IRWD FACILITIES. IRWD will be responsible for constructing IRWD FACILITIES at their expense under an encroachment permit issued by the CITY. IRWD shall have a period of ten (10) business days for review of the bid price(s) presented in the low bidder's proposal for the IRWD FACILITIES, and for approval or

rejection of the bid price(s). The total estimated construction cost for IRWD FACILITIES is $2,083,646 as shown in Exhibit "A", however, that the amount to be reimbursed by IRWD shall be based on the actual construction costs for the items for IRWD FACILITIES. Upon transmitting the Notice to Proceed to the Contractor, CITY shall provide IRWD with one (1) original copy of the fully executed contract documents and one (1) copy of the bid form.

SECTION 5. CONSTRUCTION CHANGE ORDERS. CITY agrees that if, during construction, CITY requests or initiates any revision to the Plans and Specifications that would increase the cost of the IRWD FACILITIES, such additional costs shall be borne by CITY, and shall not be reimbursed by IRWD, except for such revision(s) and cost(s) that are determined necessary to construct IRWD FACILITIES in accordance with the IRWD's Construction Manual and could not reasonably have been foreseen at the time bids were received. The cost of any such necessary and unforeseeable revisions, and the cost of any revisions requested or initiated by IRWD shall be reimbursed by IRWD as provided herein.

CITY shall promptly furnish IRWD with copies of any proposed change orders to the Project contract within five (5) working days of initiation of changed conditions to such contract, which change orders shall be subject to IRWD approval if and to the extent any of the IRWD FACILITIES are affected thereby. IRWD will review and respond to proposed change orders affecting the IRWD FACILITIES within five (5) working days of receipt by IRWD.

SECTION 6. REIMBURSEMENT. Within thirty (30) days following receipt from CITY of each invoice for the portion of construction progress payment and construction inspection/administration costs attributable to IRWD FACILITIES, together with supporting documentation, IRWD shall deposit with CITY the amount of such invoice. IRWD agrees to accept the IRWD FACILITIES when the Project, which includes the IRWD FACILITIES, has been completed, including any change orders approved by IRWD as provided in Section 5 hereof and accepted by CITY.

SECTION 7. LAWS, ORDINANCES, RULES AND REGULATIONS. CITY shall require in its contract for the construction of the IRWD FACILITIES that its contractor be fully informed of and comply with all laws, ordinances, rules and regulations, including, but not limited to, all applicable requirements of the California Labor Code, prevailing wage laws, the IRWD Construction Manual, and the Rules and Regulations of IRWD, in connection with the construction of the IRWD FACILITIES

SECTION 8. INSPECTION. CITY shall provide a representative to administer the construction contract and perform the usual functions of a resident Engineer, hereinafter referred

to as "RESIDENT ENGINEER". The IRWD shall appoint a representative, hereinafter referred to as "IRWD REPRESENTATIVE". RESIDENT ENGINEER shall at all times, coordinate activities with IRWD REPRESENTATIVE to ensure timely review of IRWD FACILITIES work activities to facilitate the construction activity, but the decision of CITY's RESIDENT ENGINEER to facilitate construction shall be final. The cost for construction administration by the RESIDENT ENGINEER attributable to IRWD FACILITIES shall be reimbursed to the CITY by the IRWD. CITY and IRWD agree that the cost for construction administration will be calculated as a fixed percentage of 4% (four percent) of the actual construction cost of the IRWD FACILITIES. The cost estimate for construction administration attributable to IRWD FACILITIES by the RESIDENT ENGINEER is shown in Exhibit "C" attached hereto.

IRWD shall have sole and absolute discretion as to all aspects of design and construction of the IRWD FACILITIES, and IRWD shall inspect the construction of IRWD FACILITIES as it deems necessary to assure compliance with the Plans and Specifications, including shop drawing review, construction surveying, material inspection, field inspection compaction testing and soils analysis for trench backfill, certify the compaction of backfill material, and to provide a final compaction report. IRWD will promptly notify CITY of any portion of the work on IRWD FACILITIES which appears not to conform to the Plans and Specifications. The determination of IRWD as to conformity of IRWD FACILITIES with the Plans and Specifications shall be made in IRWD's sole and absolute discretion. IRWD agrees not to unreasonably withhold its approval as to such conformity. CITY shall require its contractor to construct the IRWD FACILITIES so that the IRWD FACILITIES conform to the Plans and Specifications. CITY agrees that it shall not accept the IRWD FACILITIES work from CITY's contractor until IRWD concurs that the IRWD FACILITIES have been constructed in accordance with the Plans and Specifications and any authorized contract change orders.

CITY shall coordinate the work to be performed by gas, telephone, electric, cable television, and other affected utilities and adjacent landowners during construction of the PROJECT.

SECTION 9. PLANCHECK AND PERMIT FEES. CITY will waive all plan check fees and encroachment permit fees associated with the IRWD FACILITIES.

SECTION 10. ACCEPTANCE. At the time of completion and acceptance of the IRWD FACILITIES, CITY agrees to furnish IRWD with "as-built" drawings.

SECTION 11. OWNERSHIP. It is mutually agreed between the parties hereto that notwithstanding the fact that CITY shall accomplish the construction of the IRWD FACILITIES

subject to reimbursement, IRWD FACILITIES to be completed hereunder, rights-of-way, and other privileges, shall at all times be subject to the applicable rates, rules and regulations of IRWD, as modified or amended from time to time. CITY hereby disclaims any interest in IRWD FACILITIES and by acceptance of the Project which includes the IRWD FACILITIES, transfers and assigns to IRWD any and all right, title, and interest it may have in the IRWD FACILITIES. IRWD shall own, operate and maintain the IRWD FACILITIES following acceptance thereof.

SECTION 12. GUARANTEES. CITY agrees to cause its contractor for the IRWD FACILITIES to guarantee the IRWD FACILITIES against defects in workmanship and materials for a period of one (1) year from the date of acceptance by IRWD. It is further agreed that the CITY shall assume the responsibility for causing the IRWD FACILITIES to be brought or restored to full compliance with the requirements of the Plans and Specifications, including any test requirements, for any portion of the IRWD FACILITIES which during said one (1) year period are found not to be in conformance of the Plans and Specifications. This guarantee is in addition to any and all other warranties, expressed or implied, from CITY contractors or material manufacturers with respect to the IRWD FACILITIES. The guarantee and obligations under this section shall in no way be relieved by IRWD inspection and/or approval of the IRWD FACILITIES. This section sets forth the entire agreement of CITY with respect to guarantees and warranties of the IRWD FACILITIES, but this section shall in no way limit any expressed or implied warranties of other persons with respect to the IRWD FACILITIES.

SECTION 13. INDEMNIFICATION. CITY shall indemnify, defend and hold IRWD, its officers, agents and employees, harmless from any expense, liability or claim for death, injury, loss, damage or expense to persons or property which may arise or is claimed to have arisen during construction of the IRWD FACILITIES and prior to acceptance by IRWD, as a result of any work or action performed by CITY or on behalf of CITY, save and except to the extent such death, injury, loss, damage or expense is determined by a court of competent jurisdiction to have been proximately caused in whole or in part by any negligence of IRWD, its officers, agents or employees or by any act or omission for which IRWD, its officers, agents or employees are liable without fault.

IRWD shall indemnify, defend and hold CITY, its officers, agents, and employees, harmless from any expense, liability or claim for death, injury, loss, damage or expense to persons or property which may arise or is claimed to have arisen either (i) as a result of any act performed by IRWD, its officers, agents, or employees, with respect to the construction of the IRWD FACILITIES, or (ii) following IRWD acceptance of the IRWD FACILITIES, with respect to maintenance and operation of the IRWD FACILITIES, save and except to the extent such death, injury, loss, damage or expense is determined by a court of competent jurisdiction to

have been proximately caused in whole or in part by any negligence of CITY, its officers, agents or employees, or by any act or omission for which CITY, its officers, agents or employees are liable without fault.

SECTION 14. INSURANCE AND BONDING. CITY shall cause its contractors for the construction of IRWD FACILITIES to obtain insurance coverage sufficiently broad to insure the matters set forth in this Agreement and to include IRWD as an additional insured on all insurance policies that CITY requires its contractors to provide. As evidence of such insurance coverage, CITY shall, prior to commencement of construction of the IRWD FACILITIES, provide IRWD with certificates of insurance and insurance endorsements in forms that are acceptable to IRWD.

SECTION 15. TERMINATION. Either party shall have the right, upon written notice to the other which shall become effective five (5) days after receipt pursuant to Section 14, to terminate this Agreement at any time, subject to the provisions of this section. If at the request or direction of a party other than CITY, including IRWD, the IRWD FACILITIES construction is not accomplished or completed, IRWD shall remain obligated for the actual amount of any Costs incurred by CITY for the items set forth in Sections 4, 5 and 6 above to the date of termination.

SECTION 16. NOTICE. Any notice or other written instrument required or permitted by this Agreement to be given to either party shall be deemed received when personally served or twenty-four (24) hours after being deposited in the U.S. Mail, postage prepaid, registered or certified and addressed as follows:

IRWD:

Irvine Ranch Water District
15600 Sand Canyon Avenue
Irvine, CA 92618-3102
Attn: General Manager

CITY:

City of Lake Forest
25550 Commercentre Drive
Lake Forest, CA 92630
Attn: Director of Public Works/City Engineer

SECTION 17. SUCCESSORS AND ASSIGNS; INTEGRATION; AMENDMENT. This Agreement shall be binding upon and inure to the benefit of the successors and assigns of CITY and IRWD. This Agreement constitutes the entire Agreement between CITY and IRWD

and supersedes all prior understandings and Agreements between the parties with respect to the subject hereof. This Agreement may be modified only in writing, signed by both parties hereto.

SECTION 18. LEGAL FEES. In the event of any declaratory or other legal or equitable action instituted between CITY and IRWD in connection with this Agreement, the prevailing party shall be entitled to recover from the losing party all of its costs and expenses, including court costs and reasonable attorneys' fees.

SECTION 19. DEEMED APPROVAL. Any approval required to be given by either party pursuant to this Agreement, shall be deemed given if no response to the party's request for such approval is received by the requesting party within fifteen (15) days following the request for such approval.

SECTION 20. SEVERABILITY. If any term, provision, covenant or condition of this Agreement is held to be invalid, void or other unenforceable, to any extent, by any court of competent jurisdiction, the remainder of this Agreement shall not be affected thereby, and each term provision, covenant or condition of this Agreement shall be valid and enforceable to the fullest extent permitted by law.

SECTION 21. APPLICABLE LAW. This Agreement shall be construed and enforced in accordance with the laws of the State of California. Venue shall be in Orange County.

SECTION 22. WAIVER. The waiver of any provision of this Agreement by either party shall not be deemed to be a waiver of any other provision or of any preceding or subsequent breach hereunder.

IN WITNESS WHEREOF, the parties to the Agreement have executed this Agreement on the date hereinabove written.

IRVINE RANCH WATER DISTRICT

By _____ Dated 24 August 2010
Assistant General Manager

ATTEST:

By _____ Dated 8/24/10
Secretary/Assistant Secretary

APPROVED AS TO FORM:

By _____ Dated 8-24-10
Legal Counsel,
Irvine Ranch Water District

CITY OF LAKE FOREST

By _____ Dated 9-7-2010
Peter Herzog, Mayor

APPROVED AS TO FORM:

By _____ Dated 9-7-2010
Best Best & Krieger LLP
City Attorney

ATTEST:

By _____
Stephanie D. Smith, CMC City Clerk

EXHIBIT "A"

CONSTRUCTION COST ESTIMATE FOR
IRWD FACILITIES
(IRWD's Responsibility)

(actual cost is based on actual quantities and bid prices received from the CONTRACTOR)

Item	Description	Units	Quantity	Unit Price	Extended Amount
1	Remove interfering pipe and fittings and connect as	LS	1	$17,000	$ 17,000
2	Construct PRV Station with 8" & 4" PRV's per IRWD	LS	1	$75,000	$ 75,000
3	Furnish & install 16" Steel Pipeline and all fittings,	LF	2,844	$105	$ 298,620
4	Furnish & install 16" Class 150 butterfly valve per	EA	6	$9,000	$ 54,000
5	Construct CP test station (4-wire) per IRWD	EA	6	$2,000	$ 12,000
6	Construct 1" air-vacuum release assembly per IRWD	EA	3	$1,750	$ 5,250
7	Construct 2" water service per IRWD specifications	EA	1	$2,200	$ 2,200
8	Furnish & install 12" Class 200 C-900 PVC Pipeline	LF	6,796	$85	$ 577,660
9	Furnish & install 12" Class 150 butterfly valve per	EA	3	$9,000	$ 27,000
10	Furnish & install 12" resilient seated gate valve	EA	5	$8,000	$ 40,000
11	Furnish & install 8" Class 200 C-900 PVC Pipeline	LF	398	$57	$ 22,686
12	Furnish & install 8" Class 150 butterfly valve per	EA	4	$5,500	$ 22,000
13	Furnish & install 8" resilient seated gate valve per IRWD	EA	2	$3,000	$ 6,000
14	Furnish & install 6" Class 200 C-900 PVC Pipeline	LF	1,107	$39	$ 43,173
15	Furnish & install 6" Class 150 butterfly valve per	EA	1	$ 3,500	$ 3,500
16	Furnish & install 4" Class 200 C-900 PVC Pipeline	LF	76	$32	$ 2,432
17	Furnish & install 4" resilient seated gate valve per IRWD	EA	2	$2,100	$ 4,200
18	Furnish & install Flush-out Assembly per IRWD	EA	11	$5,400	$ 59,400
19	Furnish & install 4" meter assembly per IRWD	EA	1	$33,000	$ 33,000

20	Furnish & install 15" PVC, SDR35, Sewer Pipe and all	LF	4,627	$145	$ 670,915
21	Furnish & install 8" PVC, SDR35, Sewer Pipe and all	LF	209	$90	$ 18,810
22	Furnish & install 72" diameter manhole and all	EA	2	$5,500	$ 11,000
23	Furnish & install 60" diameter manhole and all	EA	3	$5,000	$ 15,000
24	Furnish & install 48" diameter manhole and all	EA	9	$4,500	$ 40,500
25	Furnish & install 8" terminal clean-out to grade	EA	4	$2,450	$ 9,800
26	Trenching and Shoring for IRWD Water & Sewer Lines	LS	1	$10,000	$ 10,000
27	All work required for successful completion of	LS	1	$2,500	$ 2,500
	Total Cost:				$2,083,646

EXHIBIT "B"

DESCRIPTION OF IRWD FACILITIES

NEW FACILITIES include:

- Installation of approximately 1,900 linear feet of 12" and 2,850 linear feet 16" diameter domestic water pipe and appurtenances
- Installation of approximately 4650 linear feet of 15" diameter sewer pipe and appurtenances
- Installation of approximately 1,100 linear feet of 6"and 4,900 linear feet of 12" diameter reclaimed water pipe and appurtenances
- Domestic water PRV station

IRWD FACILITIES work are included as deletable bid items of the Project Plans and Specifications,

**The installation of IRWD FACILITIES include other features such as manholes, valves, thrust blocks, vaults, meters, protective casing, test station and other items required by IRWD for the installation of IRWD FACILITIES identified on the construction plans and described in the technical specifications of the special provisions.

EXHIBIT "C"

COST ESTIMATE FOR
INSPECTION AND CONSTRUCTION ADMINISTRATION
OF IRWD FACILITIES
(IRWD's Responsibility)

(actual cost is based on actual quantities and bid prices received from the CONTRACTOR)

Item	Description	Amount
1	CITY'S Construction Administration (4% actual of construction cost of IRWD facilities)	$83,300
	Total Estimated Cost	$83,300

Exhibit "C"

CONTRACT CHANGE ORDER

IRVINE RANCH WATER DISTRICT
15600 Sand Canyon Avenue
Irvine, CA 92618
(949) 453-5300

C.O. No. 06 Page 1 of 1
☐ Final

Project No. 11408

Date: 02-07-12

Alton Parkway Extension – Lake Forest Segment Code 5455
Project Title

THE FOLLOWING CHANGE TO CONTRACT, DRAWINGS AND SPECIFICATIONS IS PROPOSED.	$ ADDITIONS	$ DELETIONS	DAYS ±
Item No. 1: (COR No. 040) Additional labor, materials and equipment required to remove, demolish, salvage, backfill, plug and abandon the Borrego Sewage Lift Station and restore property to its undeveloped condition. All work in conformance to project plans and specifications prepared by Hunsaker & Associates in conjunction with the Alton Parkway Extension – City of Lake Forest Segment. Work to be performed at the negotiated lump sum price increase. No time extension was granted for this work.	$72,205.00		0
NOTE: The Change Order modifies the Reimbursement Agreement between IRWD and the City of Lake Forest, dated August 24, 2010.			
TOTAL =	$72,205.00		0

			DAYS ±
1. NET AMOUNT THIS CHANGE ORDER	=	$72,205.00	0
2. ORIGINAL CONTRACT REIMBURSEMENT AMOUNT	=	$1,238,373.00	City
3. TOTAL PREVIOUS CHANGE ORDERS	=	$150,025.02	0
4. TOTAL BEFORE THIS CHANGE ORDER (2+ 3)	=	$1,388,398.02	City
5. PROPOSED REVISED CONTRACT AMOUNT TO DATE (1+4)	=	$1,460,603.02	City

We hereby agree to make the above change subject to the terms of this change order for the sum of:

---------- seventy two thousand two hundred five dollars and no cents

2/7/12
Date

City of Lake Forest (via RA for Sukut Construction)
Name of Contractor

By

SIGNATURE	DATE	APPROVAL LEVEL REQUIRED	
Jeff Stanegast	2/7/12		
IRWD Project Engineer or Consulting Engineer	Date	Department Director Approval Required	
Malcolm Cortez	2/9/12.	General Manager Approval Required	
Principal Engineer / Construction Manager	Date	Committee Approval Required	X
Kevin L Burton	2/11/12	Board Approval Required	
Director of Engineering & Construction	Date	By	Date
		127808	
General Manager	Date	Purchase Order No.	

NOTE: The documents supporting this Change Order, including any drawings and estimates of cost, if required are attached hereto and made a part hereof. This Change Order shall not be considered as such until it has been signed by the Owner and the Contractor. Upon final approval, distribution of copies will be made as required. The parties mutually agree the pricing set forth in this Change Order are complete and fair compensation for the entirety of the work authorized under this Change Order and that no additional compensation is warranted nor shall it be allowed.

CHANGES: All workmanship and materials called for by this Change Order shall be fully [illegible] the original Contract Documents insofar as the same may be applied without conflict to the conditions set forth by this Change Order. [illegible]ract will not be extended unless expressly provided for in this Change Order.

SUKUT CONSTRUCTION, INC.

Change Order Request

Detailed, Grouped by Each Number

COR 40

Alton Parkway Lake Forest

Project # 111037
Tel: Fax:

Change Order Request: 040 **Date: 1/26/2012**

To: Stan Vander May
City of Lake Forest

From: Michael Mulich
Sukut Construction, Inc.
4010 W. Chandler Ave.
Santa Ana, CA 92704-5202

Description	Category	Status
Demolition of Borrego Lift Station		

Reference	Required By	Days Req	Amt Req
	2/2/2012	0	72,205

Notes
Angel / Stan / Jeff,

Please see the following Change Order Request for the demolition of the Borrego lift station.

Thank you.

