

AGENDA
IRVINE RANCH WATER DISTRICT
ENGINEERING AND OPERATIONS COMMITTEE
TUESDAY, JUNE 19, 2018

CALL TO ORDER 7:30 a.m., IRWD's Operations Center, First Floor Committee Room
3512 Michelson Drive, Irvine, California 92612

ATTENDANCE Committee Chair: John Withers _____
Committee Member: Mary Aileen Matheis _____

<u>ALSO PRESENT</u>	Paul Cook	_____	Jose Zepeda	_____	Harry Cho	_____
	Kevin Burton	_____	Eric Akiyoshi	_____	Paul Weghorst	_____
	Rich Mori	_____	Scott Toland	_____	Tom Roberts	_____
	Kelly Lew	_____	Ken Drake	_____	Ken Pfister	_____
	Lars Oldewage	_____	Arseny Kalinsky	_____	Steve Malloy	_____
	Malcolm Cortez	_____	Barkev Meserlian	_____		_____
	John Dayer	_____	Bruce Newell	_____		_____

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.
4. Determine which items may be approved without discussion.

INFORMATION

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| 5. <u>IRWD NON-POTABLE WATER STORAGE ANNUAL MANAGEMENT PLAN FOR 2018-19 – PFISTER/ROBERTS</u> | |
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Recommendation: Receive and file.

ACTION

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| 6. <u>MICHELSON WATER RECYCLING PLANT BIOSOLIDS AND ENERGY RECOVERY FACILITIES CONTRACT CHANGE ORDER NO. 84 – STEWART/MALLOY/BURTON</u> | |
|---|--|

Recommendation: That the Board approve Contract Change Order No. 84 in the amount of \$105,492.90 with Filanc/Balfour Beatty for electrical items due to the addition of grease pumps to the methane digester mixers for the Michelson Water Recycling Plant Biosolids and Energy Recovery Facilities, Project 04286.

ACTION (Continued)

7. ZONE 1 RESERVOIR CONSULTANT SELECTION – MCGEHEE/MORI/
BURTON

Recommendation: That the Board authorize the General Manager to execute a Professional Services Agreement with Tetra Tech, Inc. in the amount of \$290,000 for engineering support services during construction for the 3.7 MG Zone 1 Reservoir, Project 06401.

8. TUSTIN LEGACY MOFFETT DRIVE AND LEGACY ROAD CAPITAL
DOMESTIC AND RECYCLED WATER FACILITIES BUDGET INCREASE
AND CONTRACT CHANGE ORDER – RIOS/LEW/BURTON

Recommendation: That the Board authorize a budget increase in the amount of \$160,000, from \$643,000 to \$803,000, for Project 10260; authorize a budget increase in the amount of \$125,000, from \$643,000 to \$768,000, for Project 10261; and approve Contract Change Order No. 2 in the amount \$219,711 for the Moffett Drive and Legacy Road Capital Domestic and Recycled Water Improvements.

9. PLANNING AREA 51 HERITAGE FIELDS CAPITAL FACILITIES –
KESSLER/LEW/BURTON

Recommendation: That the Board authorize the General Manager to accept Heritage Fields' construction contract with Fydaq Company Inc. in the amount of \$130,413 for the District 5 Cadence South Sewer Improvements, Project 10117; authorize the General Manager to accept Heritage Fields' construction contract with Fydaq in the amount of \$598,335 for the District 5 Chinon Street Domestic Water, Sewer and Recycled Water Improvements, Projects 10022, 10023 and 10024; approve Contract Change Order No. 1 to Projects 10022, 10023 and 10024 in the amount of \$124,418.98 for additions to quantities originally contracted to the District 5 Chinon Street Domestic Water, Sewer and Recycled Water Improvements; authorize the General Manager to accept Heritage Fields' construction contract with Fydaq in the amount of \$1,056,852 for the District 5 "A" Street Domestic Water and Recycled Water Improvements, Projects 10343 and 10344; and approve Contract Change Order No. 3 to Projects 06048 and 05788 in the amount of \$226,934 for tasks related to extending sewer pipelines across and within Barranca Parkway.

ACTION (Continued)

10. PRETREATMENT PROGRAM DEVELOPMENT AND IMPLEMENTATION
CONSULTANT SELECTION – LAO/SANCHEZ/WEGHORST

Recommendation: That the Board authorize the General Manager to execute a Professional Services Agreement with EEC Environmental to develop and implement a pretreatment program in the amount of \$140,580.

OTHER BUSINESS

11. Directors' Comments

12. Adjourn

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's Operation's Committee Room at 3512 Michelson, Irvine, California. The Irvine Ranch Water District's Committee Room is wheelchair accessible. If you require any special disability-related accommodations (e.g., access to an amplified sound system, etc.), please contact the District Secretary at (949) 453-5312 during business hours at least seventy-two (72) hours prior to the scheduled meeting.

June 19, 2018

Prepared by: K. Pfister

Submitted by: T. Roberts

Approved by: Paul A. Cook 

ENGINEERING AND OPERATIONS COMMITTEE

IRWD NON-POTABLE WATER STORAGE ANNUAL MANAGEMENT PLAN FOR 2018-19

SUMMARY:

Staff will present the annual management plan for IRWD's non-potable "seasonal" water storage reservoir. Various assumptions and system limitations will be discussed for the Recycled Water Reservoir and Irvine Lake Reservoir Management Plans for the period July 1, 2018 through June 30, 2019.

BACKGROUND:

Recycled Water Reservoirs:

The IRWD Recycled Reservoir Management Plan for FY 2018-19, which is attached as Exhibit "A", is 12-month projection of the supply, demand, and system limitations for all recycled water reservoirs consisting of the San Joaquin, Sand Canyon, Syphon, and Rattlesnake Reservoirs. This plan was developed with the following assumptions:

- Beginning storage of 4,000 acre-feet (AF) as of July 1, 2018;
- Recycled system water demands of 27,843 AF based on a two-year average;
- Recycled system supplies of 31,363 AF;
- 5 inches to 10 inches of rainfall capturing up to 280 AF of runoff in the recycled reservoirs (based on the National Oceanic and Atmospheric Administration (NOAA) projections);
- Operation of Wells 78, ET-1, and ET-2 for 10 months of the year;
- Combined storage of 90% (or 4,770 AF) for all recycled water reservoirs by May 1, 2019; and
- Los Alisos Water Recycling Plant (LAWRP) operational for up to eight months.

Irvine Lake:

The IRWD Irvine Lake Reservoir Management Plan, which is attached as Exhibit "B", is a 12-month projection of Irvine Lake's supply and demands. An estimated 200 AF of native water was included in the plan as a source of supply. In addition, 3,000 AF of native carryover water and the purchase of an additional 3,810 AF of untreated water will meet demands. This approach maintains the reservoir at a lower level allowing IRWD to capture runoff from a large rain event and minimizes evaporation. This plan was developed based on the following assumptions:

Engineering and Operations Committee: IRWD Non-potable Water Storage Annual
Management Plan for 2018-19

June 19, 2018

Page 2

- Beginning storage of 4,000 AF July of 2018;
- Demands of 6,870 AF based on a two-year average;
- Evaporation of 722 AF based on monthly lake levels and contractual evaporation losses;
- 200 AF of local rainfall runoff based on 5 inches to 10 inches of annual local rainfall (based on NOAA projections);
- The use of 3,000 AF of native carryover water;
- Projected storage of 3,540 AF at the end of June of 2019;
- 3,810 AF of imported untreated water will be purchased at a rate of \$681 per AF for the first six months of the fiscal year and \$738 per AF for the second half of the fiscal year for an average rate of \$710 per AF; these purchases will be distributed throughout the year to match demands; and
- If necessary and if possible, install flashboards in the spillway to capture up to an additional 3,000 AF of storage (flashboards can be installed after April through September of each year).

FISCAL IMPACTS:

None.

ENVIRONMENTAL COMPLIANCE:

Not applicable.

RECOMMENDATION:

Receive and file.

LIST OF EXHIBITS:

Exhibit "A" – IRWD Recycled Reservoir Management Plan FY 2018-19

Exhibit "B" – IRWD Irvine Lake Reservoir Management FY 2018-19

EXHIBIT "A"

Recycled Reservoir Management Plan FY 2018-2019 San Joaquin, Rattlesnake, Syphon and Sand Canyon

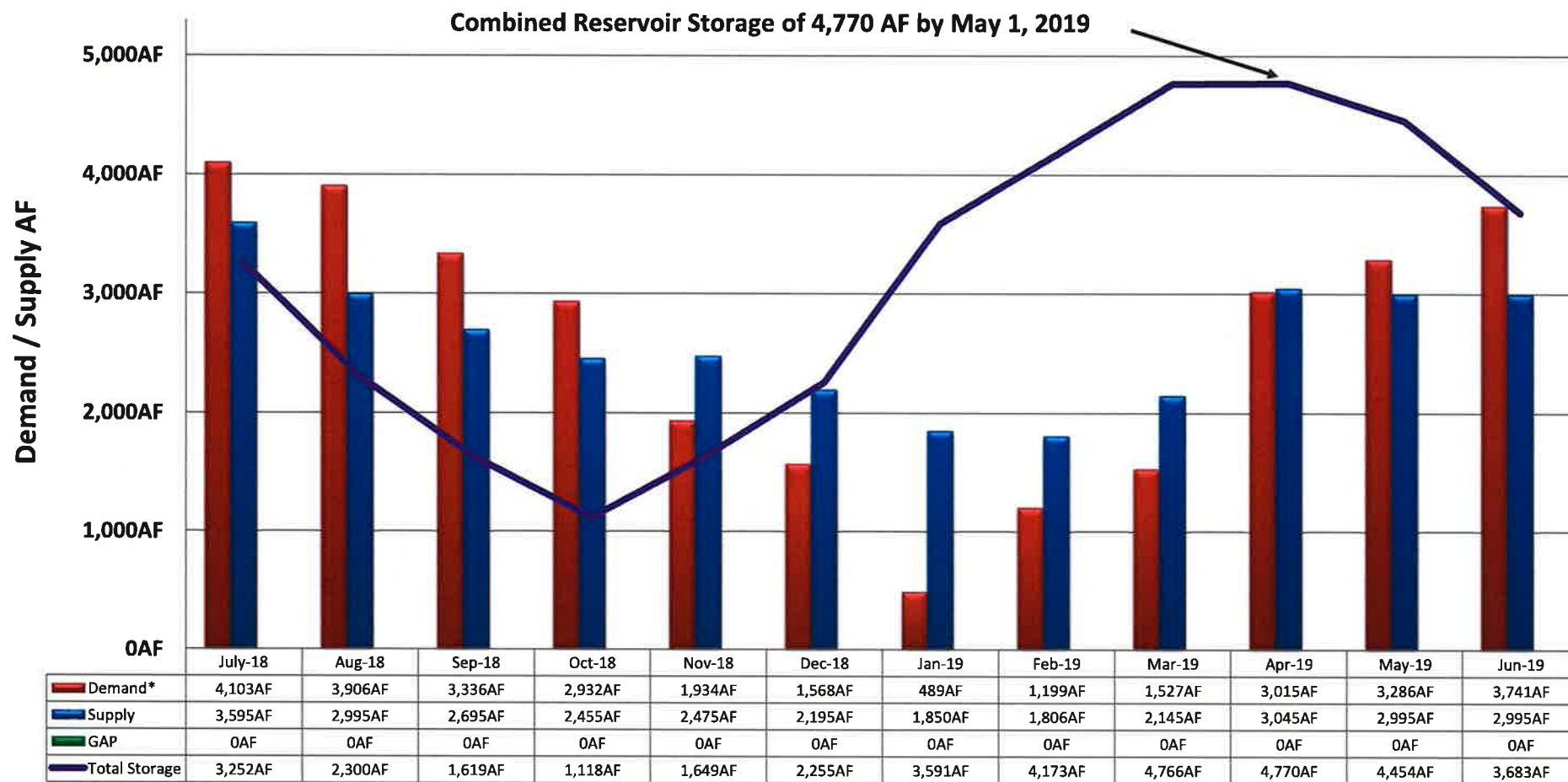
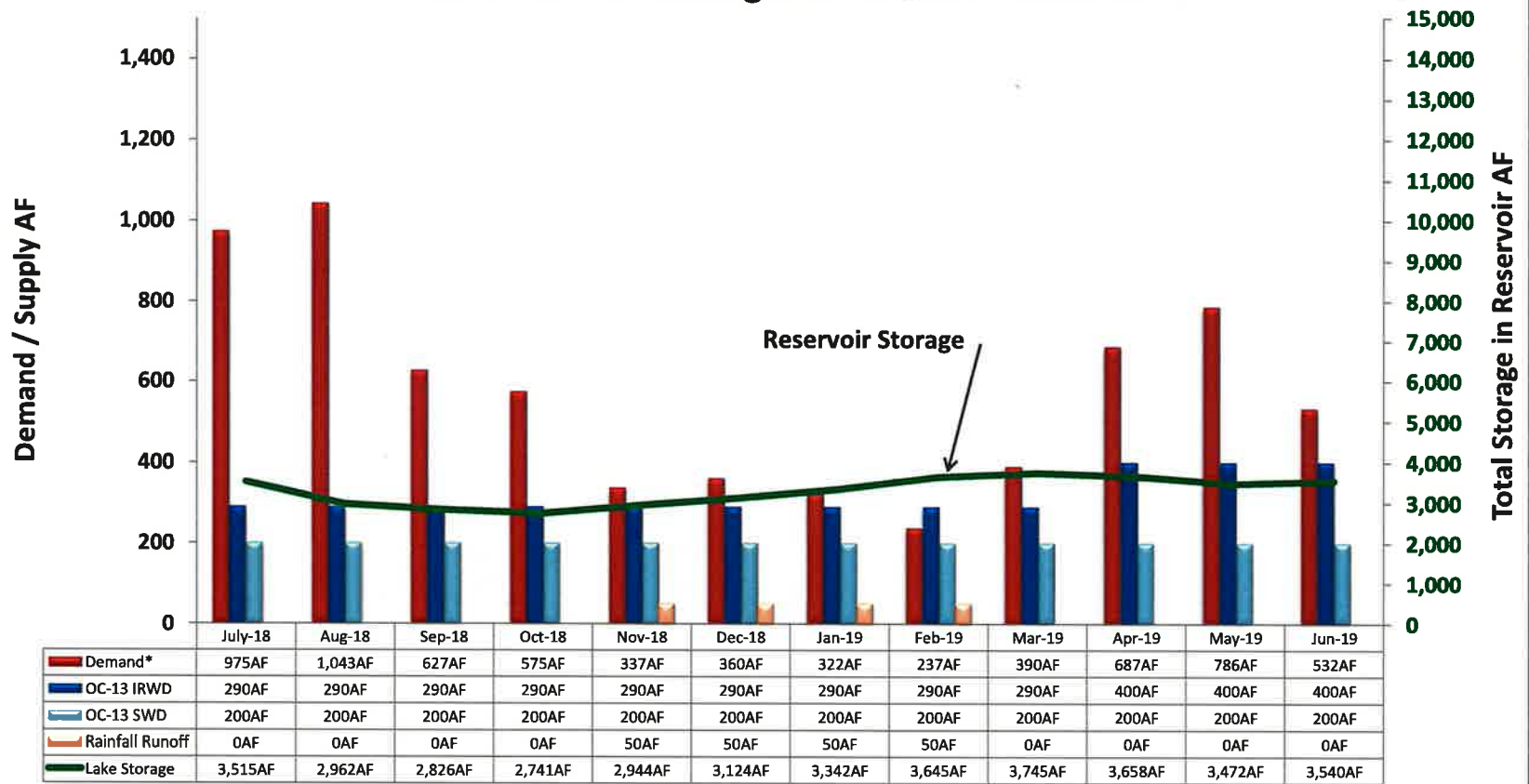


EXHIBIT "B"

Irvine Lake Reservoir Management Plan FY 2018-19



*Demand Projections Based on a 2 Year Average and includes evaporation loss

June 19, 2018

Prepared by: W. Stewart/S. Malloy

Submitted by: K. Burton 

Approved by: Paul A. Cook 

ENGINEERING AND OPERATIONS COMMITTEE

MICHELSON WATER RECYCLING PLANT BIOSOLIDS AND ENERGY RECOVERY FACILITIES CONTRACT CHANGE ORDER NO. 84

SUMMARY:

Filanc/Balfour Beatty (FBB) is constructing the Michelson Water Recycling Plant (MWRP) Biosolids and Energy Recovery Facilities (Biosolids Project). Contract Change Order (CCO) No. 84 includes costs for electrical items related to the addition of grease pumps to the methane digester mixer system. Staff recommends that the Board approve CCO No. 84 in the amount of \$105,492.90 with FBB for the Biosolids Project.

BACKGROUND:

Construction of the Biosolids Project was awarded to FBB in March 2013 in the amount of \$163,465,940. The Biosolids Project will provide biosolids digestion, dewatering, energy production, and on-site sludge drying. The project includes excavation for subsurface structures; installation of foundation piles; three egg-shaped digesters; a state-of-the-art odor control system; a biogas conditioning system and power generation using microturbines; a fats, oil and grease (FOG) receiving station; and new utility services. These facilities are being constructed on the land north of IRWD's Operations Center, maintenance shops, water quality laboratory, and warehouse.

CCO No. 84:

Staff negotiated with FBB and agrees to the labor and material costs contained in CCO No. 84 in the amount of \$105,492.90. CCO No. 84 includes the following item:

- *Electrical Modifications Due to the Addition of Grease Pumps in the amount of \$105,492.90* – Based on the recommendation of the manufacturer of the mixers on top of the methane digesters, it was decided to add grease pumps to the mixers. The addition will result in better operation and preserve the manufacturer's warranty. This item is for the labor and material to install the necessary electrical modifications to allow for the addition of the grease pumps and for the associated SCADA programming. There is no additional cost for the grease pumps.

Staff recommends that the Board approve CCO No. 84 in the amount of \$105,492.90, which is attached as Exhibit "A". The construction change order summary is attached as Exhibit "B". The following is a summary of the change order categories:

Category	Total Amount	% of Original Contract
A - District Convenience/Initiation - Project Related	\$ 3,388,993.51	2.07%
B - Differing Site Conditions	\$12,764,549.66	7.81%
C - Design Oversight	\$ 3,595,641.37	2.20%
D - District Convenience/Initiation - Non-Project Related	\$ -	0.00%
E - Contractor Convenience/Initiation	\$ 98,302.54	0.06%
F - Contractor Requested Inspection Overtime	\$ (265,760.00)	-0.16%
TOTAL (All Items A - F)	\$19,581,727.08	11.98%

FISCAL IMPACTS:

The MWRP Biosolids and Energy Recovery Facilities Project 04286 is included in the FY 2018-19 Capital Budget. The existing budget is sufficient to fund the change order.

ENVIRONMENTAL COMPLIANCE:

The MWRP Biosolids and Energy Recovery Facilities is subject to the California Environmental Quality Act (CEQA) and in conformance with the California Code of Regulations Title 14, Chapter 3, Article 7, a Supplemental Environmental Impact Report (SEIR), SCH # 2011031091, was certified by IRWD at its October 22, 2012 meeting. The City of Irvine Planning Commission approved a conditional use permit for the IRWD Biosolids Project at its December 6, 2012 meeting.

RECOMMENDATION:

That the Board approve Contract Change Order No. 84 in the amount of \$105,492.90 with Filanc/Balfour Beatty for electrical items due to the addition of grease pumps to the methane digester mixers for the Michelson Water Recycling Plant Biosolids and Energy Recovery Facilities, Project 04286.

LIST OF EXHIBITS:

Exhibit "A" – Contract Change Order No. 84 with FBB
Exhibit "B" – Construction Change Order Summary

CONTRACT CHANGE ORDER

EXHIBIT "A"



Irvine Ranch Water District

15600 Sand Canyon Avenue
P.O. Box 57000
Irvine, CA 92619-7000
(949) 453-5300

C.O. No. 84
☐ Final
Project No. 04286

MWRP Biosolids and Energy Recovery Facilities

Project Title

Date: 05/02/2018

THE FOLLOWING CHANGE TO CONTRACT, DRAWINGS AND SPECIFICATIONS IS PROPOSED.	\$ ADDITIONS	\$ DELETIONS	DAYS ±
1. Electrical Modifications Due to the Addition of Grease Pumps (CR-619) PR 04286 Task 5.30	\$105,492.90	\$0.00	See Notes
Notes: 1. For all items noted above, the Contractor reserves the right to compensable and/or excusable time extensions provided that time impacts to the Project's critical path are demonstrated to be beyond the Contractor's control. 2. Contractor reserves any and all rights it has and otherwise does not waive or release any claims it may have for additional compensation related to impact, including but not limited to the cumulative effect of the number, nature, or extent of any changes or design clarifications. 3. The project completion date of October 31, 2017 per CCO No. 45 is unchanged by this Change Order.			
TOTAL	\$105,492.90	\$0.00	0

DAYS ±

1. NET AMOUNT THIS CHANGE ORDER	=	\$105,492.90	0
2. ORIGINAL CONTRACT AMOUNT	=	\$163,465,940.00	1,278
3. TOTAL PREVIOUS CHANGE ORDER(S)	=	\$19,476,234.18	368
4. TOTAL BEFORE THIS CHANGE ORDER (2+ 3)	=	\$182,942,174.18	1,646
5. PROPOSED REVISED CONTRACT AMOUNT TO DATE (1+4)	=	\$183,047,667.08	1,646

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

-----One Hundred Five Thousand Four Hundred Ninety-Two and 90/100 -----Dollars

Filanc/Balfour-Beatty		By: Glenn Schwenger, Project Manager	
Date	Contractor		
SIGNATURE	DATE	APPROVAL LEVEL REQUIRED	
IRWD Engineer or Consulting Engineer	Date	Department Director Approval Required ☐ Executive Director Approval Required ☐ General Manager Approval Required ☐ Board Approval Required ☒	
Principal Engineer	Date		
Executive Director of Engineering & Water Quality	Date		
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 in accord with the original Contract Documents insofar as the same may be applied without conflict to the conditions set forth by this Change Order. The time for completing the contract will not be extended unless expressly provided for in this Change Order.

**MWRP Biosolids and Energy Recovery Facilities
PR 21146 (4286)
Construction Change Order Summary**

EXHIBIT "B"

Contractor: Filano/Balfour-Beatty
Design Engineer: Black & Veatch

				Contract Amount						Contract Days				Original Completion Date:
				Original Contract Amount: \$163,465,940.00						Original Days: 1,278				10/28/2016
Change Order	Description	Category	IRWD or FBB	Change Order Line Item Amount	Change Order Amount	Previous Change Orders	Cumulative Total of Change Orders	% of Original Contract Amount	Revised Contract Amount	Change Order Days	Previous Change Orders	Cum. Total C.O. days	Revised Total Contract Days	Revised Completion Date
1	Approved by Exe. Director of Engineering and Water Quality Approved on October 24, 2013 1.1 Modifications to Road to Development Area - Delete AC to Triangle, add AB to Michelson (CR-004)	A	IRWD	\$ 20,202.42	\$20,202.42	\$0.00	\$20,202.42	0.01%	\$163,486,142.42	0	0	0	1,278	10/28/2016
2	Approved by Exe. Director of Engineering and Water Quality Approved on November 13, 2013 2.1 Street Light Conduit Modifications (CR-007)	B	IRWD	\$ 12,475.08	\$12,475.08	\$20,202.42	\$32,677.50	0.02%	\$163,498,617.50	0	0	0	1,278	10/28/2016
3	Approved by Board of Directors Approved on March 10, 2014 3.1 Bid Quantity Adjustment of Bid Item 8.6 Pre-Drill	B	FBB	\$ 745,503.00	\$745,503.00	\$32,677.50	\$778,180.50	0.48%	\$164,244,120.50	0	0	0	1,278	10/28/2016
4	Approved by Exe Dir of Eng & Water Quality Approved on March 14, 2014 4.1 Installation of Five Additional Groundwater Wells and Monitoring – (CR-006) PR 21146 (4286) Task 3505 4.2 Brace Bay Modifications at the FOG Station – (CR-015) PR 21146 (4286) Task 3505 4.3 Grounding Extension at Nitrogen and Mineral Oil System (CR-025) PR 21146 (4286) Task 3510	A C C	IRWD FBB IRWD	\$11,047.81 \$2,977.81 \$9,003.60	\$23,029.22	\$778,180.50	\$801,209.72	0.49%	\$164,267,149.72	0 0 0	0 0 0	0 0 0	1,278	10/28/2016
5	Approved by Exe Dir of Eng & Water Quality Approved on March 14, 2014 5.1 Unidentified Utility - Meter Shop Discharge (CR-008) PR 21146 (4286) Task 3505 5.2 Connection Beam Modifications at Solids Handling Facility (CR-014) PR 21146 (4286) Task 3235 5.3 Increased Grating Thickness at Solids Handling Facility (CR-041) PR 21146 (4286) Task 3505	B C C	IRWD FBB FBB	\$15,225.75 \$8,270.86 \$1,355.12	\$24,851.73	\$801,209.72	\$826,061.45	0.51%	\$164,292,001.45	0 0 0	0 0 0	0 0 0	1,278	10/28/2016
6	Approved by General Manager Approved on March 20, 2014 6.1 Additional Costs to Install Piles to the Design Tip (CR-033) PR 21146 (4286) Task 3505	B	FBB	\$31,815.00	\$31,815.00	\$826,061.45	\$857,876.45	0.52%	\$164,323,816.45	0	0	0	1,278	10/28/2016

A - District Convenience/Initiation - Project Related
B - Differing Site Conditions
C - Design Oversight
D - District Convenience/Initiation - Non-Project Related
E - Contractor Convenience/Initiation
F - Contractor Requested Inspection Overtime

B - 1

**MWRP Biosolids and Energy Recovery Facilities
PR 21146 (4286)
Construction Change Order Summary**

Contractor: Filanc/Balfour-Beatty
Design Engineer: Black & Veatch

				Contract Amount						Contract Days				Original Completion Date:
				Original Contract Amount: \$163,465,940.00						Original Days: 1,278				10/28/2016
Change Order	Description	Category	IRWD or FBB	Change Order Line Item Amount	Change Order Amount	Previous Change Orders	Cumulative Total of Change Orders	% of Original Contract Amount	Revised Contract Amount	Change Order Days	Previous Change Orders	Cum. Total C.O. days	Revised Total Contract Days	Revised Completion Date
7	Approved by Exe Dir of Eng & Water Quality Approved on April 21, 2014				\$24,725.00	\$857,876.45	\$882,601.45	0.54%	\$164,348,541.45	0	0	0	1,278	10/28/2016
7.1	Meter Shop Discharge Pipe Leak Investigation and Repair (CR-013) PR 21146 (4286) Task 3505	B	IRWD	\$2,542.00						0				
7.2	Additional Reinforcement and Lifting Eyes for Removable Slabs at Solids Handling Building (CR-021) PR 21146 (4286) Task 3505	C	FBB	\$14,059.00						0				
7.3	Increased Grating Thickness at Solids Handling Facility (CR-041) PR 21146 (4286) Task 3505 Additional Conductance Probe Materials for Relay Level Switches for Various Sumps Located at the Microturbine Area PR 21146 (4286) Task 3510	C	FBB	\$8,124.00						0				
8	Approved by General Manager Approved on April 21, 2014				(\$49,990.00)	\$882,601.45	\$832,611.45	0.51%	\$164,298,551.45	0	0	0	1,278	10/28/2016
8.1	Cost Sharing for Project Partnering (CR- Credit for Primavera 7.0 Project Portfolio Management Software (CR-002) PR 21146 (4286) Task 3235	A	IRWD	(\$14,611.00)						0				
8.2	21146 (4286) Task 3235	A	IRWD	(\$2,700.00)						0				
8.3	Deletion of Concrete Pad near Development Area (CR-004A) PR 21146 (4286) Task 3235	A	IRWD	(\$3,865.00)						0				
8.4	Deletion of Ground Test Device (CR-034) PR 21146 (4286) Task 3210	A	IRWD	(\$15,579.00)						0				
8.5	Deletion of Existing T-4 Switchgear Level Indicating Switch (CR-035) PR 21146 (4286) Task 3210	A	IRWD	(\$9,167.00)						0				
8.6	Change to NEMA 4X Panels and Modification to NEMA 4X Bar Graph Display (CR-046) PR 21146 (4286) Task 3210	A	IRWD	(\$4,068.00)						0				
9	Approved by Exe. Director of Eng. & Water Quality Approved on May 31, 2014				\$24,840.17	\$832,611.45	\$857,451.62	0.52%	\$164,323,391.62	0	0	0	1,278	10/28/2016
9.1	Additional Circuits for Gas Monitors and Re-route of Conduits in Solids Handling Facility (CR-028) PR 21146 (4286) Task 3510	C	FBB	\$1,187.49						0				
9.2	Cantilevered Beam Support Modifications in the Solids Handling Facility (CR-049) PR 21146 (4286) Task 3505	C	FBB	\$4,605.30						0				
9.3	Additional Ethernet Switches (CR-062) PR 21146 (4286) Task 3510	C	IRWD	\$19,047.38						0				
10	Approved by Exe. Director of Eng. & Water Quality Approved on May 31, 2014				\$21,398.99	\$857,451.62	\$878,850.61	0.54%	\$164,344,790.61	0	0	0	1,278	10/28/2016
10.1	Additional Grace Ports for Various PLCs (CR-030) PR 21146 (4286) Task 3510	C	IRWD	\$8,580.62						0				
10.2	Provide H-20 Rated Hatches at WAS Pump Station and Valve Vault (CR-061) PR 21146 (4286) Task 3505	C	IRWD	\$12,818.37						0				

A - District Convenience/Initiation - Project Related
B - Differing Site Conditions
C - Design Oversight
D - District Convenience/Initiation - Non-Project Related
E - Contractor Convenience/Initiation
F - Contractor Requested Inspection Overtime

B - 2

**MWRP Biosolids and Energy Recovery Facilities
PR 21146 (4286)
Construction Change Order Summary**

Contractor: Filanco/Balfour-Beatty
Design Engineer: Black & Veatch

				Contract Amount						Contract Days				Original Completion Date:
				Original Contract Amount: \$163,465,940.00						Original Days: 1,278				10/28/2016
Change Order	Description	Category	IRWD or FBB	Change Order Line Item Amount	Change Order Amount	Previous Change Orders	Cumulative Total of Change Orders	% of Original Contract Amount	Revised Contract Amount	Change Order Days	Previous Change Orders	Cum. Total C.O. days	Revised Total Contract Days	Revised Completion Date
11	Approved by Exe. Director of Eng. & Water Quality Approved on June 4, 2014				\$24,739.76	\$878,850.61	\$903,590.37	0.55%	\$164,369,530.37	#REF!	0	#REF!	#REF!	10/28/2016
11.1	Waste Activated Sludge (WAS) Pump Station Structural Modifications (CR-023) PR 21146 (4286) Task 3505	C	IRWD	\$12,905.49						0				
11.2	Removable Slab Modifications on the Second Floor of Solids Handling Building (CR-064) PR 21146 (4286) Task 3505	C	IRWD	\$11,834.27						0				
12	Approved by Board of Directors Approved on July 21, 2014				\$156,580.22	\$903,590.37	\$1,060,170.59	0.65%	\$164,526,110.59	0	0	0	1,278	10/28/2016
12.1	Final Bid Quantity Adjustment for Bid Item No. 5.2 – Undocumented Fill (suitable) – Remedial Grading – Remove and Re-compact a net increase of 8,104.7 CY from 51,700 CY to 59,804.7 CY at \$5/CY. PR 21146 (4286) Task 3505	B	N/A	\$40,523.37						0				
12.2	Final Bid Quantity Adjustment for Bid Item No. 5.5 - Undocumented Fill (not suitable) - Remedial Grading - Remove and Export Offsite, a net increase of 60 CY, from 1,800 CY to 1,860 CY at \$25 /CY. PR 21146 (4286) Task 3505	B	N/A	\$1,500.00						0				
12.3	Final Bid Quantity Adjustment for Bid Item No. 5.6 - Geotextile Fabric - Remedial Grading, a net decrease of 5,414 SF, from 181,500 SF to 176,086 SF at \$0.40/SF. PR 21146 (4286) Task 3505	B	N/A	(\$2,165.60)						0				
12.4	Final Bid Quantity Adjustment for Bid Item No. 5.6 - Geotextile Fabric - Remedial Grading, a net decrease of 5,414 SF, from 181,500 SF to 176,086 SF at \$0.40/SF. PR 21146 (4286) Task 3505	B	N/A	(\$6,523.33)						0				
12.5	Final Bid Quantity Adjustment for Bid Item No. 5.8 - Undocumented Fill - Deep Foundations – Removal, a net increase of 966 CY, from 21,650 CY to 22,616 CY at \$5.50/CY. PR 21146 (4286) Task 3505	B	N/A	\$5,313.00						0				
12.6	Final Bid Quantity Adjustment for Bid Item No. 5.9 - Alluvium - Remedial Grading - Removal and Export Offsite, a net increase of 2,076 CY, from 28,154 CY to 30,230 CY at \$35/CY. PR 21146 (4286) Task 3505	B	N/A	\$72,665.98						0				
12.7	Final Bid Quantity Adjustment for Bid Item No. 5.10 - Undocumented Fill Deep Foundations - Compaction of stockpiled materials, a net increase of 3,117 CY, from 11,400 CY to 14,517 CY at \$15/CY. PR 21146 (4286) Task 3505	B	N/A	\$46,755.00						0				
12.8	Final Bid Quantity Adjustment for Bid Item No. 5.11 - Undocumented Fill - Deep Foundations - Export excess offsite a net decrease of 2,151 CY, from 10,250 CY to 8,099 CY PR 21146 (4286) Task 3505	B	N/A	(\$30,114.00)						0				

A - District Convenience/Initiation - Project Related
B - Differing Site Conditions
C - Design Oversight
D - District Convenience/Initiation - Non-Project Related
E - Contractor Convenience/Initiation
F - Contractor Requested Inspection Override

B - 3

**MWRP Biosolids and Energy Recovery Facilities
PR 21146 (4286)
Construction Change Order Summary**

Contractor: Filano/Balfour-Beatty
Design Engineer: Black & Veatch

					Contract Amount						Contract Days				Original Completion Date:
					Original Contract Amount: \$163,465,940.00						Original Days: 1,278				10/28/2016
Change Order		Description	Category	IRWD or FBB	Change Order Line Item Amount	Change Order Amount	Previous Change Orders	Cumulative Total of Change Orders	% of Original Contract Amount	Revised Contract Amount	Change Order Days	Previous Change Orders	Cum. Total C.O. days	Revised Total Contract Days	Revised Completion Date
	12.9	Final Bid Quantity Adjustment for Bid Item No. 5.12 - Geotextile Fabric - Deep Foundations, a net increase of 9,218 SF, from 51,500 SF to 60,718 SF at \$0.60/SF. PR 21146 (4286) Task 3505	B	N/A	\$5,530.80						0				
	12.10	Final Bid Quantity Adjustment for Bid Item No. 5.13 - Aggregate Base - Deep Foundations, a net increase of 513.2 CY, from 2,860 CY to 3,373.2CY at \$45/CY. PR 21146 (4286) Task 3505	B	N/A	\$23,095.00						0				
13		Approved by Exe. Director of Engineering & Water Quality Approved on July 10, 2014				\$10,129.18	\$1,060,170.59	\$1,070,299.77	0.65%	\$164,536,239.77	0	0	0	1,278	10/28/2016
	13.1	Modifications to Switchgear 16 (CR-070) PR 21146 (4286) Task 3510	A	FBB	\$10,129.18						0				
14		Approved by General Manager Approved on June 24, 2014				\$44,543.19	\$1,070,299.77	\$1,114,842.96	0.68%	\$164,580,782.96	0	0	0	1,278	10/28/2016
	14.1	Slide Gates Clarification Regarding Actuators (CR-039) PR 21146 (4286) Task 3520	A	IRWD	\$44,543.19						0				
15		Approved by General Manager Approval on July 31, 2014				\$45,214.40	\$1,114,842.96	\$1,160,057.36	0.71%	\$164,625,997.36	0	0	0	1,278	10/28/2016
	15.1	Provide Masonry Shelf Angle at Digester Control Building (CR-031) PR 21146 (4286) Task 3505	C	FBB	\$27,543.19						0				
	15.2	Beam Size Increase for Monorail Runway in Solids Handling Building - (CR-074) PR 21146 (4286) Task 3505	C	FBB	\$1,200.47						0				
	15.3	Upsize Odor Control Circulation Pump Motor Disconnects (CR-082) PR 21146 (4286) Task 3510	B	FBB	\$1,184.83						0				
	15.4	Additional Deck Support for the Solids Handling Building Roof (CR-044) PR 21146 (4286) Task 3505	C	FBB	\$15,285.91						0				
16		Approved by E&O Committee Approved on August 19, 2014				\$62,037.10	\$1,160,057.36	\$1,222,094.46	0.75%	\$164,688,034.46	0	0	0	1,278	10/28/2016
	16.1	Installation of Level 3 Diesel Particulate Filter (DPF) on the Standby Generator - (CR-073) PR 21146 (4286) Task 3520	B	IRWD	\$62,037.10						0				
17		Approved by Board of Directors Approved on August 25, 2014				(\$106,241.99)	\$1,222,094.46	\$1,115,852.47	0.68%	\$164,581,792.47	0	0	0	1,278	10/28/2016
	17.1	Modifications to Switchgear 16 (CR-070A) PR 21146 (4286) Task 3510	A	FBB	(\$106,241.99)						0				
18		Approved by Board of Directors Approved on August 25, 2014				\$108,087.55	\$1,115,852.47	\$1,223,940.02	0.75%	\$164,689,880.02	0	0	0	1,278	10/28/2016
	18.1	Stormwater Drainage System Modification (CR-017) PR 21146 (4286)	A	IRWD	\$108,087.55						0				

A - District Convenience/Initiation - Project Related
B - Differing Site Conditions
C - Design Oversight
D - District Convenience/Initiation - Non-Project Related
E - Contractor Convenience/Initiation
F - Contractor Requested Inspection Overtime

B - 4

**MWRP Biosolids and Energy Recovery Facilities
PR 21146 (4286)
Construction Change Order Summary**

Contractor: Filanc/Balfour-Beatty
Design Engineer: Black & Veatch

				Contract Amount						Contract Days				Original Completion Date:
				Original Contract Amount: \$163,465,940.00						Original Days: 1,278				10/28/2016
Change Order	Description	Category	IRWD or FBB	Change Order Line Item Amount	Change Order Amount	Previous Change Orders	Cumulative Total of Change Orders	% of Original Contract Amount	Revised Contract Amount	Change Order Days	Previous Change Orders	Cum. Total C.O. days	Revised Total Contract Days	Revised Completion Date
19	Approved by Executive Director of Engineering & Water Quality Approved on September 30, 2014				\$72,572.86	\$1,223,940.02	\$1,296,512.88	0.79%	\$164,762,452.88	0	0	0	1,278	10/28/2016
19.1	Modification to Switchgear 16 (CR-070B) PR 21146 (4286) Task 3510	A	IRWD	\$1,125.75						0				
19.2	Alluvium Removal Due to 36-inch Storm Drain Installation (CR-085) PR 21146 (4286) Task 3520	B	N/A	\$14,140.00						0				
19.3	Additional Structural Support for Fats, Oils, and Grease (FOG) Grinders (CR-081) PR 21146 (4286) Task 3505	C	FBB	\$8,323.99						0				
19.4	Portable Lift Truck for 480V ABB Breakers (CR-108) PR 21146 (4286) Task 3510	A	IRWD	\$2,625.12						0				
19.5	Retaining Wall North and West of Biosolids Site (CR-010) PR 21146 (4286) Task 3505	B	IRWD	\$46,358.00						0				
20	Approved by Executive Director of Engineering & Water Quality Approved on November 19, 2014				\$54,485.63	\$1,296,512.88	\$1,350,998.51	0.83%	\$164,816,938.51	0	0	0	1,278	10/28/2016
20.1	Nitrogen Slab Modifications (CR-052) PR 21146 (4286) Task 3505	A	IRWD	\$24,855.80						0				
20.2	Additional Conduits and Circuits for the Access Control Systems for the Solids Handling Building and the Digester Control Building (CR-082) PR 21146 (4286) Task 3510	A	IRWD	\$3,412.13						0				
20.3	Digital Power Meters Change for SWGR-14 and SWGR-15 (CR-109) PR 21146 (4286) Task 3510	A	IRWD	\$3,863.22						0				
20.4	Truck Unloading Panel Modifications (CR-115) PR 21146 (4286) Task 3510	A	IRWD	\$12,843.50						0				
20.5	Switchgear SWGR-14 Modifications (CR-116) PR 21146 (4286) Task 3510	A	IRWD	\$9,510.98						0				
21	Approved by General Manager Approved on January 30, 2015				\$ 98,506.19	\$1,350,998.51	\$1,449,504.70	0.89%	\$164,915,444.70	0	0	0	1,278	10/28/2016
21.1	Additional Anchorage for Methane Digesters (CR-051A) PR 21146 (4286) Task 3520	B	FBB	\$92,367.44						0				
21.2	Additional Input/Outputs Review of Master I/O List (CR-136) PR 21146 (4286) Task 3510	C	FBB	\$6,138.75						0				

A - District Convenience/Initiation - Project Related
B - Differing Site Conditions
C - Design Oversight
D - District Convenience/Initiation - Non-Project Related
E - Contractor Convenience/Initiation
F - Contractor Requested Inspection Overtime

B - 5

**MWRP Biosolids and Energy Recovery Facilities
PR 21146 (4286)
Construction Change Order Summary**

Contractor: Filanc/Balfour-Beatty
Design Engineer: Black & Veatch

				Contract Amount						Contract Days				Original Completion Date:
				Original Contract Amount: \$163,465,940.00						Original Days: 1,278				10/28/2016
Change Order	Description	Category	IRWD or FBB	Change Order Line Item Amount	Change Order Amount	Previous Change Orders	Cumulative Total of Change Orders	% of Original Contract Amount	Revised Contract Amount	Change Order Days	Previous Change Orders	Cum. Total C.O. days	Revised Total Contract Days	Revised Completion Date
22	Approved by Board of Directors Approved on February 9, 2015				\$964,324.51	\$1,449,504.70	\$2,413,829.21	1.48%	\$165,879,769.21	0	0	0	1,278	10/28/2016
22.1	Electrical Conduit Overfill (CR-055) PR 21146 (4286) Task 3510	C	FBB	\$485,250.28						0				
22.2	Heat Dryer Equipment Escalation Costs (CR-057) PR 21146 (4286) Task 3520	B	FBB	\$333,477.50						0				
22.3	Glass-lining Sludge Density Meters (CR-067) PR 21146 (4286) Task 3510	A	IRWD	\$71,010.74						0				
22.4	Switchgear-16 Enclosure (CR-040) PR 21146 (4286) Task 3510	C	FBB	\$56,882.30						0				
22.5	Propane Gas Tank Foundation Demolition (CR-084) PR 21146 (4286) Task 3505	C	IRWD	\$2,004.98						0				
22.6	Credit for travel costs related to inspection of centrifuges in Germany (CR-091) PR 21146 (4286) Task 3520	A	IRWD	(\$5,573.42)						0				
22.7	Deletion of MMC Switchgear-14 Breaker (CR-092) PR 21146 (4286) Task 3510	A	IRWD	(\$5,032.00)						0				
22.8	Increase of Fiber Optic Conduit Size (CR-097) PR 21146 (4286) Task 3510	C	IRWD	\$23,269.61						0				
22.9	Overtime to perform work in the Solids Handling electrical room (CR-103) PR 21146 (4286) Task 3510	A	IRWD	\$1,384.47						0				
22.10	Credit for modification to the Uninterruptible Power System (CR-118) PR 21146 (4286) Task 3510	A	IRWD	(\$9,771.72)						0				
22.11	Addition of Low Voltage Compartment in SCE Switch "C" (CR-160) PR 21146 (4286) Task 3510	A	IRWD	\$2,156.20						0				
22.12	Addition of input/output points relating to sump pumps located at the Solids Handling Building (CR-161) PR 21146 (4286) Task 3510	A	FBB	\$9,265.57						0				

A - District Convenience/Initiation - Project Related
B - Differing Site Conditions
C - Design Oversight
D - District Convenience/Initiation - Non-Project Related
E - Contractor Convenience/Initiation
F - Contractor Requested Inspection Overtime

B - 6

**MWRP Biosolids and Energy Recovery Facilities
PR 21146 (4286)
Construction Change Order Summary**

Contractor: Filano/Balfour-Beatty
Design Engineer: Black & Veatch

				Contract Amount						Contract Days				Original Completion Date:
				Original Contract Amount: \$163,465,940.00						Original Days: 1,278				10/28/2016
Change Order	Description	Category	IRWD or FBB	Change Order Line Item Amount	Change Order Amount	Previous Change Orders	Cumulative Total of Change Orders	% of Original Contract Amount	Revised Contract Amount	Change Order Days	Previous Change Orders	Cum. Total C.O. days	Revised Total Contract Days	Revised Completion Date
23	Approved by General Manager Approved on February 26, 2015				\$97,005.10	\$2,413,829.21	\$2,510,834.31	1.54%	\$165,976,774.31	0	0	0	1,278	10/28/2016
23.1	Additional Steel Reinforcement the Pellet Storage Silos Anchor Bolts (CR-094) PR 21146 (4286) Task 3505	B	FBB	\$5,514.57						0				
23.2	Differential Pressure Transmitter (CR-094) PR 21146 (4286) Task 3510	A	IRWD	\$2,535.33						0				
23.3	Additional Aluminum Trench Grating in Digester Control Building (CR-107) PR 21146 (4286) Task 3520	A	IRWD	\$7,552.11						0				
23.4	Light Weight Concrete for Electrical Conduits Underneath the Solids Handling Building Electrical Room (CR-113) PR 21146 (4286) Task 3510	A	IRWD	\$30,535.94						0				
23.5	Adding Energyjets Weir Plates to Dewatering Centrifuges – (CR-124) PR 21146 (4286) Task 3520	A	IRWD	\$11,139.25						0				
23.6	Provide Angle Supports for the Removable Slabs at the Solids Handling Building – (CR-137) PR 21146 (4286) Task 3520	A	IRWD	\$20,671.61						0				
23.7	Structural Modification at Solids Handling Building – (CR-140) PR 21146 (4286) Task 3520	C	FBB	\$1,109.42						0				
23.8	Increase of Fiber Optic Conduit Size (CR-097) PR 21146 (4286) Task 3510	A	IRWD	\$5,516.45						0				
23.9	Steel Joist Framing Modifications at Digester Control Building (CR-151) PR 21146 (4286) Task 3505	C	FBB	\$2,286.29						0				
23.10	WAS Valve Vault and Piping Modifications (CR-100) PR 21146 (4286) Task 3520	A	IRWD	\$10,144.13						0				
24	Approved by General Manager Approved on March 6, 2015				\$99,122.95	\$2,510,834.31	\$2,609,957.26	1.60%	\$166,075,897.26	0	0	0	1,278	10/28/2016
24.1	Coating of WAS/Primary Sludge Pump Stations & Sludge Wetwells per RFI-0612A (CR-127) PR 21146 (4286) Task 3505	A	FBB	\$99,122.95						0				
25	Approved by Board of Directors Approved on March 23, 2015				\$280,575.97	\$2,609,957.26	\$2,890,533.23	1.77%	\$166,356,473.23	0	0	0	1,278	10/28/2016
25.1	Lightning Protection for the Methane Digesters (CR-121) PR 21146 (4286) Task 3505	C	FBB	\$158,259.68						0				
25.2	Deflagration Quench Tubes outside of the Dryer Room (CR-143) PR 21146 (4286) Task 3505	B	FBB	\$122,316.29						0				

A - District Convenience/Initiation - Project Related
B - Differing Site Conditions
C - Design Oversight
D - District Convenience/Initiation - Non-Project Related
E - Contractor Convenience/Initiation
F - Contractor Requested Inspection Overtime

B - 7

**MWRP Biosolids and Energy Recovery Facilities
PR 21146 (4286)
Construction Change Order Summary**

Contractor: Filanc/Balfour-Beatty
Design Engineer: Black & Veatch

				Contract Amount						Contract Days				Original Completion Date:
				Original Contract Amount: \$163,465,940.00						Original Days: 1,278				10/28/2016
Change Order	Description	Category	IRWD or FBB	Change Order Line Item Amount	Change Order Amount	Previous Change Orders	Cumulative Total of Change Orders	% of Original Contract Amount	Revised Contract Amount	Change Order Days	Previous Change Orders	Cum. Total C.O. days	Revised Total Contract Days	Revised Completion Date
26	Approved by Exe. Dir. Of Engineering & Water Quality Approved on April 14, 2015				\$74,815.79	\$2,890,533.23	\$2,965,349.02	1.81%	\$166,431,289.02	0	0	0	1,278	10/28/2016
26.1	UPS and Power Fail Alarms per RFI 357 (CR-056) PR 21146 (4286) Task 3510	C	FBB	\$3,646.82						0				
26.2	I/O Points for Methane Digester Sump Pumps per RFI-356 (CR-077) PR 21146 (4286) Task 3510	C	FBB	\$6,489.00						0				
26.3	Loss of Power Alarms to the SCADA Network per RFI-0393B (CR-093) PR	A	FBB	\$20,297.16						0				
26.4	FOG Flushing and Rock Trap Modifications per RFI-0534 (CR-101) PR 21146	A	IRWD	\$18,093.61						0				
26.5	Install Grounding Pig Tails in Solids Handling Building Area Electrical Room per RFI 0594 (CR-105) PR 21146 (4286) Task 3510	A	IRWD	\$1,593.10						0				
26.6	Additional Pushbuttons, Light and Relays for the FOG Receiving Control Panel (CR-114) PR 21146 (4286) Task 3510	A	IRWD	\$6,892.40						0				
26.7	Changes to the HMI Enclosures at the Sludge Receiving Area (CR-133) PR 21146 (4286) Task 3510	A	IRWD	\$7,114.17						0				
26.8	Provide Storage Shelf for Keyboard and Mouse to the HMI Enclosures at the Sludge Receiving Area (CR-135) PR 21146 (4286) Task 3510	A	IRWD	\$1,163.26						0				
26.9	Dewatering Feed Pump Station Guardrail Additions (CR-142) PR 21146 (4286) Task 3520	C	FBB	\$4,204.00						0				
26.10	Additional I/O Points for PLC-4300 (CR-156) PR 21146 (4286) Task 3510	C	FBB	\$3,035.28						0				
26.11	Shoring Revision to Roof Slab of Dewatering Feed Pump Station (CR-189) PR 21146 (4286) Task 3510	B	FBB	\$1,286.99						0				
26.12	Coating of the Sludge Receiving Bins (CR-199) PR 21146 (4286) Task 3520	A	FBB	\$1,000.00						0				
27	Approved by Board of Directors Approved on April 27, 2015				\$107,253.26	\$2,965,349.02	\$3,072,602.28	1.88%	\$166,538,542.28	0	0	0	1,278	10/28/2016
27.1	Modifications to Human-Machine Interface (HMI) for the Microturbine Area (CR-078) PR 21146 (4286) Task 3510	A	IRWD	\$29,744.43						0				
27.2	Modifications to the Piping and Automation Features at Fats, Oils, and Grease (FOG) Facility (CR-129) PR 21146 (4286) Task 3510	A	IRWD	\$35,771.81						0				
27.3	Structural Support to the Monorail at the Dewatering Feed Pump Station (CR-152) PR 21146 (4286) Task 3505	C	FBB	\$13,697.51						0				
27.4	Two Additional Magnetic Flowmeters at Polymer Feed System (CR-158) PR 21146 (4286) Task 3510	A	IRWD	\$9,522.81						0				
27.5	Modifications to PLCs at Sludge Receiving Area (CR-180) PR 21146 (4286) Task 3510	A	IRWD	\$18,516.70						0				

A - District Convenience/Initiation - Project Related
B - Differing Site Conditions
C - Design Oversight
D - District Convenience/Initiation - Non-Project Related
E - Contractor Convenience/Initiation
F - Contractor Requested Inspection Overtime

B - 8

**MWRP Biosolids and Energy Recovery Facilities
PR 21146 (4286)
Construction Change Order Summary**

Contractor: Filanc/Balfour-Beatty
Design Engineer: Black & Veatch

				Contract Amount						Contract Days				Original Completion Date:
				Original Contract Amount: \$163,465,940.00						Original Days: 1,278				10/28/2016
Change Order	Description	Category	IRWD or FBB	Change Order Line Item Amount	Change Order Amount	Previous Change Orders	Cumulative Total of Change Orders	% of Original Contract Amount	Revised Contract Amount	Change Order Days	Previous Change Orders	Cum. Total C.O. days	Revised Total Contract Days	Revised Completion Date
28	Approved by Exe. Dir. Of Eng. & Water Quality Approved on May 15, 2015				\$74,550.35	\$3,072,602.28	\$3,147,152.63	1.93%	\$166,613,092.63	0	0	0	1,278	10/28/2016
28.1	Decanter Control Panel Modifications (CR-215) Task 3520	C	FBB	\$22,451.01						0				
28.2	Additional Structural Support in the Solids Handling Building (CR-075) Task 3505	C	FBB	\$12,028.44						0				
28.3	Additional Sump Pump Drain Line in the Bulk Polymer Storage Area (CR-119) Task 3520	C	FBB	\$1,433.86						0				
28.4	Install Three 5-inch conduits on Southwest Side of the Biosolids Site (CR-120) Task 3510	C	FBB	\$16,033.58						0				
28.5	Provide Power to Several Instruments Located at the Solids Handling Building and Digester Control Building (CR-154) Task 3520	C	FBB	\$3,454.91						0				
28.6	Install Foam Separator Drain at Digester Control Building (CR-167) Task 3520	C	FBB	\$11,013.75						0				
28.7	Install Support for 14-inch Plug Valve at Centrate Treatment Wetwell (CR-197) Task 3520	C	FBB	\$1,715.20						0				
28.8	Trench Modifications at the Sludge Cake Load-Out Area of the Solids Handling Building (CR-123) Task 3505	C	FBB	\$6,419.60						0				
29	Approved by Board of Directors Approved on June 22, 2015				\$225,971.77	\$3,147,152.63	\$3,373,124.40	2.06%	\$166,839,064.40	0	0	0	1,278	10/28/2016
29.1	Foul Air Pipe Supports in the Solids Handling Building Basement (CR-106) PR 21146 (4286) Task 3520	C	FBB	\$119,937.87						0				
29.2	Secondary Circuit Breaker for Transformer T-14 (CR-185) PR 21146 (4286)) Task 3510	A	IRWD	\$106,033.90						0				

A - District Convenience/Initiation - Project Related
B - Differing Site Conditions
C - Design Oversight
D - District Convenience/Initiation - Non-Project Related
E - Contractor Convenience/Initiation
F - Contractor Requested Inspection Overtime

B - 9

**MWRP Biosolids and Energy Recovery Facilities
PR 21146 (4286)
Construction Change Order Summary**

Contractor: Filanc/Balfour-Beatty
Design Engineer: Black & Veatch

				Contract Amount						Contract Days				Original Completion Date:
				Original Contract Amount: \$163,465,940.00						Original Days: 1,278				10/28/2016
Change Order	Description	Category	IRWD or FBB	Change Order Line Item Amount	Change Order Amount	Previous Change Orders	Cumulative Total of Change Orders	% of Original Contract Amount	Revised Contract Amount	Change Order Days	Previous Change Orders	Cum. Total C.O. days	Revised Total Contract Days	Revised Completion Date
30	Approved by Board of Directors Approved on July 27, 2015				(\$47,976.59)	\$3,373,124.40	\$3,325,147.81	2.03%	\$166,791,087.81	0	0	0	1,278	10/28/2016
30.1	Credit for Changing Storm Drain line from Ductile Iron to PVC (CR-042) PR 21146 (4286) Task 3520	A	IRWD	(\$1,890.92)						0				
30.2	Installation of Additional Digester Anchorage (CR-051B) PR21146 (4286) Task 3505	B	FBB	\$118,335.54						0				
30.3	Huber Screens I/O Modifications per RFI-0391 and RFI-0525A (CR-068) PR 21146 (4286) Task 3510	A	IRWD	\$12,579.20						0				
30.4	Credit for FBB's Portion of Partnering (CR-090) PR 21146 (4286) Task	E	FBB	(\$81,948.33)						0				
30.5	Deletion of Waterstops at Methane Digester Complex (CR-102) PR 21146 (4286) Task 3505	A	IRWD	(\$2,505.79)						0				
30.6	Deletion of Bid Item No. 18.4 - Computers and Networking Hardware for the Control System (CR-138) PR 21146 (4286) Task 3510	A	IRWD	(\$200,000.00)						0				
30.7	Electrical and Gas Modifications (CR-146) PR 21146 (4286) Task 3510	C	IRWD	\$363,978.41						0				
30.8	Credit for Changing Heat Dryer Wet Material Mixer from A24 Steel to A36 Steel (CR-157) PR 21146 (4286) Task 3520	E	FBB	(\$2,392.66)						0				
30.9	Credit for Travel Cost of On-Site Inspection for Acid Phase Digester (CR-175) PR 21146 (4286) Task 3520	B	IRWD	(\$683.39)						0				
30.1	Heat Dryer I/O Modifications per RFI-0626 (CR-179) PR 21146 (4286) Task 3510	A	IRWD	\$11,191.41						0				
30.11	Decant Trough I/O Modifications per RFI-0979 (CR-202) PR 21146 (4286) Task 3510	A	IRWD	\$9,960.55						0				
30.12	Deletion of Interior Coating of Methane Digesters (CR-188) PR 21146 (4286) Task 3520	A	IRWD	(\$398,571.00)						0				
30.13	Piping Modifications and Addition of Carbon Canisters (CR-218) PR 21146 (4286) Task 3520	A	IRWD	\$88,076.01						0				
30.14	Pickling and Passivation of Sludge Mixers (CR-248) PR 21146 (4286) Task 3520	C	IRWD	\$73,997.23						0				
30.15	IRWD Costs Associated to Repairing the Pile and Installing Couplers (CR-139) PR 21146 (4286) Task 3505	E	FBB	(\$38,102.85)						0				