PCO No	Date	Reference	Amt Prop	Days Req	Category	Reason
Description		**Notes**				

Approved By:

Signature _____ 1-26-12

Name Michael Mulich Date

Change Order Request

Alton Parkway -Commercentre to Towne Centre Drive

C.O. REQUEST NUMBER	40
DATE WORK COMPLETED	N/A

SUKUT EXTRA WORK NUMBER	
SUKUT JOB NUMBER	111037

DESCRIPTION OF WORK	Please see the following Change Order Request for the demolition of the Borrego Lift Station	

EQUIPMENT

MODEL	CODE	HRS ST	RATE	AMOUNT ST	OT HOURS	RATE	AMOUNT OT	TOTAL AMOUNT
TOTAL EQUIPMENT COSTS								$ -

LABOR

	NAME	HRS ST	RATE	AMOUNT ST	HRS OT	OT RATE	AMOUNT OT	TOTAL AMOUNT
Please see the attached Summary Report				$ 71,490.00				$ 71,490.00
TOTAL LABOR COSTS								$ 71,490.00

SUBCONTACTOR

DESCRIPTION	DATE	VENDOR	UNITS	UNIT COST	TOTAL
TOTAL MATERIAL COSTS					$ -

SUKUT OVERHEAD COSTS

DESCRIPTION	INVOICE NO.	DATE	VENDOR	UNITS	UNIT COST	TOTAL
TOTAL COSTS						$ -
						$ -

TOTAL COST SUMMARY, STANDARD MARK-UPS AND SUBCONTRACTOR MARK-UP

DESCRIPTION	TOTAL COST	% MARK UP	AMOUNT MARK UP	TOTAL
TOTAL COST FOR EQUIPMENT	$ -	10.00%	$ -	$ -
TOTAL COST FOR LABORERS AND OPERATORS	$ 71,490.00	0.00%	$ -	$ 71,490.00
TOTAL COST FOR SUBS (10% on first $2000, 5% in excess of $2000)	$ -	5.00%	$ -	$ -
TOTAL COST FOR SUKUT OVERHEAD	$ -	0.00%	$ -	
TOTAL FOR THIS CHANGE ORDER				$ 71,490.00
BOND COST ADD (1% OF Total)				$ 714.90
GRAND TOTAL OF THIS CHANGE ORDER REQUEST				$ 72,204.90

SUKUT CONSTRUCTION, INC.

4010 W. Chandler Avenue
Santa Ana, CA 92704

Phone: (714) 540-5351
Fax: (714) 545-2438

Item Price Summary Report

Project Name:	Demolition Of Borrego Lift Station	**Customer:**	Irvine Ranch Water District
Job Number:	111037 Change Order	**Billing Address:**	Irvine, CA
Bid As:	Prime		
Estimator:	Michael Mulich	**Phone:**	
Project Address:	Towne Centre Just North Of The New Alton Tie In, Lake Forest, CA	**Contact:**	Jeff Staneart
Completion Date:	2/29/2012		

Pay Items

Description	Job Cost ID	Bid Quantity	UM	Unit Bid Price	Total Bid Price
[D] 010 - Mobilization		1.00	LS	$3,675.00	$3,675.00
[D] 020 - Edison Coordination/Permits - Owner To Coordinate And Pay All Fees And Permits		1.00	LS	$0.00	$0.00
[S] 030 - Electrical Demo - Disonnect All Electrical Equipment For Salvage By Sukut		1.00	LS	$5,790.00	$5,790.00
[D] 040 - Salvage And Return Electrical/Pumping Equipment As Listed		1.00	LS	$9,975.00	$9,975.00
[D] 060 - Demolition Of AC/Concrete/Bollards/Fence		1.00	LS	$10,500.00	$10,500.00
[D] 070 - Remove Misc. Piping/Puncture/Fill Well		1.00	LS	$7,750.00	$7,750.00
[D] 080 - Demolition Of Concrete Well/Vault		25.00	CY	$525.00	$13,125.00
[D] 090 - Cap Misc. VCP/PVC Lines		2.00	EACH	$1,350.00	$2,700.00
[D] 100 - Slury Backfill 10" Sewer Line		75.00	LF	$37.00	$2,775.00
[D] 110 - Backfill Vault		80.00	CY	$190.00	$15,200.00
Pay Items Total:					$71,490.00

Notes:
- IRWD to Pay all fees and permits required by Edison.
- It is assumed that Edison will remove the transformer before demo work proceeds.
- Sukut did not include the removal of any elec. lines or equipment from Elec. Source to Edison transformer (None expected)
- Sukut intends to use material stockpiled at Magazine Rd / Irvine Blvd. as fill for Vault. If not approved, any additional costs to buy / import material will be payed for as extra costs + 15% OH/P.

February 23, 2012
Prepared and
Submitted by: K. Burton KLB
Approved by: Paul Cook P Cook

ENGINEERING AND OPERATIONS COMMITTEE

EMERGENCY DOMESTIC WATER INTERCONNECTION AGREEMENT WITH SANTA MARGARITA WATER DISTRICT

SUMMARY:

IRWD, as the successor to the Los Alisos Water District (LAWD), owns capacity in certain Santa Margarita Water District (SMWD) pipelines, the Alicia Reservoir A, and an emergency intertie. The facilities are no longer utilized by IRWD. SMWD has agreed to accept the IRWD capacity at no capital cost and assume the operation and maintenance responsibility. The emergency intertie will remain a joint facility for the benefit to both IRWD and SMWD. Staff recommends that the Board:

- Authorize the General Manager to execute an Agreement with SMWD that terminates the 1979 capacity Agreement and provides for an emergency domestic water interconnect; and
- Adopt a resolution authorizing the District officers to execute a Quitclaim Deed of IRWD's capacity ownership in various pipelines and the Alicia Reservoir A to SMWD.

BACKGROUND:

In April 1979 LAWD and SMWD entered into an agreement where LAWD acquired capacity in certain pipelines, the Alicia Reservoir A, and an emergency intertie. As the successor to LAWD, IRWD now owns the capacity in the SMWD facilities. Per the 1979 Agreement, IRWD's capacity is 4 cfs through approximately 18,150 feet of pipelines ranging from 20-inch to 42-inch, 25% reservoir capacity (1 MG), and 50% emergency intertie capacity. The pipeline, reservoir and intertie are managed and operated by SMWD. The 1979 Agreement is attached as Exhibit "A".

In September 2009 SMWD performed a routine dive inspection of Alicia Reservoir A which revealed that a significant number of rust zones had developed on the walls and floor of the reservoir. The numerous corrosion locations and the age of the interior coal tar enamel lining indicated that the protection system had reached the end of its useful service life. To prevent additional interior corrosion, SMWD's consultant recommended full removal and replacement of the lining within two to five years. SMWD notified IRWD of the proposed rehabilitation project and IRWD's estimated cost of $150,000.

IRWD Water System Evaluation:

Since the pipelines, reservoir and intertie capacity have not been utilized by IRWD since the consolidation with LAWD, staff performed a need assessment of the facilities as part of the 2010 Lake Forest Sub Area Master Plan (SAMP). Water system modeling demonstrated that the Alicia Reservoir capacity was no longer needed due to the Foothill Ranch connections within the IRWD system.

Due to the age of pipelines and reservoir, increasing maintenance costs, lack of IRWD use for many years, and the SAMP modeling results, staff approached SMWD to determine if SMWD would accept the IRWD pipelines and reservoir capacity at no capital cost and assume the operation and maintenance responsibility, including IRWD's share of the upcoming reservoir rehabilitation. IRWD also proposed to keep the emergency intertie for the joint benefit to both IRWD and SMWD. SMWD agreed to the terms proposed by IRWD. An Agreement, attached as Exhibit "B", was prepared by IRWD to formalize the capacity quitclaim in the various pipelines and the Alicia Reservoir A. SMWD's Board approved the Agreement on January 13, 2012. A resolution authorizing execution of the Quitclaim Deed for the various pipelines and the reservoir is attached as Exhibit "C".

FISCAL IMPACTS:

LAWD's capital cost in 1979 for capacity in the pipelines, reservoir and intertie was $559,845. The facilities are now approximately 33 years old with a depreciated value of approximately $98,000. IRWD will avoid a cost of approximately $150,000 by quitclaiming the facilities to SMWD.

ENVIRONMENTAL COMPLIANCE:

This activity is not subject to the California Environmental Quality Act (CEQA) and does not require CEQA compliance. CEQA defines a project as any activity that may cause either a direct physical change in the environment or a reasonably foreseeable indirect physical change in the environment.

RECOMMENDATION:

That the Committee recommend the Board authorize the General Manager to execute an Agreement with Santa Margarita Water District that terminates the 1979 capacity agreement and provides for an emergency domestic water interconnect; authorize the District officers to execute a Quitclaim Deed to transfer IRWD's capacity ownership in various pipelines and the Alicia Reservoir A to Santa Margarita Water District; and adopt the following resolution by title.

RESOLUTION NO. 2012 -

RESOLUTION OF THE BOARD OF DIRECTORS OF
IRVINE RANCH WATER DISTRICT, ORANGE COUNTY, CALIFORNIA,
APPROVING EXECUTION OF THE QUITCLAIM DEED TO
SANTA MARGARITA WATER DISTRICT

LIST OF EXHIBITS:

Exhibit "A" – 1979 Agreement between SMWD and LAWD for Acquisition of Capacity
Exhibit "B" – 2012 Agreement between SMWD and IRWD for Emergency Domestic Water Interconnection
Exhibit "C" – Resolution approving execution of the Quitclaim Deed to Santa Margarita Water District

AGREEMENT FOR THE ACQUISITION OF CAPACITY IN CERTAIN PIPELINES OF THE SANTA MARGARITA WATER DISTRICT, THE CONSTRUCTION AND JOINT OWNERSHIP OF CERTAIN PIPELINES AND A RESERVOIR, AND FOR THE USE, OPERATION AND MAINTENANCE OF SAID FACILITIES

THIS AGREEMENT made and entered into as of this 16th day of April, 1979 by and between the LOS ALISOS WATER DISTRICT (hereinafter referred to as "Los Alisos") and the SANTA MARGARITA WATER DISTRICT (hereinafter referred to as "Santa Margarita"), both of which are formed under and exist pursuant to the California Water District Law of the State of California.

R E C I T A L S:

1. Los Alisos and Santa Margarita desire to provide water service by joint participation to certain zones within their respective districts (hereinafter referred to as "Zone 3"), which zones are at substantially the same elevation, and additionally to provide an emergency intertie between said districts.

2. Santa Margarita has constructed certain pipelines for the benefit of its Zone 3 and has plans for the construction of additional pipelines and a reservoir to service its Zone 3.

3. Los Alisos and Santa Margarita find that it is in the best interests of the lands and inhabitants within their respective districts if Los Alisos acquires capacity in the pipelines constructed for the benefit of Santa Margarita's

Zone 3 and to participate in the construction of new pipelines and a reservoir planned to be constructed by Santa Margarita for its Zone 3 as said Facilities are described in Exhibit A and shown on Exhibit B, attached hereto and made a part hereof, (hereinafter the "Facilities"), so that after the acquisition of capacity hereinbefore referred to and the construction of the new facilities, said Zone 3 system can be maintained and operated for the benefit of the two districts.

4. Santa Margarita has taken proceedings as provided in the California Environmental Quality Act relating to the pipelines heretofore constructed and Los Alisos has included certain Zone 3 facilities in its Plan of Works and has taken proceedings as provided in the California Environmental Quality Act relating to said Plan of Works.

NOW, THEREFORE, in consideration of the mutual covenants and promises between the parties hereinafter set forth the parties to this Agreement agree as follows:

SECTION 1. Existing Transmission Pipelines

Los Alisos agrees to purchase from Santa Margarita capacity in those pipelines described in Exhibit "A" designated "Facility Nos. 3.9, 3.7D, 3.7C and 3.4", and Santa Margarita agrees to sell said capacity to Los Alisos. The capacity to be acquired by Los Alisos is set forth in Column 5 of Exhibit "A" and the amount to be paid by Los Alisos to Santa Margarita

is set forth in Column 15 of Exhibit "A". Los Alisos agrees to pay said amount within ninety (90) days of the date of the execution of this Agreement.

SECTION 2. Facility No. 3.24(b)

Santa Margarita has received bids for the construction of Facility 3.24(b). The low bidder for said work is Peter C. David and the amount of the construction contract is set forth in Column 9 of Exhibit "A". The capacity to be acquired by Los Alisos is set forth in Column 5 of said Exhibit "A". Santa Margarita has awarded the contract to Peter C. David and Los Alisos agrees to pay Santa Margarita fifty percent (50%) of all payments to be made by Santa Margarita pursuant to said contract plus fifteen percent (15%) of said payments made by Los Alisos for engineering and administrative expenses incurred and to be incurred by Santa Margarita. Bills for progress payments submitted by Santa Margarita on or before the 25th of the month will be paid by Los Alisos by the Friday following the second Wednesday of the next month. Los Alisos shall pay its pro rata share of any change orders authorized by Santa Margarita and approved by Los Alisos. Any dispute unresolved by the parties regarding change orders shall be resolved by arbitration in the same manner as provided in Section 6 hereof.

SECTION 3. New Construction

Santa Margarita agrees to complete the construction of

Facility Nos. 3.22, 3.25 and 3.19 on or before two years from the date of this Agreement. Santa Margarita agrees to take competitive bids for the construction of each of said facilities and to present said bids to Los Alisos for approval by Los Alisos prior to the award of any contract by Santa Margarita. Any dispute unresolved by the parties regarding the award of any contract shall be resolved by arbitration in the same manner as provided in Section 6 hereof. Following the award of each construction contract Los Alisos shall pay to Santa Margarita that percentage of the construction contract, including change orders, as shown in Column 7 of said Exhibit "A", plus fifteen percent (15%) thereof for engineering and administrative expenses. Bills for progress payments submitted by Santa Margarita on or before the 25th of the month will be paid by Los Alisos by the Friday following the second Wednesday of the next month.

SECTION 4. Ownership of the Facilities

Upon the payment of the respective percentages of the cost of each Facility as shown on Exhibit "A", Los Alisos and Santa Margarita shall jointly own in perpetuity the capacity in the Facilities as determined from Columns 6 and 7 of Exhibit "A". Any increase or decrease in the design capacities shall be shares by the parties in proportion to their design capacities.

SECTION 5. Option to Acquire Initial Capacity In Facility No. 3.19

As hereinbefore provided, Los Alisos is acquiring 1 mg capacity in Facility No. 3.19. Los Alisos and Santa Margarita agree that Los Alisos shall have the option for a period of one year from the date of execution of this Agreement to acquire an additional 1 mg of capacity in Facility 3.19. Los Alisos shall give Santa Margarita thirty (30) days prior written notice that it intends to exercise the option to acquire the additional 1 mg. Los Alisos shall acquire said additional 1 mg capacity upon the payment to Santa Margarita of the additional pro rata cost for said capacity plus interest on said pro rata amount at the rate of eight percent (8%) per annum from the date that Facility No. 3.19 is completed by Santa Margarita to the date that said option is exercised. Los Alisos may give Santa Margarita written notice at any time on or before the anniversary date of this Agreement.

SECTION 6. Maintenance and Operation

The Facilities shall be maintained and operated by Santa Margarita for the benefit of Los Alisos and Santa Margarita, including its operation as an emergency intertie facility commencing on the date of completion by Los Alisos of its Zone III Phase IV Transmission Main from Santa Margarita's 3.24(b)20" Facility to Los Alisos Zone III pump station. All maintenance and operation costs shall be shared on the basis of the capacity that each entity has in each Facility.

For the purposes of this Agreement, all references to "maintenance and operation costs" shall include those costs that are attributable to the protection and preservation of the Facilities, such as the expense of mending or replacing a broken portion of the line, the expense of cathodic protection, the expense of restoring defective valves to reasonable operating condition, or (in the event that repair is not economically feasible) the replacement of same, the expense of regrading portions of the easement after flooding or other acts of God, to restore eroded cover or remove excessive material, as well as the more direct costs of providing service personnel and related facilites necessary to insure continued and reasonable performance of the Facilities. Any obligation imposed on a party by any other public entity for the payment of taxes, assessments or charges because of their interest in the Facilities shall be paid by said party. Any water delivered by one party to the other party due to an emergency shall be replaced by the receiving party delivering a like amount of water to the supplying party within a reasonable time after the emergency ceases.

Bills for progress payments submitted by Santa Margarita on or before the 25th of the month will be paid by Los Alisos by the Friday following the second Wednesday of the next month. Any dispute unresolved by the parties as to the necessity for a maintenance and operation expenditure or the amount of said costs shall be settled by arbitration. Los

Alisos and Santa Margarita shall select an engineer to be the arbitrator. In the event that Los Alisos and Santa Margarita cannot agree upon an engineer to arbitrate the dispute, each entity shall appoint an engineer to act as arbitrator and the two engineers so appointed shall appoint a third engineer to arbitrate the dispute. The American Arbitration Association rules shall be followed for any arbitration conducted pursuant to this Agreement.

The parties recognize that the precise method of operating the Facilities for the mutual benefit of Los Alisos and Santa Margarita cannot be ascertained until the Facilities have been constructed and operated for a period of time. The parties agree that within eighteen (18) months of the execution of this Agreement the parties shall execute a supplemental agreement which will set forth the operating procedures. Until said supplemental agreement is executed Santa Margarita shall have the sole authority to operate the Facilities in the manner it deems to be in the best interest of both districts.

SECTION 7. Notice

All notices, demands and requests which may be or are required to be given or made by any party to the other party shall be in writing. All notices, demands and requests by Los Alisos to Santa Margarita shall be sent by United States registered mail, postage prepaid, addressed to Santa Margarita as follows:

SANTA MARGARITA WATER DISTRICT
25571 Marguerite Parkway
Mission Viejo, California 92675

or to such other addressee and at such other place as Santa Margarita may from time to time designate in written notice to Los Alisos.

All notices, demands, requests and payments by Santa Margarita to Los Alisos shall be sent by United States registered mail, postage prepaid, addressed to Los Alisos as follows:

LOS ALISOS WATER DISTRICT
22312 Muirlands Boulevard
Post Office Box 595
El Toro, California 92630

or to such other addressee and at such other place as Los Alisos may from time to time designate in written notice to Santa Margarita. Notices, demands, and requests which shall be served upon the parties in the manner aforesaid shall be deemed sufficiently served or given for all purposes hereunder at the time such notice, demand or request is thus mailed.

SECTION 8. Cooperation

Santa Margarita and Los Alisos agree that each party shall cooperate with the other in carrying out all of the terms of this Agreement, including joinder in any request for County of Orange construction permits, road encroachment permits, acquisition or any necessary easements or rights of

way, and compliance with all other State and County Regulations necessary for the accomplishment of the purposes of this Agreement.

SECTION 9. Successors and Assigns

The interests of the parties in the Facilities shall not be assigned without the consent of the other party.

SECTION 10. Districts Securities Division

This Agreement shall not be effective, except as to the provision hereinafter set forth, until it is approved by the Office of the State Treasurer, Districts Securities Division, or until the parties are informed by said office that such approval is not required.

As it is uncertain whether this Agreement must be approved by the Office of the State Treasurer, Districts Securities Division, Los Alisos and Santa Margarita agree that should said office disapprove of the Agreement as it relates to the acquisition of capacity in Santa Margarita's existing facilities and the future expenditures by Los Alisos, Los Alisos shall nevertheless be obligated to Santa Margarita to pay the cost of oversizing Facility 3.24(b) from a 16" to a 20" pipeline.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement as of the day and year first hereinabove

written.

LOS ALISOS WATER DISTRICT

By _____
President

By _____
Secretary

SANTA MARGARITA WATER DISTRICT

By _____
President

By _____
Secretary

EXHIBIT "A"

PROPOSED SMWD - LAWD JOINT ZONE III SYSTEM

ESTIMATED COST ALLOCATION FOR LOS ALISOS WATER DISTRICT

Column 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Fac. No.	Description	Install. Date	Length	Proposed LAWD Capacity	Total Capacity	% LAWD Capacity / Total Capacity	Est. 1978 Unit Price	Est. 1978 Const. Cost	Est. Cost Escal(1)	Engr. Admin. & Conting.(2)	Total Est. Project Cost	Less(3) Deprec.	Est. Current Value	Est. Prorata Cost for LAWD
3.24(b)	20" El Toro Rd to Antonio Rd	1978	3,800'	4 cfs	8 cfs	50.0%	$ (4)	$252,090	$ 0	$ 37,800	$289,890	$ 0	$289,890	$144,945
3.9	30" Antonio Rd, Los Alisos to Marguerite Pkwy	1977	1,600'	4 cfs	27 cfs	14.8%	$ (5)	$ 94,900	$ 0	$ 14,300	$109,200	$ 1,900	$107,300	$ 15,900
3.7D	30" Marguerite Pkwy Antonio Rd to O'Neill Rd	1977	3,400'	4 cfs	27 cfs	14.8%	$ (5)	$159,700	$ 0	$ 24,000	$183,700	$ 3,200	$180,500	$ 26,700
3.7C	20" O'Neill Rd, Marguerite Pkwy to Melinda	1976	2,350'	4 cfs	10 cfs	40.0%	$ (5)	$ 97,900	$ 0	$ 14,700	$112,600	$ 3,900	$108,700	$ 43,500
3.4	30" O'Neill Rd, Melinda to Alicia Pkwy	1978	3,400'	4 cfs	27 cfs	14.8%	$ (5)	$195,700	$ 0	$ 29,400	$225,100	$ 0	$225,100	$ 33,300
3.22	42" Alicia Pkwy, O'Neill to Nijar	1979	1,600'	4 cfs	57 cfs	7.0%	$137/ft	$219,200	$21,900	$ 60,300	$301,400	$ 0	$301,400	$ 21,100
3.25	24" Connection to Zone III Reservoir	1979	2,000'	4 cfs	15 cfs	26.7%	$ 70/ft	$140,000	$14,000	$ 38,500	$192,500	$ 0	$192,500	$ 51,400
3.19	4 MG Zone III Reservoir	1979	---	1 MG	4 MG	25.0%	$.137/gal.	$662,000(6)	$51,400	$128,400	$891,800	$ 0	$891,800	$223,000

TOTAL ESTIMATED COST FOR LAWD PRORATA CAPACITY $559,845

(1) Cost escalation assumed at 10% per year, compounded for future installations
(2) Engr. & Administration estimated @ 15%; an allowance of 10% is included for contingencies on future projects
(3) Straight line depreciation based on 50 year life
(4) Based on bids received November 15, 1978
(5) 1978 replacement cost based on contract prices updated to June, 1978 based on ENR const. cost indices for Los Angeles area

Fac. No.	Contract Price	ENR Ratio	Est. 1978 Replacement Cost
3.9	$ 87,058.20	3209/2941	$ 94,900
3.7D	$146,519.00	3209/2941	$159,700
3.7C	$ 80,884.37	3209/2649	$ 97,900
3.4	$195,718.60	3209/3209	$195,700

(6) Includes site grading costs estimated @ $ 147,700 based on bids received December 18, 1978; estimated cost escalation excludes site grading costs.