A - District Convenience/Initiation - Project Related
B - Differing Site Conditions
C - Design Oversight
D - District Convenience/Initiation - Non-Project Related
E - Contractor Convenience/Initiation
F - Contractor Requested Inspection Overturn

B - 10

**MWRP Biosolids and Energy Recovery Facilities
PR 21146 (4286)
Construction Change Order Summary**

Contractor: Filanc/Balfour-Beatty
Design Engineer: Black & Veatch

				Contract Amount						Contract Days				Original Completion Date:
				Original Contract Amount: \$163,465,940.00						Original Days: 1,278				10/28/2016
Change Order	Description	Category	IRWD or FBB	Change Order Line Item Amount	Change Order Amount	Previous Change Orders	Cumulative Total of Change Orders	% of Original Contract Amount	Revised Contract Amount	Change Order Days	Previous Change Orders	Cum. Total C.O. days	Revised Total Contract Days	Revised Completion Date
31	Approved by Exe. Dir. Of Eng. & Water Quality Approved on July 28, 2015				\$74,999.74	\$3,325,147.81	\$3,400,147.55	2.08%	\$166,866,087.55	0	0	0	1,278	10/28/2016
31.1	Provide Circuit and Breaker for Standby Generator in the Microturbine Area (CR-170) PR 21146 (4286) Task 3510	C	FBB	\$4,296.86						0				
31.2	Additional Pipe Support for 14-inch Air Line at the Centrate Facility (CR-226) PR 21146 (4286) Task 3520	C	FBB	\$893.78						0				
31.3	Addition of E-stops (CR-128) PR 21146 (4286) Task 3510	A	FBB	\$57,916.71						0				
31.4	Structural Support of Jib Crane at Dewatering Feed Pump Station Stairwell (CR-243) PR 21146 (4286) Task 3520	C	FBB	\$11,892.39						0				
32	Approved by Exe. Dir. Of Eng. & Water Quality Approved on August 31, 2015				\$74,682.96	\$3,400,147.55	\$3,474,830.51	2.13%	\$166,940,770.51	0	0	0	1,278	10/28/2016
32.1	Additional Conduits and Circuits for Fire Alarm in the Solids Handling Building	A	IRWD	\$21,637.57						0				
32.2	Additional Davit Bases at Centrate Treatment Facility (CR-111) PR 21146 (4286) Task 3520	A	IRWD	\$1,809.77						0				
32.3	Additional Fire Alarm Panel in Digester Control Building (CR-169) PR 21146 (4286) Task 3510	A	IRWD	\$25,153.79						0				
32.4	Modifications to FOG Sump Pumps Controls (CR-177) PR 21146 (4286) Task 3510	A	IRWD	\$5,690.83						0				
32.5	Additional Truck Load-out Conveyor Input and Output (CR-201) PR 21146 (4286) Task 3510	A	IRWD	\$2,220.12						0				
32.6	Additional Spare Conduits in the Microturbine Area (CR-229) PR 21146 (4286) Task 3510	A	FBB	\$14,602.41						0				
32.7	Conduits for Electrical Disconnect Switch for Roll-Up Doors of the Digester Control Building (CR-230) PR 21146 (4286) Task 3510	A	IRWD	\$3,568.47						0				
33	Approved by Executive Director of Engineering & Water Quality Approved on September 30, 2015				\$58,247.75	\$3,474,830.51	\$3,533,078.26	2.16%	\$166,999,018.26	0	0	0		1/0/1900
33.1	Realignment of 8-inch Reclaimed Water Line at Gate 2 (CR-225) PR 21146 (4286) Task 3520	B	FBB	\$24,017.48						0				
33.2	Additional Conduits and Wires for Lighting Circuits to Minimize Voltage Drop (CR-228) PR 21146 (4286) Task 3510	C	IRWD	\$32,399.41						0				
33.3	Cable and Conduit Changes at Solids Handling Building and Dewatering Feed Pump Station (CR-231) PR 21146 (4286) Task 3510	C	IRWD	\$1,830.86						0				

A - District Convenience/Initiation - Project Related
B - Differing Site Conditions
C - Design Oversight
D - District Convenience/Initiation - Non-Project Related
E - Contractor Convenience/Initiation
F - Contractor Requested Inspection Overtime

B - 11

**MWRP Biosolids and Energy Recovery Facilities
PR 21146 (4286)
Construction Change Order Summary**

Contractor: Filanc/Balfour-Beatty
Design Engineer: Black & Veatch

					Contract Amount						Contract Days				Original Completion Date:
					Original Contract Amount: \$163,465,940.00						Original Days: 1,278				10/28/2016
Change Order		Description	Category	IRWD or FBB	Change Order Line Item Amount	Change Order Amount	Previous Change Orders	Cumulative Total of Change Orders	% of Original Contract Amount	Revised Contract Amount	Change Order Days	Previous Change Orders	Cum. Total C.O. days	Revised Total Contract Days	Revised Completion Date
34		Approved by Board of Directors Approved on October 26, 2015				\$164,775.28	\$3,533,078.26	\$3,697,853.54	2.26%	\$167,163,793.54	0	0	0	1,278	10/28/2016
	34.1	Credit for Third Submittal Review Through 05/31/2015 (CR-088) PR 21146 (4286) Task 1065	B	IRWD	(\$39,502.50)						0				
	34.2	Credit for Overtime Inspection Hours Through 05/31/2015 (CR-089) PR 21146 (4286) Task 3520	F	FBB	(\$80,850.00)						0				
	34.3	Credit for Special Inspections for Structural Anchors and Geotechnical Investigation (CR-295) PR 21146 (4286) Task 1065	A	IRWD	(\$27,500.00)						0				
	34.4	Change in Knife Gate Valve Manufacturer (CR-187) PR 21146 (4286) Task 3520	E	FBB	\$275,954.90						0				
	34.5	Credit for Changes in Low Voltage SWGR-14 Circuit Breaker (CR-163) PR 21146 (4286) Task 3510	A	IRWD	(\$1,978.00)						0				
	34.6	Change to Addressable Smoke Detectors (CR-220) PR 21146 (4286) Task 3510	B	IRWD	\$38,650.88						0				
35		Approved by General Manager Approved on November 25, 2015				\$97,980.57	\$3,697,853.54	\$3,795,834.11	2.32%	\$167,261,774.11	0	0	0	1,278	10/28/2016
	35.1	Change in Naming Convention for Storm Water Pump Station (Area 1500) SCADA Programming (CR-181) PR 21146 (4286) Task 3510	E	FBB	\$9,027.03						0				
	35.2	Valve Status Override Functionality (CR-182) PR 21146 (4286) Task 3510	E	FBB	\$38,999.08						0				
	35.3	Control Changes for Primary Sludge and Waste Activated Pump Stations (Area 1900) SCADA Programming (CR-184) PR 21146 (4286) Task 3510	A	IRWD	\$36,772.78						0				
	35.4	Motor Protection Relay (CR-239) PR 21146 (4286) Task 3510	A	IRWD	\$13,181.68						0				
36		Approved by General Manager Approved on December 3, 2015				\$86,007.50	\$3,795,834.11	\$3,881,841.61	2.37%	\$167,347,781.61	0	0	0	1,278	10/28/2016
	36.1	Light Weight Concrete for Underslab Conduits at Microturbine Area (CR-253) PR 21146 (4286) Task 3510	A	FBB	\$21,117.50						0				
	36.2	Outstanding CB&I Items (CR-099A) PR 21146 (4286) Task 3520 – This change order includes: CR-098 (Guard Rail at Biogas Storage Tank); CR-099 (Tube Steel Supports); additional Off-Site Storage Costs; and credit for Use of SS 308 in Lieu of SS 316L Welds.	B	FBB	\$64,890.00						0				

A - District Convenience/Initiation - Project Related
B - Differing Site Conditions
C - Design Oversight
D - District Convenience/Initiation - Non-Project Related
E - Contractor Convenience/Initiation
F - Contractor Requested Inspection Overtime

B - 12

**MWRP Biosolids and Energy Recovery Facilities
PR 21146 (4286)
Construction Change Order Summary**

Contractor: Filanc/Balfour-Beatty
Design Engineer: Black & Veatch

					Contract Amount					Contract Days				Original Completion Date:
					Original Contract Amount: \$163,465,940.00					Original Days: 1,278				10/28/2016
Change Order	Description	Category	IRWD or FBB	Change Order Line Item Amount	Change Order Amount	Previous Change Orders	Cumulative Total of Change Orders	% of Original Contract Amount	Revised Contract Amount	Change Order Days	Previous Change Orders	Cum. Total C.O. days	Revised Total Contract Days	Revised Completion Date
37	Approved by Exe. Director of Engineering and Water Quality Approved on January 21, 2016				\$47,446.49	\$3,881,841.61	\$3,929,288.10	2.40%	\$167,395,228.10	0	0	0	1,278	10/28/2016
37.1	Additional Pressure Relief Valves in the Digester Control Building Slab (CR-112) PR 21146 (4286) Task 3520	C	IRWD	\$1,065.72						0				
37.2	Change Feeder Circuit Breaker Size in MCC-4102 (CR-165) PR 21146 (4286) Task 3510	C	IRWD	\$4,157.60						0				
37.3	Change Feeder Circuit Breaker Size for the Primary Sludge Pump Variable Frequency Drive (CR-233) PR 21146 (4286) Task 3510	C	IRWD	\$2,430.59						0				
37.4	SCADA Programming Changes Due to Change to Schweitzer Power Quality	A	FBB	\$16,814.00						0				
37.5	Additional Labeling of Parallel Conduits and Cables (CR-262) PR 21146 (4286) Task 3510	A	IRWD	\$8,410.00						0				
37.6	Change in Sludge Receiving Entrance Beacon Operation CR-263) PR 21146 (4286) Task 3510	A	IRWD	\$5,382.19						0				
37.7	Anodize Aluminum Light Fixture Stanchions/Sun Shades (CR-283) PR 21146 (4286) Task 3510	A	IRWD	\$5,911.61						0				
37.8	Hot Tap 8-Inch ACP Potable Water Line (CR-311) PR 21146 (4286) Task 3520	A	FBB	\$3,274.78						0				

A - District Convenience/Initiation - Project Related
B - Differing Site Conditions
C - Design Oversight
D - District Convenience/Initiation - Non-Project Related
E - Contractor Convenience/Initiation
F - Contractor Requested Inspection Overtime

B - 13

**MWRP Biosolids and Energy Recovery Facilities
PR 21146 (4286)
Construction Change Order Summary**

Contractor: Filano/Balfour-Beatty
Design Engineer: Black & Veatch

				Contract Amount						Contract Days				Original Completion Date:
				Original Contract Amount: \$163,465,940.00						Original Days: 1,278				10/28/2016
Change Order	Description	Category	IRWD or FBB	Change Order Line Item Amount	Change Order Amount	Previous Change Orders	Cumulative Total of Change Orders	% of Original Contract Amount	Revised Contract Amount	Change Order Days	Previous Change Orders	Cum. Total C.O. days	Revised Total Contract Days	Revised Completion Date
38	Approved by General Manager Approved on February 29, 2016				\$83,345.07	\$3,929,288.10	\$4,012,633.17	2.45%	\$167,478,573.17	0	0	0	1,278	10/28/2016
38.1	Software Control Block Revision for Area 4300 – Dewatering (CR-211) PR 4286 Task 3510	C	FBB	\$18,908.76						0				
38.2	Revised Master List of SCADA Templates (CR-247) PR 4286 Task 3510	C	FBB	\$47,274.54						0				
38.3	Additional Overflow Alarms at Sludge Holding Tanks (CR-280) PR 4286 Task 3510	A	IRWD	\$9,654.54						0				
38.4	Leak Detection at Sulfuric Acid Facility (CR-290) PR 21146 (4286) Task 3510	A	IRWD	\$5,499.97						0				
38.5	Insulation for Acid Phase Gas Piping (CR-218A) PR 21146 (4286) Task 3520	A	IRWD	\$2,007.26						0				
39	Approved by General Manager Approved on March 7, 2016				\$98,006.46	\$4,012,633.17	\$4,110,639.63	2.51%	\$167,576,579.63	0	0	0	1,278	10/28/2016
39.1	SCE Installation - Final Accounting of Work Items Between Negotiated Change Order and Actual Work (CR-146E) PR 4286 Task 3510	B	FBB	\$7,809.51						0				
39.2	Installation of Southern California Gas (SCG) Boxes (CR-146F) PR 4286 Task 3510	A	FBB	\$3,479.81						0				
39.3	Schweitzer SEL-735 Power Monitors for Centrifuge Panels (CR-207) PR 4286 Task 3510	A	IRWD	\$34,274.40						0				
39.4	Hirschmann Ethernet Switches for Centrifuge Panels (CR-208) PR 4286 Task 3510	A	IRWD	\$9,569.15						0				
39.5	Addition of Sample Pump Variable Frequency Drives for Thickening Centrifuges (CR-237) PR 4286 Task 3520	E	IRWD	\$24,496.55						0				
39.6	Upgrade of Exit Signs and Ceiling Lights in the Gas Room of the Digester Control Building to NEC Class 1 Division 1 (CR-313) PR 4286 Task 352	A	IRWD	\$18,377.04						0				
40	Approved by General Manager Approved on April 20, 2016				\$97,287.05	\$4,110,639.63	\$4,207,926.68	2.57%	\$167,673,866.68	0	0	0	1,278	10/28/2016
40.1	Brace Plates in Solids Handling Building (CR-069) PR 4286 Task 3505	C	FBB	\$40,216.76						0				
40.2	Relocation of RIO-50 Panel (CR-186) PR 4286 Task 3510	B	FBB	\$4,818.64						0				
40.3	Addition of Two Doors at the bases of the stairways at Methane Digesters Nos. 1 and No. 2 (CR-232) PR 4286 Task 3505	C	FBB	\$52,251.65						0				

A - District Convenience/Initiation - Project Related
B - Differing Site Conditions
C - Design Oversight
D - District Convenience/Initiation - Non-Project Related
E - Contractor Convenience/Initiation
F - Contractor Requested Inspection Overtime

B - 14

**MWRP Biosolids and Energy Recovery Facilities
PR 21146 (4286)
Construction Change Order Summary**

Contractor: Filano/Balfour-Beatty
Design Engineer: Black & Veatch

				Contract Amount						Contract Days				Original Completion Date:
				Original Contract Amount: \$163,465,940.00						Original Days: 1,278				10/28/2016
Change Order	Description	Category	IRWD or FBB	Change Order Line Item Amount	Change Order Amount	Previous Change Orders	Cumulative Total of Change Orders	% of Original Contract Amount	Revised Contract Amount	Change Order Days	Previous Change Orders	Cum. Total C.O. days	Revised Total Contract Days	Revised Completion Date
41	Approved By Board of Directors Approved on May 23, 2016				\$1,103,650.56	\$4,207,926.68	\$5,311,577.24	3.25%	\$168,777,517.24	0	0	0	1,278	10/28/2016
41.1	Additional SCE and SCG Modifications (CR-146A) PR 4286 Task 3510	B	FBB	\$51,238.69						0				
41.2	Additional Potholing Due to SCE and SCG Realignment (CR-146B) PR 4286 Task 3510	B	FBB	\$36,706.57						0				
41.3	Additional Cameras at the Unloading/Loading Area of the Solids Handling Facility (CR-164) PR 4286 Task 3505	A	IRWD	\$61,731.96						0				
41.4	Fire Sprinkler System Modifications – Mechanical (CR-174) PR 4286 Task 3520	B	IRWD	\$154,592.08						0				
41.5	Fire Sprinkler System Modifications – Electrical (CR-166) PR 4286 Task 3510	B	IRWD	\$13,730.06						0				
41.6	Fiber Optic System Modifications (CR-172/CR-306/CR-314) PR 4286 Task 3510	A	IRWD	\$178,879.46						0				
41.7	T-15, T-16, and T-17 Secondary Breakers (CR-185A, CR-185B, and CR-185C) PR 4286 Task 3510	A	IRWD	\$254,941.66						0				
41.8	Cable and Conduit Changes at the Sludge Receiving Area of the Solids Handling Building (CR-203) PR 4286 Task 3510	C	FBB	\$14,338.94						0				
41.9	Concrete Surface Treatment (CR-222) PR 4286 Task 3505	A	IRWD	\$68,714.34						0				
41.1	Heating Water Boiler Control Modifications (CR-246) PR 4286 Task 3510	A	IRWD	\$71,379.00						0				
41.11	SCADA Control Modifications for the Acid Phase Digesters, Methane Digesters, and Sludge Holding Tank (CR-252) PR 4286 Task 3510	A	IRWD	\$50,540.23						0				
41.12	Ambient Gas Analyzer Wiring Modification (CR-264) PR 4286 Task 3510	B	IRWD	\$19,734.51						0				
41.13	Disconnect Switches for Flow Valves in the Solids Handling Building (CR-272) PR 4286 Task 3510	C	IRWD	\$25,550.26						0				
41.14	Centrifuge Pedestal Modifications (CR-301) PR 4286 Task 3505	C	IRWD	\$30,603.14						0				
41.15	SCADA, Instrumentation, and Electrical Modifications (CR-287, CR-294, and CR-322) PR 4286 Task 3510	A	IRWD	\$70,969.66						0				

A - District Convenience/Initiation - Project Related
B - Differing Site Conditions
C - Design Oversight
D - District Convenience/Initiation - Non-Project Related
E - Contractor Convenience/Initiation
F - Contractor Requested Inspection Overtime

B - 15

**MWRP Biosolids and Energy Recovery Facilities
PR 21146 (4286)
Construction Change Order Summary**

Contractor: Filanc/Balfour-Beatty
Design Engineer: Black & Veatch

				Contract Amount						Contract Days				Original Completion Date:
				Original Contract Amount: \$163,463,940.00						Original Days: 1,278				10/28/2016
Change Order	Description	Category	IRWD or FBB	Change Order Line Item Amount	Change Order Amount	Previous Change Orders	Cumulative Total of Change Orders	% of Original Contract Amount	Revised Contract Amount	Change Order Days	Previous Change Orders	Cum. Total C.O. days	Revised Total Contract Days	Revised Completion Date
42	Approved By Board of Directors Approved on May 23, 2016				(\$199,771.09)	\$5,311,577.24	\$5,111,806.15	3.13%	\$168,577,746.15	0	0	0	1,278	10/28/2016
42.1	Value Engineering of Chemical Pump Systems (CR-054) PR 4286 Task 3520	E	FBB	(\$48,549.90)						0				
42.2	Change in Lightning Protection Installation for Egg-Shaped Digesters (CR-121A) PR 4286 Task 3510	E	FBB	(\$97,141.74)						0				
42.3	Deletion of Seal Water Stations and Seal Water Piping (CR-214) PR 4286 Task 3520	A	IRWD	(\$10,557.28)						0				
42.4	Deletion of Low Pressure Switches for Centrate Pumps (CR-257) PR 4286 Task 3510	A	IRWD	(\$1,748.17)						0				
42.5	Centrifuge Seismic Restraint Design Costs (CR-345) PR 4286 Task 1065	A	IRWD	(\$24,064.00)						0				
42.6	Credit for Overtime Inspection Hours From 6/1/2015 to Through 12/31/2015 (CR-089B) PR 4286 Task 1065	F	FBB	(\$17,710.00)						0				
43	Approved by Exe. Director of Engineering and Water Quality Approved on May 31, 2016				\$74,731.69	\$5,111,806.15	\$5,186,537.84	3.17%	\$168,652,477.84	0	0	0	1,278	10/28/2016
43.1	Combustible Gas Detection System (CR-234) PR 21146 (4286) Task 3510	E	FBB	\$18,843.39						0				
43.2	Additional Wires and Cables Between MCC-4102 and PLC-4000 (CR-278) PR 21146 (4286) Task 3510	C	FBB	\$1,775.13						0				
43.3	SCADA Programming Modifications (CR-282) PR 21146 (4286) Task 3510	E	FBB	\$49,679.02										
43.4	Change of Waste Gas Burner Feeder Circuit Breaker (CR-344) PR 21146 (4286) Task 3510	B	FBB	\$4,434.15						0				
44	Approved by Exe. Director of Engineering and Water Quality Approved on June 29, 2016				\$74,912.99	\$5,186,537.84	\$5,261,450.83	3.22%	\$168,727,390.83	0	0	0	1,278	10/28/2016
44.1	Electrical and Telephonic Modifications for Elevators for Solids Handling Building and Digester Control Building (CR-037A) PR 4286 Task 3510	C	FBB	\$38,882.06						0				
44.2	Odor Control Recirculation Pump Selector Switch SCADA Modifications (CR-343) PR 4286 Task 3510	A	IRWD	\$9,294.71						0				
44.3	SCADA Valve Matrix Tables Animation Clarification for Milestone 1 (CR-353) PR 4286 Task 3510	A	IRWD	\$9,195.86						0				
44.4	PLC Status Object Update (CR-234) PR 4286 Task 3510	B	FBB	\$4,783.14						0				
44.5	Elevator Safety Beam in the Digester Control Building (CR-302) PR 4286 Task 3505	C	FBB	\$3,830.95						0				
44.6	Masonry Changes to the North Retaining Wall (CR-365) PR 4286 Task 3505	B	IRWD	\$8,926.27						0				

A - District Convenience/Initiation - Project Related
B - Differing Site Conditions
C - Design Oversight
D - District Convenience/Initiation - Non-Project Related
E - Contractor Convenience/Initiation
F - Contractor Requested Inspection Overtime

B - 16

**MWRP Biosolids and Energy Recovery Facilities
PR 21146 (4286)
Construction Change Order Summary**

Contractor: Filano/Balfour-Beatty
Design Engineer: Black & Veatch

				Contract Amount						Contract Days				Original Completion Date:
				Original Contract Amount: \$163,463,940.00						Original Days: 1,278				10/28/2016
Change Order	Description	Category	IRWD or FBB	Change Order Line Item Amount	Change Order Amount	Previous Change Orders	Cumulative Total of Change Orders	% of Original Contract Amount	Revised Contract Amount	Change Order Days	Previous Change Orders	Cum. Total C.O. days	Revised Total Contract Days	Revised Completion Date
45	Approved by Board of Directors Approved on July 25, 2016/December 20, 2016 Recovery Plan PR 4286 Task 3510	B	FBB	\$9,250,000.00	\$9,250,000.00	\$5,261,450.83	\$14,511,450.83	8.88%	\$177,977,390.83	368	0	368	1,646	10/31/2017
46	Approved by General Manager Approved on January 27, 2017				\$94,696.76	\$14,511,450.83	\$14,606,147.59	8.94%	\$178,072,087.59	0	368	368	1,646	10/31/2017
46.1	Additional Masonry Anchor in the Solids Handling Building (CR-200) PR 4286	C	IRWD	\$1,457.22						0				
46.2	Additional Auto Dialer (CR-234A) PR 4286 Task 3510	A	IRWD	\$6,081.90						0				
46.3	Grating and Handrail Modifications at Bulk Polymer Storage Platform (CR-300) PR 4286 Task 3505	A	IRWD	\$5,568.83						0				
46.4	SCADA IP Address Update (CR-309) PR 4286 Task 3510	A	IRWD	\$1,227.96						0				
46.5	Masonry Modifications at Solids Handling Building Stairwell (CR-324) PR 4286 Task 3505	C	FBB	\$5,939.45						0				
46.6	Change in Valve Operator at the Centrate Treatment Facility (CR-329) PR 4286 Task 3520	A	IRWD	\$4,824.29						0				
46.7	Boot Wash Landing Addition (CR-349) PR 4286 Task 3505	C	FBB	\$1,834.60						0				
46.8	Updating Valve Analog SCADA Template (CR-354) PR 4286 Task 3510	A	IRWD	\$692.72						0				
46.9	Additional Light Fixtures and Lamps (CR-355A) PR 4286 Task 3510	A	IRWD	\$8,508.46						0				
46.10	Addition of Rebate Angle in the FOG Unloading Sump Area (CR-363) PR 4286 Task 3505	A	IRWD	\$763.62						0				
46.11	MCC-4103 Hot Water Circulation Pump Breakers Change (CR-366) PR 4286 Task 3510	B	IRWD	\$2,316.03						0				
46.12	MCC-4100/4101 Cake Transfer Pump Breakers Change (CR-370) PR 4286 Task 3510	B	IRWD	\$23,720.61						0				
46.13	MCC-4102 Breaker Change (CR-374) PR 4286 Task 3510	B	IRWD	\$2,316.03						0				
46.14	SCADA Programming Modifications During Benchtest No.1 for Areas 1900 and 2000 (CR-376) PR 4286 Task 3510	A	IRWD	\$24,092.32						0				
46.15	Additional Light Fixture Above Door in Digester Control Building Gas Room (CR-399) PR 4286 Task 3510	A	IRWD	\$1,478.19						0				
46.16	Change in Size of Disconnect Switches for Digested Sludge Mixers (CR-408) PR 4286 Task 3510	B	FBB	\$1,290.10						0				
46.17	Additional Thickening Feed Grinder Control Panel Circuits (CR-438) PR 4286 Task 3510	B	IRWD	\$1,286.63						0				
46.18	Thickness and Glazing Change for Windows (CR-438) PR 4286 Task 3510	C	IRWD	\$1,297.80						0				

A - District Convenience/Initiation - Project Related
B - Disturbing Site Conditions
C - Design Oversight
D - District Convenience/Initiation - Non-Project Related
E - Contractor Convenience/Initiation
F - Contractor Requested Inspection Overtime

B - 17

**MWRP Biosolids and Energy Recovery Facilities
PR 21146 (4286)
Construction Change Order Summary**

Contractor: Filanc/Balfour-Beatty
Design Engineer: Black & Veatch

				Contract Amount						Contract Days				Original Completion Date:
				Original Contract Amount: \$163,465,940.00						Original Days: 1,278				10/28/2016
Change Order	Description	Category	IRWD or FBB	Change Order Line Item Amount	Change Order Amount	Previous Change Orders	Cumulative Total of Change Orders	% of Original Contract Amount	Revised Contract Amount	Change Order Days	Previous Change Orders	Cum. Total C.O. days	Revised Total Contract Days	Revised Completion Date
47	Approved by General Manager Approved on February 28, 2017				\$96,414.36	\$14,606,147.59	\$14,702,561.95	8.99%	\$178,168,501.95	0	368	368	1,646	10/31/2017
47.1	Relocation of Neutralization Tank Drainage Piping PR 4286 Task 3520	B	FBB	\$2,312.08						0				
47.2	Modifications to Digester Control Building Door and Piping Due to Heating Water Expansion Tank Pad Adjustment (CR-221) PR 4286 Task 3505	C	FBB	\$5,500.74						0				
47.3	PLC-3100 Changes (CR-284) PR 4286 Task 3510	C	FBB	\$1,070.38						0				
47.4	Additional Angle Support to Acid Phase Digester Bridges (CR-298) PR 4286 Task 3505	C	FBB	\$4,986.21						0				
47.5	Additional Potable Water Gate Valves (CR-332) PR 4286 Task 3520	A	IRWD	\$3,892.44						0				
47.6	T-4 Kirk Key Interlock Installation (CR-335) PR 4286 Task 3510	B	IRWD	\$6,924.69						0				
47.7	Solids Handling Building Dumpster Room Channel Frames Modifications (CR-338) PR 4286 Task 3505	C	FBB	\$5,093.87						0				
47.8	PCS Server Configuration Clarification (CR-352) PR 4286 Task 3510	A	IRWD	\$6,824.35						0				
47.9	Additional Anchorage Support for Ledgers of the Digester Control Building Roof (CR-361) PR 4286 Task 3505	C	FBB	\$13,794.95						0				
47.10	Change of MCC-4103 Hot Water Circulation Pump Breakers (CR-366B) PR 4286 Task 3510	A	IRWD	\$1,336.13						0				
47.11	Centrate Treatment Facility Pull Boxes Duct Bank Settlement (CR-383) PR 4286 Task 3510	B	FBB	\$3,300.13						0				
47.12	Modifications to the MCC-4100/4101/4102/4103 (CR-405) PR 4286 Task 3510	B	FBB	\$7,418.52						0				
47.13	Cake Storage Hopper Modifications (CR-421) PR 4286 Task 3510	C	FBB	\$2,250.67						0				
47.14	Removing Installed Lighting in the Solids Handling Building (CR-427) PR 4286 Task 3510	A	IRWD	\$8,947.37						0				
47.15	Electrical Changes for Generator MPC (CR-430) PR 4286 Task 3510	A	IRWD	\$10,950.14						0				
47.16	Electrical Modifications to MCC-4100 and 4103 (CR-431) PR 4286 Task 3510	A	FBB	\$4,500.00						0				
47.17	Occupancy Sensors in the Solids Handling Building Shower Areas (CR-444) PR 4286 Task 3510	C	FBB	\$1,601.36						0				
47.18	Digester Gas Pre-Treatment In-Slab Conduit Size Change (CR-454) PR 4286 Task 3510	C	FBB	\$5,710.33						0				

A - District Convenience/Initiation - Project Related
B - Differing Site Conditions
C - Design Oversight
D - District Convenience/Initiation - Non-Project Related
E - Contractor Convenience/Initiation
F - Contractor Requested Inspection Overtime

B - 18

**MWRP Biosolids and Energy Recovery Facilities
PR 21146 (4286)
Construction Change Order Summary**

Contractor: Filanc/Balfour-Beatty
Design Engineer: Black & Veatch

				Contract Amount						Contract Days				Original Completion Date:
				Original Contract Amount: \$163,465,940.00						Original Days: 1,278				10/28/2016
Change Order	Description	Category	IRWD or FBB	Change Order Line Item Amount	Change Order Amount	Previous Change Orders	Cumulative Total of Change Orders	% of Original Contract Amount	Revised Contract Amount	Change Order Days	Previous Change Orders	Cum. Total C.O. days	Revised Total Contract Days	Revised Completion Date
48	Approved by Board of Directors Approved on March 13, 2017				\$728,237.74	\$14,702,561.95	\$15,430,799.69	9.44%	\$178,896,739.69	0	368	368	1,646	10/31/2017
48.1	Structural Modifications of the Elevator Shafts (CR-037) PR 4286 Task 3505200) PR 4286 Task 3505	B	FBB	\$58,705.90						0				
48.2	SCADA Programming Update of Polymer Feed and Storage System (CR-148A) PR 4286 Task 3510	A	FBB	\$23,685.14						0				
48.3	Stairs and Platform at SHB Load-Out Area (CR-149) PR 4286 Task 3505	C	FBB	\$39,622.65						0				
48.4	Additional Polymer Dilution Flow Meters and Associated Conduits and Cables (CR-159B) PR 4286 Task 3510	A	IRWD	\$38,978.70						0				
48.5	Miscellaneous Andritz Items (CR-205) PR 4286 Task 3520	A	IRWD	\$41,246.71						0				
48.6	RIO-4001 Changes (CR-286) PR 4286 Task 3510	A	IRWD	\$27,889.74						0				
48.7	RIO-3102 Changes (CR-310) PR 4286 Task 3510	A	IRWD	\$18,280.62						0				
48.8	Mini Power Center - Additional Outlet and Data Locations in the SHB (CR-419) PR 4286 Task 3510	A	IRWD	\$13,261.60						0				
48.9	New Lighting in the SHB First Floor Area (CR-427A) PR 4286 Task 3510	A	IRWD	\$102,503.46						0				
48.10	Additional Conduits and Cables for Thermocouples for Several Pumps (CR-424, CR-424A through CR-424F) PR 4286 Task 3510	B	FBB	\$54,982.68						0				
48.11	Additional Wall Panel Framework at the SHB (CR-445) PR 4286 Task 3505	C	FBB	\$128,000.00						0				
48.12	Changes in Uninterruptible Power Supply Units (CR-162/CR-162A) PR 4286 Task 3510	A	IRWD	\$128,052.94						0				
48.13	Addition of Circuit Breaker at Transformer T-14 (CR-474) PR 4286 Task 3510	A	IRWD	\$53,027.60						0				

A - District Convenience/Initiation - Project Related
B - Differing Site Conditions
C - Design Oversight
D - District Convenience/Initiation - Non-Project Related
E - Contractor Convenience/Initiation
F - Contractor Requested Inspection Overtime

B - 19

**MWRP Biosolids and Energy Recovery Facilities
PR 21146 (4286)
Construction Change Order Summary**

Contractor: Filano/Balfour-Beatty
Design Engineer: Black & Veatch

				Contract Amount						Contract Days				Original Completion Date:
				Original Contract Amount: \$163,465,940.00						Original Days: 1,278				10/28/2016
Change Order	Description	Category	IRWD or FBB	Change Order Line Item Amount	Change Order Amount	Previous Change Orders	Cumulative Total of Change Orders	% of Original Contract Amount	Revised Contract Amount	Change Order Days	Previous Change Orders	Cum. Total C.O. days	Revised Total Contract Days	Revised Completion Date
49	Approved by Board of Directors Approved on March 13, 2017				(\$47,099.20)	\$15,430,799.69	\$15,383,700.49	9.41%	\$178,849,640.49	0	368	368	1,646	10/31/2017
49.1	Related Mechanical Piping Modifications Due to Change in Chemical Pumps in CCO No. 42 (CR-054A) PR 4286 Task 3520	E	FBB	(\$23,897.73)						0				
49.2	Changing the Solids Handling Building Roofing from EPDM to PVC (CR-255) PR 4286 Task 3505	E	FBB	(\$9,000.00)						0				
49.3	Net Reduction of Scope of Work in CR-353 – SCADA Valve Matrix Tables Animation Clarifications (CR-353B/353C) PR 4286 Task 3510	A	IRWD	(\$4,429.09)						0				
49.4	Change in Starters for MCC-4100/4101 Cake Transfer Pump Breakers (CR-370A) PR 4286 Task 3510	A	IRWD	(\$4,047.43)						0				
49.5	Deletion of Insulation for the Solids Handling Building Foundation (CR-393) PR 4286 Task 3505	A	IRWD	(\$5,724.95)						0				
50	Approved by Executive Director of Engineering & Water Quality Approved on March 31, 2017				\$72,150.89	\$15,383,700.49	\$15,455,851.38	9.46%	\$178,921,791.38	0	368	368	1,646	10/31/2017
50.1	Electrical Modifications to FOG Local Control Panel 70-LCP-0710 (CR-304) PR 4286 Task 5.30	A	IRWD	\$6,614.77						0				
50.2	Condensate Modifications at Digester Gas Pre-Treatment Area (CR-312) PR 4286 Task 5.31	C	FBB	\$9,826.09						0				
50.3	Installation of Lindapters Instead of Eye Bolts (CR-413) PR 4286 Task 5.29	A	FBB	\$13,346.01						0				
50.4	T-5 Connection to Biosolids Switch-14 (CR-480) PR 4286 Task 5.30	A	IRWD	\$35,170.26						0				
50.5	Polymer Feeder Blender Skids Flow Element Grounding Conductor (CR-482) PR 4286 Task 5.30	C	IRWD	\$7,193.76						0				
51	Approved by Executive Director of Engineering & Water Quality Approved on March 31, 2017				(\$126,390.00)	\$15,455,851.38	\$15,329,461.38	9.38%	\$178,795,401.38	0	368	368	1,646	10/31/2017
51.1	Credit for Overtime Inspection Hours From 1/1/2016 to Through 12/31/2016 (CR-089C) PR 4286 Task 4.0	F	IRWD	(\$97,570.00)						0				
51.2	Credit for Overtime Inspection Hours From 1/1/2017 to Through 03/31/2017 (CR-089D) PR 4286 Task 4.0	E	IRWD	(\$28,820.00)						0				

A - District Convenience/Initiation - Project Related
B - Differing Site Conditions
C - Design Oversight
D - District Convenience/Initiation - Non-Project Related
E - Contractor Convenience/Initiation
F - Contractor Requested Inspection Overtime

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**MWRP Biosolids and Energy Recovery Facilities
PR 21146 (4286)
Construction Change Order Summary**

Contractor: Filanc/Balfour-Beatty
Design Engineer: Black & Veatch

				Contract Amount						Contract Days				Original Completion Date:
				Original Contract Amount: \$163,465,940.00						Original Days: 1,278				10/28/2016
Change Order	Description	Category	IRWD or FBB	Change Order Line Item Amount	Change Order Amount	Previous Change Orders	Cumulative Total of Change Orders	% of Original Contract Amount	Revised Contract Amount	Change Order Days	Previous Change Orders	Cum. Total C.O. days	Revised Total Contract Days	Revised Completion Date
52	Approved by General Manager Approved on April 28, 2017				\$98,342.16	\$15,329,461.38	\$15,427,803.54	9.44%	\$178,893,743.54	0	368	368	1,646	10/31/2017
52.1	Removal of Unsuitable Alluvium (CR-146H) PR 4286 Task 5.29	B	FBB	\$3,564.32						0				
52.2	Polymer Dilution Water Flowmeters (CR-159A) PR 4286 Task 5.31	A	IRWD	\$14,090.39						0				
52.3	Aluminum Handrail and Guardrail Modifications at Liquid Chemical and Polymer Areas (CR-171) PR 4286 Task 5.30	A	IRWD	\$13,765.20						0				
52.4	Modifications Due to Solids Handling Building Electrical Room Equipment Clearance Issues (CR-196) PR 4286 Task 5.30	C	FBB	\$9,382.01						0				
52.5	Data and Telephone Outlets in Solids Handling Building (CR-261) PR 4286 Task 5.30	A	IRWD	\$27,620.21						0				
52.6	HVAC Duct Modifications in Dewatering Feed Pump Station (CR-268) PR 4286 Task 5.31	C	FBB	\$16,023.50						0				
52.7	Coating of 8 Roll-up doors (CR-358) PR 4286 Task 5.29	A	IRWD	\$5,710.32						0				
52.8	Upsizing Wire Size of Dewatering Feed Pump Station Main Breaker Light Panel LP-3501 (CR-390) PR 4286 Task 5.30	A	IRWD	\$1,449.75						0				
52.9	Modifications to the Roofs of the Solids Handling Building and Digester Control Building (CR-528) PR 4286 Task 5.29	A	IRWD	\$6,736.46						0				
53	Exe. Director of Water Quality and Engineering Approved on June 5, 2017				\$42,281.96	\$15,427,803.54	\$15,470,085.50	9.46%	\$178,936,025.50	0	368	368	1,646	10/31/2017
53.1	Modifications to Regenerative Thermal Oxidizer (RTO) Drainage and Utility Water Piping (CR-267) PR 4286 Task 5.31	C	IRWD	\$33,814.80						0				
53.2	Modifications to Liquid Chemical Feed Control Panel Wiring (CR-396) per RFI-1602 PR 4286 Task 5.30	C	FBB	\$8,467.16						0				
54	Approved by General Manager Approved on June 19, 2017				\$44,210.51	\$15,470,085.50	\$15,514,296.01	9.49%	\$178,980,236.01	0	368	368	1,646	10/31/2017
54.1	Modifications to Thickening and Dewatering Platforms (CR-195) PR 4286 Task 5.29	C	FBB	\$44,210.51						0				
55	Approved by General Manager Approved on July 3, 2017				\$94,352.43	\$15,514,296.01	\$15,608,648.44	9.55%	\$179,074,588.44	0	368	368	1,646	10/31/2017
55.1	Additional Pipe Supports of 54-Inch Fiberglass Reinforced Air Duct (CR-106A) PR 4286 Task 5.29	C	FBB	\$14,211.18						0				
55.2	Natural Gas Step Down Manifolds and Gas Transition Piping (CR-146G) PR	B	IRWD	\$20,489.32						0				
55.3	Modifications to the West End Stair Landing of the Solids Handling Building (CR-315) PR 4286 Task 5.29	B	IRWD	\$5,622.11						0				

A - District Convenience/Initiation - Project Related
B - Differing Site Conditions
C - Design Oversight
D - District Convenience/Initiation - Non-Project Related
E - Contractor Convenience/Initiation
F - Contractor Requested Inspection Overtime

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**MWRP Biosolids and Energy Recovery Facilities
PR 21146 (4286)
Construction Change Order Summary**

Contractor: Filano/Balfour-Beatty
Design Engineer: Black & Veatch

				Contract Amount						Contract Days				Original Completion Date:
				Original Contract Amount: \$163,465,940.00						Original Days: 1,278				10/28/2016
Change Order	Description	Category	IRWD or FBB	Change Order Line Item Amount	Change Order Amount	Previous Change Orders	Cumulative Total of Change Orders	% of Original Contract Amount	Revised Contract Amount	Change Order Days	Previous Change Orders	Cum. Total C.O. days	Revised Total Contract Days	Revised Completion Date
55.4	Regenerative Thermal Oxidizer (RTO) Pad Modifications (CR-400) PR 4286 Task 5.29	C	FBB	\$8,471.16						0				
55.5	Addition of Thin Client at the Dryer Facility (CR-485) PR 4286 Task 5.30	A	IRWD	\$36,874.10						0				
55.6	Change in Size to 2 Check Valves in the Digester Control Building (CR-514) PR 4286 Task 5.31	C	FBB	\$8,684.56						0				
56	Approved by Board Approved on July 24, 2017				\$201,744.33	\$15,608,648.44	\$15,810,392.77	9.67%	\$179,276,332.77	0	368	368	1,646	10/31/2017
56.1	Addition Of Stairs and Platform to RTO (CR-266) PR 4286 Task 5.29	A	IRWD	\$101,744.33						0				
56.2	Microturbine CLC (ESC Capstone) per RF1 1141 (CR-277) PR 4286 Task 5.30	B	FBB	\$100,000.00						0				
57	Approved by General Manager Approval on August 5, 2017				\$98,886.90	\$15,810,392.77	\$15,909,279.67	9.73%	\$179,375,219.67	0	368	368	1,646	10/31/2017
57.1	Additional Support at Digester Control Building (CR-342) PR 04286 Task 5.29	C	IRWD	\$2,522.47						0				
57.2	Pipe and Duct Hanger Modifications (CR-362) PR 04286 Task 5.29	C	IRWD	\$4,083.12						0				
57.3	Increase Wire Size of Main Breaker PP-3501 (CR-418) PR 04286 Task 5.30	C	FBB	\$696.66						0				
57.4	Roof Vent at DCB Elevator/Stair Tower (CR-437) PR 04286 Task 5.29	B	IRWD	\$8,563.72						0				
57.5	T-14 Fixed Type Manual Operator per Submittal 16443-0016A (CR-540) PR 04286 Task 5.31	C	IRWD	\$1,945.62						0				
57.6	Area Classification at Methane Digesters to meet NFPA Table 6.2(a) - Plug Valves Limit Switches (CR-557) PR 04286 Task 5.30	C	FBB	\$64,195.15						0				
57.7	Area Classification at Methane Digesters to meet NFPA Table 6.2(a) - Sump Pump Cable Retrofit PR 04286 Task 5.30	C	FBB	\$16,880.16						0				

A - District Convenience/Initiation - Project Related
B - Differing Site Conditions
C - Design Oversight
D - District Convenience/Initiation - Non-Project Related
E - Contractor Convenience/Initiation
F - Contractor Requested Inspection Overtime

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**MWRP Biosolids and Energy Recovery Facilities
PR 21146 (4286)
Construction Change Order Summary**

Contractor: Filanc/Balfour-Beatty
Design Engineer: Black & Veatch

				Contract Amount						Contract Days				Original Completion Date:
				Original Contract Amount: \$163,465,940.00						Original Days: 1,278				10/28/2016
Change Order	Description	Category	IRWD or FBB	Change Order Line Item Amount	Change Order Amount	Previous Change Orders	Cumulative Total of Change Orders	% of Original Contract Amount	Revised Contract Amount	Change Order Days	Previous Change Orders	Cum. Total C.O. days	Revised Total Contract Days	Revised Completion Date
58	Approved by Board of Directors Approval on August 28, 2017				\$182,938.94	\$15,909,279.67	\$16,092,218.61	9.84%	\$179,558,158.61	0	368	368	1,646	10/31/2017
58.1	Concrete Cap over Shallow Pipe Crossings (CR-348) PR 04286 Task 5.31	B	FBB	\$7,923.00						0				
58.2	Additional Conduit and Wiring for Sludge Screen Moisture Sensors (CR-381) PR 04286 Task 5.30	C	FBB	\$8,355.32						0				
58.3	SCADA Programming Modifications (CR-433/476/546/547/551) PR 04286 Task 5.30	A	IRWD	\$15,758.38						0				
58.4	Polymer Storage Power Panels Wire and Breaker Modifications (CR-456) PR 04286 Task 5.30	C	FBB	\$24,238.65						0				
58.5	Odor Control Starter Modifications (CR-466) PR 04286 Task 5.30	B	FBB	\$41,436.09						0				
58.6	Odor Control Fan Remote Temperature Device Revisions (CR-522) PR 04286 Task 5.30	A	IRWD	\$52,484.50						0				
58.7	Re-location of Digester Control Building Gas Room Local Control Panels (CR-534) PR 04286 Task 5.30	A	FBB	\$32,743.00						0				
59	Approved by Exe. Director of Water Quality and Engineering Approval on September 6, 2017				\$98,988.68	\$16,092,218.61	\$16,191,207.29	9.90%	\$179,657,147.29	0	368	368	1,646	10/31/2017
59.1	Modifications to Building 101 (CR-212) PR 04286 Task 5.30	E	FBB	\$26,500.00										
59.2	Change in Conduit Size in Area 20 (CR-292) PR 04286 Task 5.10	C	FBB	\$1,946.70						0				
59.3	Centrifuge Discharge Cake Conveyors Schematic Modifications (CR-422) PR 04286 Task 5.10	C	FBB	\$6,410.04						0				
59.4	Power Monitor Programming Modifications (CR-539) PR 04286 Task 5.10	A	IRWD	\$2,595.60						0				
59.5	SCADA Programming Modifications (CR-547A) PR 04286 Task 5.10	A	IRWD	\$1,574.86						0				
59.6	Change in Area Classification at Methane Digesters to meet NFPA Standards - MOVs (CR-557B) PR 04286 Task 5.10	C	FBB	\$54,736.73						0				
59.7	FOG Heating Disconnect Switch Relocation (CR-559) PR 04286 Task 5.10	C	FBB	\$5,224.75						0				
60	Approved by Exe. Director of Water Quality and Engineering Approval on September 5, 2017				(\$34,540.00)	\$16,191,207.29	\$16,156,667.29	9.88%	\$179,622,607.29	0	368	368	1,646	10/31/2017
60.1	Credit for Overtime Inspection Hours From 4/1/2017 Through 6/30/2017 (CR-089E) PR 04286 Task 4.0	F	FBB	(\$34,540.00)						0				

A - District Convenience/Initiation - Project Related
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C - Design Oversight
D - District Convenience/Initiation - Non-Project Related
E - Contractor Convenience/Initiation
F - Contractor Requested Inspection Overtime

B - 23

**MWRP Biosolids and Energy Recovery Facilities
PR 21146 (4286)
Construction Change Order Summary**

Contractor: Filanc/Balfour-Beatty
Design Engineer: Black & Veatch

				Contract Amount						Contract Days				Original Completion Date:
				Original Contract Amount: \$163,465,940.00						Original Days: 1,278				10/28/2016
Change Order	Description	Category	IRWD or FBB	Change Order Line Item Amount	Change Order Amount	Previous Change Orders	Cumulative Total of Change Orders	% of Original Contract Amount	Revised Contract Amount	Change Order Days	Previous Change Orders	Cum. Total C.O. days	Revised Total Contract Days	Revised Completion Date
61	Approved by Exe. Director of Water Quality and Engineering Approved on September 6, 2017 61.1 Credit for Bulk Polymer Storage Changes per RFI-0863 and Submittal 15140-013B (CR-168) PR 04286 Task 5.16	E	FBB	(\$1,752.39)	(\$1,752.39)	\$16,156,667.29	\$16,154,914.90	9.88%	\$179,620,854.90	0	368	368	1,646	10/31/2017
62	Approved by Board of Directors Approved on October 9, 2017 62.1 Fats, Oil, and Grease (FOG) Modifications (CR-223A) PR 04286 Task 5.30 62.2 Density Meter Conduit and Cabling Modifications (CR-326) PR 04286 Task 5.30 62.3 Fiber Optic Modifications (CR-356) PR 04286 Task 5.30 62.4 Sludge Screen Pneumatic Control Panel Conduit and Cabling (CR-380) PR 04286 Task 5.30 62.5 Additional Circuits for Control of the Thickening Centrifuges (CR-386) PR 04286 Task 5.30 62.6 Upsize of Power Panel PP-8001 Circuit Breaker (CR-414) PR 04286 Task 5.30 62.7 Electrical Power Feeders to Electric Water Heater (CR-426) PR 04286 Task 5.30 62.8 Chemical Sump Pump Control Panel Space Heater Wiring Modifications (CR-461) PR 04286 Task 5.30 62.9 Relocate Electrical Feeders to Generator Bus (CR-462) PR 04286 Task 5.30 62.10 Electrical and Instrumentation Related Components for the Installation of Thin Client at Dryer Facility (CR-485A) PR 04286 Task 5.30 62.11 Polymer Room Eye Wash Station Flow Switches (CR-535) PR 04286 Task 5.30 62.12 Chemical Storage and Feed Modifications (CR-563) PR 04286 Task 5.30 62.13 PLC Redundancy Hot Standby Status Register (CR-568) PR 04286 Task 5.30	A	IRWD	\$52,174.90	\$708,162.72	\$16,154,914.90	\$16,863,077.62	10.32%	\$180,329,017.62	0	368	368	1,646	10/31/2017

A - District Convenience/Initiation - Project Related
B - Differing Site Conditions
C - Design Oversight
D - District Convenience/Initiation - Non-Project Related
E - Contractor Convenience/Initiation
F - Contractor Requested Inspection Overtime

B - 24

**MWRP Biosolids and Energy Recovery Facilities
PR 21146 (4286)
Construction Change Order Summary**

Contractor: Filanc/Balfour-Beatty
Design Engineer: Black & Veatch

				Contract Amount						Contract Days				Original Completion Date:
				Original Contract Amount: \$163,465,940.00						Original Days: 1,278				10/28/2016
Change Order	Description	Category	IRWD or FBB	Change Order Line Item Amount	Change Order Amount	Previous Change Orders	Cumulative Total of Change Orders	% of Original Contract Amount	Revised Contract Amount	Change Order Days	Previous Change Orders	Cum. Total C.O. days	Revised Total Contract Days	Revised Completion Date
63	Approved by General Manager Approved on October 2, 2017				\$91,766.09	\$16,863,077.62	\$16,954,843.71	10.37%	\$180,420,783.71	0	368	368	1,646	10/31/2017
63.1	Electrical Modifications to RIO-2001 (CR-269) PR 04286 Task 5.30	C	IRWD	\$30,563.48						0				
63.2	Modifications to RIO-4002 (CR-285) PR 04286 Task 5.30	C	FBB	\$14,563.39						0				
63.3	Cap for 12-Inch Storm Drain (CR-351) PR 04286 Task 5.16	B	FBB	\$2,394.54						0				
63.4	Access Hatch for Regenerative Thermal Oxidizer Pipe Chase (CR-473) PR 04286 Task 5.31	C	FBB	\$3,958.91						0				
63.5	Electrical Upgrades to RIO-4002 (CR-447) PR 04286 Task 5.30	A	FBB	\$40,285.77						0				
64	Approved by Board of Directors Approved on October 23, 2017				\$231,100.22	\$16,954,843.71	\$17,185,943.93	10.51%	\$180,651,883.93	0	368	368	1,646	10/31/2017
64.1	Modifications to Centrate Treatment Facility Stairs (CR-379) PR 04286 Task 5.29	B	FBB	\$9,758.16						0				
64.2	Modifications to Ductwork in Solids Handling Building (CR-401) PR 04286 Task 5.31	C	FBB	\$9,537.05						0				
64.3	Electrical Conduits and Wires for Additional Bridge Breakers for Cake Receiving Pumps (CR-416) PR 04286 Task 5.30	B	FBB	\$21,678.83						0				
64.4	Handrail Modifications at the Methane Digesters (CR-472) PR 04286 Task 5.29	B	FBB	\$22,154.53						0				
64.5	Electrical and Instrumentation Related Components for the Installation of Thin Client at Dryer Facility (CR-485B) PR 04286 Task 5.30	A	IRWD	\$53,090.84						0				
64.6	Electrical Modifications at the Motor Control Centers for the Acid Phase Sludge Heating Recirculation Pumps (CR-517) PR 04286 Task 5.30	A	IRWD	\$47,611.11						0				
64.7	FOG Receiving Pumps Thermocouple and Thermostat Wiring (CR-525) PR 04286 Task 5.30	C	FBB	\$37,826.58						0				
64.8	SCADA Programming Changes (CR-537/570/573/573A) PR 04286 Task 5.30	A	IRWD	\$23,694.13						0				
64.9	Change of Limit Switches for Buried Service (CR-560) PR 04286 Task 5.30	C	FBB	\$5,748.99						0				

A - District Convenience/Initiation - Project Related
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C - Design Oversight
D - District Convenience/Initiation - Non-Project Related
E - Contractor Convenience/Initiation
F - Contractor Requested Inspection Overtime

B - 25

**MWRP Biosolids and Energy Recovery Facilities
PR 21146 (4286)
Construction Change Order Summary**

Contractor: Filanc/Balfour-Beatty
Design Engineer: Black & Veatch

				Contract Amount						Contract Days				Original Completion Date:
				Original Contract Amount: \$163,465,940.00						Original Days: 1,278				10/28/2016
Change Order	Description	Category	IRWD or FBB	Change Order Line Item Amount	Change Order Amount	Previous Change Orders	Cumulative Total of Change Orders	% of Original Contract Amount	Revised Contract Amount	Change Order Days	Previous Change Orders	Cum. Total C.O. days	Revised Total Contract Days	Revised Completion Date
65	Approved by Board of Directors Approved on October 23, 2017				\$149,591.14	\$17,185,943.93	\$17,335,535.07	10.60%	\$180,801,475.07	0	368	368	1,646	10/31/2017
65.1	Additional Conduits and Wires for the Engine Generator, Switchgear-16, and Switchgear-16 Programmable Logic Controller (CR-204) PR 04286 Task 5.30	C	FBB	\$100,000.00						0				
65.2	Modifications to Spirac Conveyor in the Solids Handling Building (CR-409) PR 04286 Task 5.31	B	FBB	\$13,641.00						0				
65.3	Additional Metal Bridge Walkway Structural Support Angles (CR-420) PR 04286 Task 5.29	B	FBB	\$35,950.14						0				
66	Approved by General Manager Approved on November 30, 2017				\$98,201.20	\$17,335,535.07	\$17,433,736.27	10.67%	\$180,899,676.27	0	368	368	1,646	10/31/2017
66.1	SCADA Programming Modifications and Updates (CR-247A/CR-469/CR-485C/CR-571/CR-575A/CR-579/CR-580/CR-585) PR 04286 Task 5.30	A	IRWD	\$61,734.78						0				
66.2	Installation of Sump Pump Floats (CR-452) PR 04286 Task 5.31	A	IRWD	\$17,228.56						0				
66.3	Electrical Work Associated with Air Handling/Heating Units, Recycle Bin Feed Conveyor, and Recycle Bucket Elevator in the Solids Handling Building (CR-457/CR-529) PR 04286 Task 5.30	B	IRWD	\$11,003.85						0				
66.4	Additional Wires and Conduits for FOG Receiving Valves (CR-565) PR 04286 Task 5.30	B	FBB	\$6,368.21						0				
66.5	Additional Door Cover Plates for MCC-4100 and MCC-4101	B	IRWD	\$1,865.80						0				
67	Approved by Exe. Dir of Engineering and Water Quality Approved on November 30, 2017				(\$53,626.83)	\$17,433,736.27	\$17,380,109.44	10.63%	\$180,846,049.44	0	368	368	1,646	10/31/2017
67.1	Credit for Overtime Inspection Hours from 07/1/2017 to 09/30/2017 (CR-089F) PR 04286 Task 4.0	F	FBB	(\$19,140.00)						0				
67.2	Credit for Additional Conduits and Wires for the Engine Generator, Switchgear-16, and Switchgear-16 Programmable Logic Controller (CR-204A) PR 04286 Task 5.30	E	FBB	(\$13,591.83)						0				
67.3	Deletion of Pavement Prime Coat (CR-331D) PR 04286 Task 5.29	A	IRWD	(\$20,895.00)						0				