Revised 1-24-79

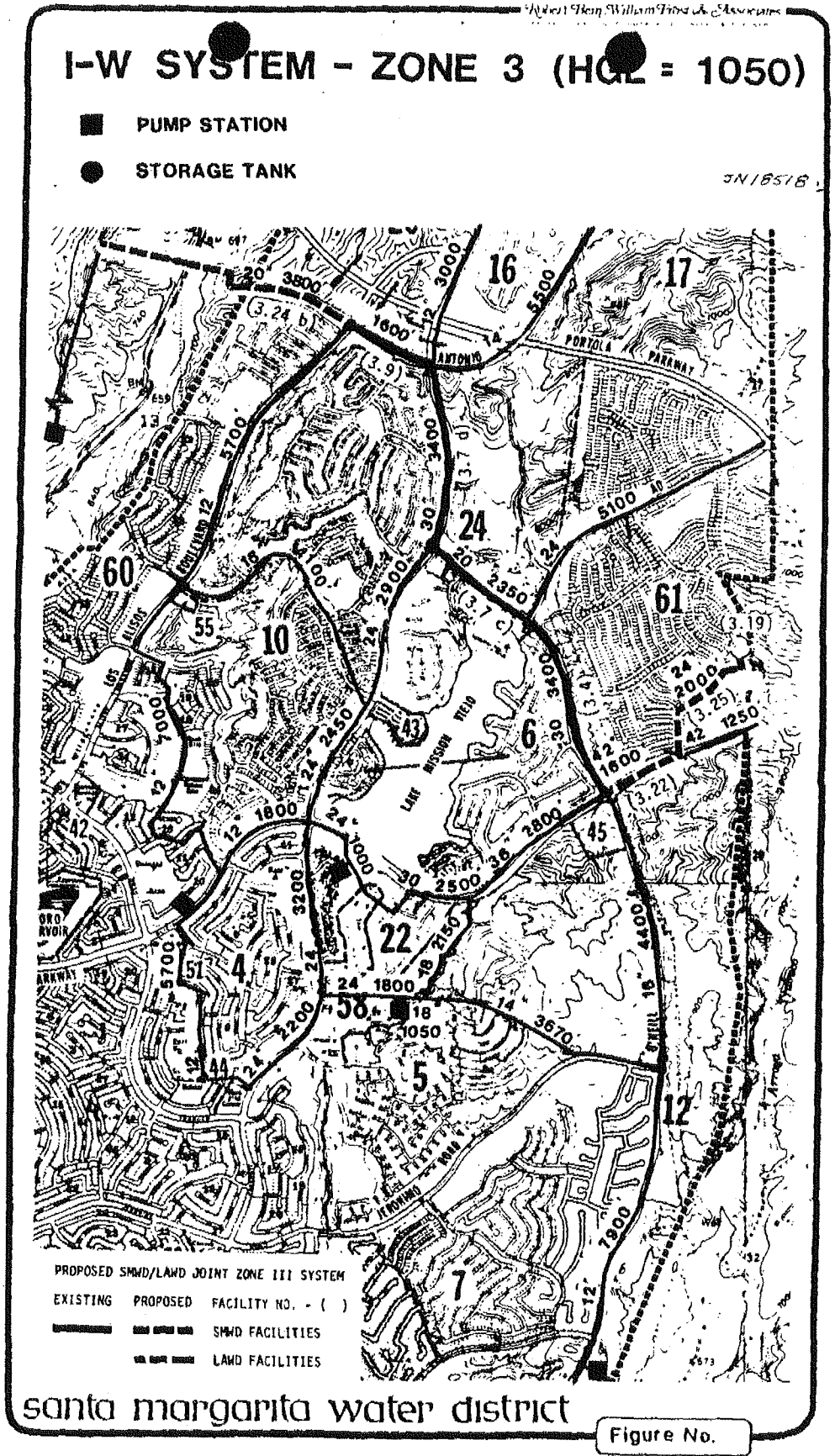

I-W SYSTEM - ZONE 3 (HGL = 1050)
PUMP STATION
STORAGE TANK
JN/1851B
16
17
24
60
61
10
55
6
22
4
5
7
12
45
42
43
PORTOLA PARKWAY
LAKE MISSION VIEJO
PROPOSED SMWD/LAWD JOINT ZONE III SYSTEM
EXISTING
PROPOSED
FACILITY NO. - ( )
SMWD FACILITIES
LAWD FACILITIES
santa margarita water district
Figure No.

EXHIBIT B

EXHIBIT "B"

AGREEMENT BETWEEN
SANTA MARGARITA WATER DISTRICT
AND IRVINE RANCH WATER DISTRICT
TERMINATING 1979 AGREEMENT AND
PROVIDING FOR DOMESTIC WATER
EMERGENCY INTERCONNECTION

This AGREEMENT [TERMINATING 1979 AGREEMENT AND] PROVIDING FOR DOMESTIC WATER EMERGENCY INTERCONNECTION ("Agreement") is entered into the ____ day of _____, 2012, by and between the SANTA MARGARITA WATER DISTRICT ("SMWD") and the IRVINE RANCH WATER DISTRICT ("IRWD"), each a California water district formed and existing under Section 34000 *et seq.* of the California Water Code (each, a "Party" and together, the "Parties").

RECITALS

A. SMWD and the Los Alisos Water District entered into that certain agreement entitled, "Agreement for the Acquisition of Capacity in Certain Pipelines of the Santa Margarita Water District, the Construction and Joint Ownership of Certain Pipelines and a Reservoir, and for the Use, Operation and Maintenance of Said Facilities," dated as of April 16, 1979 (the "1979 Agreement"). The former Los Alisos Water District and IRWD were consolidated on December 31, 2000, with IRWD as the consolidated successor district, and as a result IRWD is the successor in interest to LAWD's rights and obligations under the 1979 Agreement.

B. IRWD no longer needs its capacity interests in the Facilities (as that term is defined in the 1979 Agreement) and desires to transfer and relinquish them to SMWD, except for the emergency intertie referred to in Section 6 of the 1979 Agreement.

C. Both Parties desire to retain joint ownership and of the emergency intertie and continue to operate and maintain it to serve as a two-way emergency interconnection that can be operated by either Party for emergency purposes.

D. The Parties desire to terminate the 1979 Agreement.

AGREEMENT

1. Termination of 1979 Agreement. The 1979 Agreement is hereby terminated in its entirety. Except as provided hereinafter in this Agreement with respect to the emergency interconnection, IRWD hereby transfers, quitclaims and relinquishes to SMWD all of IRWD's interests in the Facilities, SMWD hereby accepts the same, and the Parties agree that IRWD shall have no further rights and obligations with respect to the Facilities.

2. Emergency Interconnection. The emergency interconnection located on El Toro Road between Normandale Drive and Glenmeadows Drive, as depicted on Exhibit "A" attached hereto and incorporated herein by this reference shall be jointly used as provided herein for the mutual benefit of the Parties. The interconnection shall be defined to consist of the meters, valves, vault

and other appurtenances, together with the pipeline extending from either side of the vault to the adjacent isolation valves.

3. Ownership, Maintenance and Operation; Vault Access. The Parties shall jointly own the emergency interconnection facilities and the capacity therein. SMWD shall maintain the emergency interconnection as needed and periodically invoice IRWD for a one-half share of maintenance costs, and IRWD agrees to pay each such invoice within 30 days of receipt. Each Party shall have all necessary rights of access to the interconnection vault for the purposes of reading the meters and for the purpose of opening, using and closing the interconnection as provided in this Agreement.

4. Water Pressure, Quality and Flow Requirements. The interconnection is designed to supply a flow of four (4) cubic feet per second, provided, however, that neither Party guarantees any specified water flow rate, quantity, pressure, or quality of the water that may be delivered from its system to the other Party's system through the interconnection for any purpose. Each Party acknowledges and agrees to the foregoing limitations and agrees to use the interconnection for temporary supply purposes, only, in the event and to the extent it cannot meet demands from its own sources.

5. Operational Limitations. The provision of a temporary water supply by either Party to the other through the interconnection is subject to availability and is conditioned upon the supplying Party's ability to satisfy all of its obligations for the provision of water service to its own customers. In the event a Party determines, in its discretion, that any of its operations may reduce its ability to provide the temporary supply, the Party will, when practical, notify the other Party of said operations, but will incur no obligation or liability in respect of such reduced ability or any defect, delay or failure in giving such notice. Each Party acknowledges and agrees that the provision of a temporary supply by the supplying Party may be limited or affected by the supplying Party's operations and services to its own customers, including, but not limited to, said other Party's issuance of will serve letters and granting of new service connections. Each Party further acknowledges and agrees that the provision of a temporary supply by the supplying Party may also be limited or affected by the occurrence of unanticipated outages or failures sustained by the supplying Party, regional outages or failures, or other factors beyond the supplying Party's control. If determined by a Party to be necessary in an emergency, the Party may reduce supply through or shut off the interconnection without prior notice to the other Party, but in such event the Party making such reduction or shut off will notify the other Party as soon as practical.

6. No Dedication of Capacity. Each Party acknowledges and agrees that this Agreement provides only for temporary transmission of water through the interconnection, and nothing herein creates any implied dedication of any facilities or capacity in facilities, or any other right or entitlement in or to water or capacity in the other Party's water system.

7. Term and Termination of Agreement. Either Party may terminate this Agreement by giving the other Party one hundred eighty (180) days' prior written notice. This Agreement shall continue in effect until either Party exercises such right to terminate. Upon termination, the interconnection shall be removed or otherwise taken out of service, with the cost to be shared

equally by the Parties.

8. Metering. The interconnection meters shall be used for the purpose of measurement, invoicing and payment of water supplied through the interconnection.

9. Invoicing and Payment. The Party supplying any water through the interconnection shall invoice the other Party for all water metered through the interconnection, on a monthly basis. The water supplied will be charged at the prevailing rate paid by the supplying Party for full-service Metropolitan Water District treated water or equivalent, plus any incremental increase in readiness-to-serve charges paid by the supplying Party and attributable to the water supplied. Each invoiced amount shall be due and payable within thirty (30) days of mailing of the invoice. In lieu of payment as specified above, with the mutual consent of the Parties any water supplied to a Party through the interconnection may be repaid by the return or delivery of a like quantity of water to the supplying Party, in a manner and location(s) as the Parties shall agree.

10. Indemnification.

10.1. Water Supply. Each Party shall indemnify and hold the other Party harmless from and against any and all claims arising from said other Party's inability or failure to provide the temporary water supply or arising from any condition of flow, pressure or quality of the water supplied. Said indemnification and hold-harmless obligations shall include, without limitation, all costs and attorneys' fees incurred in the defense of any claim or any action or proceeding brought against the indemnified Party. For claims *other than* as described in this paragraph 10.1, the following paragraphs shall apply.

10.2. Indemnification by IRWD. IRWD shall indemnify, defend and hold SMWD, its officers, agents, employees harmless from any expense, liability or claim for death, injury, loss, damage or expense to persons or property which may arise or is claimed to have arisen out of the performance of this Agreement, save and except to the extent such expense, liability or claim is proximately caused in whole or in part by any act, omission, or negligence of SMWD, its officers, agents or employees or by any act or omission for which SMWD, its officers, agents or employees are liable without fault.

10.3. Indemnification by SMWD. SMWD shall indemnify, defend and hold IRWD, its officers, agents, employees harmless from any expense, liability or claim for death, injury, loss, damage or expense to persons or property which may arise or is claimed to have arisen out of the performance of this Agreement, save and except to the extent such expense, liability or claim is proximately caused in whole or in part by any act, omission, or negligence of IRWD, its officers, agents or employees or by any act or omission for which IRWD, its officers, agents or employees are liable without fault.

11. Amendment. This Agreement may be amended only by a writing executed by both parties.

12. Notice. Any notice or other document and all billings and payments required or

permitted to be given by either party hereto to the other party shall be deemed received upon delivery in person to the recipient or within two (2) business days after the date of deposit in the United States mail in the State of California, with postage prepaid, and addressed to the party for whom intended at the following address:

If to SMWD:	Santa Margarita Water District 26111 Antonio Parkway Rancho Santa Margarita, California 92688 Attention: General Manager
If to IRWD:	Irvine Ranch Water District P.O. Box 57000 15600 Sand Canyon Avenue Irvine, California 92619-7000 Attention: General Manager

13. Severability. If any portion, provision or part of this Agreement is held, determined or adjudicated to be invalid, unenforceable, or void for any reason whatsoever, each such portion, provision, or part shall be severed from the remaining portions, provisions, or parts of this Agreement, and shall not affect the validity or enforceability of such remaining portions, provisions or parts.

14. Entire Agreement. This Agreement contains the entire understanding and agreement between the parties with respect to the compromise set forth herein. No other representations, covenants, undertakings or other prior or contemporaneous oral agreements respecting such matters which are not specifically incorporated herein shall be deemed in any way to exist or bind either of the parties. The parties, and each of them, acknowledge that they have not executed this Agreement in reliance on any such promises, representations, or warranties.

15. Successors and Assigns. This Agreement shall be binding upon and inure to the benefit of the successors and assigns of the Parties.

16. No Third Party Beneficiaries. No person or entity other than SMWD and IRWD shall be deemed to be a third party beneficiary hereof, and nothing in this Agreement, either express or implied, is intended to confer upon any person or entity, other than the parties and their respective successors and assigns, any rights, remedies, obligations or liabilities under or by reason of this Agreement.

17. Authority. The representative of each party signing this Agreement warrants and represents that he/she has the full authority to execute the Agreement on behalf of the party on whose signature he/she so executes and he/she is acting within the express scope of such authority.

IRVINE RANCH WATER DISTRICT

By _____
Paul Cook
General Manager

By _____
Leslie Bonkowski
Secretary

Approved as to form:

By: _____
IRWD Legal Counsel

SANTA MARGARITA WATER DISTRICT

By _____
John Schatz
General Manager

By _____

Secretary

Approved as to form:

By:_____
SMWD Legal Counsel

EXHIBIT A

SMWD / IRWD Emergency Interconnection Agreement

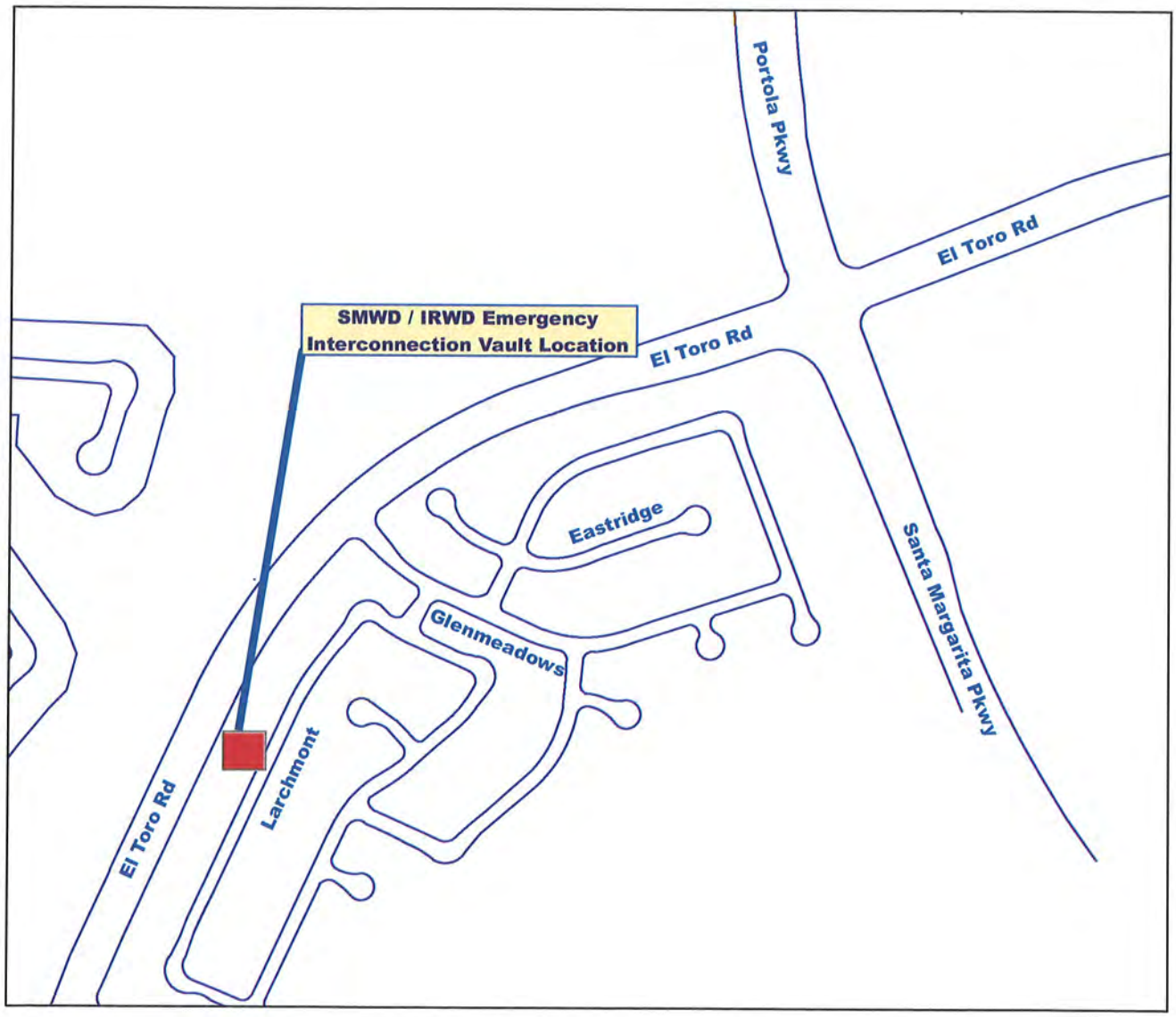


EXHIBIT "C"

RESOLUTION NO. 2012 -

RESOLUTION OF THE BOARD OF DIRECTORS OF
IRVINE RANCH WATER DISTRICT
APPROVING EXECUTION OF THE QUITCLAIM DEED TO
SANTA MARGARITA WATER DISTRICT

WHEREAS, Santa Margarita Water District ("SMWD") and Los Alisos Water District ("LAWD") entered into that certain agreement entitled, "Agreement for the Acquisition of Capacity in Certain Pipelines of the Santa Margarita Water District, the Construction and Joint Ownership of Certain Pipelines and a Reservoir, and for the Use, Operation and Maintenance of Said Facilities," dated as of April 16, 1979 (the "1979 Agreement"); and

WHEREAS, the former LAWD and Irvine Ranch Water District ("IRWD") were consolidated on December 31, 2000, with IRWD as the consolidated successor district, and as a result IRWD is the successor in interest to LAWD's rights and obligations under the 1979 Agreement; and

WHEREAS, IRWD no longer needs its capacity interests in the Facilities (as that term is defined in the 1979 Agreement) and desires to transfer and relinquish them to SMWD, except for the emergency intertie referred to in Section 6 of the 1979 Agreement with the execution and recordation of a quitclaim deed; and

WHEREAS, IRWD and SMWD have entered into a new agreement terminating the 1979 Agreement in its entirety, and providing that except for the emergency intertie, IRWD transfers, quitclaims and relinquishes to SMWD all of IRWD's interests in the Facilities, and SMWD accepts the same; and

WHEREAS the purpose of the quitclaim is to implement the quitclaim, transfer and relinquishment all of IRWD's interests in the Facilities except for the emergency intertie referred to above; and

WHEREAS, the proposed quitclaim has been presented to this Board of Directors, copy of which is attached hereto as Exhibit "A".