A - District Convenience/Initiation - Project Related
B - Differing Site Conditions
C - Design Oversight
D - District Convenience/Initiation - Non-Project Related
E - Contractor Convenience/Initiation
F - Contractor Requested Inspection Overtime

B - 26

**MWRP Biosolids and Energy Recovery Facilities
PR 21146 (4286)
Construction Change Order Summary**

Contractor: Filanc/Balfour-Beatty
Design Engineer: Black & Veatch

				Contract Amount						Contract Days				Original Completion Date:
				Original Contract Amount: \$163,465,940.00						Original Days: 1,278				10/28/2016
Change Order	Description	Category	IRWD or FBB	Change Order Line Item Amount	Change Order Amount	Previous Change Orders	Cumulative Total of Change Orders	% of Original Contract Amount	Revised Contract Amount	Change Order Days	Previous Change Orders	Cum. Total C.O. days	Revised Total Contract Days	Revised Completion Date
68	Approved by Board of Directors Approved on December 11, 2017				\$569,553.19	\$17,380,109.44	\$17,949,662.63	10.98%	\$181,415,602.63	0	368	368	1,646	10/31/2017
68.1	Fats, Oil, and Grease (FOG) Modifications (CR-223) PR 04286 Task 5.30	A	IRWD	\$83,648.47						0				
68.2	Additional Electrical Outlets and Circuits in the Solids Handling Building (CR-453) PR 04286 Task 5.30	A	IRWD	\$44,054.83						0				
68.3	Control Panel Modifications in the Methane Digester Complex (CR-545) PR 04286 Task 5.30	C	IRWD	\$55,414.03						0				
68.4	Additional Electrical, Instrumentation, and Controls for the Heat Dryer System (CR-270 and CR-471A through CR-471G, CR-496, and CR-555) PR 04286 Task 5.30	B	FBB	\$386,435.86						0				
69	Approved by General Manager Approved on December 20, 2017				\$90,846.69	\$17,949,662.63	\$18,040,509.32	11.04%	\$181,506,449.32	0	368	368	1,646	10/31/2017
69.1	Power Supply Failure Alarms for Acid Gas Boosters (CR-477) PR 04286 Task	A	IRWD	\$10,965.90						0				
69.2	Addition of Waste Gas Burner Instrument Air Compressor System (Electrical) (CR-484A) PR 04286 Task 5.30	C	IRWD	\$8,046.52						0				
69.3	Circuit Breaker for MOC-2034 (CR-541) PR 04286 Task 5.30	B	IRWD	\$2,389.56						0				
69.4	Change in Limit Switches Located in the Methane Digester Complex Due Electrical Classification Change (CR-557D) PR 04286 Task 5.30	C	IRWD	\$37,744.12						0				
69.5	Change in Limit Switches Located in the Methane Digester Complex Due Electrical Classification Change (CR-582) PR 04286 Task 5.30	C	IRWD	\$16,228.03						0				
69.6	SCADA Programming Changes – Totalizers (CR-590) PR 04286 Task 5.30	A	IRWD	\$7,830.90						0				
69.7	Control Panel Modifications in the Methane Digester Complex (CR-592) PR 04286 Task 5.30	A	IRWD	\$7,641.66						0				

A - District Convenience/Initiation - Project Related
B - Differing Site Conditions
C - Design Oversight
D - District Convenience/Initiation - Non-Project Related
E - Contractor Convenience/Initiation
F - Contractor Requested Inspection Overtime

B - 27

**MWRP Biosolids and Energy Recovery Facilities
PR 21146 (4286)
Construction Change Order Summary**

Contractor: Filanc/Balfour-Beatty
Design Engineer: Black & Veatch

					Contract Amount						Contract Days				Original Completion Date:
					Original Contract Amount: \$163,465,940.00						Original Days: 1,278				10/28/2016
Change Order		Description	Category	IRWD or FBB	Change Order Line Item Amount	Change Order Amount	Previous Change Orders	Cumulative Total of Change Orders	% of Original Contract Amount	Revised Contract Amount	Change Order Days	Previous Change Orders	Cum. Total C.O. days	Revised Total Contract Days	Revised Completion Date
70		Approved by Exe. Dir of Engineering and Water Quality Approved on January 23, 2018				\$73,972.77	\$18,040,509.32	\$18,114,482.09	11.08%	\$181,580,422.09	0	368	368	1,646	10/31/2017
	70.1	Addition of Limit Switches on Gas Dryer Heat Exchanger (CR-303) PR 04286 Task 5.30	A	IRWD	\$17,367.32						0				
	70.2	Change of Electrical Classification of Valve Limit Switches at Acid Phase Digester Complex (CR-415) PR 04286 Task 5.30	C	IRWD	\$24,018.04						0				
	70.3	Power Source to the Solids Handling Building Bridge Cranes (CR-574) PR 04286 Task 5.30	C	IRWD	\$27,479.58						0				
	70.4	Investigation of Street Lights, South side of Biosolids Site (CR-613) PR 04286 Task 5.30	A	IRWD	\$1,204.20						0				
	70.5	Additional Switches in the Solids Handling Building (CR-625) PR 04286 Task 5.30	A	IRWD	\$3,903.63						0				
71		Approved by Exe. Dir of Engineering and Water Quality Approved on January 31, 2018				(\$12,210.00)	\$18,114,482.09	\$18,102,272.09	11.07%	\$181,568,212.09	0	368	368	1,646	10/31/2017
	71.1	Credit for Overtime Inspection Hours from 10/1/2017 to 12/31/2017 (CR-089G) PR 04286 Task 4.0	F	IRWD	(\$12,210.00)						0				
72		Approved by General Manager Approved on January 25, 2018				\$25,256.29	\$18,102,272.09	\$18,127,528.38	11.09%	\$181,593,468.38	0	368	368	1,646	10/31/2017
	72.1	Installation of Breakers for Power Panel PP-8001 (CR-414A) PR 04286 Task 5.30	A	IRWD	\$25,256.29						0				
73		Approved by Board of Directors Approved on March 12, 2018				\$150,755.29	\$18,127,528.38	\$18,278,283.67	11.18%	\$181,744,223.67	0	368	368	1,646	10/31/2017
	73.1	Additional Circuits for Control of the Dewatering Centrifuges (CR-386B) PR 04286 Task 5.30	B	FBB	\$150,755.29						0				

A - District Convenience/Initiation - Project Related
B - Differing Site Conditions
C - Design Oversight
D - District Convenience/Initiation - Non-Project Related
E - Contractor Convenience/Initiation
F - Contractor Requested Inspection Overtime

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**MWRP Biosolids and Energy Recovery Facilities
PR 21146 (4286)
Construction Change Order Summary**

Contractor: Filanc/Balfour-Beatty
Design Engineer: Black & Veatch

				Contract Amount						Contract Days				Original Completion Date:
				Original Contract Amount: \$163,465,940.00						Original Days: 1,278				10/28/2016
Change Order	Description	Category	IRWD or FBB	Change Order Line Item Amount	Change Order Amount	Previous Change Orders	Cumulative Total of Change Orders	% of Original Contract Amount	Revised Contract Amount	Change Order Days	Previous Change Orders	Cum. Total C.O. days	Revised Total Contract Days	Revised Completion Date
74	Approved by General Manager Approved on February 22, 2018				\$99,467.47	\$18,278,283.67	\$18,377,751.14	11.24%	\$181,843,691.14	0	368	368	1,646	10/31/2017
74.1	Access Platform to Heat Dryer Acid Scrubber (CR-485D) PR 04286 Task 5.30	A	IRWD	\$14,637.02						0				
74.2	Modifications to the FRP Ducting in the Solids Handling Building (CR-491) PR 04286 Task 5.31	A	IRWD	\$20,171.39						0				
74.3	Power to Air Compressors and Pre-Action Panels of the Fire Sprinkler System (CR-526) PR 04286 Task 5.30	B	IRWD	\$24,442.16						0				
74.4	Electrical and Instrumentation Revisions to the FOG System (CR-578) PR 04286 Task 5.30	A	IRWD	\$13,035.52						0				
74.5	Addition of Centrate Air Purge System (CR-581) PR 04286 Task 5.30	A	IRWD	\$17,777.95						0				
74.6	Addition of Flame Checks on Foam Separator Digested Sludge Line (CR-587) PR 04286 Task 5.3	A	IRWD	\$3,038.27						0				
74.7	Modifications to 10-Ton Crane Stops (CR-589) PR 04286 Task 5.31	C	FBB	\$6,365.16						0				

A - District Convenience/Initiation - Project Related
B - Differing Site Conditions
C - Design Oversight
D - District Convenience/Initiation - Non-Project Related
E - Contractor Convenience/Initiation
F - Contractor Requested Inspection Overturn

B - 29

**MWRP Biosolids and Energy Recovery Facilities
PR 21146 (4286)
Construction Change Order Summary**

Contractor: Filanc/Balfour-Beatty
Design Engineer: Black & Veatch

				Contract Amount						Contract Days				Original Completion Date:
				Original Contract Amount: \$163,465,940.00						Original Days: 1,278				10/28/2016
Change Order	Description	Category	IRWD or FBB	Change Order Line Item Amount	Change Order Amount	Previous Change Orders	Cumulative Total of Change Orders	% of Original Contract Amount	Revised Contract Amount	Change Order Days	Previous Change Orders	Cum. Total C.O. days	Revised Total Contract Days	Revised Completion Date
75	Approved by General Manager Approved on March 2, 2018				\$98,698.78	\$18,377,751.14	\$18,476,449.92	11.30%	\$181,942,389.92	0	368	368	1,646	10/31/2017
75.1	Electrical Modifications to the Acid Phase Digester and Methane Phase Digester System (CR-252C) PR 04286 Task 5.30	A	IRWD	\$31,492.38						0				
75.2	Modifications to the Odor Control Panels (CR-382) PR 04286 Task 5.30	A	IRWD	\$12,726.70						0				
75.3	Additional Lock-Out Switch for the Bridge Breaker (CR-384A) PR 04286 Task 5.30	B	IRWD	\$14,276.72						0				
75.4	Additional On/Off Switch for Duct Fans (CR-384B) PR 04286 Task 5.30	A	IRWD	\$12,100.47						0				
75.5	Aeration Blower MCC Modifications (CR-481) PR 04286 Task 5.30	C	IRWD	\$14,441.86						0				
75.6	Addition of Level Switches and Solenoid Valves for Gas/Foam Separator Tanks (CR-566) PR 04286 Task 5.30	B	IRWD	\$7,568.99						0				
75.7	SCADA Template Update (CR-622) PR 04286 Task 5.30	A	IRWD	\$2,775.05						0				
75.8	Additional Lights in the Shower Stalls of the Solids Handling Building (CR-628) PR 04286 Task 5.30	C	FBB	\$1,639.80						0				
75.9	Relocation of Flow Switch in Sample Analysis Room (CR-637) PR 04286 Task 5.30	A	IRWD	\$1,676.81						0				
76	Approved by Board of Directors Approved on March 26, 2018				\$150,690.04	\$18,476,449.92	\$18,627,139.96	11.40%	\$182,093,079.96	0	368	368	1,646	10/31/2017
76.1	Power Feed to Microturbine PLCs (CR-289) PR 04286 Task 5.30	B	FBB	\$49,534.35						0				
76.2	Upsizing of Electrical Cables related to the Heat Drying System (CR-510) PR 04286 Task 5.30	B	FBB	\$4,670.94						0				
76.3	Additional Cables to MCC-1 (CR-538) PR 04286 Task 5.30	B	FBB	\$5,679.24						0				
76.4	Electrical Code Area Classification Change in the Digester Control Building Gas Room (CR-582A) PR 04286 Task 5.30	C	IRWD	\$8,804.31						0				
76.5	Addition of Water Source for the Foam Separator (CR-583) PR 04286 Task 5.31	C	FBB	\$8,418.23						0				
76.6	SCADA Modifications on Solids Handling Polymer System (CR-620) PR 04286 Task 5.30	A	IRWD	\$7,761.00						0				
76.7	3-Way Valve Graphical Modifications to SCADA (CR-621) PR 04286 Task 5.30	A	IRWD	\$22,540.18						0				
76.8	SCADA Modifications on FOG System (CR-623) PR 04286 Task 5.30	A	IRWD	\$7,970.58						0				
76.9	SCADA Modifications on the Digested Tank Level (CR-626) PR 04286 Task 5.30	A	IRWD	\$8,898.86						0				
76.10	Solids Handling Building Stair Modifications (CR-634) PR 04286 Task 5.29	C	FBB	\$26,412.35						0				

A - District Convenience/Initiation - Project Related
B - Differing Site Conditions
C - Design Oversight
D - District Convenience/Initiation - Non-Project Related
E - Contractor Convenience/Initiation
F - Contractor Requested Inspection Overtime

B - 30

**MWRP Biosolids and Energy Recovery Facilities
PR 21146 (4286)
Construction Change Order Summary**

Contractor: Filano/Balfour-Beatty
Design Engineer: Black & Veatch

				Contract Amount						Contract Days				Original Completion Date:
				Original Contract Amount: \$163,465,940.00						Original Days: 1,278				10/28/2016
Change Order	Description	Category	IRWD or FBB	Change Order Line Item Amount	Change Order Amount	Previous Change Orders	Cumulative Total of Change Orders	% of Original Contract Amount	Revised Contract Amount	Change Order Days	Previous Change Orders	Cum. Total C.O. days	Revised Total Contract Days	Revised Completion Date
77	Approved by General Manager Approved on April 30, 2018				\$94,371.12	\$18,627,139.96	\$18,721,511.08	11.45%	\$182,187,451.08	0	368	368	1,646	10/31/2017
77.1	Modifications of Notching Shear Lugs - Solids Handling Building (CR-299A) PR 04286 Task 5.29	C	FBB	\$1,269.23						0				
77.2	Cake Storage Hopper Conveyor Control Changes (CR-384) PR 04286 Task 5.30	A	IRWD	\$30,869.71						0				
77.3	Electrical Testing for Manual Transfer Switchgear SWGR-14 (CR-474A) PR 04286 Task 5.30	C	FBB	\$5,891.73						0				
77.4	Additional HVAC Fan Coil Power Circuits (CR-474A) PR 04286 Task 5.30	B	FBB	\$16,053.47						0				
77.5	Modifications to Digester Control Building Roof Guardrail and Bridge Steps (CR-617) PR 04286 Task 5.29	B	IRWD	\$10,147.48						0				
77.6	Electrical Modifications to the Condensing Unit and Heat Pumps in the Solids Handling Building (CR-635) PR 04286 Task 5.30	A	FBB	\$9,551.13						0				
77.7	SCADA Control Logic Change in the Acid Phase Digester Area (CR-668) PR 04286 Task 5.30	A	IRWD	\$9,741.22						0				
77.8	SCADA Control Logic Change in the Polymer Thickening Tank Area (CR-669) PR 04286 Task 5.30	A	IRWD	\$8,144.54						0				
77.9	SCADA Control Logic Change in the Polymer Thickening Tank Area (CR-669) PR 04286 Task 5.30	A	IRWD	\$2,702.61						0				
78	Approved by Board of Directors Approved on April 26, 2018				\$344,006.55	\$18,721,511.08	\$19,065,517.63	11.66%	\$182,531,457.63	0	368	368	1,646	10/31/2017
78.1	Operator Interface Terminal (OIT) Indusoft Licensing Cost (CR-244) PR 04286 Task 5.30	A	IRWD	\$4,618.13						0				
78.2	Retaining Wall Modifications at Solids Handling Building (CR-331E) PR 04286 Task 5.29	C	IRWD	\$26,508.00						0				
78.3	Andritz Air Compressor Equipment Pad Modifications (CR-550) PR 04286 Task 5.31	C	FBB	\$6,729.00						0				
78.4	Waste Activated Sludge (WAS), Digested Sludge (DS), and Primary Sludge (PS) Piping Modifications (CR-594) PR 04286 Task 5.31	A	IRWD	\$28,967.68						0				
78.5	Modifications to MWRP Biosolids Hardscape (CR-331K) PR 04286 Task 5.29	A	IRWD	\$277,183.74						0				

A - District Convenience/Initiation - Project Related
B - Differing Site Conditions
C - Design Oversight
D - District Convenience/Initiation - Non-Project Related
E - Contractor Convenience/Initiation
F - Contractor Requested Inspection Overtime

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**MWRP Biosolids and Energy Recovery Facilities
PR 21146 (4286)
Construction Change Order Summary**

Contractor: Filanc/Balfour-Beatty
Design Engineer: Black & Veatch

				Contract Amount						Contract Days				Original Completion Date:
				Original Contract Amount: \$163,465,940.00						Original Days: 1,278				10/28/2016
Change Order	Description	Category	IRWD or FBB	Change Order Line Item Amount	Change Order Amount	Previous Change Orders	Cumulative Total of Change Orders	% of Original Contract Amount	Revised Contract Amount	Change Order Days	Previous Change Orders	Cum. Total C.O. days	Revised Total Contract Days	Revised Completion Date
79	Approved by General Manager Approved on May 17, 2018				\$89,123.41	\$19,065,517.63	\$19,154,641.04	11.72%	\$182,620,581.04	0	368	368	1,646	10/31/2017
79.1	Addition of High Temperature Switches for the Primary Sludge/Waste Activated Sludge Wet Well Mixers (CR-377A) PR 04286 Task 5.30	C	FBB	\$12,145.12						0				
79.2	Utility Line Modifications in the Solids Handling Building (CR-521) PR 04286 Task 5.31	A	IRWD	\$2,163.21						0				
79.3	SCADA Programming Changes in the Methane Digester Area (CR-542) PR 04286 Task 5.30	A	IRWD	\$7,191.02						0				
79.4	MCC-4100 Bridge Breaker Modifications in the Bulk Polymer Storage Area (CR-562) PR 04286 Task 5.30	B	IRWD	\$9,905.77						0				
79.5	Electrical Modifications of Exhaust Air Unit in the Solids Handling Building (CR-618) PR 04286 Task 5.30	B	FBB	\$6,391.05						0				
79.6	SCADA Programming Changes on the Biosolids Conveyor Distribution System (CR-630) PR 04286 Task 5.30	A	IRWD	\$7,226.35						0				
79.7	Electrical Modifications to the Dewatering Conveyors in the Solids Handling Building (CR-672) PR 04286 Task 5.30	B	FBB	\$21,239.15						0				
79.8	Additional Space Heater for Regenerative Thermal Oxidizer Draft Fan (CR-675) PR 04286 Task 5.30	A	FBB	\$9,351.07						0				
79.9	SCADA Programming Update on the Acid Phase Sludge Transfer Pumps (CR-689) PR 04286 Task 5.30	A	IRWD	\$13,510.67						0				

A - District Convenience/Initiation - Project Related
B - Differing Site Conditions
C - Design Oversight
D - District Convenience/Initiation - Non-Project Related
E - Contractor Convenience/Initiation
F - Contractor Requested Inspection Overtime

B - 32

**MWRP Biosolids and Energy Recovery Facilities
PR 21146 (4286)
Construction Change Order Summary**

Contractor: Filanc/Balfour-Beatty
Design Engineer: Black & Veatch

				Contract Amount						Contract Days				Original Completion Date:
				Original Contract Amount: \$163,465,940.00						Original Days: 1,278				10/28/2016
Change Order	Description	Category	IRWD or FBB	Change Order Line Item Amount	Change Order Amount	Previous Change Orders	Cumulative Total of Change Orders	% of Original Contract Amount	Revised Contract Amount	Change Order Days	Previous Change Orders	Cum. Total C.O. days	Revised Total Contract Days	Revised Completion Date
80	Approved by Board of Directors Approved on May 29, 2018				\$313,076.14	\$19,154,641.04	\$19,467,717.18	11.91%	\$182,933,657.18	0	368	368	1,646	10/31/2017
80.1	Modifications to MCC-4100, MCC-4101 and MCC-4102 (CR-384) PR 04286 Task 5.30	C	FBB	\$36,158.66						0				
80.2	Modifications to MCC-4102 and MCC-4103 (CR-384D) PR 04286 Task 5.30	C	FBB	\$63,388.51						0				
80.3	Separate Air Compressor System Electrical Panel for Waste Gas Burner (CR-484B) PR 04286 Task 5.3	B	FBB	\$50,723.04						0				
80.4	Additional Power Monitoring Equipment for Self-Generation Incentive Program (CR-577) PR 04286 Task 5.30	A	IRWD	\$34,887.16						0				
80.5	Electrical Modifications for the Gas Compressor Detector and Enclosure Fire Alarm Panel (CR-629) PR 04286 Task 5.30	A	IRWD	\$13,215.42						0				
80.6	Additional Power Circuits for the Solids Handling Building Roll-Up Doors (CR-631) PR 04286 Task 5.30	C	IRWD	\$24,446.58						0				
80.7	Modifications to Digested Sludge Line (CR-648) PR 04286 Task 5.31	C	FBB	\$17,023.42						0				
80.8	Relocation of Local Control Panel in the Solids Handling Building (CR-676) PR 04286 Task 5.30	C	FBB	\$34,619.35						0				
80.9	Additional Manual Valves and Components for Heat Dryer System (CR-683) PR 04286 Task 5.30	C	FBB	\$38,614.00						0				
81	Pending Approval by Executive Director of Engineering and Water Quality Pending Approval on June 1, 2018				\$2,566.55	\$19,467,717.18	\$19,470,283.73	11.91%	\$182,936,223.73	0	368	368	1,646	10/31/2017
81.1	Modifications to Duct and Cable Tray Support in Dryer Room (CR-125) PR 04286 Task 5.30	A	FBB	\$2,566.55						0				
82	Pending Approval by Executive Director of Engineering and Water Quality Pending Approval on June 1, 2018				(\$75,950.64)	\$19,470,283.73	\$19,394,333.09	11.86%	\$182,860,273.09	0	368	368	1,646	10/31/2017
82.1	Credit for Overtime Inspection Hours from 01/01/2018 to 3/31/2018 (CR-089H) PR 04286 Task 4.0	F	FBB	(\$3,740.00)						0				
82.2	Odor Control Fan Platform Modifications (CR-334) PR 04286 Task 5.31	A	IRWD	(\$8,498.82)						0				
82.3	Chemical Piping Modifications Between Chemical Storage and Odor Control Areas (CR-387) PR 04286 Task 5.31	A	IRWD	(\$20,197.71)						0				
82.4	Ferric Chloride Piping Modifications in the Thickened Sludge Area (CR-388) PR 04286 Task 5.31	A	IRWD	(\$26,067.00)						0				
82.5	Ferric Chloride Piping Re-Route South of the Solids Handling Building (CR-423) PR 04286 Task 5.31	A	IRWD	(\$17,447.11)						0				

A - District Convenience/Initiation - Project Related
B - Differing Site Conditions
C - Design Oversight
D - District Convenience/Initiation - Non-Project Related
E - Contractor Convenience/Initiation
F - Contractor Requested Inspection Overtime

B - 33

**MWRP Biosolids and Energy Recovery Facilities
PR 21146 (4286)
Construction Change Order Summary**

Contractor: Filanc/Balfour-Beatty
Design Engineer: Black & Veatch

				Contract Amount						Contract Days				Original Completion Date:
				Original Contract Amount: \$163,465,940.00						Original Days: 1,278				10/28/2016
Change Order	Description	Category	IRWD or FBB	Change Order Line Item Amount	Change Order Amount	Previous Change Orders	Cumulative Total of Change Orders	% of Original Contract Amount	Revised Contract Amount	Change Order Days	Previous Change Orders	Cum. Total C.O. days	Revised Total Contract Days	Revised Completion Date
83	Pending Approval by Executive Director of Engineering and Water Quality Pending Approval on June 1, 2018				\$81,901.09	\$19,394,333.09	\$19,476,234.18	11.91%	\$182,942,174.18	0	368	368	1,646	10/31/2017
83.1	Andritz Pellet Silo Structure Conflict (CR-554) PR 04286 Task 5.29	C	FBB	\$4,963.98						0				
83.2	Additional Power Circuits for the Solids Handling Building Roll-Up Doors (CR-631A) PR 04286 Task 5.30	C	FBB	\$32,998.95						0				
83.3	SCADA Programming Update – Gas Booster System (CR-670) PR 04286 Task 5.30	A	IRWD	\$14,981.13						0				
83.4	Electrical Receptacles for Deionized Water System (CR-692A) PR 04286 Task 5.30	A	IRWD	\$4,546.34						0				
83.5	Cable Work Related in MCC-1 to Harmonic Filters (CR-694) PR 04286 Task 5.30	A	IRWD	\$6,932.07						0				
83.6	SCADA Update to Valve Matrix Sludge Heat Transfer System (CR-699) PR 04286 Task 5.30	A	IRWD	\$17,478.62						0				
84	Pending Approval by Board of Directors Pending Approval on June 25, 2018				\$105,492.90	\$19,476,234.18	\$19,581,727.08	11.98%	\$183,047,667.08	0	368	368	1,646	10/31/2017
84.1	Electrical Modifications Due to the Addition of Grease Pumps (CR-619) PR 04286 Task 5.30	B	FBB	\$105,492.90						0				

A - District Convenience/Initiation - Project Related
B - Differing Site Conditions
C - Design Oversight
D - District Convenience/Initiation - Non-Project Related
E - Contractor Convenience/Initiation
F - Contractor Requested Inspection Overtime

B - 34

**MWRP Biosolids and Energy Recovery Facilities
PR 21146 (4286)
Construction Change Order Summary**

Contractor: Filano/Balfour-Beatty
Design Engineer: Black & Veatch

				Contract Amount						Contract Days				Original Completion Date:
				Original Contract Amount: \$163,465,940.00						Original Days: 1,278				10/28/2016
Change Order	Description	Category	IRWD or FBB	Change Order Line Item Amount	Change Order Amount	Previous Change Orders	Cumulative Total of Change Orders	% of Original Contract Amount	Revised Contract Amount	Change Order Days	Previous Change Orders	Cum. Total C.O. days	Revised Total Contract Days	Revised Completion Date
Category				Total Amount	% of Original Contract									
A - District Convenience/Initiation - Project Related				\$ 3,388,993.51	2.07%									
B - Differing Site Conditions				\$ 12,764,549.66	7.81%									
C - Design Oversight				\$ 3,595,641.37	2.20%									
D - District Convenience/Initiation - Non-Project Related				\$ -	0.00%									
E - Contractor Convenience/Initiation				\$ 98,302.54	0.06%									
F - Contractor Requested Inspection Overtime				\$ (265,760.00)	-0.16%									
TOTAL (A + B + C + D + E + F)				\$ 19,581,727.08	11.98%									

Category	Total Amount	% of Original Contract
IRWD-Initiation/Driven	\$ 4,438,423.38	2.72%
FBB-Initiation/Driven	\$ 14,965,651.41	9.16%
N/A	\$ 170,720.22	0.10%
TOTAL	\$ 19,574,795.01	11.97%

A - District Convenience/Initiation - Project Related
B - Differing Site Conditions
C - Design Oversight
D - District Convenience/Initiation - Non-Project Related
E - Contractor Convenience/Initiation
F - Contractor Requested Inspection Overtime

B - 35

June 19, 2018

Prepared by: J. McGehee/R. Mori

Submitted by: K. Burton

Approved by: Paul A. Cook



ENGINEERING AND OPERATIONS COMMITTEE

ZONE 1 RESERVOIR CONSULTANT SELECTION

SUMMARY:

The design for the 3.7 Million Gallon (MG) Zone 1 Reservoir project is complete. In preparation for the construction phase, staff solicited a proposal from Tetra Tech for engineering support services during construction. Staff recommends that the Board authorize the General Manager to execute a Professional Services Agreement in the amount of \$290,000 with Tetra Tech, Inc. for engineering support services during construction of the reservoir.

BACKGROUND:

On September 26, 2016, the Board awarded a Professional Services Agreement to Tetra Tech for engineering design services for the reservoir. The proposed reservoir will be sited directly adjacent to the existing 15 MG Zone 1 reservoir, which is located on Sand Canyon Avenue near Elysian as shown on the attached Exhibit "A". The reservoir, which will be an aboveground prestressed concrete tank, will have a maximum volume of 3.7 MG. The design was completed in May 2018.

The project is currently being advertised for construction bids and the bid opening is scheduled for June 19, 2018. Staff anticipates bringing a recommendation for construction award to the June 25, 2018 Board meeting.

Consultant Selection:

Tetra Tech performed all elements of the pre-design and design phases for the project, including geotechnical, civil, mechanical, structural, electrical, and instrumentation. Staff requested Tetra Tech to submit a proposal for engineering support services during construction. The proposal, which is attached as Exhibit "B", includes scope for submittal reviews, responses to contractor requests for information, site visits, record drawing preparation, energy control procedure development, and construction coordination and engineering support commensurate with the requirements of the project.

Staff reviewed Tetra Tech's scope of work and fee and recommends that the Board authorize the General Manager to execute a Professional Services Agreement with Tetra Tech in the amount of \$290,000 for engineering support services during construction.

FISCAL IMPACTS:

The 3.7 MG Zone 1 Reservoir, Project 06401, is included in the FY 2018-19 Capital Budget and will be funded through regional potable water funds. The existing budget is sufficient to fund the recommendation presented herein.

ENVIRONMENTAL COMPLIANCE:

This project is subject to the California Environmental Quality Act (CEQA) and in conformance with California Code of Regulations Title 14, Chapter 3, Article 6, a Notice of Intent to adopt a Mitigated Negative Declaration was filed with the County of Orange on January 18, 2018. Pursuant to State Guideline § 15073, the Initial Study/Mitigated Negative Declaration (IS/MND) was made available for public review for a period of 30 days from January 18, 2018 through February 16, 2018. The IS/MND was adopted by IRWD Board of Directors at its March 26, 2018 meeting. A Notice of Determination was filed with the Orange County Clerk/Recorder and the CA State Clearinghouse on March 27, 2018.

RECOMMENDATION:

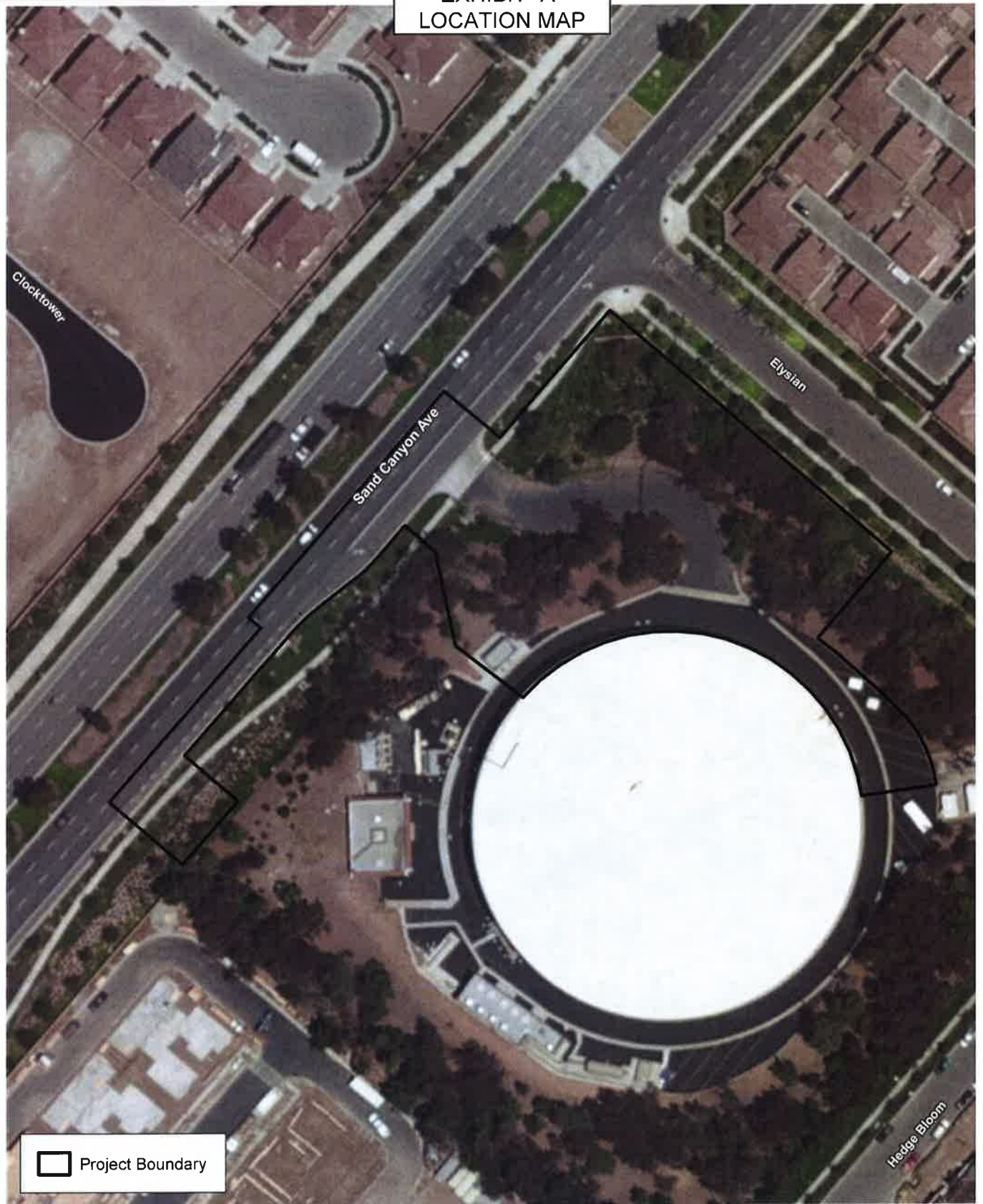
That the Board authorize the General Manager to execute a Professional Services Agreement with Tetra Tech, Inc. in the amount of \$290,000 for engineering support services during construction for the 3.7 MG Zone 1 Reservoir, Project 06401.

LIST OF EXHIBITS:

Exhibit "A" – Location Map

Exhibit "B" – Tetra Tech, Inc. Proposal to Provide Construction Support Services

EXHIBIT "A"
LOCATION MAP



3.7 MG Zone 1 Reservoir Project





TETRA TECH

May 1, 2018

Mr. Richard K. Mori, P.E.
Irvine Ranch Water District
15600 Sand Canyon Avenue
Irvine, CA 92619

**Reference: Proposal to Provide Construction Support Services for the
3.7 MG Zone 1 Reservoir, Project No. 06401**

Dear Mr. Mori:

Tetra Tech has been working with the District on the 3.7 MG Zone 1 Reservoir since September 2016. Tetra Tech submitted the 100% submittal plans and specifications to the District on April 9, 2018. The District has requested Tetra Tech to provide construction support services for the project. By this correspondence, Tetra Tech is requesting approval of this proposal to provide construction support services for the 3.7 MG Zone 1 Reservoir.

CONSTRUCTION SUPPORT SERVICES

The construction support services depend greatly on the Contractor's construction schedule, the adequacy of his submittals, and the amount of issues/conflicts that arise during the construction of the project. Tetra Tech does not control the amount of the submittals, RFIs or the issues that arise during the construction process. In addition, Tetra Tech does not control the adequacy of the submittals prepared by the Contractor or the level of additional information required by the Contractor. Based on the Contract Documents, the time for completion shall be within 540 calendar days (about 18 months) from the date of the Notice of Award.

In summary, Tetra Tech will perform these construction support services on a time and material basis while not exceeding the approved budget.

The following is a summary of the anticipated level of service for each task:

Task 1 – Project Management

Tetra Tech will include preparation of monthly invoices and invoice backup spreadsheets. We are assuming a duration of eighteen (18) months.

Task 2 – Project Meetings

Tetra Tech will attend up to thirty-five (35) project meetings of two (2) hours each during the construction duration and shall provide meeting agendas and minutes for each meeting.

Task 3 – Contractor's Request for Information (RFI)

Tetra Tech will respond up to seventy-five (75) Request for Information (RFI). We have assumed that fifteen (15) of these responses will require a corresponding sketch or exhibit.

Task 4 – Minor Plan Revisions

Tetra Tech will provide up to one hundred (100) hours of staff time for minor plan revisions to the construction drawings.

Tetra Tech, Inc.

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

Mr. Richard K. Mori, P.E.

May 1, 2018

Page 2

Task 5 – Site Visits

Tetra Tech will conduct up to ten (10) site visits of two (2) hours each as needed during construction.

Task 6 – Shop Drawing Submittals

Tetra Tech will review and respond up to two hundred (200) shop drawing submittals, including resubmittals. Based on the plans and specifications, we have estimated up to 150 shop drawings submittals with 50 resubmittals.

Task 7 – Energy Control Procedures and Asset Management

Tetra Tech will prepare Energy Control Procedures (ECP's) in accordance with California Occupational Safety and Health (Cal/OSHA) requirements for all equipment and operations that may store potential energy. Tetra Tech will also prepare an inventory of new equipment utilizing IRWD's asset management parent/child spreadsheet format. Tetra Tech will include a budget of \$5,000 for preparing the ECP's and asset management inventory spreadsheet.

Task 8 – Record Drawings

Tetra Tech will prepare record drawings at the construction completion using Contractor's and District Inspector's red-lines. Tetra Tech will submit final record drawings including AutoCAD electronic files, and a single-color PDF electronic file of the entire signed plan set.

Task 9 – Additional Construction Coordination

Tetra Tech will provide additional construction coordination (labor/time spent in addition to responses to RFIs, review of submittals, and other task items listed above) and general engineering support to the District. This task will include: answering general IRWD/Contractor/City of Irvine inquiries; coordination with IRWD, Contractor, City of Irvine; coordination with and responding to inquiries from SCE, City of Irvine, Crown Castle, etc.; and general engineering support as requested by the District.

Task 10 – Landscape Support

Kobzeff & Associates, Tetra Tech's Landscape subconsultant, will provide landscape construction support services during construction. The support services will include: field meetings; responding to RFIs; site visits; review of tree removal and protection plan; review of submittals; and additional construction coordination and support as requested by the District. Tetra Tech has included a budget of \$23,000 for this landscape support.

Mr. Richard K. Mori, P.E.
May 1, 2018
Page 3

BUDGET

Tetra Tech will perform the above services on a Time and Material Basis and will provide status summaries to the District each month. The following is our requested budget for the Construction Support Services:

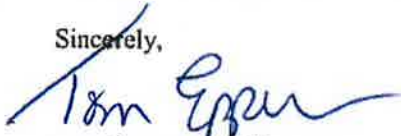
Task 1 – Project Management (18 months)	\$ 3,100
Task 2 – Project Meetings (35)	\$ 13,300
Task 3 – Contractor's Request for Information (75/15)	\$ 40,700
Task 4 – Minor Plan Revisions (100 hours)	\$ 12,200
Task 5 – Site Visits (10)	\$ 4,000
Task 6 – Shop Drawing Submittals (200)	\$ 91,200
Task 7 – Energy Control Procedures and Asset Mgmt	\$ 5,000
Task 8 – Record Drawings	\$ 22,500
Task 9 – Additional Construction Coordination	\$ 75,000
Task 10 – Landscape Support	<u>\$ 23,000</u>
Hourly but Not-to-Exceed Budget	\$290,000

The following page provides our person-hour estimate per task for this work. We have also included our proposed Hourly Rate Schedule.

Tetra Tech is pleased to submit this proposal to provide the above scope of services for a not-to-exceed fee amount of **\$290,000**. It is our understanding that this work will be performed under a new Agreement for Professional Services including the corresponding new purchase order.

If you have any questions or require additional information, please do not hesitate to call.

Sincerely,



Tom Epperson, P.E.
Project Manager

TE/te

P:\135-09368-17002\ProjMgmt\Correspondence\Drafts\Construction Support Services Proposal.doc
Attachment

Irvine Ranch Water District
3.7 MG Zone 1 Reservoir
Construction Phase Services
Fee Proposal

Task Description	Personnel						Fees		TOTALS
	Senior Project Manager	Project Engineer	Design Engineer	CADD	WP	Total Hours	Labor	Sub-Contractors Re-imbursables	
Construction Support Services									
Project Management (18 months)	10	0	0	0	0	10	\$3,050	\$50	\$3,100
Project Meetings (35)	10	60	0	0	0	70	\$12,950	\$350	\$13,300
Request for Information (75/15)	6	150	78	30	0	264	\$40,650	\$50	\$40,700
Minor Plan Revisions (100 hours)	0	8	0	92	0	100	\$12,176	\$24	\$12,200
Site Visits (10)	4	16	0	0	0	20	\$3,860	\$140	\$4,000
Shop Drawing Submittals (150/50)	20	300	200	64	10	594	\$91,102	\$98	\$91,200
Energy Control Proc. & Asset Mgmt	0	16	16	0	2	34	\$4,990	\$10	\$5,000
Record Drawings	0	4	16	160	2	182	\$21,890	\$610	\$22,500
Additional Construction Coordination	40	320	60	10	6	436	\$74,850	\$150	\$75,000
Landscape Support	0	0	0	0	0	0	\$0	\$23,000	\$23,000
Budget Request	90	874	370	356	20	1710	\$265,518	\$24,482	\$290,000
TOTAL	90	874	370	356	20	1710	\$265,518	\$24,482	\$290,000

June 19, 2018

Prepared by: B. Rios/K. Lew

Submitted by: K. Burton

Approved by: Paul A. Cook



ENGINEERING AND OPERATIONS COMMITTEE

TUSTIN LEGACY MOFFETT DRIVE AND LEGACY ROAD CAPITAL DOMESTIC AND RECYCLED WATER FACILITIES BUDGET INCREASE AND CONTRACT CHANGE ORDER

SUMMARY:

The City of Tustin (City) is close to completion on the Moffett Drive and Legacy Road project that includes the construction of streets, storm drains, domestic water, sewer, and recycled water improvements. As part of the project, the City constructed IRWD capital domestic and recycled water facilities within Moffett Drive and Legacy Road. The project encountered significant unforeseen utility crossings that required revisions to pipeline alignments and materials. Staff recommends that the Board:

- Authorize a budget increase in the amount of \$160,000, from \$643,000 to \$803,000, for Project 10260 Capital Domestic Facilities;
- Authorize a budget increase in the amount of \$125,000, from \$643,000 to \$768,000, for Project 10261 Capital Recycled Facilities; and
- Approve Contract Change Order No. 2 in the amount of \$219,711 for tasks related to changes to the construction scope of work for the Moffett Drive and Legacy Road Capital Domestic and Recycled Water Facilities.

BACKGROUND:

The City is close to completion of the Moffett Drive and Legacy Road Capital Domestic and Recycled water facilities under the terms of an existing Reimbursement Agreement between IRWD and the City. In December 2017 the Board authorized the General Manager to accept the City's construction contract for the Moffett Drive and Legacy Road Capital Domestic and Recycled facilities in the amount of \$758,337. The project consists of approximately 1,000 feet of 16-inch domestic water pipeline, 3,600 feet of 12-inch domestic water pipeline, 900 feet of 16-inch recycled water pipeline and 3,300 feet of 12-inch recycled water pipeline. Construction of the pipeline began in December 2017 and is expected to be completed soon. The improvements are shown in Exhibit "A".

Contract Change Order No. 2:

The project encountered several utility conflicts with existing storm drain and utility trenches across Tustin Ranch Road that were unknown during design. Pothole information provided to the engineer during construction resulted in design revisions that required vertical realignment, alternative materials and additional fittings to resolve the crossing conflicts of these existing utilities with the domestic and recycled pipelines. Additionally, Contract Change Order No. 2 includes the addition of various non-contract appurtenances such as air vacuum release assemblies, additional tees, bends and stubs that were added during construction.

FISCAL IMPACTS:

Projects 10260 and 10261 are included in the FY 2018-19 Capital Budget. Staff requests a budget increase in the amount of \$160,000 for Project 10260 and a budget increase in the amount of \$125,000 for Project 10261 as shown in the table below:

Project No.	Current Budget	Addition <Reduction>	Total Budget
10260	\$643,000	\$160,000	\$803,000
10261	\$643,000	\$125,000	\$768,000

ENVIRONMENTAL COMPLIANCE:

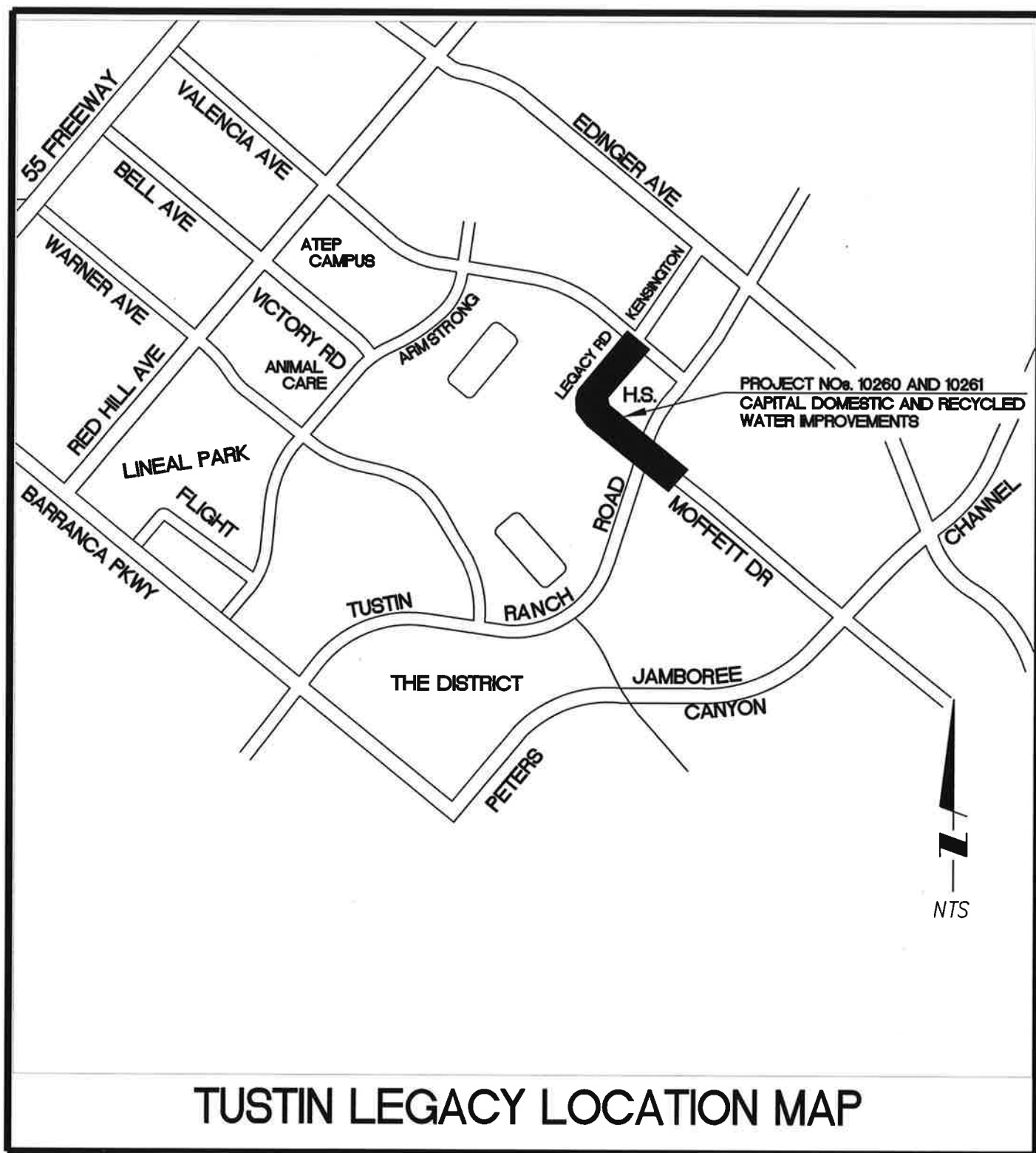
This project is subject to CEQA and is in conformance with the California Code of Regulations Title 14, Chapter 3, Article 7. A Joint Environmental Impact Statement/Environmental Impact Report was certified by the City of Tustin and the Department of the Navy on January 3, 2000 (SCH 1982040906).

RECOMMENDATION:

That the Board authorize a budget increase in the amount of \$160,000, from \$643,000 to \$803,000, for Project 10260; authorize a budget increase in the amount of \$125,000, from \$643,000 to \$768,000, for Project 10261; and approve Contract Change Order No. 2 in the amount \$219,711 for the Moffett Drive and Legacy Road Capital Domestic and Recycled Water Improvements.

LIST OF EXHIBITS:

Exhibit "A" – Project Location Map
Exhibit "B" – Contract Change Order Summary



TUSTIN LEGACY LOCATION MAP

EXHIBIT "A"

TUSTIN



EXHIBIT "B"

**CITY OF TUSTIN
 PUBLIC WORKS DEPARTMENT
 CONTRACT CHANGE ORDER**

Project: Moffett Drive and Legacy Road Extension Roadway Construction Project

Project Number: 70230 & 70231 Change Order Number: No. 2

To (Contractor): SUKUT CONSTRUCTION, LLC.

You are hereby directed to make the herein changes from the plans and specifications or do the following described work not included in the plans and specifications on this contract.

NOTE: THIS CHANGE ORDER IS NOT EFFECTIVE UNTIL APPROVED BY THE CITY ENGINEER.

Unless otherwise stated, rates for rental of equipment cover only such time as equipment is actually used and no allowance will be made for idle time.

Change requested by: Joseph C. Blum

CHANGE IN CONTRACT ITEMS

The following changes are hereby made to the contract:

IRWD CAPITAL PROJECT NOS. 10260 & 10261

IRWD CODE 7013

CONTRACT ITEM		DOMESTIC WATER (CAPITAL IRWD)			
NO.	DESCRIPTION	UNIT PRICE	QTY	UNIT	AMOUNT
134	12" PVC, C900, DR 14	\$55.00	-3508	LF	-\$192,940.00
135	12" BUTTERFLY VALVE, CL 150B, FLANGED, VALVE BOX PER IRWD STD. DRAWING W-22	\$3,600.00	-15	EACH	-\$54,000.00
136	12" X 12" X 12" X 12" D. I. CROSS, FLANGED, W/ THRUST BLOCK PER IRWD STD. DRAWING W-16	\$1,330.00	-1	EACH	-\$1,330.00
137	12" X 12" X 12" D. I. CUT-IN TEE, FLANGED, W/ FLANGED COUPLING ADAPTER AND THRUST BLOCK PER IRWD STD. DRAWING W-16 & W-19	\$6,300.00	-2	EACH	-\$12,600.00
138	12" X 12" X 12" D. I. FLANGED AND THRUST BLOCK PER IRWD STD. DRAWING W-16	\$1,000.00	-2	EACH	-\$2,000.00
139	12" X 12" X 8" D. I. TEE, FLANGED, W/ THRUST BLOCK PER IRWD STD. DRAWING W-16	\$890.00	-3	EACH	-\$2,670.00
140	12" X 12" X 6" D. I. TEE, FLANGED, W/ THRUST BLOCK PER IRWD STD. DRAWING W-16	\$867.00	-1	EACH	-\$867.00
141	12" X 12" X 4" D. I. TEE, FLANGED, W/ THRUST BLOCK PER IRWD STD. DRAWING W-16	\$884.00	-1	EACH	-\$884.00
142	12" 90° D. I. BEND, PO X PO, W/ THRUST BLOCK PER IRWD STD. DRAWING W-16	\$552.00	-1	EACH	-\$552.00
143	16" 45° D. I. BEND, PO X PO, W/ THRUST BLOCK PER IRWD STD. DRAWING W-16	\$485.00	-2	EACH	-\$970.00
144	12" 11.25° D. I. BEND, PO X PO, W/ THRUST BLOCK PER IRWD STD. DWG. W-16	\$445.00	-7	EACH	-\$3,115.00

145	12" 11.25° D. I. BEND, FE X MJ, W/ THRUST BLOCK PER IRWD STD. DRAWING W-16	\$680.00	-1	EACH	-\$680.00
146	12" 11.25° D. I. BEND, MJ X MJ, W/ THRUST BLOCK PER IRWD STD. DRAWING W-16	\$570.00	-1	EACH	-\$570.00
147	12" D. I. FE X PO ADAPTER	\$600.00	-21	EACH	-\$12,600.00
148	12" X 8" D. I. ECCENTRIC REDUCER, FE X PO	\$470.00	-3	EACH	-\$1,410.00
149	2" AIR-VAC ASSEMBLY, CASE 1, PER IRWD STD. DRAWING W-11	\$4,260.00	-3	EACH	-\$12,780.00
150	TEMPORARY FLUSH-OUT ASSEMBLY PER IRWD STD. DRAWING W-12	\$2,060.00	-2	EACH	-\$4,120.00
151	16" X 12" D. I. ECCENTRIC REDUCER (SOFFIT FLAT), FE X PO	\$680.00	-1	EACH	-\$680.00
152	16" X 12" D. I. ECCENTRIC REDUCER (INVERT FLAT), FLANGED	\$680.00	-1	EACH	-\$680.00
153	16" PVC, C905, DR 18	\$69.00	-1084	LF	-\$74,796.00
154	16" BUTTERFLY VALVE, CL 150B, FLANGED, VALVE BOX PER IRWD STD. DRAWING W-22	\$5,400.00	-1	EACH	-\$5,400.00
155	16" X 16" X 6" D. I. CUT-IN TEE, FLANGED, W/ THRUST BLOCK PER IRWD STD. DRAWING W-16	\$5,750.00	-1	EACH	-\$5,750.00
156	16" D. I. FE X PO ADAPTER	\$645.00	-2	EACH	-\$1,290.00
157	16" 22.5° D. I. BEND, FE X MJ, W/ THRUST BLOCK PER IRWD STD. DRAWING W-16	\$1,300.00	-1	EACH	-\$1,300.00
158	16" 22.5° D. I. BEND, MJ X MJ, W/ THRUST BLOCK PER IRWD STD. DRAWING W-16	\$925.00	-1	EACH	-\$925.00
159	12" 11.25° D. I. BEND, PO X FE, W/ THRUST BLOCK PER IRWD STD. DRAWING W-16	\$1,100.00	-1	EACH	-\$1,100.00
DOMESTIC WATER (CAPITAL IRWD) SUBTOTAL					-\$396,009.00

CONTRACT ITEM		RECLAIMED WATER (CAPITAL IRWD)			
NO.	DESCRIPTION	UNIT PRICE	QTY	UNIT	AMOUNT
160	12" PVC (PURPLE), C900, DR14	\$56.00	-3420	LF	-\$191,520.00
161	12" BUTTERFLY VALVE, CL 150B, FLANGED, VALVE BOX PER IRWD STD. DRAWING W-22	\$3,550.00	-6	EACH	-\$21,300.00
162	16" X 16" X 16" X 16" D. I. CROSS, FLANGED, W/ THRUST BLOCK PER IRWD STD. DRAWING W-16	\$2,100.00	-1	EACH	-\$2,100.00
163	12" X 12" X 12" X 12" D. I. CROSS, FLANGED, W/ THRUST BLOCK PER IRWD STD. DRAWING W-16	\$1,400.00	-1	EACH	-\$1,400.00
164	12" X 12" X 4" D. I. TEE, FLANGED, W/ THRUST BLOCK PER IRWD STD. DRAWING W-16	\$1,125.00	-1	EACH	-\$1,125.00
165	6" X 6" X 6" D. I. CUT-IN TEE, FLANGED, W/ FLANGED COUPLING ADAPTER & THRUST BLOCK PER IRWD STD. DRAWING W-16 & W-19	\$1,830.00	-1	EACH	-\$1,830.00
166	16" X 12" D. I. ECCENTRIC REDUCER (SOFFIT FLAT), FE X FE	\$815.00	-1	EACH	-\$815.00
167	12" X 6" D. I. ECCENTRIC REDUCER (SOFFIT FLAT), PO X FE	\$1,185.00	-1	EACH	-\$1,185.00
168	12" D. I. FE X PO ADAPTER	\$425.00	-7	EACH	-\$2,975.00
169	12" 22.5° D. I. BEND, MJ X MJ, W/ THRUST BLOCK PER IRWD STD. DRAWING W-16	\$575.00	-4	EACH	-\$2,300.00
170	12" 22.5° D. I. BEND, PO X PO, W/ THRUST BLOCK PER IRWD STD. DRAWING W-16	\$450.00	-1	EACH	-\$450.00
171	12" 11.25° D. I. BEND, FE X PO, W/ THRUST BLOCK PER IRWD STD. DRAWING W-16	\$632.00	-1	EACH	-\$632.00
172	12" 11.25° D. I. BEND, PO X PO, W/ THRUST BLOCK PER IRWD STD. DRAWING W-16	\$445.00	-4	EACH	-\$1,780.00