NOW, THEREFORE, BE IT RESOLVED, the Quitclaim Deed to Santa Margarita Water District, a California Water District, herein described and hereby is approved and execution by the District's officers is authorized.

ADOPTED, SIGNED and APPROVED this 27th day of February, 2012.

_____

President, IRVINE RANCH WATER DISTRICT and of the Board of Directors thereof

_____

Secretary, IRVINE RANCH WATER DISTRICT and of the Board of Directors thereof

APPROVED AS TO FORM:
BOWIE, ARNESON, WILES & GIANNONE
IRWD Legal Counsel

By _____

RECORDING REQUESTED BY AND WHEN RECORDED RETURN TO:

Ray Thatcher, District R/W Agent
Irvine Ranch Water District
15600 Sand Canyon Avenue
P.O. Box 57000
Irvine CA, 92619-7000

ASSESSOR PARCEL NO. (S):

_____

EXHIBIT "A"

(Space Above This Line For Recorder's Use)

IRWD Res. No. _____

This document is recorded at the request of and for the benefit of Irvine Ranch Water District and is therefore exempt from the payment of the recording fee pursuant to Government Code Section 6103 and from the payment of the documentary transfer tax pursuant to Revenue and Taxation Code Section 11922.

QUITCLAIM DEED

FOR VALUABLE CONSIDERATION, receipt of which is hereby acknowledged, IRVINE RANCH WATER DISTRICT, a California Water District organized under and existing pursuant to Section 34000 *et seq.* of the California Water Code and Consolidated Successor District to Los Alisos Water District, does hereby REMISE, RELEASE, AND FOREVER QUITCLAIM to SANTA MARGARITA WATER DISTRICT, a California Water District organized under and existing pursuant to Section 34000 *et seq.* of the California Water Code,

all RIGHT, TITLE and INTEREST in the real property located in the City of Irvine, County of Orange, State of California, as more particularly described in Exhibit "A", attached hereto and by this reference, made a part hereof.

The rights hereby quitclaimed are not necessary or useful in the performance of the duties of said Irvine Ranch Water District.

Dated: _____, 2012

IRVINE RANCH WATER DISTRICT,
a California Water District

By: _____
Name: Mary Aileen Matheis
Title: President

By: _____
Name: Leslie Bonkowski
Title: District Secretary

MAIL TAX STATEMENTS TO THE ABOVE ADDRESS

STATE OF CALIFORNIA)
)
COUNTY OF ORANGE)

On _____, 2012, before me, _____, a Notary Public in and for said State, personally appeared Mary Aileen Matheis and Leslie Bonkowski, who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature _____ (SEAL)

Notary Public in and for said State

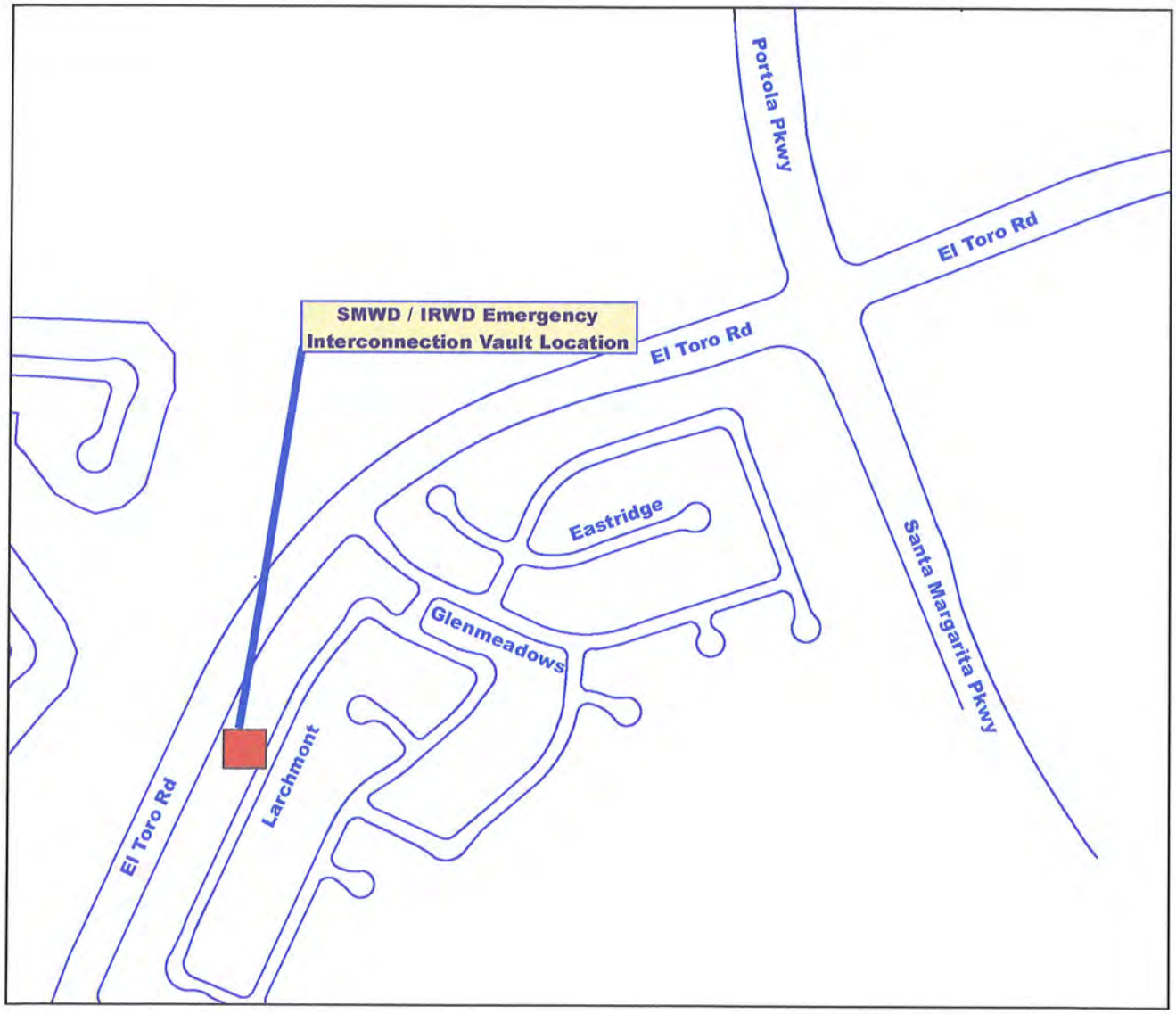
Exhibit "A"

All that real property located in the cities of Lake Forest and Mission Viejo, County of Orange, State of California, more particularly described as the "Facilities" in that certain Agreement for the Acquisition of Capacity in Certain Pipelines of the Santa Margarita Water District, The Construction and Joint Ownership of Certain Pipelines and a Reservoir. And for the Use, Operation and Maintenance of Said Facilities, Dated April 16, 1979. Said Facilities are described below (diameters, lengths, street intersections, volumes, capacities and other descriptions are approximate).

Fac. No.	Description	Install Date	Length	Proposed LAWD Capacity	Total Capacity	% LAWD Capacity Total Capacity
3.24(b)	20" El Toro Rd. to Antonio Rd.	1978	3,800'	4 cfs	8 cfs	50.0%
3.9	30" Antonio Rd., Los Alisos to Marguerite Pkwy	1977	1,600'	4 cfs	27 cfs	14.8%
3.7B	30" Marguerite Pkwy, Antonio Rd. to O'Neill Rd	1977	3,400'	4 cfs	27 cfs	14.8%
3.7C	20" O'Neill Rd., Marguerite Pkwy. To Melinda	1976	2,350'	4 cfs	10 cfs	40.0%
3.4	30" O'Neill Rd, Melinda to Alicia Pkwy.	1978	3,400'	4 cfs	27 cfs	14.8%
3.22	42" Alicia Pkwy., O'Neill Rd. to Nijar	1979	1,600'	4 cfs	57 cfs	7.0%
3.25	24" Connection to Zone III Reservoir	1979	2,000'	4 cfs	15 cfs	26.7%
3.19	4 MG Zone III Reservoir (Alicia Res.)	1979	-------	1 MG	4 MG	25.0%

EXCEPTING THEREFROM the emergency interconnection located on El Toro Road between Normandale Drive and Glenmeadows Drive, as depicted on Exhibit "B" attached hereto and incorporated herein by this reference, which interconnection shall be defined to consist of the meters, valves, vault and other appurtenances, together with the pipeline extending from either side of the vault to the adjacent isolation valves.

SMWD / IRWD Emergency Interconnection Agreement



February 21, 2012
Prepared by: S. Malloy
Submitted by: K. Burton
Approved by: Paul Cook

ENGINEERING AND OPERATIONS COMMITTEE

MICHELSON WATER RECYCLING PLANT PHASE 2 EXPANSION AND FLOOD PROTECTION IMPROVEMENTS
CHANGE ORDERS, VARIANCE, AND REDUCTION OF RETENTION

SUMMARY:

The Michelson Water Recycling Plant (MWRP) Phase 2 Expansion and Flood Protection Improvements are currently being constructed by J. R. Filanc Construction Company (Filanc). Staff recommends the Board:

- Approve Contract Change Order (CCO) No. 57 in the amount of $116,206.53 to install a 5-ton bridge crane for the MWRP Phase 2 Expansion;
- Approve Contract Change Order (CCO) No. 58 in the credit amount of $669,030.20 due to final quantity adjustment of the structure piles within the MWRP Phase 2 Expansion;
- Authorize the General Manager to execute Variance No. 2 in the amount of $24,700 with Ninyo and Moore for supplemental construction phase services associated with pile installation for the MWRP Phase 2 Expansion and Flood Protection Improvements; and
- Find that satisfactory progress is being made on the MWRP Phase 2 Expansion and Flood Protection Improvements contract;
- Authorize the reduction of retention from 10% to 5% of the contract amount; and
- Release funds in excess of 5% of the contract amount from retention currently held for MWRP Phase 2 Expansion and Flood Protection Improvements.

BACKGROUND:

Construction of the MWRP Phase 2 Expansion and Flood Protection Improvements project was awarded to J. R. Filanc Construction, Co. in July 2009 in the amount of $87,479,450. This project will expand the recycled water production capacity of MWRP to 28 million gallons per day and protect MWRP from flooding of San Diego Creek. A Project Overview Diagram of the MWRP Phase 2 Expansion is attached as Exhibit "A".

Contract Change Order No. 57:

The Phase 2 Expansion contract documents show that Filanc was to install a 2-ton bridge crane over the membrane bioreactors (MBR) to allow lifting of the membrane modules and moving them to the south side of the MBR for membrane module cleaning. Our design engineer, HDR, later discovered after review of the GE/Zenon submittal that a 5-ton bridge crane would be required. CCO No. 57 is for the incremental cost for material and labor to construct and install the 5-ton bridge crane. IRWD would have had to pay these costs had the Contract Documents shown a 5-ton crane. Additionally, the bridge crane was modified to extend an additional 9 feet to the north side of the MBR to allow the membrane modules to be lifted to and from trucks.

CCO No. 57 is attached as Exhibit "B". CCO No. 57 includes the incremental costs associated with changing from a 2-ton crane to a 5-ton crane. These costs are related to material, labor, commissioning, and applicable taxes. CCO No. 57 also includes $14,817 of unusable material and re-engineering by the crane manufacturer since the manufacturer had started manufacturing the 2-ton crane before the discovery was made. Staff has negotiated with the HDR to credit IRWD an equivalent amount on their construction services invoices to reimburse IRWD for this portion of the CCO. IRWD staff reviewed these costs and recommends approval of CCO No. 57.

Contract Change Order No. 58:

Contract Change Order No. 58 is for the final quantity adjustment for Bid Item No. A.06 – Precast Pre-stressed Concrete Drive Piles – Structure Piles. The adjustment was due to differing site conditions. This CCO credit amount represents a 23% decrease from the original $2,916,000 amount for the bid item. CCO No. 58 is attached as Exhibit "C".

The Contract Change Order Summary is attached as Exhibit "D". The total amount of all change orders for this construction project is $2,327,807.14 (2.7% of the original bid). The amount of change orders directly related to MWRP Phase 2 Expansion and Flood Protection Improvements is $1,104,804.82 (1.3% of the original bid). Change orders for work items related to other projects, such as the pipelines for the biosolids project, account for the difference.

Variance No. 2 with Ninyo and Moore:

Ninyo and Moore has been providing construction phase services associated with pile installation since the start of the project. Ninyo and Moore is requesting additional authorization due to Filanc's anticipated need for more time to install the piles. Slow pile installation has been as a result of (1) discovery of several previously unknown utilities; (2) realignment of several piles; and (3) constraints due to potential noise impact on the surrounding habitat.

Variance No. 2, attached as Exhibit "E", is to provide supplemental construction phase services for pile installation for the remaining 237 piles. Specifically, these services include monitoring of pile driving operations, geotechnical engineering, data complication and analysis, consultations, and a final report. Filanc has installed between 3 and 26 piles per day. Ninyo and Moore has assumed about 12 piles per day for Variance No. 2. Should the remaining piles take longer than this installation rate, another variance may be required.

Reduction of Retention:

Construction of MWRP Phase 2 Expansion and Flood Protection Improvements is 72.5% completed. Filanc has formally requested that the project retention be reduced pursuant to the project manual. According to General Provisions Section 11.4.3 "At any time after fifty (50) percent of the work has been satisfactorily completed and if DISTRICT determines that aggressive progress will continue to a timely completion of the Work, DISTRICT may pay any of the remaining progress payments in full for actual work completed."

Staff has reviewed Filanc's request and verified that they are currently working at a pace to complete the contract work prior to the contract completion date. Filanc has consistently maintained good construction progress throughout the project duration.

FISCAL IMPACTS:

The MWRP Phase 2 Expansion, Project 20214 (1599) and Project 30214 (1706) and Flood Protection Improvements, Project 20542 (1150) and Project 30542 (1118), are included in the FY 2011/12 Capital Budget. The existing budgets and Expenditure Authorizations are sufficient to fund Contract Change Order No. 57 and No. 58 with Filanc and Variance No. 2 with Ninyo and Moore.

Approval of the request to reduce the retention from 10% to 5% of the contract amount will not impact the project budget.

ENVIRONMENTAL COMPLIANCE:

The Michelson Water Recycling Plant Phase 2 Expansion and Flood Protection Improvements, Projects 20214 (1599), 20542 (1706), 30214 (1150), and 30542 (1118) are subject to the California Environmental Quality Act (CEQA) and in conformance with the California Code of Regulations Title 14, Chapter 3, Article 7, an Environmental Impact Report, SCH # 2005051174, was certified by the lead agency on February 27, 2006.

RECOMMENDATION:

That the Committee recommend the Board approve Contract Change Order No. 57 in the amount of $116,206.53 with J. R. Filanc Construction Co. to install a 5-ton crane for Michelson Water Recycling Plant Phase 2 Expansion, Projects 20214 (1599) and 30214 (1706); approve Contract Change Order No. 58 in the credit amount of $669,030.20 with J. R. Filanc Construction Co. due to final quantity adjustment of the structure piles within Michelson Water Recycling Plant Phase 2 Expansion, Projects 20214 (1599) and 30214 (1706); authorize the General Manager to execute Variance No. 2 in the amount of $24,700 with Ninyo and Moore for supplemental construction phase services for pile installation for the Michelson Water Recycling Plant Phase 2 Expansion, Projects 20214 (1599) and 30214 (1706) and Flood Protection Improvement, Projects 20542 (1150) and 30542 (1118); find that satisfactory progress is being made on the Michelson Water Recycling Plant Phase 2 Expansion and Flood Protection Improvements contract; authorize the reduction of retention from 10% to 5% of the contract amount; and release funds in excess of 5% of the contract amount from retention currently held for MWRP Phase 2 Expansion and Flood Protection Improvements, Projects 20214 (1599), 20542 (1150), 30214 (1706), and 30542 (1118).

LIST OF EXHIBITS:
Exhibit "A" – Location Map
Exhibit "B" – Contract Change Order No. 57
Exhibit "C" – Contract Change Order No. 58
Exhibit "D" – Contract Change Order Summary
Exhibit "E" – Variance No. 2 – Ninyo and Moore

Overview of MWRP Phase 2 Expansion

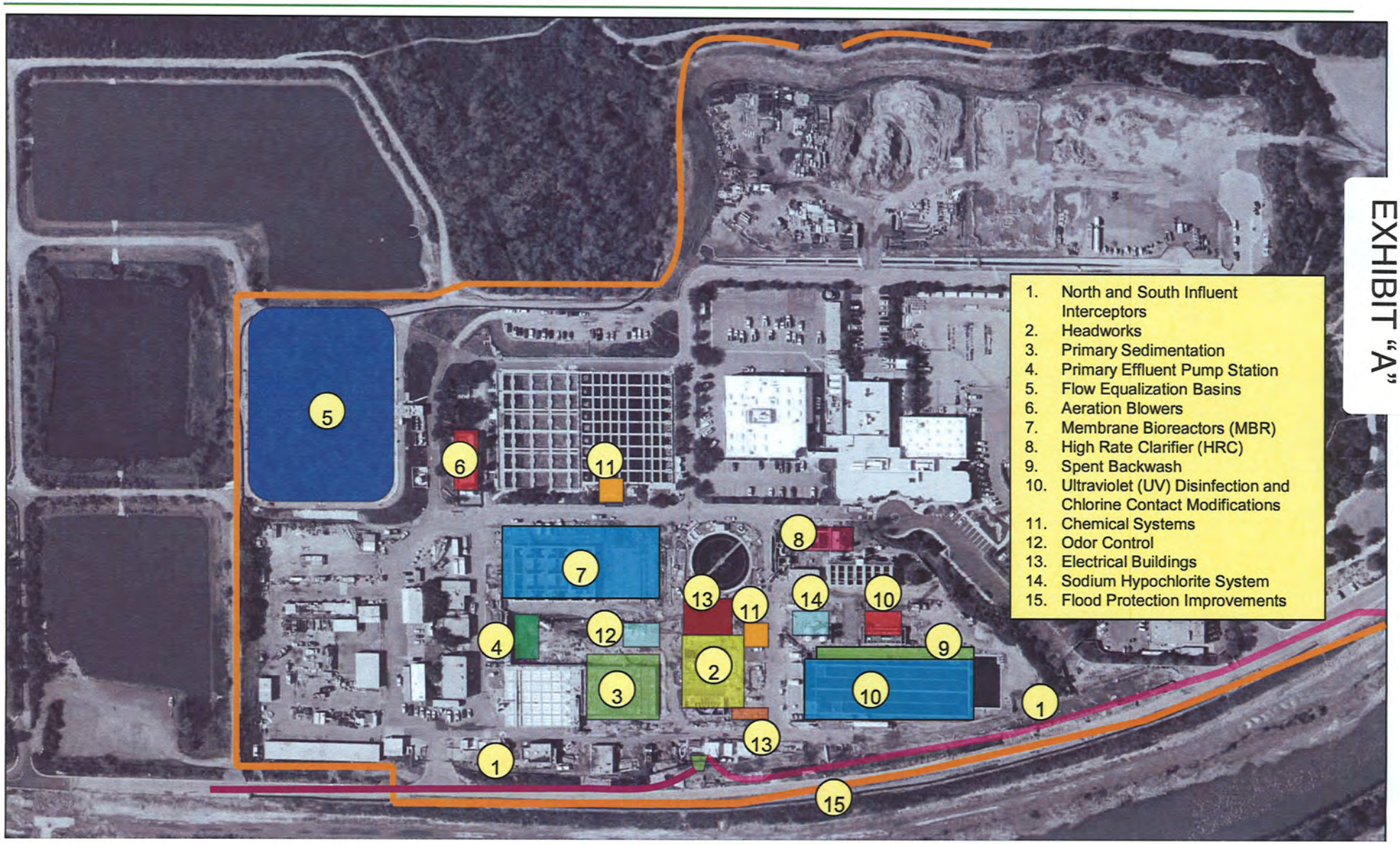


EXHIBIT "A"

EXHIBIT "B"

CONTRACT CHANGE ORDER

IRVINE RANCH WATER DISTRICT
15600 Sand Canyon Avenue
Irvine, California 92618
(949) 453-5300

C.O. No. 57
☐ Final

Project No. 20214, 30214, 20542, 30542 (1599,1706,1150,1118)

MWRP Phase 2 Expansion and Flood Protection Improvements
Project Title

Date: February 7, 2012

THE FOLLOWING CHANGE TO CONTRACT, DRAWINGS AND SPECIFICATIONS IS PROPOSED.	$ ADDITIONS	$ DELETIONS	DAYS ±
1. Change from 2-ton Bridge Crane to 5-ton Bridge Crane at Membrane Bioreactors (CR-195) (PR 20214,30214/Oracle 1599,1706)	$116,206.53	$0	0
Note 1. The project's overall completion date of January 15, 2013 is unchanged with this Change Order.			
TOTAL	$116,206.53	$0.00	0

			DAYS ±
1. NET AMOUNT THIS CHANGE ORDER	=	$116,206.53	0
2. ORIGINAL CONTRACT AMOUNT	=	$87,479,450.00	1,094
3. TOTAL PREVIOUS CHANGE ORDER(S)	=	$2,880,630.81	167
4. TOTAL BEFORE THIS CHANGE ORDER (2+ 3)	=	$90,360,080.81	1,261
5. PROPOSED REVISED CONTRACT AMOUNT TO DATE (1+4)	=	$90,476,287.34	1,261

We hereby agree to make the above change subject to the terms of this change order for the sum of: ----------One Hundred Sixteen Thousand Two Hundred Six and 53/100----------Dollars

2/9/12 — Date
J R Filanc Construction Co. — Contractor
By: Bill Hanley, Project Manager

SIGNATURE	DATE	APPROVAL LEVEL REQUIRED	
IRWD Engineer or Consulting Engineer	2/7/12 Date	Department Director Approval Required	
Principal Engineer - MWRP Construction	2-9-12 Date	General Manager Approval Required	
Director of Engineering and Construction	2-13-12 Date	Committee Approval Required	
General Manager	Date	Board Approval Required	X
		By / Date	
		Purchase Order No.	