173	6" BUTTERFLY VALVE, CL 150B, FLANGED, VALVE BOX PER IRWD STD. DRAWING W-22	\$1,950.00	-4	EACH	-\$7,800.00
174	2" AIR-VAC ASSEMBLY, CASE 1, PER IRWD STD. DRAWING W-11	\$4,400.00	-3	EACH	-\$13,200.00
175	16" PVC (PURPLE), C905, DR18	\$71.00	-948	LF	-\$67,308.00
176	16" X 16" X 6" D. I. TEE, FLANGED, W/ THRUST BLOCK PER IRWD STD. DRAWING W-16	\$1,450.00	-1	EACH	-\$1,450.00
177	16" D. I. FE X PO ADAPTER	\$800.00	-2	EACH	-\$1,600.00
178	16" X 6" D. I. ECCENTRIC REDUCER (SOFFIT FLAT), PO X FE	\$1,444.00	-1	EACH	-\$1,444.00
179	4" BLOW OFF ASSEMBLY, CASE 3, PER IRWD STD. DRAWING W-14	\$10,225.00	-1	EACH	-\$10,225.00
180	6" X 4" D. I. ECCENTRIC REDUCER (INVERT FLAT), PO X FE, W/THRUST BLOCK PER IRWD STD. DRAWING W-16	\$145.00	-1	EACH	-\$145.00
181	6" BUTTERFLY VALVE, CL 150B, FLANGED VALVE BOX PER IRWD STD. DRAWING W-22	\$1,950.00	-1	EACH	-\$1,950.00
182	12" X 4" D. I. ECCENTRIC REDUCER, FE X PO	\$405.00	-2	EACH	-\$810.00
183	REMOVE TEMPORARY FLUSH-OUT & JOIN EXISTING 16" PVC RECYCLED WATER LINE	\$3,140.00	-1	EACH	-\$3,140.00
184	2" AIR-VAC ASSEMBLY, CASE 1, PER IRWD STD. DRAWING W-11	\$4,100.00	-1	EACH	-\$4,100.00
185	16" 45° D. I. BEND, MJ X MJ, W/ THRUST BLOCK PER IRWD STD. DRAWING W-16	\$940.00	-4	EACH	-\$3,760.00
186	24" STEEL CASING PER IRWD STD. DRAWING W- 21	\$205.00	-30	LF	-\$6,150.00
187	CASING TEST STATION PER IRWD STD. DRAWING CP-3	\$2,600.00	-2	EACH	-\$5,200.00
188	12" 90° D. I. BEND, PO X PO, W/ THRUST BLOCK PER IRWD STD. DRAWING W-16	\$552.00	-2	EACH	-\$1,104.00
189	INSTALL 12" X 12" X 12" D. I. TEE, FANGED, W/THRUST BLOCK PER IRWD STD. DRAWING W-16	\$970.00	-1	EACH	-\$970.00
RECLAIMED WATER (CAPITAL IRWD) SUBTOTAL					-\$359,768.00

SUMMARY OF CONTRACT ITEM CHANGES	
DOMESTIC WATER (CAPITAL IRWD)	-\$396,009.00
RECLAIMED WATER (CAPITAL IRWD)	-\$359,768.00
TOTAL CONTRACT ITEM CHANGE	-\$755,777.00

ADDITIONAL WORK (NON-CONTRACT ITEM)					
ITEM		DOMESTIC WATER (CAPITAL IRWD)			
NO.	DESCRIPTION	UNIT PRICE	QTY	UNIT	AMOUNT
1	12" PVC, C900, DR 14	\$55.00	3560	LF	\$195,800.00
2	12" BUTTERFLY VALVE, CL 150B, FLANGED, VALVE BOX PER IRWD STD. DRAWING W-22	\$3,600.00	15	EA	\$54,000.00
3	12" X 12" X 12" X 12" D. I. CROSS, FLANGED, W/ THRUST BLOCK PER IRWD STD. DRAWING W-16	\$1,330.00	1	EA	\$1,330.00
4	12" X 12" X 12" X 12" D. I. CUT-IN TEE, FLANGED, W/ FLANGED COUPLING ADAPTER AND THRUST BLOCK PER IRWD STD. DRAWING W-16 & W-19	\$6,300.00	2	EA	\$12,600.00
5	12" X 12" X 8" D. I. TEE, FLANGED, W/ THRUST BLOCK PER IRWD STD. DRAWING W-16	\$890.00	5	EA	\$4,450.00
6	12" X 12" X 6" D. I. TEE, FLANGED, W/ THRUST BLOCK PER IRWD STD. DRAWING W-16	\$867.00	2	EA	\$1,734.00
7	12" X 12" X 4" D. I. TEE, FLANGED, W/ THRUST BLOCK PER IRWD STD. DRAWING W-16	\$884.00	1	EA	\$884.00
8	16" 45° D. I. BEND, PO X PO, W/ THRUST BLOCK PER IRWD STD. DRAWING W-16	\$485.00	2	EA	\$970.00
9	12" 11.25° D. I. BEND, PO X PO, W/ THRUST BLOCK PER IRWD STD. DWG. W-16	\$445.00	6	EA	\$2,670.00
10	12" 11.25° D. I. BEND, FLG'D, W/ THRUST BLOCK PER IRWD STD. DRAWING W-16	\$680.00	3	EA	\$2,040.00
11	12" 11.25° D. I. BEND, FE X MJ, W/ THRUST BLOCK PER IRWD STD. DRAWING W-16	\$570.00	1	EA	\$570.00
12	12" D. I. FE X PO ADAPTER	\$600.00	26	EA	\$15,600.00
13	12" X 8" D. I. ECCENTRIC REDUCER, FE X PO	\$470.00	1	EA	\$470.00
14	2" AIR-VAC ASSEMBLY, CASE 1, PER IRWD STD. DRAWING W-11	\$4,260.00	4	EA	\$17,040.00
15	INSTALL TEMPORARY FLUSH-OUT ASSEMBLY PER IRWD STD. DRAWING W-12	\$2,060.00	2	EA	\$4,120.00
16	16" X 12" D. I. ECCENTRIC REDUCER (INVERT FLAT), FLANGED	\$680.00	2	EA	\$1,360.00
17	16" PVC, C905, DR 18	\$69.00	1057	LF	\$72,933.00
18	16" BUTTERFLY VALVE, CL 150B, FLANGED, VALVE BOX PER IRWD STD. DRAWING W-22	\$5,400.00	4	EA	\$21,600.00
19	16" X 16" X 6" D. I. CUT-IN TEE, FLANGED, W/ THRUST BLOCK PER IRWD STD. DRAWING W-16	\$5,750.00	4	EA	\$23,000.00
20	16" D. I. FE X PO ADAPTER	\$645.00	13	EA	\$8,385.00
21	16" 22.5° D. I. BEND, FE X MJ, W/ THRUST BLOCK PER IRWD STD. DRAWING W-16	\$1,300.00	1	EA	\$1,300.00
22	REMOVE TEMPORARY FLUSH-OUT, 8" PVC AND 12"x8" REDUCER AND JOIN EX. 12" BUTTERFLY VALVE	\$7,500.00	1	EA	\$7,500.00
23	2" AIR-VAC ASSEMBLY, CASE 2, PER IRWD STD. DRAWING W-11	\$5,880.00	1	EA	\$5,880.00
24	16" 22.5° D. I. BEND, FLG'D, W/ THRUST BLOCK PER IRWD STD. DRAWING W-15	\$1,750.00	1	EA	\$1,750.00
25	INSTALL 12" DIP, CL 350, SPOOL, FLG'D, W/TRENCH & BEDDING PER IRWD STD. DWG. W-17. INSTALL WITH 50 LBS ANODE AND BOND ALL JOINTS & FITTINGS PER IRWD STD. DWG. CP-9	\$750.00	33	LF	\$24,750.00
26	INSTALL 16"x16"x8" D.I. TEE, FLG'D W/ THRUST BLOCK PER IRWD STD. DWG. W-16	\$7,125.00	3	EA	\$21,375.00

27	INSTALL 16" DIP, CL 300, SPOOL, FLG'D, W/TRENCH & BEDDING PER IRWD STD. DWG. W-17. BOND ALL JOINTS PER IRWD STD. DWG. CP-9	\$825.00	6	LF	\$4,950.00
28	INSTALL 12" 22.5 DEGREE D.I. BEND, POxPO, W/ THRUST BLOCK PER IRWD STD. DWG. W-16	\$900.00	5	EA	\$4,500.00
29	INSTALL 12" 90 DEGREE D.I. BEND, FExPO, W/ THRUST BLOCK PER IRWD STD. DWG. W-16	\$1,450.00	1	EA	\$1,450.00
30	INSTALL 16"x16"x12" D.I. TEE, FLG'D, W/ THRUST BLOCK PER IRWD STD. DWG. W-16	\$7,450.00	1	EA	\$7,450.00
31	INSTALL 12" 45 DEGREE D.I. BEND, FExMJ, W/ THRUST BLOCK PER IRWD STD. DWG. W-16	\$950.00	2	EA	\$1,900.00
32	INSTALL 12" 45 DEGREE D.I. BEND, FLG'D, W/ THRUST BLOCK PER IRWD STD. DWG. W-16	\$1,050.00	2	EA	\$2,100.00
33	INSTALL 12" 11.25 D.I. BEND, FExPO, W/ THRUST BLOCK PER IRWD STD. DWG. W-16	\$950.00	1	EA	\$950.00
34	INSTALL 12" 45 DEGREE D.I. BEND, POxPO, W/ THRUST BLOCK PER IRWD STD. DWG. W-16	\$485.00	2	EA	\$970.00
35	INSTALL 12" 45 DEGREE D.I. BEND, POxFE, W/ THRUST BLOCK PER IRWD STD. DWG. W-16	\$950.00	1	EA	\$950.00
DOMESTIC WATER (CAPITAL IRWD) SUBTOTAL					\$529,331.00

ITEM		RECLAIMED WATER (CAPITAL IRWD)			
NO.	DESCRIPTION	UNIT PRICE	QTY	UNIT	AMOUNT
36	12" PVC (PURPLE), C900, DR14	\$56.00	3383	LF	\$189,448.00
37	12" BUTTERFLY VALVE, CL 150B, FLANGED, VALVE BOX PER IRWD STD. DRAWING W-22	\$3,550.00	12	EA	\$42,600.00
38	12" X 12" X 12" X 12" D. I. CROSS, FLANGED, W/ THRUST BLOCK PER IRWD STD. DRAWING W-16	\$1,400.00	1	EA	\$1,400.00
39	12" X 12" X 4" D. I. TEE, FLANGED, W/ THRUST BLOCK PER IRWD STD. DRAWING W-16	\$1,125.00	2	EA	\$2,250.00
40	6" X 6" X 6" D. I. CUT-IN TEE, FLANGED, W/ FLANGED COUPLING ADAPTER & THRUST BLOCK PER IRWD STD. DRAWING W-16 & W-19	\$1,830.00	1	EA	\$1,830.00
41	16" X 12" D. I. ECCENTRIC REDUCER (SOFFIT FLAT), FE X FE	\$815.00	1	EA	\$815.00
42	INSTALL 12" DIP, CL350, SPOOL FLG'D, W/TRENCH & BEDDING PER IRWD STD. DWG W-17. INSTALL W/ 60 LBS ANNODE AND BOND ALL JOINTS & FITTINGS PER IRWD STD. DWG CP-9	\$590.00	22	LF	\$12,980.00
43	12" D. I. FE X PO ADAPTER	\$425.00	9	EA	\$3,825.00
44	12" 22.5° D. I. BEND, PO X PO, W/ THRUST BLOCK PER IRWD STD. DRAWING W-16	\$445.00	10	EA	\$4,450.00
45	6" BUTTERFLY VALVE, CL 150B, FLANGED, VALVE BOX PER IRWD STD. DRAWING W-22	\$1,950.00	3	EA	\$5,850.00
46	2" AIR-VAC ASSEMBLY, CASE 1, PER IRWD STD. DRAWING W-11	\$4,400.00	4	EA	\$17,600.00
47	16" PVC (PURPLE), C905, DR18	\$71.00	841	LF	\$59,711.00
48	16" X 16" X 6 D. I. TEE, FLANGED, W/ THRUST BLOCK PER IRWD STD. DRAWING W-16	\$1,450.00	1	EA	\$1,450.00
49	16" D.I. FExPO ADAPTER	\$800.00	4		\$3200.00
50	12" X 4" D. I. ECCENTRIC REDUCER, FE X PO	\$405.00	1	EA	\$405.00
51	REMOVE TEMPORARY FLUSH-OUT & JOIN EXISTING 16" PVC RECYCLED WATER LINE	\$3,140.00	1	EA	\$3,140.00
52	2" AIR-VAC ASSEMBLY, CASE 1, PER IRWD STD. DRAWING W-11	\$4,100.00	1	EA	\$4,100.00

53	24" STEEL CASING PER IRWD STD. DRAWING W- 21	\$205.00	41	LF	\$8,405.00
54	CASING TEST STATION PER IRWD STD. DRAWING CP-3	\$2,600.00	2	EA	\$5,200.00
55	12" 90° D. I. BEND, PO X PO, W/ THRUST BLOCK PER IRWD STD. DRAWING W-16	\$552.00	1	EA	\$552.00
56	INSTALL 16" X 16" X 12" X 12" D. I. CROSS, FLANGED, W/ THRUST BLOCK PER IRWD STD. DRAWING W-16	2,100.00	1	EA	\$2,100.00
57	12" 22.5° D. I. BEND, FE X MJ, W/ THRUST BLOCK PER IRWD STD. DRAWING W-16	\$950.00	2	EA	\$1,900.00
58	INSTALL 16" DIP, CL 300, SPOOL, FLG'D, W/TRENCH & BEDDING PER IRWD STD. DWG. W-17, INSTALL WITH 60LBS ANODE AND BOND ALL JOINTS & FITTINGS PER IRWD STD. DWG. CP-9	\$442.00	103	LF	\$45,526.00
59	16" 45° D. I. BEND, FE X MJ, W/ THRUST BLOCK PER IRWD STD. DRAWING W-16	\$1,940.00	3	EA	\$5,820.00
60	12" 22.5° D. I. BEND, FLG'D, W/ THRUST BLOCK PER IRWD STD. DRAWING W-16	\$1,300.00	3	EA	\$3,900.00
61	INSTALL 16" 45 DEGREE D.I. BEND, FLG'D, W/ THRUST BLOCK PER IRWD STD. DWG. W-16	\$1,850.00	1	EA	\$1,850.00
62	INSTALL 6" D.I. FExPO ADAPTER	\$600.00	2	EA	\$1,200.00
63	INSTALL 12"x6" D.I. ECENTRIC REDUCER, FExPO	\$900.00	1	EA	\$900.00
64	12" 45° D. I. BEND, POxPO, W/ THRUST BLOCK PER IRWD STD. DRAWING W-16	\$900.00	3	EA	\$2,700.00
65	12" 45° D. I. BEND, POxFE, W/ THRUST BLOCK PER IRWD STD. DRAWING W-16	\$950.00	2	EA	\$1,900.00
66	INSTALL 16"X16"X6"X6" D.I. CROSS, FLG'D, W/THRUST BLOCK	\$8,500.00	1	EA	\$8,500.00
67	INSTALL 6x4 D.I. ECCENTRIC REDUCER, FExPO	\$650.00	1	EA	\$650.00
RECLAIMED WATER (CAPITAL IRWD) SUBTOTAL					\$446,157.00

SUMMARY OF NON-CONTRACT ITEM CHANGES	
DOMESTIC WATER (CAPITAL IRWD)	\$529,331.00
RECLAIMED WATER (CAPITAL IRWD)	\$446,157.00

TOTAL NON-CONTRACT ITEM CHANGE			\$975,488.00
SUMMARY OF LINE ITEM CHANGES			
	CONTRACT	NON- CONTRACT	TOTAL
DOMESTIC WATER (CAPITAL IRWD)	-\$396,009.00	\$529,331.00	\$133,322.00
RECLAIMED WATER (CAPITAL IRWD)	-\$359,768.00	\$446,157.00	\$99,479.00
TOTALS	-\$755,777.00	\$975,488.00	\$219,711.00
GRAND TOTAL CHANGE ORDER NO. 2			\$219,711.00
Payment for elimination/additions of bid items will be reflected on the progress payments.			

CHANGE TO CONTRACT PRICE

The contractor shall be paid a sum of **\$219,711.00** for all work included in this change order. This sum constitutes full compensation, including mark-ups and extended overhead. The compensation (time and cost) set forth in this Change Order comprises the total compensation due the Contractor, the Subcontractors and all suppliers, for the work or change defined in this Change Order, including all impact on any unchanged work. By signing this Change Order, the Contractor acknowledges and agrees, on behalf of himself, all Subcontractors and all suppliers, that the stipulated compensation includes payment for all work contained in this Change Order, plus all payment for the interruption of schedules, extended overhead costs, delay, and all impact, ripple effect or cumulative impact on all other work under this Contract. The signing of this Change Order shall indicate that the Change Order constitutes full mutual accord and satisfaction for the change, and that the time and/or cost under the Change Order constitutes the total equitable adjustment owed the Contractor, all Subcontractors, and all suppliers, as a result of this change. The Contractor, on behalf of himself, all Subcontractors and all suppliers, agrees to waive all rights, without exception or reservation of any kind whatsoever, to file any further claim or request for equitable adjustment of any type, for any reasonably foreseeable cause that shall arise out of or as a result of this Change Order or the impact of this Change Order on the remainder of the work under this Contract

TOTAL COST THIS CHANGE ORDER: INCREASE: \$219,711.00

By reason of this order the contract time completion will be adjusted as follows: **0** working days

SUMMARY OF CONTRACT CHANGE ORDERS	
ORIGINAL CONTRACT AMOUNT	\$6,989,548.10
COST OF PRECEDING CHANGE ORDERS	\$269,265.00
COST OF THIS CHANGE ORDER	\$219,711.00
COST OF CHANGE ORDERS TO DATE	\$488,976.00
REVISED CONTRACT AMOUNT	\$7,478,524.10

We the undersigned contractor have given careful consideration to the change proposed and hereby agree, if this proposal is approved, that we will provide all equipment, furnish all materials, except as may otherwise be noted above, and perform all services necessary for the work above specified, and will accept as full payment therefore the prices shown above.

ACCEPT DATE _____	CONTRACTOR _____
BY _____	TITLE _____
APPROVAL RECOMMENDED BY _____ DATE _____ CONSTRUCTION MANAGER/CONTRACT ADMINISTRATOR	
APPROVED BY <u>KNL</u> _____ DATE _____ IRWD	
APPROVED BY _____ DATE _____ CITY ENGINEER	

June 19, 2018

Prepared by: C. Kessler/K. Lew

Submitted by: K. Burton

Approved by: Paul A. Cook 

ENGINEERING AND OPERATIONS COMMITTEE

PLANNING AREA 51 HERITAGE FIELDS CAPITAL FACILITIES

SUMMARY:

Heritage Fields El Toro, LLC (Heritage Fields) is proceeding with development of Planning Area (PA) 51 (Great Park), which includes the construction of streets, storm drains, domestic water, sewer, and recycled water improvements. Staff recommends that the Board:

- Authorize the General Manager to accept Heritage Fields' construction contract with Fydaq Company Inc. in the amount of \$130,413 for the District 5 Cadence South Sewer Improvements, Project 10117;
- Authorize the General Manager to accept Heritage Fields' construction contract with Fydaq in the amount of \$598,335 for the District 5 Chinon Street Domestic Water, Sewer and Recycled Water Improvements, Projects 10022, 10023 and 10024;
- Approve CCO No. 1 to Projects 10022, 10023 and 10024 in the amount of \$124,418.98 for additions to quantities originally contracted to the District 5 Chinon Street Domestic Water, Sewer and Recycled Water Improvements;
- Authorize the General Manager to accept Heritage Fields' construction contract with Fydaq in the amount of \$1,056,852 for the District 5 "A" Street Domestic Water and Recycled Water Improvements, Projects 10343 and 10344; and
- Approve CCO No. 3 to Projects 06048 and 05788 in the amount of \$226,934 for tasks related to extending sewer pipelines across and within Barranca Parkway.

BACKGROUND:

Heritage Fields is moving forward with development of Districts 3 and 5 within PA 51. District 3 is bisected by Marine Way between Barranca Parkway and Alton Parkway. District 5 is adjacent to the city of Lake Forest between Irvine Boulevard and Barranca Parkway. The project location map is shown as Exhibit "A". As part of this development, Heritage Fields will design and construct IRWD's domestic water, sewer, and recycled water capital improvements. The required IRWD capital facilities are documented in the June 2017 PA 51 Sub-Area Master Plan Technical Memorandum prepared by Stantec.

The design and construction of the IRWD facilities will be performed under the terms of the Master Reimbursement Agreement and Supplemental Reimbursement Agreement between Heritage Fields and IRWD approved by the Board in August 2012 and November 2015, respectively.

District 5 Cadence South Sewer Improvements:

The District 5 Cadence South Sewer Improvements consist of installing approximately 750 feet of 12-inch sewer pipeline within Cadence South between "O" Street and Chinon. Heritage Fields retained Hunsaker to prepare the plans and received bids from four contractors. Heritage

Fields recommends awarding the construction contract to the lowest bidder, Fydaq, for a bid amount of \$130,413 as shown in Exhibit “B”. In addition, Heritage Fields has received consultant proposals for geotechnical observation and testing, surveying, construction support services, design and field archeological and paleontological monitoring. Staff has reviewed the consultant proposals and the construction bids and found the amounts to be acceptable. A summary of the Cadence South Sewer Improvement costs is shown below.

Design (Hunsaker)	\$ 16,114.00
Construction (Fydaq)	\$ 130,413.00
Geotechnical Services (Engeo)	\$ 4,700.00
Construction Engineering/Surveying (Hunsaker)	\$ 12,500.00
Archeo/Paleo Monitoring (LSA)	\$ 5,225.00
Heritage Fields Administration Fee (1%)	<u>\$ 13,041.30</u>
	\$ 181,993.30

District 5 Chinon Improvements:

The District 5 Chinon Improvements consist of installing approximately 3,700 feet of 12-inch domestic water pipeline, 750 feet of 16-inch recycled water pipeline, 1,900 feet of 12-inch recycled water pipeline, 1,000 feet of sewer pipeline, and two sewer manholes within Chinon between Cadence and Cadence South. Heritage Fields retained Hunsaker to prepare the plans and received bids from four contractors. Heritage Fields recommends awarding the construction contract to the lowest bidder, Fydaq, for a bid amount of \$598,335 as shown in Exhibit “C”. In addition, Heritage Fields has received consultant proposals for geotechnical observation and testing, surveying, construction support services, design and field archeological and paleontological monitoring. Staff has reviewed the consultant proposals and the construction bids and found the amounts to be acceptable. A summary of the Chinon Improvement costs is shown below.

Design (Hunsaker)	\$ 72,225.25
Construction (Fydaq)	\$ 598,335.00
Geotechnical Services (Engeo)	\$ 18,100.00
Construction Engineering/Surveying (Hunsaker)	\$ 34,800.00
Archeo/Paleo Monitoring (LSA)	\$ 5,225.00
Heritage Fields Administration Fee (1%)	<u>\$ 59,833.50</u>
	\$ 788,518.75

District 5 Chinon Improvements CCO No. 1:

CCO No. 1 to the District 5 Chinon Improvements project represents revisions to bid quantities that were originally contracted. Items were added to the original bid set as a part of final plan revisions. CCO No. 1 includes eliminating approximately 230 feet of 12-inch domestic water pipeline and 350 feet of 10-inch recycled water pipeline and adding approximately 800 feet of 12-inch sewer pipeline and 230 feet of 16-inch recycled water pipeline. Staff has reviewed the costs and quantities associated with this change order and finds it to be acceptable. CCO No. 1, attached as Exhibit “D” in the amount of \$124,418.98, is for the equipment, material, and labor to design and install the pipelines.

District 5 “A” Street Domestic Water and Recycled Water Improvements:

The District 5 “A” Street Domestic Water and Recycled Water Improvements consists of installing approximately 7,200 feet of 12-inch domestic water pipeline and 3,900 feet of 10-inch recycled water pipeline. Heritage Fields retained Hunsaker to prepare the plans and received bids from five contractors. Heritage Fields recommends awarding the construction contract to the lowest bidder, Fydaq, for a bid amount of \$1,056,852 as shown in Exhibit “E”. In addition, Heritage Fields has received consultant proposals for geotechnical observation and testing, surveying, and construction support services. Field archeological and paleontological monitoring was determined to be unnecessary given that construction of the domestic and recycled water pipelines would fall within the disturbed soil layer. Staff has reviewed the consultant proposals and the construction bids and found the amounts to be acceptable. A summary of the District 5 “A” Street Domestic Water and Recycled Water Improvements costs is shown below.

Design (Hunsaker)	\$ 160,000.00
Construction (Fydaq)	\$ 1,056,852.00
Geotechnical Services (Engeo)	\$ 18,600.00
Construction Engineering/Surveying (Hunsaker)	\$ 42,100.00
Heritage Fields Administration Fee (1%)	\$ 105,685.20
	\$ 1,383,237.20

District 3 Marine Way Sewer Improvements CCO No. 3:

CCO No. 3 to the District 3 Marine Way Sewer Improvements project represents construction and construction support costs associated with extending sewer pipelines across and within Barranca Parkway, thus eliminating the need for an additional Capital Project plan set. The extension of the sewer required approximately 150 feet of 18-inch sewer pipe and 150 feet of 30-inch steel casing what was installed via jack and bore. CCO No. 3, attached as Exhibit “F” in the amount of \$226,934, is for the equipment, material, and labor to perform the required modifications.

FISCAL IMPACTS:

Projects 10117, 10254, 10255, 10022, 10023, 10024, 10343, 10344, 06048 and 05788 are included in the FY 2018-19 Capital Budget and have adequate budget to fund this work.

ENVIRONMENTAL COMPLIANCE:

Construction of capital domestic water, sewer, and recycled water facilities for the Great Park Development is subject to CEQA. In conformance with the California Code of Regulations Title 14, Chapter 3, Article 7 an Environmental Impact Report was certified by the City of Irvine, the lead agency on April 4, 2012 (SCH# 2002101020).

RECOMMENDATION:

That the Board authorize the General Manager to accept Heritage Fields' construction contract with Fydaq Company Inc. in the amount of \$130,413 for the District 5 Cadence South Sewer Improvements, Project 10117; authorize the General Manager to accept Heritage Fields' construction contract with Fydaq in the amount of \$598,335 for the District 5 Chinon Street Domestic Water, Sewer and Recycled Water Improvements, Projects 10022, 10023 and 10024; approve Contract Change Order No. 1 to Projects 10022, 10023 and 10024 in the amount of \$124,418.98 for additions to quantities originally contracted to the District 5 Chinon Street Domestic Water, Sewer and Recycled Water Improvements; authorize the General Manager to accept Heritage Fields' construction contract with Fydaq in the amount of \$1,056,852 for the District 5 "A" Street Domestic Water and Recycled Water Improvements, Projects 10343 and 10344; and approve Contract Change Order No. 3 to Projects 06048 and 05788 in the amount of \$226,934 for tasks related to extending sewer pipelines across and within Barranca Parkway.

LIST OF EXHIBITS:

- Exhibit "A" – Location Map
- Exhibit "B" – Bid Summary, District 5 Cadence South Sewer Improvements
- Exhibit "C" – Bid Summary, District 5 Chinon Improvements
- Exhibit "D" – Contract Change Order No. 1, District 5 Chinon Improvements
- Exhibit "E" – Bid Summary, District 5 "A" Street Domestic Water and Recycled Water Improvements
- Exhibit "F" – Contract Change Order No. 3, Marine Way Sewer Improvements.