NOTE: The documents supporting this Change Order, including any drawings and estimates of cost, if required are attached hereto and made a part hereof. This Change Order shall not be considered as such until it has been signed by the Owner and the Contractor. Upon final approval, distribution of copies will be made as required. The parties mutually agree the pricing set forth in this Change Order are complete and fair compensation for the entirety of the work authorized under this Change Order and that no additional compensation is warranted nor shall it be allowed.

CHANGES: All workmanship and materials called for by this Order shall be fully in accord with the original Contract Documents insofar as the same may be applied without conflict to the conditions set forth by this Order. The time for completing the contract will not be extended unless expressly provided for in this Change Order.

Rev. 8/2006

J.R. FILANC CONSTRUCTION COMPANY, INC.

FILANC

740 North Andreasen Drive, Escondido, California 92029 Ph 760-941-7130 Fax 760-941-3969 www.filanc.com

January 12, 2012

Mr. Steve Malloy
Irvine Ranch Water District
15600 Sand Canyon Avenue
Irvine, CA 92618

Re: CR-195 2Ton to 5Ton Crane Change at MBR- Revised

Dear Mr. Malloy:

Please note that based on an email received from Scott Toland on 10/19, Filanc has provided a price proposal to upgrade the bridge crane over the MBR tanks from a 2ton to a 5ton capacity. The cost has been revised per district request to add a 9' cantilever section and additional breakdown of costs has been included. Please note that any time impacts will be determined once the change request is formally approved and the new crane is released for fabrication. The total cost of upgrading the crane is ~~$118,466~~. Please note we are waiting for current fabrication/installation durations to provide a theoretical time impact.

$116,206.53

Please contact me at (760)801-0675 if you have any questions.

Sincerely,

J. R. FILANC CONSTRUCTION CO., INC.

Bill Hanley
Project Manager

Enclosures:3

J.R. FILANC CONSTRUCTION COMPANY

DATE: **01/12/12**

JOB: **IRWD - MWRP Expansion Phase 2** CR # 195

DESC:

ITEM	DESCRIPTION	Labor	Equipment	Materials	Subcontract	TOTAL
1	Upgrade from 2ton to 5ton crane at the MBR tank area.	$ -	$ -	$ -	$ 109,539.00	$ 109,539.00
	OH & Profit @ 15% L,M,E 5% S	$0.00	$0.00	$0.00	$5,476.95	$ 5,476.95
	Subtotal with Profit & Overhead	$ -	$ -	$ -	$ 115,015.95	$ 115,015.95
	Prime Contractor Totals					**$115,015.95**
	Bond Premium @ 1%					$1,150.16
	Small Tools & Consumables @ 2% *					~~$2,300.32~~ 40.42
	Total Change Order Request					~~**$118,466.43**~~ $116,206.53

MADE IN THE USA

B-3

* on the new work only
$2021.00

CraneNetics, Inc.

CRANES - HOISTS - MONORAILS

CA. LIC. #788423

4780 Cheyenne Way
Chino, CA 91710

Phone: (909) 590-1444
Fax: (909) 590-0295
Email: cranenetics@msn.com

PROPOSAL

January 12, 2012

PROPOSAL NO. CA-05870-A3

J R Filanc Construction Co., Inc.
740 N Andreasen Drive
Escondido, CA 92029
Fax No.: (760) 941-3969

Attention: Mr. Bill Hanley
For: Mr. Nathaniel Johnson

REF: Michelson Water Reclamation Plant

Upgrade 2-Ton Crane System To 5-Ton Capacity
Membrane Bioreactor – **Addendum No. 3**
EQUIPMENT PRICE BREAKDOWN (Additional)
And Price Addition For 9'-0" Runway Overhang

The following is a "Price Breakdown Comparison" of the 2-Ton Capacity crane system as originally offered and the upgrade to a 5-Ton Capacity system **AND** cost addition to extend crane runway (overhang) 9'-0" at north end:

ITEM DESCRIPTION	2-TON SYSTEM	5-TON SYSTEM
Five Support Frames (With Bracing, Etc.)	$ 58,266.00	$ 81,133.00
Runway Beam System, Rail, Stops, Electrification, Etc.	14,352.00	21,355.00
Crane Bridge, Hoist, Mat'ls & Shop Labor	18,360.00	36,049.00
Engineering, Submittals, Etc.	2,860.00	4,280.00
Jobsite Delivery Of Materials/Equipment	1,580.00	2,155.00
Special Coatings/Paint Requirements	11,300.00	37,983.00
Field Labor Installation w/Equipment	17,407.00	27,320.00
Commissioning/Certification	1,980.00	2,990.00
Applicable Sales Tax	7,391.00	12,932.00
	$ 133,496.00	$ 226,197.00
Wasted Materials (Crane Trucks, Controls, Frame & Runway Steel)	- - 0 - -	$ 14,817.00
	$ 133,496.00	$ 241,014.00

Sum Total Additional Net Costs: . . . . . $ 107,518.00

To: **J R Filanc Construction Co., Inc.**
Escondido, CA 92029

Date: January 12, 2012

PROPOSAL NO.: CA-05870-A3 Page: 2 Of 2.

RE: **Michelson Water Reclamation Plant**; Upgrade 2-Ton Crane System To 5-Ton Capacity; **Addendum #3**

Cost Addition For 9'-0" Overhang Extension At North End Of Runway System:

Materials	-	$ 1,248.00
Labor	-	628.00
Sales Tax	-	145.00

Total Additional Cost - $ 2,021.00

Should you have any questions or require additional assistance, kindly email or call.

Respectfully submitted
CaneNetics, Inc.

Jim Bogucci .

CraneNetics, Inc.

Bill Hanley

From: Jim Bogucci [cranenetics@msn.com]
Sent: Thursday, January 12, 2012 12:24 PM
To: Bill Hanley
Subject: Michelson; 2-Ton Crane System Upgraded To 5-Ton
Attachments: 5870A3bd.doc

Bill:

I am attaching another revised cost comparison breakdown. We were able to save monies on the installation. We have been advised by the paint supplier that our equipment is unable to apply the special paint so we really don't have any room to reduce the price on this item. Keep in mind, the amount of steel for the 5-Ton system has increase in weight by approx. 15,000 Lbs.. Back in 2009 we were quited .38 cents per pound. Now we have been quoted approx. .60 cents per pound (plus trucking to and fro). Let me know.

Thanks & best regards,

Jim Bogucci
CraneNetics, Inc.
Ph: (909) 590-1444
Fax: (909) 590-0295
Cell: (909) 241-6387

Exhibit "C"

CONTRACT CHANGE ORDER

IRVINE RANCH WATER DISTRICT
15600 Sand Canyon Avenue
Irvine, California 92618
(949) 453-5300

C.O. No. 58
☐ Final

Project No. 20214, 30214, 20542, 30542 (1599,1706,1150,1118)

MWRP Phase 2 Expansion and Flood Protection Improvements
Project Title

Date: February 10, 2012

THE FOLLOWING CHANGE TO CONTRACT, DRAWINGS AND SPECIFICATIONS IS PROPOSED.	$ ADDITIONS	$ DELETIONS	DAYS ±
1. Final Quantity Adjustment for Bid Item A.06 – Precast Prestressed Concrete Driven Piles – Structure Piles (PR 20214,30214/Oracle 1599,1706)	$0.00	$669,030.20	0
Note 1. The project's overall completion date of January 15, 2013 is unchanged with this Change Order.			
TOTAL	$0.00	$669,030.20	0

			DAYS ±
1. NET AMOUNT THIS CHANGE ORDER	=	($669,030.20)	0
2. ORIGINAL CONTRACT AMOUNT	=	$87,479,450.00	1,094
3. TOTAL PREVIOUS CHANGE ORDER(S)	=	$2,996,837.34	167
4. TOTAL BEFORE THIS CHANGE ORDER (2+ 3)	=	$90,476,287.34	1,261
5. PROPOSED REVISED CONTRACT AMOUNT TO DATE (1+4)	=	$89,807,257.14	1,261

We hereby agree to make the above change subject to the terms of this change order for the sum of:

----------A CREDIT OF Six Hundred Sixty-Nine Thousand Thirty and 20/100----------Dollars

2/13/12	J R Filanc Construction Co.	Sean MacGregor
Date	Contractor	By: Bill Hanley, Project Manager

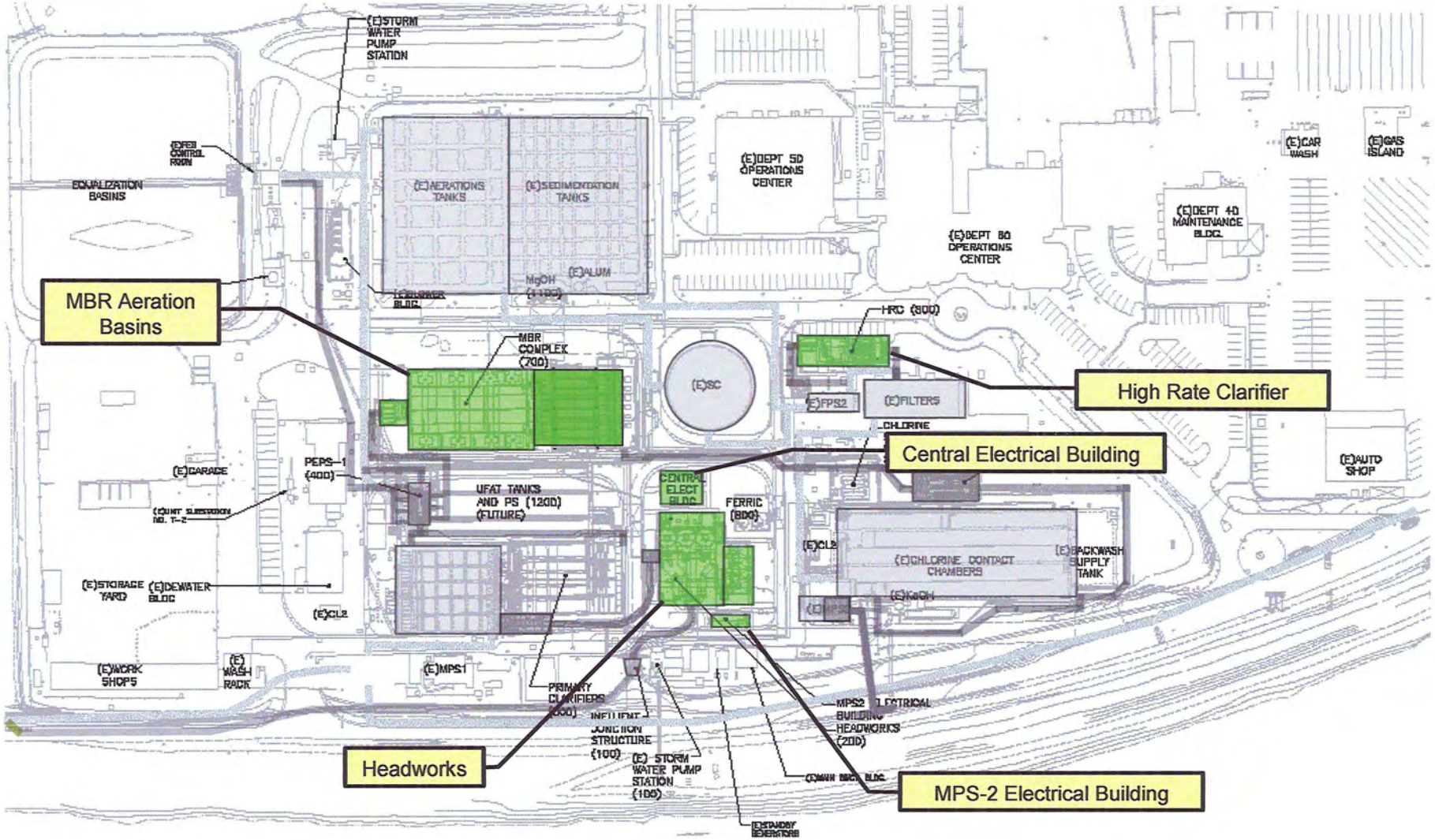
SIGNATURE	DATE	APPROVAL LEVEL REQUIRED	
IRWD Engineer or Consulting Engineer	2/13/12 Date	Department Director Approval Required	☐
Principal Engineer – MWRP Construction	2-13-12 Date	General Manager Approval Required	☐
Director of Engineering and Construction	2-14-12 Date	Committee Approval Required	☐
General Manager	Date	Board Approval Required	X
		By	Date
		Purchase Order No.	

NOTE: The documents supporting this Change Order, including any drawings and estimates of cost, if required are attached hereto and made a part hereof. This Change Order shall not be considered as such until it has been signed by the Owner and the Contractor. Upon final approval, distribution of copies will be made as required. The parties mutually agree the pricing set forth in this Change Order are complete and fair compensation for the entirety of the work authorized under this Change Order and that no additional compensation is warranted nor shall it be allowed.

CHANGES: All workmanship and materials called for by this Order shall be fully in accord with the original Contract Documents insofar as the same may be applied without conflict to the conditions set forth by this Order. The time for completing the contract will not be extended unless expressly provided for in this Change Order.

Rev. 8/2006

MWRP Phase 2 Structural Pile Locations



C-2

CONTINUATION SHEET

APPLICATION AND CERTIFICATION FOR PAYMENT, containing
Contractor's signed certification is attached

Use Column I on Contracts where variable retainage for line items may apply

APPLICATION NO: 421-29
APPLICATION DATE: 01/31/12
PERIOD TO: 01/31/12
J. R. FILANC PROJECT NO: 421

A	B	B.1	C	D	E	F	G		H	I
ITEM NO	DESCRIPTION OF WORK	LF COST OR LS	SCHEDULED VALUE	WORK COMPLETED FROM PREVIOUS APPLICATION	WORK COMPLETED THIS PERIOD	MATERIALS PRESENTLY STORED (NOT IN D OR E)	TOTAL COMPLETED AND STORED TO DATE (D+E+F)	% (G ÷ C)	BALANCE TO FINISH (C - G)	RETAINAGE (IF VARIABLE RATE)
Schedule A Bid Items										
A.01	Trench safety, shoring	LS	$ 1,000,000.00	$ 697,800.00	$ 22,000.00	$ -	$ 719,800.00	72%	$ 280,200.00	
A.02	Mobilization ($40,000/month)	LS	$ 3,000,000.00	$ 2,540,000.00	$ 40,000.00	$ -	$ 2,580,000.00	86%	$ 420,000.00	
A.03	Bonds	LS	$ 580,000.00	$ 580,000.00	$ -	$ -	$ 580,000.00	100%	$ -	
A.04	Settlement monitoring... ($2760/month)	LS	$ 100,000.00	$ 80,540.00	$ 2,760.00	$ -	$ 83,300.00	83%	$ 16,700.00	
A.05	Vibration monitoring... ($4000/month)	LS	$ 100,000.00	$ 98,000.00	$ -	$ -	$ 98,000.00	98%	$ 2,000.00	
A.06	Precast Prestressed Concrete Driven Piles - Structure Piles (54,000 LF)	$ 54.00	$ 2,916,000.00	$ 2,097,474.22	$ -	$ -	$ 2,097,474.22	72%	$ 818,525.78	
A.07	Predrilled Precast/stressed Concrete Driven Piles-Influent Sewer Piles (21,000 LF)	$ 43.00	$ 903,000.00	$ 362,795.00	$ -	$ -	$ 362,795.00	40%	$ 540,205.00	
A.08	Additional Predrilling for items A.6 & A.7 (22,000 LF)	$ 7.00	$ 154,000.00	$ 154,000.00	$ -	$ -	$ 154,000.00	100%	$ -	
A.09	Overall project	LS	$ 53,327,028.00	$ 35,496,903.46	$ 1,864,390.17	$ -	$ 37,361,293.63	70%	$ 15,965,734.37	
A.10	GE/Zenon MBR	LS	$ 9,049,700.00	$ 7,694,081.00	$ -	$ -	$ 7,694,081.00	85%	$ 1,355,619.00	
A.11	Eutek grit package	LS	$ 572,520.00	$ 567,720.00	$ -	$ -	$ 567,720.00	99%	$ 4,800.00	
A.12	Turblex blowers	LS	$ 1,758,000.00	$ 1,758,000.00	$ -	$ -	$ 1,758,000.00	100%	$ -	
A.13	Kruger ACTIFLO	LS	$ 1,988,000.00	$ 1,789,200.00	$ -	$ -	$ 1,789,200.00	90%	$ 198,800.00	
A.14	Sanitaire diffusers	LS	$ 188,440.00	$ 188,440.00	$ -	$ -	$ 188,440.00	100%	$ -	
A.15	Viking primary clarifier	LS	$ 253,335.00	$ 250,335.00	$ -	$ -	$ 250,335.00	99%	$ 3,000.00	
A.16	Siemens Odor Control	LS	$ 208,478.00	$ -	$ -	$ -	$ -	0%	$ 208,478.00	
A.17	Cornell Prim Sludge	LS	$ 52,765.00	$ 52,765.00	$ -	$ -	$ 52,765.00	100%	$ -	
A.18	Allen Bradley MCC's...	LS	$ 2,325,701.00	$ 2,325,701.00	$ -	$ -	$ 2,325,701.00	100%	$ -	
A.19	Modicon PLC's...	LS	$ 276,997.00	$ 276,997.00	$ -	$ -	$ 276,997.00	100%	$ -	
A.20	Krohne Mag Meters...	LS	$ 142,000.00	$ 141,682.00	$ -	$ -	$ 141,682.00	100%	$ 318.00	
A.21	Hallsten Alum Covers	LS	$ 350,240.00	$ 127,562.34	$ -	$ -	$ 127,562.34	36%	$ 222,677.66	
A.22	Sodium Hypochlorite Tanks..	LS	$ 122,145.00	$ 122,145.00	$ -	$ -	$ 122,145.00	100%	$ -	
A.23	Street sweeping... ($1480/month)	LS	$ 50,000.00	$ 36,560.00	$ 1,480.00	$ -	$ 38,040.00	76%	$ 11,960.00	
A.24	Startup & testing...	LS	$ 200,000.00	$ 29,000.00	$ -	$ -	$ 29,000.00	15%	$ 171,000.00	
A.25	O&M manuals...	LS	$ 80,000.00	$ 6,000.00	$ 12,000.00	$ -	$ 18,000.00	23%	$ 62,000.00	
A.26	Final record drawings...($4000/M@24M w/ $54,000 Final Payment)	LS	$ 150,000.00	$ 72,000.00	$ 4,000.00	$ -	$ 76,000.00	51%	$ 74,000.00	
A.27	Project dewatering...	LS	$ 175,000.00	$ 129,322.44	$ 8,000.00	$ -	$ 137,322.44	78%	$ 37,677.56	
A.28	System integration...	LS	$ 1,624,460.00	$ 1,624,460.00	$ -	$ -	$ 1,624,460.00	100%	$ -	
A.29	Worker's Comp Ins...	LS	$ 320,000.00	$ 320,000.00	$ -	$ -	$ 320,000.00	100%	$ -	
A.30	Gen'l liability insurance...	LS	$ 345,000.00	$ 345,000.00	$ -	$ -	$ 345,000.00	100%	$ -	
A.31	Auto liability insurance...	LS	$ 65,000.00	$ 65,000.00	$ -	$ -	$ 65,000.00	100%	$ -	
A.32	Differing site conditions...	AL	$ 100,000.00	$ 72,944.00	$ -	$ -	$ 72,944.00	73%	$ 27,056.00	
A.33	SWPPP ($1850/month)	LS	$ 85,000.00	$ 71,900.00	$ 1,850.00	$ -	$ 73,750.00	87%	$ 11,250.00	
	SUBTOTAL SCHEDULE A BID ITEMS		$ 82,562,809.00	$ 60,174,327.46	$ 1,956,480.17	$ -	$ 62,130,807.63	75%	$ 20,432,001.37	
Schedule A-1										
A-01	Builder's Risk Insurance	LS	$ 635,000.00	$ 635,000.00	$ -	$ -	$ 635,000.00	100%	$ -	
	SUBTOTAL BUILDER'S RISK		$ 635,000.00	$ 635,000.00	$ -	$ -	$ 635,000.00	100%	$ -	
Schedule B Bid Items										
B.01	Precast Prestressed Concrete Driven Pile (46,580 LF)	$ 51.00	$ 2,389,350.00	$ 1,973,882.00	$ -	$ -	$ 1,973,882.00	83%	$ 415,468.00	
B.02	Predrilled Precast Prestressed Concrete Driven Piles (650 LF)	$ 52.00	$ 33,800.00	$ 33,800.00	$ -	$ -	$ 33,800.00	100%	$ -	
B.03	Furnish and Install Removable Floodwalls	LS	$ 250,000.00	$ 163,916.00	$ -	$ -	$ 163,916.00	66%	$ 86,084.00	
B.04	Impermeable membrane (4,659 LF)	$ 20.00	$ 93,180.00	$ 32,417.00	$ 10,400.00	$ -	$ 42,817.00	46%	$ 50,363.00	

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MWRP Phase 2 Expansion Construction
Determination of Credit for
Structure Piles - MWRP (within Plant)

1. Unrealized Mobilization Costs

	Rate ($/LF)	Length (ft)	Total Cost ($)
Bid	$ 7.07	54,000	$381,780.00
Actual Installed	$ 7.07	36,415	$257,454.05
Unrealized Production		**17,585**	**$124,325.95**

2. Under Payment - Foundation Pile

Foundation Pile Cost		$ 1,908,912.85
Amount Paid to Foundation Pile		$ 1,887,389.45
Amount Due to Foundation Pile		**$ 21,523.40**

3. Settlement Offer		$ 145,849.35
	2.5% to Filanc	$ 3,646.23
		$ 149,495.58

2/9/2012

MWRP Phase 2 Expansion and Flood Protection Improvements
PR 20214, 20542, 30214, and 30542
Construction Summary

Contractor: J R Filanc Construction
Design Engineer: HDR

Change Order		Description	Category	Contract Amount: Change Order Line Item Amount	Change Order Amount	Previous Change Orders	Cumulative Total of Change Orders	% of Original Contract Amount	Revised Contract Amount	Contract Days: Change Order Days	Previous Change Orders	Cum. Total C.O. days	Revised Total Contract Days	Original Completion Date: / Revised Completion Date
				Original Contract Amount: $ 87,479,450.00						Original Days: 1,094				8/1/2012
1		Approved by Director of Engineering and Construction Approved on November 19, 2009			$195.40	$0.00	$195.40	0.0%	$87,479,645.40	0	0	0	1,094	8/1/2012
	1.1	Partnering Workshop – IRWD and the Contractor agreed to split equally the cost of partnering. The initial partnering workshop was held on September 3, 2009. This change request represents the Contractor's portion of the cost of that initial workshop. It is a credit to IRWD.	A	($6,561.60)						0				
	1.2	Installation of Bollards – The Contractor installed bollards around the IRWD MWRP Phase 2 Field Office Trailer and K-rails around the interim soium hypochlorite System to protect from traffic	A	$ 3,655.72						0				
	1.3	Relocation of 4-inch Natural Gas Pipeline	B	$ 3,101.28						0				
2		Approved by Director of Engineering and Construction Approved on December 3, 2009			$16,018.04	$195.40	$16,213.44	0.0%	$87,495,663.44	0	0	0	1,094	8/1/2012
	2.1	Previously Approved Change Request #4 – Tree Removal and Grinding at Flood Improvements and Duck Club	A	$ 6,696.00						0				
	2.2	Previously Approved NOPE #1 – Demolish Abandoned Building	D	$ 7,641.87						0				
	2.3	Repair of 10-inch PVC Groundwater Line at the New Headworks Area	B	$ 1,680.17						0				
3		Approved by Director of Engineering and Construction Approved on December 18, 2009			$0.00	$16,213.44	$16,213.44	0.0%	$87,495,663.44	0	0	0	1,094	8/1/2012
	3.1	Construct Temporary Access Road to Staging Area 3	A	$ -						0				
4		Approved by Board of Directors Approved on January 25, 2010			$143,950.10	$16,213.44	$160,163.54	0.2%	$87,639,613.54	0	0	0	1,094	8/1/2012
	4.1	Upsize Area 600 Aeration Blower from 350 to 500 hp	C	$ 66,355.57						0				
	4.2	Upsizing Soft Starters for Area 700 Blowers from 350 to 450 hp	C	$ 41,529.75						0				
	4.3	Infrared Windows to Measure Stray Currents	A	$ 36,064.78						0				
5		Approved by Director of Engineering and Construction Approved on December 29, 2009			$5,081.52	$160,163.54	$165,245.06	0.2%	$87,644,695.06	0	0	0	1,094	8/1/2012
	5.1	Relocation of K-rail to Allow Construction Equipment access for pond maintenance (PR 10942)	D	$ 5,081.52						0				
6		Approved by Engineering & Operations Comm Approved on January 19, 2010			$77,478.00	$165,245.06	$242,723.06	0.3%	$87,722,173.06	0	0	0	1,094	8/1/2012
	6.1	WAS and Skimming Pumps Replacement (PR 20779)	D	$ 77,478.00						0				

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EXHIBIT "D"

MWRP Phase 2 Expansion and Flood Protection Improvements
PR 20214, 20542, 30214, and 30542
Construction Summary

Contractor: J R Filanc Construction
Design Engineer: HDR

Change Order		Description	Category	Contract Amount: Change Order Line Item Amount	Change Order Amount	Previous Change Orders	Cumulative Total of Change Orders	% of Original Contract Amount	Revised Contract Amount	Contract Days: Change Order Days	Previous Change Orders	Cum. Total C.O. days	Revised Total Contract Days	Original Completion Date: Revised Completion Date
				Original Contract Amount: $ 87,479,450.00						Original Days: 1,094				
7		Approved by AGM Approved on February 9, 2010			$10,214.87	$242,723.06	$252,937.93	0.3%	$87,732,387.93	0	0	0	1,094	8/1/2012
	7.1	Relocation and Repair of Unknown Utilities. The Contractor relocated a 1-inch air line and repaired a 2-inch chlorine line, both of which were not shown on the Plans. (CCR #10)	B	$ 2,588.36						0				
	7.2	Removal and Disposal of Unknown Electrical Ductbanks at future Sodium Hypochlorite Feed Facility. (CCR #12)	B	$ 2,216.31						0				
	7.3	Non-compensable Weather-Related Delay	B	$ -						0				
	7.4	Non-compensable Time Extension Due to Change Order No. 4	C	$ -						0				
	7.5	Addition of Manways on Sodium Hypochlorite Tanks (CCR #23)	A	$ 5,410.20						0				
8		Approved by Board of Directors Approved on February 22, 2010			-$1,135,820.75	$252,937.93	-$882,882.82	-1.0%	$86,596,567.18	0	0	0	1,094	8/1/2012
	8.1	Delete Bid Item A.28 – System Integration	A	$ (1,624,460.00)						0				
	8.2	System Integration Coordination and SCADA Hardware Procurement	A	$ 488,639.25						0				
9		Approved by AGM Approved on March 18, 2010			-$36,064.78	-$882,882.82	-$918,947.60	-1.1%	$86,560,502.40	0	0	0	1,094	8/1/2012
	9.1	Deletion of Change Order 4, Line Item 3 – Installation of Infrared Windows.	A	$ (36,064.78)						0				
10		Approved by AGM Approved on March 23, 2010			$6,963.45	-$918,947.60	-$911,984.15	-1.0%	$86,567,465.85	0	0	0	1,094	8/1/2012
	10.1	Removal of 18-inch pipe and installation of 24-inch blind flange at Sodium Hypochlorite System excavation (CR #24)	B	$2,708.66						0				
	10.2	Addition of 24-inch side manway for Manganese Hydroxide tanks (CR #27)	A	$5,667.83						0				
	10.3	Relocation of 54" Primary Effluent Line (CR #29)	A	($15,928.00)						0				
	10.4	Change in PVC C900/C905 Manufacturer (CR #30)	A	$14,514.96						0				

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MWRP Phase 2 Expansion and Flood Protection Improvements
PR 20214, 20542, 30214, and 30542
Construction Summary

Contractor: J R Filanc Construction
Design Engineer: HDR

Change Order		Description	Category	Contract Amount: Change Order Line Item Amount	Change Order Amount	Previous Change Orders	Cumulative Total of Change Orders	% of Original Contract Amount	Revised Contract Amount	Contract Days: Change Order Days	Previous Change Orders	Cum. Total C.O. days	Revised Total Contract Days	Original Completion Date: Revised Completion Date
				Original Contract Amount: $ 87,479,450.00						Original Days: 1,094				8/1/2012
11		Approved by Director of Engineering and Construction Approved on April 26, 2010			$21,033.73	-$911,984.15	-$890,950.42	-1.0%	$86,588,499.58	0	0	0	1,094	8/1/2012
	11.1	Abandoned 24-inch line at high rate clarifier location (CR #026)	B	$15,782.97						0				
	11.2	Exploratory Excavation for Duct Bank at MPS-2 electrical building	B	$3,035.98						0				
	11.3	Provide chain operators and chain, and grease fittings for plug valves for the WAS/Skimming Pumps Replacement Project (PR 20779) (CR #036)	D	$2,214.78						0				
12		Approved by Director of Engineering and Construction Approved on April 28, 2010			$17,121.47	-$890,950.42	-$873,828.95	-1.0%	$86,605,621.05	0	0	0	1,094	8/1/2012
	12.1	Relocation of Existing 10-inch and 6-inch GW line (CR #014)	B	$17,121.47						0				
13		Approved by AGM Approved on April 28, 2010			$34,095.00	-$873,828.95	-$839,733.95	-1.0%	$86,639,716.05	0	0	0	1,094	8/1/2012
	13.1	Modifications in Checkered Aluminum Plates at the Headworks Area (CR 037)	C	$34,095.00						0				
14		Approved by Director of Engineering and Construction Approved on May 4, 2010			$16,655.10	-$839,733.95	-$823,078.85	-0.9%	$86,656,371.15	0	0	0	1,094	8/1/2012
	14.1	Electrical Substation Work (Two additional 5-inch Conduits and Connection btwn IRWD and SCE) (CR 028)	A	$16,655.10						0				
15		Approved by AGM Approved on May 21, 2010			-$49,007.95	-$823,078.85	-$872,086.80	-1.0%	$86,607,363.20	0	0	0	1,094	8/1/2012
	15.1	Credit for Not Relocating the 18-inch diameter drain line at HRC (CR #019)	A	($42,262.00)						0				
	15.2	Credit for Slab Penetration Modifications, Detail P17 (RFI 0102) (CR #032)	A	($6,745.95)						0				
16		Approved by Director of Engineering and Construction Approved on May 25, 2010			$22,358.42	-$872,086.80	-$849,728.38	-1.0%	$86,629,721.62	0	0	0	1,094	8/1/2012
	16.1	Abandonment of 6" Pipes at MBR Screen Area (CR 042)	B	$2,536.36						0				
	16.2	Addition of Three Transformers at UV Disinfection Facility (RFI 0149)	C	$18,633.63						0				
	16.3	Remove encasement on existing utilities to allow construction of future Primary Sedimentation Tanks (CR 051)	B	$1,188.43						0				

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MWRP Phase 2 Expansion and Flood Protection Improvements
PR 20214, 20542, 30214, and 30542
Construction Summary

Contractor: J R Filanc Construction
Design Engineer: HDR

Change Order		Description	Category	Contract Amount: Change Order Line Item Amount	Change Order Amount	Previous Change Orders	Cumulative Total of Change Orders	% of Original Contract Amount	Revised Contract Amount	Contract Days: Change Order Days	Previous Change Orders	Cum. Total C.O. days	Revised Total Contract Days	Original Completion Date: Revised Completion Date
		Original Contract Amount: $ 87,479,450.00								Original Days: 1,094				8/1/2012
17		Approved by Engineering & Operations Committee Approved on June 15, 2010			-$55,420.00	-$849,728.38	-$905,148.38	-1.0%	$86,574,301.62	0	0	0	1,094	8/1/2012
	17.1	Demolition of Old Clarifier Bottoms (CR 013)	B	($55,420.00)						0				
18		Approved by Director of Engineering and Construction Approved on July 28, 2010			$24,882.24	-$905,148.38	-$880,266.14	-1.0%	$86,599,183.86	0	0	0	1,094	8/1/2012
	18.1	Water Control Gate Revisions (CR #034)	C	$17,923.23						0				
	18.2	Repair of Existing Vault west of High Rate Clarifier (CR #057)	B	$1,451.75						0				
	18.3	Additional Demolition at Abandoned Aerobic Digester Area (CR #063)	B	$5,507.26						0				
19		Approved by Director of Engineering and Construction Approved on July 30, 2010			$16,058.68	-$880,266.14	-$864,207.46	-1.0%	$86,615,242.54	0	0	0	1,094	8/1/2012
	19.1	Platform modifications at Sodium Hypochlorite Feed System (CR 025)	A	$2,478.67						0				
	19.2	Pothole of existing 36-inch filter influent pipe (CR 043)	A	$4,503.99						0				
	19.3	Delete 6" knife gate valve and add 6" plug valve at Primary Sedimentation (CR 046)	A	$662.31						0				
	19.4	Repair of reclaimed water leak near old control room (CR 054)	B	$1,173.07						0				
	19.5	MBR fine screen cover plates modifications (CR 064)	B	$7,240.64						0				
20		Approved by Assistant GM Approved on August 26, 2010			$34,622.27	-$864,207.46	-$829,585.19	-0.9%	$86,649,864.81	0	0	0	1,094	8/1/2012
	20.1	Area 600 Blower Discharge Modifications (CR 050)	A	$34,622.27						0				
21		Approved from Board of Directors Approved on August 23, 2010			$277,384.97	-$829,585.19	-$552,200.22	-0.6%	$86,927,249.78	0	0	0	1,094	8/1/2012
	21.1	Valve Vaults Modifications (CR 020)	A	$277,384.97						0				
22		Approved by Director of Engineering and Construction Approved on August 26, 2010			$23,117.06	-$552,200.22	-$529,083.16	-0.6%	$86,950,366.84	0	0	0	1,094	8/1/2012
	22.1	Site Cleanup Due to Existing Filter Overflow (CR 065)	B	$4,271.51						0				
	22.2	Hollow shaft motor modifications to Vertical Turbine & Vertical Propeller Pumps (CR 069)	A	$18,845.55						0				
23		Approved by Director of Engineering and Construction Approved on September 9, 2010			$23,569.60	-$529,083.16	-$505,513.56	-0.6%	$86,973,936.44	0	0	0	1,094	8/1/2012
	23.1	MBR Anoxic Wall Modifications (CR 061)	C	$6,399.86						0				
	23.2	Repair Existing 6-inch GW near SCE Station (CR 067)	B	$3,449.83						0				
	23.3	Unforeseen Conditions at SCE Conduit Installation (CR 075)	B	$13,719.91						0				

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MWRP Phase 2 Expansion and Flood Protection Improvements
PR 20214, 20542, 30214, and 30542
Construction Summary

Contractor: J R Filanc Construction
Design Engineer: HDR

Change Order		Description	Category	Contract Amount: Change Order Line Item Amount	Change Order Amount	Previous Change Orders	Cumulative Total of Change Orders	% of Original Contract Amount	Revised Contract Amount (Original Contract Amount: $ 87,479,450.00)	Contract Days: Change Order Days (Original Days: 1,094)	Previous Change Orders	Cum. Total C.O. days	Revised Total Contract Days	Original Completion Date: 8/1/2012 / Revised Completion Date
24		Approved by Engineering and Operations Committee Approved on September 21, 2010			-$52,172.00	-$505,513.56	-$557,685.56	-0.6%	$86,921,764.44	0	0	0	1,094	8/1/2012
	24.1	UVE Piping Modifications at Chlorine Contact Tanks (CR 056)	A	($52,172.00)						0				
25		Approved by Board of Directors Approved on September 27, 2010			$186,651.45	-$557,685.56	-$371,034.11	-0.4%	$87,108,415.89	0	0	0	1,094	8/1/2012
	25.1	Modifications to Campus Drive Entrance (CR 022)	A	$186,651.45						0				
26		Approved by Director of Engineering and Construction Approved on October 20, 2010			$19,392.74	-$371,034.11	-$351,641.37	-0.4%	$87,127,808.63	0	0	0	1,094	8/1/2012
	26.1	Change of Strut Material from FRP to Stainless Steel 316/Install CAT5 Cable from PLC 1600 to PLC 9 (CR 074) [PR 20214, 30214]	A	$1,539.18						0				
	26.2	Existing Primary Sludge Pump Room Demolition and Modifications (CR 076) [PR 20214, 30214]	C	$3,909.94						0				
	26.3	Fence Repair at SCE Substation (CR 078) [PR 20214, 30214]	B	$1,957.62						0				
	26.4	SHC Electrical and Controls and Milestone Revisions (CR 079) [PR 20214, 30214]	B	$324.07						0				
	26.5	Change to more Energy Efficient Air Conditioning Units (Five Total) (Submittal 15604-001) (CR 081) [PR 20214, 30214]	A	$9,101.41						0				
	26.6	Grouting of the Sodium Hypochlorite Tanks at their Permanent Site (CR 084) [PR 20214, 30214]	A	$2,560.52						0				
27		Approved by Engineering & Operations Committee Approved on November 4, 2010			-$58,157.82	-$351,641.37	-$409,799.19	-0.5%	$87,069,650.81	0	0	0	1,094	8/1/2012
	27.1	Primary Sedimentation Tanks Flo-Clip Baffles Value Engineering (CR 080)	A	($58,157.82)						0				
28		Approved by GM Approved on November 24, 2010			$39,525.24	-$409,799.19	-$370,273.95	-0.4%	$87,109,176.05	0	0	0	1,094	8/1/2012
	28.1	Ducts for Future Phase 3 MBR (RFI 44) (RFI 016)	A	$32,021.80						0				
	28.2	Sodium Hypochlorite LCP Modifications (CR 071)	A	$7,503.44						0				
29		Approved by Director of Engineering & Construction Approved on December 22, 2010			$23,964.61	-$370,273.95	-$346,309.34	-0.4%	$87,133,140.66	0	0	0	1,094	8/1/2012
	29.1	MBR Aeration Piping Access Platforms (CR-066)	A	$14,074.73						0				
	29.2	Electrical Conduit Installation near MWRP Phase 2 Trailers (Unforeseen Conditions) (CR 077)	B	$9,889.88						0				

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MWRP Phase 2 Expansion and Flood Protection Improvements
PR 20214, 20542, 30214, and 30542
Construction Summary

Contractor: J R Filanc Construction
Design Engineer: HDR

Change Order		Description	Category	Contract Amount: Change Order Line Item Amount	Change Order Amount	Previous Change Orders	Cumulative Total of Change Orders	% of Original Contract Amount	Revised Contract Amount	Contract Days: Change Order Days	Previous Change Orders	Cum. Total C.O. days	Revised Total Contract Days	Original Completion Date: Revised Completion Date
		Original Contract Amount: $ 87,479,450.00								Original Days: 1,094				8/1/2012
30		Approved by Assistant GM Approved on December 22, 2010			$48,684.10	-$346,309.34	-$297,625.24	-0.3%	$87,181,824.76	0	0	0	1,094	8/1/2012
	30.1	Pipe Support (20-PE and 18-ML) Modifications per Submittal 15090-003 (CR 073)	C	$20,880.97						0				
	30.2	Material Change to SS 316 for Dry Type Transformer Submittal 16460-001 and Panelboard Submittal 16441-002 (CR 093)	A	$27,803.13						0				
31		Pending Approval from Engineering & Operations Committee Approval scheduled for January 18, 2011			$61,136.74	-$297,625.24	-$236,488.50	-0.3%	$87,242,961.50	0	0	0	1,094	8/1/2012
	31.1	Modifications at Campus Drive Access (CR 085)	A	$61,136.74						0				
32		Approved by Director of Engineering & Construction Approved on January 31, 2011			$24,303.15	-$236,488.50	-$212,185.35	-0.2%	$87,267,264.65	0	0	0	1,094	8/1/2012
	32.1	Delete Grout Fillet and Add Embeds at Headworks Grit Chambers (CR 090)	A	$8,156.20						0				
	32.2	LCPs for Vertical Recirculating Chopper Pumps and Sump Pumps (CR 097)	C	$15,000.00						0				
	32.3	Install Additional "Pipe Below Ground" Warning Tape (CR-099)	A	$1,146.95						0				
33		Pending Approval from Board of Directors Pending Approval on February 28, 2011			$282,840.15	-$212,185.35	$70,654.80	0.1%	$87,550,104.80	0	0	0	1,094	8/1/2012
	33.1	Revised chlorine feed to filters (CR-038)	C	-$3,510.68						0				
	33.2	PEPS meter vaults and bypass piping revisions (CR-039)	C	-$165,696.50						0				
	33.3	MPS-2 Pump Discharge Pipe Modifications (NOPE #003/CR-040)	D	$54,005.58						0				
	33.4	Modifications to MPS-2 Building Due to Unknown Duct Banks (RFI 160) (CR-049)	B	$16,500.00						0				
	33.5	WAS/Foam Pump Revisions (CR-053)	C	-$5,696.40						0				
	33.6	Floodwall Revisions per County of Orange and FEMA comments (CR-083)	A	$350,685.85						0				
	33.7	Modifications to Grating Supports at PST Splitter Box (CR-102)	C	$5,266.73						0				
	33.8	Change to NEMA 3R SS 316 Cabinets and Additional Taps for UV Disinfection Transformers Added by CR 047/CO 16 (CR-104)	A	$12,003.29						0				
	33.9	Miscellaneous Time &Material Items								0				
		Demo Oversized Footing/Rebar on Existing Retaining Wall behind Paint Shop (CR-100)	B	$5,391.41						0				
		Removal of Unknown Concrete at the North Interceptor (CR-107)	B	$2,917.38						0				
		Thrust block on storage line at HRC vault (CR-108)	B	$3,638.22						0				
		Removal of encased pipe for pile driving at MBR (CR-109)	B	$2,756.79						0				
		Repair pile damaged when performing CR-109 (CR-110)	B	$1,320.34						0				
		Install hydrophilic waterstop at PST launders (CR-113)	B	$3,258.14						0				

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MWRP Phase 2 Expansion and Flood Protection Improvements
PR 20214, 20542, 30214, and 30542
Construction Summary

Contractor: J R Filanc Construction
Design Engineer: HDR

Change Order		Description	Category	Contract Amount: Change Order Line Item Amount	Change Order Amount	Previous Change Orders	Cumulative Total of Change Orders	% of Original Contract Amount	Revised Contract Amount	Contract Days: Change Order Days	Previous Change Orders	Cum. Total C.O. days	Revised Total Contract Days	Original Completion Date: Revised Completion Date
				Original Contract Amount: $ 87,479,450.00						Original Days: 1,094				8/1/2012
34		Approved by Director of Engineering & Construction Approved on March 23, 2011			$21,844.56	$70,654.80	$92,499.36	0.1%	$87,571,949.36	0	0	0	1,094	8/1/2012
	34.1	Groundwater Well Modifications (CR-041) [PR 20214, 30214]	A	$2,338.20						0				
	34.2	Bypass for Shutdown at HRC Vault (CR-106) [PR 20214, 30214]	A	$11,200.90						0				
	34.3	Removal and Disposal of Abandoned 8-inch Reclaimed Water Line in the area of North Influent Interceptor Junction Structure (CR-111) [PR 20214, 30214]	B	$3,039.17						0				
	34.4	Additional Pipe Supports for 20" PE at MBR (CR-135) [PR 20214, 30214]	B	$2,811.22						0				
	34.5	Repair existing 6-in Reclaimed Water Line near Headworks (CR-138) [PR 20214, 30214]	C	$2,455.07						0				
35		Approved by Asst. GM Approved on April 18, 2011			$43,741.00	$92,499.36	$136,240.36	0.2%	$87,615,690.36	0	0	0	1,094	8/1/2012
	35.1	Area 600 Blower Discharge Modifications (CR-055) [PR 20214, 30214]	A	$28,785.00						0				
	35.2	Area 600 Blower Structural Support Modifications (CR-077) [PR 20214, 30214]	B	$14,956.00						0				
36		Approved by Director of Engineering and Construction Approved on May 16, 2011			$23,514.97	$136,240.36	$159,755.33	0.2%	$87,639,205.33	0	0	0	1,094	8/1/2012
	36.1	Area 300 Primary Sedimentation and Area 700 Membrane Bioreactors FRP Launder Modifications (CR-087) [PR 20214,	A	$4,757.27						0				
	36.2	Area 700 Membrane Bioreactors GE Piping Modifications (CR-136) [PR 20214, 30214]	B	$16,933.64						0				
	36.3	Addition of speed feedback on Various variable speed pumps (Chemical Systems) (CR-116) [PR 20214, 30214]	A	$1,824.06						0				
37		Approved by Assistant GM Approved on May 30, 2011			$46,369.50	$159,755.33	$206,124.83	0.2%	$87,685,574.83	0	0	0	1,094	8/1/2012
	37.1	Replacement of Existing Area 600 Discharge Pipe Coupling (CR-117) [PR 20214, 30214]	A	$14,011.85						0				
	37.2	Modifications to Primary Sedimentation Tank Embeds and Cover Plates (CR-125) [PR 20214, 30214]	A	$6,751.65						0				
	37.3	Increase of Bid Item A.8 – Additional Pre-drilling of Piles (CR-098) - 3,658 LF@ $7/LF [PR 20214, 30214]	B	$25,606.00						0				
38		Approved by Director of Engineering and Construction Approved on May 30, 2011			$24,692.00	$206,124.83	$230,816.83	0.3%	$87,710,266.83	0	0	0	1,094	8/1/2012
	38.1	Two-Sided (Split Faced) Masonry for Flood Protection Improvements (CR-088) [PR 20542, 30542]	C	$19,704.00						0				
	38.2	Architectural Modifications of MBR Building per Revised Drawing A-702 (CR-149) [PR 20214, 30214]	C	$4,988.00						0				

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MWRP Phase 2 Expansion and Flood Protection Improvements
PR 20214, 20542, 30214, and 30542
Construction Summary

Contractor: J R Filanc Construction
Design Engineer: HDR

Change Order		Description	Category	Contract Amount: Change Order Line Item Amount	Change Order Amount	Previous Change Orders	Cumulative Total of Change Orders	% of Original Contract Amount	Revised Contract Amount	Contract Days: Change Order Days	Previous Change Orders	Cum. Total C.O. days	Revised Total Contract Days	Original Completion Date: Revised Completion Date
				Original Contract Amount: $ 87,479,450.00						Original Days: 1,094				8/1/2012
39		Approved by Engineering & Operations Committee Approved on June 21, 2011			$60,515.80	$230,816.83	$291,332.63	0.3%	$87,770,782.63	0	0	0	1,094	8/1/2012
	39.1	Additional Architectural Modifications at High Rate Clarifier (CR-082) [PR 20214, 30214]	A	$60,515.80						0				
40		Approved by Director of Engineering and Construction Approved on June 23, 2011			$23,214.05	$291,332.63	$314,546.68	0.4%	$87,793,996.68	0	0	0	1,094	8/1/2012
	40.1	Double Containment Piping Modification for Sodium Hypochlorite System (CR-095) [PR 20214, 30214/Oracle 1599,	A	$16,157.16										
	40.2	Change of Enclosure from NEMA 4 to NEMA 4X SS for Chopper Pumps in CR-097 (CR-133) [PR 20214,	A	$1,347.00						0				
	40.3	Sodium Hypochlorite Tank Pad at PST Odor Control (CR-146) [PR 20214, 30214/Oracle 1599, 1706]	B	$5,709.89						0				
41		Approved Assistant GM Approved on June 24, 2011			$48,005.26	$314,546.68	$362,551.94	0.4%	$87,842,001.94	0	0	0	1,094	8/1/2012
	41.1	MPS-2 replacement of existing valves (NOPE #4) (CR-126) [PR 20214, 30214/Oracle 1599, 1706]	A	$35,068.26										
	41.2	Graybar Modifications per RFI 372 (CR-144) [PR 20214, 30214/Oracle 1599, 1706]	A	$3,429.00						0				
	41.3	Steel Joists Modifications Due to Additional Load Requirements per Submittal 05221-001 (CR-153) [PR 20214, 30214/Oracle	B	$9,508.00						0				
42		Approved by Engineering & Operations Committee Approved on July 13, 2011			$59,150.74	$362,551.94	$421,702.68	0.5%	$87,901,152.68	0	0	0	1,094	8/1/2012
	42.1	MBR Aeration and Permeate Piping Modifications (CR-048) [PR 20214, 30214/Oracle 1599, 1706]	B	$59,150.74						0				
43		Approved by Board of Directors Approved on July 25, 2011			$1,132,283.71	$421,702.68	$1,553,986.39	1.8%	$89,033,436.39	120	0	120	1,214	11/29/2012
	43.1	Pipelines and Utilities for Future Biosolids (CR-017) (PR 20847/Oracle 1617)	D	$503,272.17										
	43.2	Biosolids Sewer Force Main (CR-045) (PR 20847/Oracle 1617)	D	$626,976.14						60				
	43.3	Geotechnical Investigation at Staging Area 2 for Biosolids Project (CR 137) (PR 20847/Oracle 1617)	D	$2,035.40						60				
44		Pending Approval from Director of Engineering & Construction Approval Pending on August 18, 2011			$24,974.48	$1,553,986.39	$1,578,960.87	1.8%	$89,058,410.87	0	120	120	1,214	11/29/2012
	44.1	Chemical Systems Pump Pad Modifications (CR-105) (PR 20214,30214/Oracle 1599,1706)	A	$1,833.71										
	44.2	Installation of 6" Gate Valve and Change of Pipe Size on PW near SII Junction (CR-140) (PR 20214,30214/Oracle	A	$9,141.00						0				
	44.3	PLC-300 additional I/O to accommodate VFD change of Primary Sludge Pumps (PR 20214,30214/Oracle 1599,1706)	A	$13,999.77						0				
	44.4	Non-compensable time extension of Milestone 5 – Floodwall Installation delay due to FEMA review and regulatory compliance	B	$0.00						0				

MWRP Phase 2 Expansion and Flood Protection Improvements
PR 20214, 20542, 30214, and 30542
Construction Summary

Contractor: J R Filanc Construction
Design Engineer: HDR

Change Order		Description	Category	Contract Amount: Change Order Line Item Amount	Change Order Amount	Previous Change Orders	Cumulative Total of Change Orders	% of Original Contract Amount	Revised Contract Amount	Contract Days: Change Order Days	Previous Change Orders	Cum. Total C.O. days	Revised Total Contract Days	Original Completion Date: Revised Completion Date
				Original Contract Amount: $ 87,479,450.00						Original Days: 1,094				8/1/2012
45		Approved by Director of Engineering & Construction Approved on August 29, 2011			$24,935.87	$1,578,960.87	$1,603,896.74	1.8%	$89,083,346.74	0	0	0	1,214	11/29/2012
	45.1	Deletion of Monorail and Door Modifications at Headworks (CR-103) (PR 20214,30214/Oracle 1599,1706)	A	$3,570.03						0				
	45.2	Hollow Metal Door Modifications (CR-156) (PR 20214,30214/Oracle 1599,1706)	A	$7,396.38						0				
	45.3	Miscellaneous T&M (CR-166) (PR 20214,30214/Oracle 1599,1706)	B	$13,969.46						0				
46		Approved by Board of Directors Approved on September 26, 2011			$476,789.37	$1,603,896.74	$2,080,686.11	2.4%	$89,560,136.11	0	120	120	1,214	11/29/2012
	46.1	Replacement of Sand Canyon Zone A and Associated Piping, Valves, and Appurtenances (CR-130) (PR 30038/Oracle 1643)	D	$455,216.07						0				
	46.2	As Needed Potholing Related to Strainer Replacement and Pipe Installation (CR-130) (PR 30038/Oracle 1643)	D	$21,573.30						0				
47		Approved by Director of Engineering & Construction Approved on October 13, 2011			$24,215.90	$2,080,686.11	$2,104,902.01	2.4%	$89,584,352.01	0	120	120	1,214	11/29/2012
	47.1	Installation of Davits at PST, MBR, SBW Walkway, and HRC (CR-134) (PR 20214 (1599)/30214 (Oracle 1706))	A	$6,153.02						0				
	47.2	Miscellaneous T&M Work (CR-183) (PR 20214 (1599)/30214 (Oracle 1706))	B	$18,062.88						0				
48		Approved by Director of Engineering & Construction Approved on October 18, 2011			$24,860.93	$2,104,902.01	$2,129,762.94	2.4%	$89,609,212.94	0	120	120	1,214	11/29/2012
	48.1	Primary splitter box low pressure air pipe material and restraints (CR-162)/(PR 20214 (1599)/30214 (Oracle 1706))	C	$6,583.45						0				
	48.2	FRP Launder Modifications at MBR RAS Box (CR-168)/(PR 20214 (1599)/30214 (Oracle 1706))	C	$4,318.00						0				
	48.3	Concrete with PVC behind Auto Shop (CR-112)/(PR 20214 (1599)/30214 (Oracle 1706))	B	$1,262.67						0				
	48.4	Door Hardware Modifications per RFI-0339 (CR-139)/(PR 20214 (1599)/30214 (Oracle 1706))	C	$7,428.82						0				
	48.5	SBW Pumps Low Level Circuit modifications (CR-178)/(PR 20214 (1599)/30214 (Oracle 1706))	C	$2,261.42						0				
	48.6	Site Lighting Modifications (CR-068)/(PR 20214 (1599)/30214 (Oracle 1706))	C	$3,006.57						0				

MWRP Phase 2 Expansion and Flood Protection Improvements
PR 20214, 20542, 30214, and 30542
Construction Summary

Contractor: J R Filanc Construction
Design Engineer: HDR

Change Order		Description	Category	Contract Amount: Change Order Line Item Amount	Change Order Amount	Previous Change Orders	Cumulative Total of Change Orders	% of Original Contract Amount	Revised Contract Amount	Contract Days: Change Order Days	Previous Change Orders	Cum. Total C.O. days	Revised Total Contract Days	Original Completion Date: Revised Completion Date
		Original Contract Amount: $ 87,479,450.00								Original Days: 1,094				8/1/2012
49		Approved from Board of Directors Approved on October 24, 2011			$318,886.24	$2,129,762.94	$2,448,649.18	2.8%	$89,928,099.18	188	120	308	1,214	11/29/2012
	49.1	Biosolids Indicator Piles (CR-175)/PR 20847 (1617)	D	$318,886.24						0				
50		Approved by Director of Engineering & Construction Approved on November 21, 2011			$24,957.84	$2,448,649.18	$2,473,607.02	2.8%	$89,953,057.02	0	308	308	1,214	11/29/2012
	50.1	Odor scrubber cleaning at Primary Sedimentation Tanks (CR-158) (PR 20214,30214/Oracle 1599,1706)	A	$2,564.33						0				
	50.2	Existing Ductbank Modifications (CR-185) (PR 20214,30214/Oracle 1599,1706)	A	$13,764.46						0				
	50.3	Additional Concrete Fillets at High Rate Clarifier (CR-188) (PR 20214,30214/Oracle 1599,1706)	A	$8,629.05						0				
51		Approved by Director of Engineering & Construction Approved on November 22, 2011			$24,342.17	$2,473,607.02	$2,497,949.19	2.9%	$89,977,399.19	0	308	308	1,214	11/29/2012
	51.1	Filter Pump Station-2(FPS-2) Potable Water Line Addition (CR-172) (PR 20214 (1599)/30214 (Oracle 1706))	A	$6,296.80						0				
	51.2	Pothole 8 Inch Drain Line from High Rate Clarifier to Manhole #3 (CR-197) (PR 20214 (1599)/30214 (Oracle 1706))	B	$18,045.37						0				
52		Approved by Board of Directors Approved on December 12, 2011			$284,442.00	$2,497,949.19	$2,782,391.19	3.2%	$90,261,841.19	188	308	496	1,214	11/29/2012
	52.1	36" Stormwater Pipeline for Biosolids (CR-174) (PR 20847	D	$284,442.00						0				
53		Approved by Director of Engineering & Construction Approved on December 8, 2011			$24,885.30	$2,782,391.19	$2,807,276.49	3.2%	$90,286,726.49	0	496	496	1,214	11/29/2012
	53.1	Modifications to MBR Pump Room Drains and Valve Vaults (CR-096) (PR 20214/30214 (1599/1706))	C	$8,460.88						0				
	53.2	Central Electrical Building Masonry Veneer Modifications (CR-159) (PR 20214/30214 (1599/1706))	C	$5,243.55						0				
	53.3	Sodium Hydroxide Tank Pad Modifications (CR-161)	A	$2,578.57						0				
	53.4	Addition of Gutter and Downspout at Membrane Bioreactors Structure (CR-164) (PR 20214/30214 (1599/1706))	C	$8,602.30						0				
54		Approved by Director of Engineering & Construction Approved on December 9, 2011			$24,569.34	$2,807,276.49	$2,831,845.83	3.2%	$90,311,295.83	0	496	496	1,214	11/29/2012
	54.1	Grit Pump and Mixer Power Feed Modifications (CR-115) (PR 20214,30214/Oracle 1599,1706)	A	$3,764.78						0				
	54.2	8-inch Plant Drain Residuals to Headworks Piping Modifications at High Rate Clarifier (CR-171) (PR 20214,30214/Oracle 1599,1706)	A	$11,720.63						0				
	54.3	Vault Drain Line to PEPS (CR-176) (PR 20214,30214/Oracle 1599,1706)	B	$9,083.93						0				

MWRP Phase 2 Expansion and Flood Protection Improvements
PR 20214, 20542, 30214, and 30542
Construction Summary

Contractor: J R Filanc Construction
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				Original Contract Amount: $ 87,479,450.00						Original Days: 1,094				8/1/2012
55		Approved by Director of Engineering & Construction Approved on January 11, 2012			$24,469.23	$2,831,845.83	$2,856,315.06	3.3%	$90,335,765.06	94	496	590	1,214	11/29/2012
	55.1	Sodium Hypochlorite and Ferric Chloride Chemical Piping Additions (CR-128) (PR 20214,30214/Oracle 1599,1706)	A	$9,994.81						0				
	55.2	Modifications to the Existing Filter Effluent Channels (CR-204) (PR 20214,30214/Oracle 1599,1706)	C	$14,474.42						0				
56		Approved by Director of Engineering & Construction Approved on January 20, 2012			$24,315.75	$2,856,315.06	$2,880,630.81	3.3%	$90,360,080.81	47	590	637	1,261	1/15/2013
	56.1	Existing Sludge Pump Room Modifications (CR-147) (PR 20214,30214/Oracle 1599,1706)	B	$19,483.75						0				
	56.2	Structural Modifications for 20" LPA Penetration at MBR Building (CR-213) (PR 20214,30214/Oracle 1599,1706)	C	$4,832.00						47				
57		Pending Approval from Board of Directors Pending Approval on February 27, 2012			$116,206.53	$2,880,630.81	$2,996,837.34	3.4%	$90,476,287.34	0	637	637	1,261	1/15/2013
	57.1	Change from 2-Ton Bridge Crane to 5-Ton Bridge Crane (CR-195) (PR 20214,30214/Oracle 1599,1706)	C	$116,206.53						0				
58		Pending Approval from Board of Directors Pending Approval on February 27, 2012			($669,030.20)	$2,996,837.34	$2,327,807.14	2.7%	$89,807,257.14	0	637	637	1,261	1/15/2013
	58.1	Final Bid Item Quantity Adjustment due to Differing Site Conditions of Bid Item A.06 – Precast Prestressed Concrete Driven Piles – Structure Piles (PR 20214,30214/Oracle	B	($669,030.20)						0				

A - District Convenience/Initiation - Project Related	$ 75,427.63	0.1%
B - Differing Site Conditions	$ (370,099.67)	-0.4%
C - Design Oversight	$ 263,656.11	0.3%
D - District Convenience/Initiation - Non-Project Related	$ 2,358,823.07	2.7%
TOTAL (A+B+C+D)	$ 2,327,807.14	2.7%
TOTAL (A+B+C - (CCO No. 8 - SCADA))	$ 1,104,804.82	1.3%

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EXHIBIT "E"

IRVINE RANCH WATER DISTRICT
PROFESSIONAL SERVICES VARIANCE

Project Title: Michelson Water Reclamation Plant – Phase 2 Expansion Project & Flood Protection Improvements

Project No.: 20214, 30214, 20542 and 30542 Date: 1/24/2012
Purchase Order No.: 501695 Variance No.: 2

Originator: [ ] IRWD [X] ENGINEER/CONSULTANT [ ] Other (Explain)_____

Description of Variance (*attach any back-up material*):
Supplemental pile foundation installation and geotechnical consulting services. Revised schedule by contractor exceeded our most recent estimate of time provided in variance 1. This variance request is based on revised contractors time and current charges to date. See attached letter proposal.

Engineering & Management Cost Impact:

Classification	Manhours	Billing Rate	Labor $	Direct Costs	Subcon. $	Total $
Production Piles						$24,700
					Total $ =	$24,700

Schedule Impact:

Task No.	Task Description	Original Schedule	Schedule Variance	New Schedule
		November 29, 2012	Add 4 months	March 29, 2012

Required Approval Determination:

Total Original Contract	$ 304,900	[ ] General Manager: Single Variance less than or equal to $30,000.
Previous Variances $ 121,595 This Variance $ 24,700		[ ] Committee: Single Variance greater than $30,000, and less than or equal to $60,000.
Total Sum of Variances	$146,295	
New Contract Amount	$451,195	[ ] Board: Single Variance greater than $60,000.
Percentage of Total Variances to Original Contract	48 %	[x] Board: Cumulative total of Variances greater than $60,000, or 30% of the original contract, whichever is higher.

ENGINEER/CONSULTANT: Ninyo & Moore
Company Name

Project Engineer/Manager	2/2/12 Date	IRVINE RANCH WATER DISTRICT Department Director	2/9/12 Date
Engineer's/Consultant's Management	2/2/12 Date	General Manager/Comm./Board	Date

February 2, 2012
Proposal No. P-14173B

Mr. Billy Stewart, P.E.
Irvine Ranch Water District
P.O. Box 57000
Irvine, California 92619-7000

Subject: Proposal for Additional Pile Foundation Consulting Services
Michelson Water Reclamation Plant - Phase 2 Expansion
Irvine Ranch Water District
Irvine, California

Dear Mr. Stewart:

Ninyo & Moore is pleased to submit this proposal to provide additional construction services during the remainder of the installation of driven piles for the Phase 2 Expansion of the Michelson Water Reclamation Plant. We have been providing these services since October 2009 for the project. Due to the Contractor's schedule, our original estimate provided in our referenced proposal dated August 6, 2009, and our referenced revised supplemental proposal dated September 7, 2011, has been exceeded. Based on the current contractor's schedule and amount remaining in our authorized budget, we anticipate we will exceed our budget with approximately 20 days left of production pile installation. Our additional services for the project will include geotechnical engineering, monitoring of pile driving operations, consultations and documentation of the foundation construction. Our work will include the responsibilities of the geotechnical engineer as indicated in the project specifications and evaluation of the contractor conformance to the project specifications.

The Phase 2 Expansion project will include construction of multiple new structures, piping systems and associated infrastructure improvements. Driven pre-cast concrete piles will be used to support the Influent Trunk Sewers, Headworks Facility, MBR Complex, High Rate Clarifier and Electrical Buildings. Per project Addendum No. 4, the new Flood Wall construction will be included in the project. The Flood Wall project will include installation of piles for wall support. The general sequence of work will involve: 1) review and evaluation of contractor submittals regarding pile driving equipment, pile driving plans/construction sequence, and Wave Equation Analysis (WEAP) data, 2) field evaluation and engineering analysis of Indicator Piles, including Pile Driving Analyzer (PDA) tests and Case Pile Wave Analysis Program (CAPWAP) results,

and 3) monitoring and documentation of Production Piles. The WEAP analysis, PDA testing and CAPWAP programs will be performed by the contractor in accordance with the project specifications and the data will be provided to Ninyo & Moore for review and evaluation.

SCOPE OF SERVICES

Based on our experience and our project understanding, we have prepared the following scope of services.

Production Piles

- Check pile location, depth of pre-drill, pile length, concrete strength and pile plumbness before driving. This task will be based on review of the contractor's field survey data, project plans, pile schedules and pile rig set up.
- Record blow counts and pile hammer performance information, including hammer type, hammer stroke, and cushion material and dimension during pile driving operation.
- Evaluate and consult with Irvine Ranch Water District (IRWD), the project structural engineer and the contractor for cutting off piles or over-driving piles, if refusal is encountered before reaching the specified tip elevation.
- Evaluate and consult with IRWD, the project structural engineer and the contractor for re-striking or over-driving the pile if blow counts are less than required near the specified tip elevation.
- Evaluate and make recommendations to IRWD if pile damage and/or obstacles are encountered during pile driving, as well as other conditions, such as ground heaving.
- Prepare daily field reports to document work performed, piles completed, and observations regarding pile driving conditions and contractor conformance to project specifications. The pile plan and spread sheet will be updated daily and will be available for review by the IRWD/contractor.
- Provide as-needed engineering support and consultations.
- Prepare a report presenting the results of the pile construction with conclusions regarding the adequacy of the pile installation. Our report will include detailed information regarding the pile driving in tabulated form, including pile number, pile depth, blow counts, and additional pertinent data for each pile.

ASSUMPTIONS

The following assumptions have been made in the preparation of this scope of services:

- We have assumed that the contractor will complete the pile installation within their current schedule.
- We have assumed that our representative(s) will be on site full time (8-hour working days) for the duration of the pile driving.

ESTIMATED FEE

Our services will continue to be performed on a time-and-materials basis in accordance with the attached Schedule of Fees. Based on the scope of services and assumptions presented above, we estimate that our fees for the additional production piles will be approximately $24,700 (twenty-four thousand seven hundred dollars). A detailed breakdown of our estimated fee is presented in the attached Table 1.

Thank you for the opportunity to provide continued services on this project.

Respectfully submitted,
NINYO & MOORE

Michael T. Pearce, PE, GE
Senior Engineer

Carol A. Price, PG, CEG
Principal Geologist

MTP/CAP/sc

Attachments: References
Table 1 – Breakdown of Estimated Fee – Production Piles
Schedule of Fees
Schedule of Fees for Laboratory Testing

Distribution: (1) Addressee (via e-mail)

REFERENCES

HDR Engineering, Inc., 2009, Project Manual for Michelson Water Reclamation Plant, Phase 2 Expansion, Project No. 20214, 30214, Volumes 1, Volumes 2A and 2B (Specifications), Volumes 4A and 4B (Construction Plans), and Volume 5, dated March.

Ninyo & Moore, 2008a, Geotechnical Evaluation, Phase 2 Expansion, Michelson Water Reclamation Plant, Irvine Ranch Water District, Irvine, California, dated January 7.

Ninyo & Moore, 2008b, Geotechnical Evaluation, Proposed Floodwall Improvements, Michelson Water Reclamation Plant, Irvine Ranch Water District, Irvine, California, dated July 8.

Ninyo & Moore, 2008c, Geotechnical Report, Phase 2 Expansion, Michelson Water Reclamation Plant, Irvine Ranch Water District, Irvine, California, dated July 17.

Ninyo & Moore, 2009a, Geotechnical Recommendations, Project Improvements within Orange County Flood Control District Right-of-Way, Phase 2 Expansion, Michelson Water Reclamation Plant, Irvine, California, dated February 27.

Ninyo & Moore, 2009b, Geotechnical Evaluation, FEMA Levee Certification and San Diego Creek Flood Protection Improvements, Michelson Water Reclamation Plant, Irvine Ranch Water District, Irvine, California, dated June 23.

Ninyo & Moore, 2009c, Proposal for Pile Foundation Consulting Services, Michelson Water Reclamation Plant – Phase 2 Expansion, Irvine Ranch Water District, Irvine, California, dated August 6.

Ninyo & Moore, 2011, Revised Proposal for Supplemental Pile Foundation Consulting Services, Michelson Water Reclamation Plant – Phase 2 Expansion, Irvine Ranch Water District, Irvine, California, dated September 7.

TABLE 1 – BREAKDOWN OF ESTIMATED FEE - PRODUCTION PILES

PROJECT MANAGEMENT AND MEETINGS						
Principal Engineer/Geologist/Environmental Scientist	1 hour	@	$ 139.00	/hour	$	139.00
Project Engineer/Geologist/Environmental Scientist	4 hours	@	$ 123.00	/hour	$	492.00
Subtotal					**$**	**631.00**

PILE DRIVING MONITORING (20 Rig Days)						
Project Engineer/Geologist/Environmental Scientist	160 hours	@	$ 123.00	/hour	$	19,680.00
Subtotal					**$**	**19,680.00**

DATA COMPILATION AND ANALYSIS						
Principal Engineer/Geologist/Environmental Scientist	4 hours	@	$ 139.00	/hour	$	556.00
Project Engineer/Geologist/Environmental Scientist	16 hours	@	$ 123.00	/hour	$	1,968.00
Subtotal					**$**	**2,524.00**

REPORT PREPARATION						
Principal Engineer/Geologist/Environmental Scientist	2 hours	@	$ 139.00	/hour	$	278.00
Project Engineer/Geologist/Environmental Scientist	5 hours	@	$ 123.00	/hour	$	615.00
Staff Engineer/Geologist/Environmental Scientist	8 hours	@	$ 96.00	/hour	$	768.00
Technical Illustrator/CAD Operator	2 hours	@	$ 69.00	/hour	$	138.00
Data Processing, Technical Editing, or Reproduction	2 hours	@	$ 44.00	/hour	$	88.00
Subtotal					**$**	**1,887.00**

TOTAL ESTIMATED FEE		
	$	**24,722.00**

SCHEDULE OF FEES

HOURLY CHARGES FOR PERSONNEL

Principal Engineer/Geologist/Environmental Scientist	$	139
Senior Engineer/Geologist/Environmental Scientist	$	133
Senior Project Engineer/Geologist/Environmental Scientist	$	127
Project Engineer/Geologist/Environmental Scientist	$	123
Senior Staff Engineer/Geologist/Environmental Scientist	$	109
Staff Engineer/Geologist/Environmental Scientist	$	96
GIS Analyst	$	96
Field Operations Manager	$	87
Supervisory Technician*	$	87
Nondestructive Examination Technician, UT, MT, LP*	$	87
Pull Test Technician and Equipment*	$	87
Senior Field/Laboratory Technician*	$	69
Field/Laboratory Technician*	$	69
ACI Concrete Technician*	$	69
Concrete/Asphalt Batch Plant Inspector	$	69
Special Inspector, Reinforced Concrete*	$	69
Special Inspector, Pre-stressed Concrete*	$	69
Special Inspector, Reinforced Masonry*	$	69
Special Inspector, Structural Steel*	$	69
Special Inspector, Welding, AWS*	$	69
Special Inspector, Fireproofing*	$	69
Technical Illustrator/CAD Operator	$	69
Geotechnical/Environmental/Laboratory Assistant	$	53
Information Specialist	$	52
Data Processing, Technical Editing, or Reproduction	$	44

OTHER CHARGES

Expert Witness Testimony	$	400 /hr
Concrete Coring Equipment (includes one technician)	$	160 /hr
Special Preparation of Standard Test Specimens	$	64 /hr
Inclinometer Usage	$	32 /hr
Vapor Emission Kits	$	30 /kit
Rebar Locator (Pachometer)	$	10 /hr
Nuclear Density Gauge Usage	$	9 /hr
Field Vehicle Usage	$	--
Direct Project Expenses	Cost plus 15 %	

Laboratory testing, geophysical equipment, and other special equipment provided upon request.

NOTES (Field Services)

For field and laboratory technicians and special inspectors, regular hourly rates are charged during normal weekday construction hours. Overtime rates at 1.5 times the regular rates will be charged for work performed outside normal construction hours and all day on Saturdays. Rates at twice the regular rates will be charged for all work in excess of 12 hours in one day or on Sundays and holidays. Lead time for any requested service is 24 hours. Field Technician rates are based on a 2-hour minimum. Special inspection rates are based on a 4-hour minimum for the first 4 hours and an 8-hour minimum for hours exceeding 4 hours. Field personnel are charged portal to portal.

*Indicates rates that are based on Prevailing Wage Determination made by the State of California, Director of Industrial Relations on a semiannual basis. Our rates will be adjusted in conjunction with the increase in the Prevailing Wage Determination during the life of the project.

INVOICES

Invoices will be submitted monthly and are due upon receipt. A service charge of 1.0 percent per month may be charged on accounts not paid within 30 days.

TERMS AND CONDITIONS

The terms and conditions of providing our consulting services include our limitation of liability and indemnities as presented in Ninyo & Moore's Work Authorization and Agreement.

SCHEDULE OF FEES FOR LABORATORY TESTING
Laboratory Test, Test Designation, and Price Per Test

Soils

Atterberg Limits, D 4318, CT 204	$ 145
California Bearing Ratio (CBR), D 1883	$ 440
Chloride and Sulfate Content, CT 417 & CT 422	$ 135
Consolidation, D 2435, CT 219	$ 275
Consolidation – Time Rate, D 2435, CT 219	$ 70
Direct Shear – Remolded, D 3080	$ 290
Direct Shear – Undisturbed, D 3080	$ 250
Durability Index, CT 229	$ 150
Expansion Index, D 4829, UBC 18-2	$ 165
Expansion Potential (Method A), D 4546	$ 145
Expansive Pressure (Method C), D 4546	$ 145
Geofabric Tensile and Elongation Test, D 4632	$ 165
Hydraulic Conductivity, D 5084	$ 300
Hydrometer Analysis, D 422, CT 203	$ 190
Moisture, Ash, & Organic Matter of Peat/Organic Soils	$ 110
Moisture Only, D 2216, CT 226	$ 30
Moisture and Density, D 2937	$ 39
Permeability, CH, D 2434, CT 220	$ 230
pH and Resistivity, CT 643	$ 140
Proctor Density D 1557, D 698, CT 216, & AASHTO T-180 (Rock corrections add $80)	$ 180
R-value, D 2844, CT 301	$ 250
Sand Equivalent, D 2419, CT 217	$ 90
Sieve Analysis, D 422, CT 202	$ 110
Sieve Analysis, 200 Wash, D 1140, CT 202	$ 90
Specific Gravity, D 854	$ 90
Triaxial Shear, C.D, D 4767, T 297	$ 390
Triaxial Shear, C.U., w/pore pressure, D 4767, T 2297 per pt.	$ 330
Triaxial Shear, C.U., w/o pore pressure, D 4767, T 2297 per pt.	$ 190
Triaxial Shear, U.U., D 2850	$ 140
Unconfined Compression, D 2166, T 208	$ 100
Wax Density, D 1188	$ 90

Roofing

Built-up Roofing, cut-out samples, D 2829	$ 165
Roofing Materials Analysis, D 2829	$ 500
Roofing Tile Absorption, (set of 5), UBC 15-5	$ 190
Roofing Tile Strength Test, (set of 5), UBC 15-5	$ 190

Masonry

Brick Absorption, 24-hour submersion, C 67	$ 45
Brick Absorption, 5-hour boiling, C 67	$ 55
Brick Absorption, 7-day, C 67	$ 60
Brick Compression Test, C 67	$ 45
Brick Efflorescence, C 67	$ 45
Brick Modulus of Rupture, C 67	$ 40
Brick Moisture as received, C 67	$ 35
Brick Saturation Coefficient, C 67	$ 50
Concrete Block Compression Test, 8x8x16, C 140	$ 60
Concrete Block Conformance Package, C 90	$ 440
Concrete Block Linear Shrinkage, C 426	$ 120
Concrete Block Unit Weight and Absorption, C 140	$ 55
Cores, Compression or Shear Bond, CA Code	$ 55
Masonry Grout, 3x3x6 prism compression, UBC 21-18	$ 30
Masonry Mortar, 2x4 cylinder compression, UBC 21-16	$ 30
Masonry Prism, half size, compression, UBC 21-17	$ 110

Concrete

Cement Analysis Chemical and Physical, C 109	$ 1,650
Compression Tests, 6x12 Cylinder, C 39	$ 22
Concrete Mix Design Review, Job Spec	$ 140
Concrete Mix Design, per Trial Batch, 6 cylinder, ACI	$ 750
Concrete Cores, Compression (excludes sampling), C 42	$ 55
Drying Shrinkage, C 157	$ 250
Flexural Test, C 78	$ 50
Flexural Test, C 293	$ 55
Flexural Test, CT 523	$ 60
Gunite/Shotcrete, Panels, 3 cut cores per panel and test, ACI	$ 250
Jobsite Testing Laboratory	Quote
Lightweight Concrete Fill, Compression, C 495	$ 40
Petrographic Analysis, C 856	$ 1,100
Splitting Tensile Strength, C 496	$ 80

Reinforcing and Structural Steel

Fireproofing Density Test, UBC 7-6	$ 55
Hardness Test, Rockwell, A-370	$ 50
High Strength Bolt, Nut & Washer Conformance, set, A-32	$ 120
Mechanically Spliced Reinforcing Tensile Test, ACI	$ 95
Pre-Stress Strand (7 wire), A 416	$ 140
Chemical Analysis, A-36, A-615	$ 120
Reinforcing Tensile or Bend up to No. 11, A 615 & A 706	$ 50
Structural Steel Tensile Test: Up to 200,000 lbs. (machining extra), A 370	$ 70
Welded Reinforcing Tensile Test: Up to No. 11 bars, ACI	$ 55

Asphalt Concrete

Asphalt Mix Design, Caltrans	$ 2,200
Asphalt Mix Design Review, Job Spec	$ 150
Extraction, % Asphalt, including Gradation, D 2172, CT 310	$ 215
Film Stripping, CT 302	$ 100
Hveem Stability and Unit Weight CTM or ASTM, CT 366	$ 195
Marshall Stability, Flow and Unit Weight, T-245	$ 215
Maximum Theoretical Unit Weight, D 2041	$ 120
Swell, CT 305	$ 165
Unit Weight sample or core, D 2726, CT 308	$ 90

Aggregates

Absorption, Coarse, C 127	$ 35
Absorption, Fine, C 128	$ 35
Clay Lumps and Friable Particles, C 142	$ 100
Cleanness Value, CT 227	$ 120
Crushed Particles, CT 205	$ 140
Durability, Coarse, CT 229	$ 130
Durability, Fine, CT 229	$ 130
Los Angeles Abrasion, C 131 or C 535	$ 180
Mortar making properties of fine aggregate, C 87	$ 275
Organic Impurities, C 40	$ 55
Potential Reactivity of Aggregate (Chemical Method), C 289	$ 390
Sand Equivalent, CT 217	$ 90
Sieve Analysis, Coarse Aggregate, C 136	$ 105
Sieve Analysis, Fine Aggregate (including wash), C 136	$ 105
Sodium Sulfate Soundness (per size fraction), C 88	$ 160
Specific Gravity, Coarse, C 127	$ 75
Specific Gravity, Fine, C 128	$ 85

Special preparation of standard test specimens will be charged at the technician's hourly rate.

Ninyo & Moore is accredited to perform the AASHTO equivalent of many ASTM test procedures.