EXHIBIT "A"

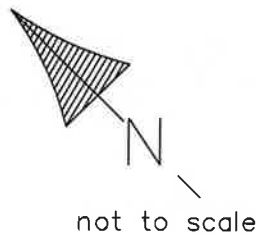
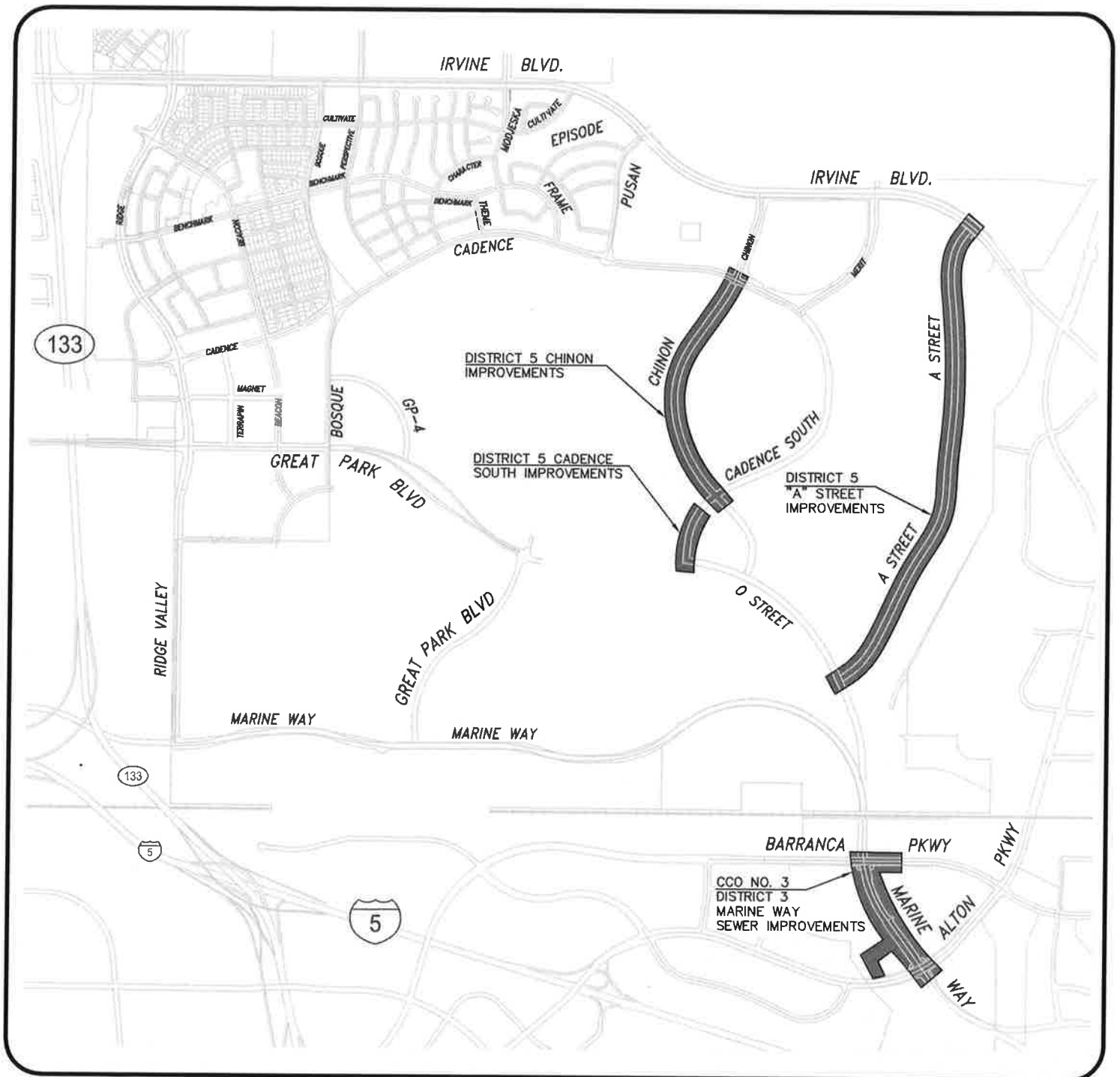


EXHIBIT "A"
LOCATION MAP

EXHIBIT "B"

Owner: Heritage Fields El Toro, LLC Project: District 5 Improvements Cadence (South) Bid Date: May 22, 2017
CODE 6966

ITEM NO.	I. IRWD CODE 6966 CAPITAL SANITARY SEWER	UNIT	QY	ENGINEER ESTIMATE		FYDAQ-LOW Attn: Steve Beyer Tel: 714.447.9760		Leatherwood Attn: Bobby Kawai Tel: 714.593.6575		Kennedy Attn: David Chorak Tel: 949.380.8363		KEC Attn: James Ellring Tel: 951.734.3010		L&S Attn: Elton Wehman Tel: 714.528.3232	
				1		1								DID NOT RESPOND TO BID	
				PRICE	AMOUNT	PRICE	AMOUNT	PRICE	AMOUNT	PRICE	AMOUNT	PRICE	AMOUNT	PRICE	AMOUNT
1.	Mobilization (Maximum of 2% of Bid Amount)	LS	1	\$ 1,600.00	\$ 1,600.00	\$ 1,000.00	\$ 1,000.00	\$ 2,000.00	\$ 2,000.00	\$ 38,000.00	\$ 38,000.00	\$ 10,000.00	\$ 10,000.00	\$ -	\$ -
2.	Performance, Labor & Payment Bond	LS	1	\$ 800.00	\$ 800.00	\$ 7,200.00	\$ 7,200.00	\$ 1,500.00	\$ 1,500.00	\$ 5,000.00	\$ 5,000.00	\$ 10,000.00	\$ 10,000.00	\$ -	\$ -
3.	Erosion Control - SWPPP & BMP's	LS	1	\$ 1,280.00	\$ 1,280.00	\$ 1,000.00	\$ 1,000.00	\$ 500.00	\$ 500.00	\$ 1,000.00	\$ 1,000.00	\$ 30,000.00	\$ 30,000.00	\$ -	\$ -
4.	Development and Application of Construction Water	LS	1	\$ 1,200.00	\$ 1,200.00	\$ 1,000.00	\$ 1,000.00	\$ 500.00	\$ 500.00	\$ 1,500.00	\$ 1,500.00	\$ 15,000.00	\$ 15,000.00	\$ -	\$ -
5.	Traffic Control	LS	1	\$ 1,200.00	\$ 1,200.00	\$ 1,000.00	\$ 1,000.00	\$ 500.00	\$ 500.00	\$ 1,000.00	\$ 1,000.00	\$ 20,000.00	\$ 20,000.00	\$ -	\$ -
6.	Clearing and Grubbing (All Vegetation Within the Project Site)	LS	1	\$ 1,280.00	\$ 1,280.00	\$ 1,000.00	\$ 1,000.00	\$ 1,500.00	\$ 1,500.00	\$ 1,500.00	\$ 1,500.00	\$ 20,000.00	\$ 20,000.00	\$ -	\$ -
7.	Remove Temporary 6" or 8" Terminal Cleanout & Join Existing Sewer	EA	1	\$ 2,500.00	\$ 2,500.00	\$ 2,500.00	\$ 2,500.00	\$ 3,500.00	\$ 3,500.00	\$ 5,000.00	\$ 5,000.00	\$ 5,000.00	\$ 5,000.00	\$ -	\$ -
8.	Air Test and Video Pipeline Per IRWD Standards & Specifications, Complete	LS	1	\$ 2,500.00	\$ 2,500.00	\$ 5,000.00	\$ 5,000.00	\$ 2,500.00	\$ 2,500.00	\$ 4,000.00	\$ 4,000.00	\$ 9,000.00	\$ 9,000.00	\$ -	\$ -
9.	Furnish and Install 12" PVC SDR 35, including Trenching, Bedding, Backfill & Compaction per IRWD Std. DWG, S-6, Depth = 13'-20', Complete	LF	727	\$ 63.00	\$ 45,801.00	\$ 101.00	\$ 73,427.00	\$ 80.00	\$ 58,160.00	\$ 102.00	\$ 74,154.00	\$ 215.00	\$ 156,305.00	\$ -	\$ -
10.	Furnish and Install 12" PVC (Green), C900, SDR 14 including Trenching, Bedding, Backfill, and Compaction per IRWD Std. S-6, Depth = 17'-29', Complete	LF	27	\$ 200.00	\$ 5,400.00	\$ 489.00	\$ 13,203.00	\$ 100.00	\$ 2,700.00	\$ 105.00	\$ 2,835.00	\$ 815.00	\$ 22,005.00	\$ -	\$ -
11.	Furnish and Install 18" PVC (Green), C905, SDR 18, including Trenching, Bedding, Backfill, and Compaction per IRWD Std. S-6, Depth = 27'-29', Complete	LF	0	\$ -	\$ -	\$ 138.00	\$ -	\$ 125.00	\$ -	\$ 237.00	\$ -	\$ 805.00	\$ -	\$ -	\$ -
12.	Construct 60" DIA. Manhole per IRWD Std. DWG. S-1 including 1 Raise, Complete	EA	3	\$ 8,580.00	\$ 25,740.00	\$ 6,714.00	\$ 20,142.00	\$ 10,000.00	\$ 30,000.00	\$ 8,500.00	\$ 25,500.00	\$ 38,000.00	\$ 114,000.00	\$ -	\$ -
13.	Construct 72" Dia. Manhole per IRWD Std. DWG. S-1 w/ Modified Base per Detail on Plan, including 1 Raise, (Depth= 27' - 29'), Complete	EA	0	\$ -	\$ -	\$ 13,941.00	\$ -	\$ 12,500.00	\$ -	\$ 12,000.00	\$ -	\$ 50,000.00	\$ -	\$ -	\$ -
14.	Furnish & Install Temporary 6" Terminal Cleanout Per IRWD Std. S-5, Including 1 Raise to Grade	EA	1	\$ 1,500.00	\$ 1,500.00	\$ 1,991.00	\$ 1,991.00	\$ 1,500.00	\$ 1,500.00	\$ 1,320.00	\$ 1,320.00	\$ 10,000.00	\$ 10,000.00	\$ -	\$ -
15.	Install Casing Test Station Per IRWD Std. S-7 and CP-3	EA	0	\$ -	\$ -	\$ 1,000.00	\$ -	\$ 1,250.00	\$ -	\$ 750.00	\$ -	\$ 5,000.00	\$ -	\$ -	\$ -
16.	Install 20" Steel Casing w/ 60 LB Anodes at Each End per IRWD Std. S-7	LF	0	\$ -	\$ -	\$ 200.00	\$ -	\$ 250.00	\$ -	\$ 120.00	\$ -	\$ 480.00	\$ -	\$ -	\$ -
17.	Install 30" Steel Casing w/ 60 LB Anodes at Each End per IRWD Std. S-7	LF	0	\$ 275.00	\$ -	\$ 250.00	\$ -	\$ 300.00	\$ -	\$ 180.00	\$ -	\$ 620.00	\$ -	\$ -	\$ -
18.	Raise Manhole to Final Grade After Improvements are Complete or Requested by Developer including Extra Move, Complete	EA	3	\$ 500.00	\$ 1,500.00	\$ 500.00	\$ 1,500.00	\$ 605.00	\$ 1,815.00	\$ 850.00	\$ 2,550.00	\$ 2,000.00	\$ 6,000.00	\$ -	\$ -
19.	Raise Cleanout to Final Grade After Improvements are Complete or Requested by Developer including Extra Move, Complete	EA	1	\$ 500.00	\$ 500.00	\$ 450.00	\$ 450.00	\$ 605.00	\$ 605.00	\$ 650.00	\$ 650.00	\$ 2,000.00	\$ 2,000.00	\$ -	\$ -
SUBTOTAL, IMPROVEMENTS.....				\$92,801.00		\$130,413.00		\$107,280.00		\$164,009.00		\$429,310.00		\$0.00	

EXHIBIT "C"

ITEM NO.	DESCRIPTION	UNIT	QTY	ENGINEER ESTIMATE		FYDAQ-LOW Attn: Steve Beyer Tel: 714.447.9760		Leatherwood Attn: Bobby Kawai Tel: 714.593.6575		Kennedy Attn: David Chorak Tel: 949.380.8363		KEC Attn: James Elfring Tel: 951.734.3010		L&S Attn: Elton Welham Tel: 714.528.3232	
				1		1								DID NOT RESPOND TO BID	
				PRICE	AMOUNT	PRICE	AMOUNT	PRICE	AMOUNT	PRICE	AMOUNT	PRICE	AMOUNT	PRICE	AMOUNT
1.	IRWD CODE 6971 CAPITAL SANITARY SEWER														
1.	Mobilization (Maximum of 2% of Bid Amount)	LS	1	\$ 1,400.00	\$ 1,400.00	\$ 1,000.00	\$ 1,000.00	\$ 2,000.00	\$ 2,000.00	\$ 38,000.00	\$ 38,000.00	\$ 10,000.00	\$ 10,000.00	\$ -	\$ -
2.	Performance, Labor & Payment Bond	LS	1	\$ 700.00	\$ 700.00	\$ 7,200.00	\$ 7,200.00	\$ 1,500.00	\$ 1,500.00	\$ 5,000.00	\$ 5,000.00	\$ 10,000.00	\$ 10,000.00	\$ -	\$ -
3.	Erosion Control - SWPPP & BMP's	LS	1	\$ 1,120.00	\$ 1,120.00	\$ 1,000.00	\$ 1,000.00	\$ 500.00	\$ 500.00	\$ 1,000.00	\$ 1,000.00	\$ 30,000.00	\$ 30,000.00	\$ -	\$ -
4.	Development and Application of Construction Water	LS	1	\$ 1,050.00	\$ 1,050.00	\$ 1,000.00	\$ 1,000.00	\$ 500.00	\$ 500.00	\$ 1,500.00	\$ 1,500.00	\$ 15,000.00	\$ 15,000.00	\$ -	\$ -
5.	Traffic Control	LS	1	\$ 1,050.00	\$ 1,050.00	\$ 1,000.00	\$ 1,000.00	\$ 500.00	\$ 500.00	\$ 1,000.00	\$ 1,000.00	\$ 20,000.00	\$ 20,000.00	\$ -	\$ -
6.	Clearing and Grubbing (All Vegetation Within the Project Site)	LS	1	\$ 1,120.00	\$ 1,120.00	\$ 1,000.00	\$ 1,000.00	\$ 1,500.00	\$ 1,500.00	\$ 1,500.00	\$ 1,500.00	\$ 20,000.00	\$ 20,000.00	\$ -	\$ -
7.	Remove Temporary 6" or 8" Terminal Cleanout & Join Existing Sewer	EA	1	\$ 2,500.00	\$ 2,500.00	\$ 2,500.00	\$ 2,500.00	\$ 3,500.00	\$ 3,500.00	\$ 5,000.00	\$ 5,000.00	\$ 5,000.00	\$ 5,000.00	\$ -	\$ -
8.	Air Test and Video Pipeline Per IRWD Standards & Specifications, Complete	LS	1	\$ 2,500.00	\$ 2,500.00	\$ 5,000.00	\$ 5,000.00	\$ 2,500.00	\$ 2,500.00	\$ 4,000.00	\$ 4,000.00	\$ 9,000.00	\$ 9,000.00	\$ -	\$ -
9.	Furnish and Install 12" PVC SDR 35, including Trenching, Bedding, Backfill & Compaction per IRWD Std. DWG. S-6, Depth = 13'-20', Complete	LF	254	\$ 63.00	\$ 16,002.00	\$ 101.00	\$ 25,654.00	\$ 80.00	\$ 20,320.00	\$ 102.00	\$ 25,908.00	\$ 215.00	\$ 54,610.00	\$ -	\$ -
10.	Furnish and Install 12" PVC (Green), C900, SDR 14 including Trenching, Bedding, Backfill, and Compaction per IRWD Std. S-6, Depth = 17'-29', Complete	LF	0	\$ -	\$ -	\$ 489.00	\$ -	\$ 100.00	\$ -	\$ 105.00	\$ -	\$ 815.00	\$ -	\$ -	\$ -
11.	Furnish and Install 18" PVC (Green), C905, SDR 18, including Trenching, Bedding, Backfill, and Compaction per IRWD Std. S-6, Depth = 27'-29', Complete	LF	0	\$ -	\$ -	\$ 138.00	\$ -	\$ 125.00	\$ -	\$ 237.00	\$ -	\$ 805.00	\$ -	\$ -	\$ -
12.	Construct 60" DIA. Manhole per IRWD Std. DWG. S-1 including 1 Raise, Complete	EA	1	\$ 8,580.00	\$ 8,580.00	\$ 6,714.00	\$ 6,714.00	\$ 10,000.00	\$ 10,000.00	\$ 8,500.00	\$ 8,500.00	\$ 38,000.00	\$ 38,000.00	\$ -	\$ -
13.	Construct 72" Dia. Manhole per IRWD Std. DWG. S-1 w/ Modified Base per Detail on Plan, including 1 Raise, (Depth= 27' - 29'), Complete	EA	0	\$ -	\$ -	\$ 13,941.00	\$ -	\$ 12,500.00	\$ -	\$ 12,000.00	\$ -	\$ 50,000.00	\$ -	\$ -	\$ -
14.	Furnish & Install Temporary 6" Terminal Cleanout Per IRWD Std. S-5, Including 1 Raise to Grade	EA	0	\$ -	\$ -	\$ 1,991.00	\$ -	\$ 1,500.00	\$ -	\$ 1,320.00	\$ -	\$ 10,000.00	\$ -	\$ -	\$ -
15.	Install Casing Test Station Per IRWD Std. S-7 and CP-3	EA	2	\$ 1,240.00	\$ 2,480.00	\$ 1,000.00	\$ 2,000.00	\$ 1,250.00	\$ 2,500.00	\$ 750.00	\$ 1,500.00	\$ 5,000.00	\$ 10,000.00	\$ -	\$ -
16.	Install 20" Steel Casing w/ 60 LB Anodes at Each End per IRWD Std. S-7	LF	190	\$ 225.00	\$ 42,750.00	\$ 200.00	\$ 38,000.00	\$ 250.00	\$ 47,500.00	\$ 120.00	\$ 22,800.00	\$ 480.00	\$ 91,200.00	\$ -	\$ -
17.	Install 30" Steel Casing w/ 60 LB Anodes at Each End per IRWD Std. S-7	LF	0	\$ 275.00	\$ -	\$ 250.00	\$ -	\$ 300.00	\$ -	\$ 180.00	\$ -	\$ 620.00	\$ -	\$ -	\$ -
18.	Raise Manhole to Final Grade After Improvements are Complete or Requested by Developer including Extra Move, Complete	EA	1	\$ 500.00	\$ 500.00	\$ 500.00	\$ 500.00	\$ 605.00	\$ 605.00	\$ 850.00	\$ 850.00	\$ 2,000.00	\$ 2,000.00	\$ -	\$ -
19.	Raise Cleanout to Final Grade After Improvements are Complete or Requested by Developer including Extra Move, Complete	EA	0	\$ -	\$ -	\$ 450.00	\$ -	\$ 605.00	\$ -	\$ 650.00	\$ -	\$ 2,000.00	\$ -	\$ -	\$ -
SUBTOTAL, IMPROVEMENTS.....				\$81,752.00		\$92,568.00		\$93,425.00		\$116,558.00		\$314,810.00		\$0.00	

ENGINEER ESTIMATE				FYDAQ-LOW Attn: Steve Beyer Tel: 714.447.9760		Leatherwood Attn: Bobby Kawai Tel: 714.593.6575		Kennedy Attn: David Chorak Tel: 949.380.8363		KEC Attn: James Elfring Tel: 951.734.3010		L&S Attn: Elton Weiham Tel: 714.528.3232	
ENGINEER ESTIMATE				FYDAQ-LOW Attn: Steve Beyer Tel: 714.447.9760		Leatherwood Attn: Bobby Kawai Tel: 714.593.6575		Kennedy Attn: David Chorak Tel: 949.380.8363		KEC Attn: James Elfring Tel: 951.734.3010		L&S Attn: Elton Weiham Tel: 714.528.3232	
1				1								DID NOT RESPOND TO BID	
ITEM NO.	IL IRWD CODE 6971 CAPITAL DOMESTIC WATER	UNIT	QY	PRICE	AMOUNT	PRICE	AMOUNT	PRICE	AMOUNT	PRICE	AMOUNT	PRICE	AMOUNT
20.	Mobilization (Maximum of 2% of Bid Amount)	LS	1	\$ 5,700.00	\$ 5,700.00	\$ 1,000.00	\$ 1,000.00	\$ 6,000.00	\$ 6,000.00	\$ 52,000.00	\$ 52,000.00	\$ 10,000.00	\$ 10,000.00
21.	Performance, Labor & Payment Bond	LS	1	\$ 2,850.00	\$ 2,850.00	\$ 3,500.00	\$ 3,500.00	\$ 4,000.00	\$ 4,000.00	\$ 9,696.00	\$ 9,696.00	\$ 10,000.00	\$ 10,000.00
22.	Erosion Control - SWPPP & BMP's	LS	1	\$ 4,560.00	\$ 4,560.00	\$ 1,000.00	\$ 1,000.00	\$ 500.00	\$ 500.00	\$ 1,000.00	\$ 1,000.00	\$ 30,000.00	\$ 30,000.00
23.	Development and Application of Construction Water	LS	1	\$ 4,275.00	\$ 4,275.00	\$ 1,000.00	\$ 1,000.00	\$ 1,500.00	\$ 1,500.00	\$ 1,500.00	\$ 1,500.00	\$ 15,000.00	\$ 15,000.00
24.	Traffic Control	LS	1	\$ 4,275.00	\$ 4,275.00	\$ 1,000.00	\$ 1,000.00	\$ 500.00	\$ 500.00	\$ 1,000.00	\$ 1,000.00	\$ 20,000.00	\$ 20,000.00
25.	Clearing and Grubbing (All Vegetation Within the Project Site)	LS	1	\$ 4,560.00	\$ 4,560.00	\$ 1,000.00	\$ 1,000.00	\$ 2,500.00	\$ 2,500.00	\$ 1,500.00	\$ 1,500.00	\$ 20,000.00	\$ 20,000.00
26.	Remove Temporary Flush-out Assembly and join existing PVC Waterline, Complete	EA	1	\$ 3,000.00	\$ 3,000.00	\$ 2,500.00	\$ 2,500.00	\$ 3,500.00	\$ 3,500.00	\$ 5,000.00	\$ 5,000.00	\$ 6,000.00	\$ 6,000.00
27.	Chlorinate & Pressure Test Pipeline, including Disposal of Chlorinated Water, Complete	LS	1	\$ 2,500.00	\$ 2,500.00	\$ 3,600.00	\$ 3,600.00	\$ 5,000.00	\$ 5,000.00	\$ 3,000.00	\$ 3,000.00	\$ 40,000.00	\$ 40,000.00
28.	Furnish and Install 12" PVC Pipe, C-900, DR 14, w/Trenching, Bedding & Backfill per IRWD Std. W-17 including all fittings, appurtenances and thrust blocks per IRWD Std. W-16 and W-19 and as shown on the plans, Complete	LF	3,971	\$ 55.00	\$ 218,405.00	\$ 45.00	\$ 178,695.00	\$ 60.00	\$ 238,260.00	\$ 115.00	\$ 456,665.00	\$ 190.00	\$ 754,490.00
29.	Furnish and Install 12" Butterfly Valve, Cl. 150B, Flg'd, w/Thrust Block per IRWD Std. DWG. W-22, including Initial Can Raise, Valve Box per IRWD Std. W-22, Complete	EA	10	\$ 4,500.00	\$ 45,000.00	\$ 3,500.00	\$ 35,000.00	\$ 4,000.00	\$ 40,000.00	\$ 3,600.00	\$ 36,000.00	\$ 8,000.00	\$ 80,000.00
30.	Furnish and Install 2" Air Vac Assembly, Case 3 per IRWD Std. W-11, including 1 Raise, Complete	EA	2	\$ 4,500.00	\$ 9,000.00	\$ 5,314.00	\$ 10,628.00	\$ 5,500.00	\$ 11,000.00	\$ 4,215.00	\$ 8,430.00	\$ 12,000.00	\$ 24,000.00
31.	Furnish and Install Temporary Flush-Out Assembly per IRWD Std. W-12, including 1 Raise, Complete	EA	2	\$ 3,500.00	\$ 7,000.00	\$ 1,800.00	\$ 3,600.00	\$ 2,500.00	\$ 5,000.00	\$ 1,000.00	\$ 2,000.00	\$ 9,000.00	\$ 18,000.00
32.	Raise Valve Can to Final Grade After Improvements are Complete or Requested by Developer including Extra Move, Complete	EA	12	\$ 500.00	\$ 6,000.00	\$ 450.00	\$ 5,400.00	\$ 385.00	\$ 4,620.00	\$ 650.00	\$ 7,800.00	\$ 1,500.00	\$ 18,000.00
SUBTOTAL, IMPROVEMENTS				\$317,125.00		\$247,923.00		\$322,380.00		\$585,591.00		\$1,045,490.00	\$0.00

ENGINEER ESTIMATE				FYDAQ-LOW Attn: Steve Beyer Tel: 714.447.9760		Leatherwood Attn: Bobby Kawai Tel: 714.593.6575		Kennedy Attn: David Chorak Tel: 949.380.8363		KEC Attn: James Elfring Tel: 951.734.3010		L&S Attn: Elton Welham Tel: 714.528.3232	
ENGINEER ESTIMATE				FYDAQ-LOW Attn: Steve Beyer Tel: 714.447.9760		Leatherwood Attn: Bobby Kawai Tel: 714.593.6575		Kennedy Attn: David Chorak Tel: 949.380.8363		KEC Attn: James Elfring Tel: 951.734.3010		L&S Attn: Elton Welham Tel: 714.528.3232	
1				1								DID NOT RESPOND TO BID	
ITEM NO.	III. IRWD CODE 6971 CAPITAL RECYCLED WATER	UNIT	QY	PRICE	AMOUNT	PRICE	AMOUNT	PRICE	AMOUNT	PRICE	AMOUNT	PRICE	AMOUNT
33.	Mobilization (Maximum of 2% of Bid Amount)	LS	1	\$ 6,100.00	\$ 6,100.00	\$ 1,000.00	\$ 1,000.00	\$ 7,500.00	\$ 7,500.00	\$ 5,443.00	\$ 5,443.00	\$ 10,000.00	\$ 10,000.00
34.	Performance, Labor & Payment Bond	LS	1	\$ 3,050.00	\$ 3,050.00	\$ 3,500.00	\$ 3,500.00	\$ 4,000.00	\$ 4,000.00	\$ 3,500.00	\$ 3,500.00	\$ 10,000.00	\$ 10,000.00
35.	Erosion Control - SWPPP & BMP's	LS	1	\$ 4,880.00	\$ 4,880.00	\$ 1,000.00	\$ 1,000.00	\$ 500.00	\$ 500.00	\$ 1,000.00	\$ 1,000.00	\$ 30,000.00	\$ 30,000.00
36.	Development and Application of Construction Water	LS	1	\$ 4,575.00	\$ 4,575.00	\$ 1,000.00	\$ 1,000.00	\$ 1,500.00	\$ 1,500.00	\$ 1,500.00	\$ 1,500.00	\$ 15,000.00	\$ 15,000.00
37.	Traffic Control	LS	1	\$ 4,575.00	\$ 4,575.00	\$ 1,000.00	\$ 1,000.00	\$ 500.00	\$ 500.00	\$ 4,000.00	\$ 4,000.00	\$ 20,000.00	\$ 20,000.00
38.	Clearing and Grubbing (All Vegetation Within the Project Site)	LS	1	\$ 4,880.00	\$ 4,880.00	\$ 1,000.00	\$ 1,000.00	\$ 2,500.00	\$ 2,500.00	\$ 1,000.00	\$ 1,000.00	\$ 20,000.00	\$ 20,000.00
39.	Remove Temporary Flush-out Assembly and join existing PVC Waterline, Complete	EA	1	\$ 3,000.00	\$ 3,000.00	\$ 2,500.00	\$ 2,500.00	\$ 3,500.00	\$ 3,500.00	\$ 3,500.00	\$ 3,500.00	\$ 7,000.00	\$ 7,000.00
40.	Pressure Test	EA	1	\$ 2,500.00	\$ 2,500.00	\$ 3,000.00	\$ 3,000.00	\$ 5,000.00	\$ 5,000.00	\$ 2,000.00	\$ 2,000.00	\$ 40,000.00	\$ 40,000.00
41.	Furnish and Install 10" PVC Purple Pipe, C900, DR 14, w/ Trenching, Bedding & Backfill per IRWD Std. W-17 including all fittings, appurtenances and thrust blocks per IRWD Std. W-16 and W-19 and as shown on the plans, Complete	LF	2,137	\$ 50.00	\$ 106,850.00	\$ 38.00	\$ 81,206.00	\$ 70.00	\$ 149,590.00	\$ 50.00	\$ 106,850.00	\$ 200.00	\$ 427,400.00
42.	Furnish and Install 12" PVC Purple Pipe, C900, DR 14, w/ Trenching, Bedding & Backfill per IRWD Std. W-17 including all fittings, appurtenances and thrust blocks per IRWD Std. W-16 and W-19 and as shown on the plans, Complete	LF	1,277	\$ 55.00	\$ 70,235.00	\$ 48.00	\$ 61,296.00	\$ 80.00	\$ 102,160.00	\$ 75.00	\$ 95,775.00	\$ 205.00	\$ 261,785.00
43.	Furnish and Install 16" PVC Purple Pipe, C905, DR 18, w/Trenching, Bedding & Backfill per IRWD Std. W-17 including all fittings, appurtenances and thrust blocks per IRWD Std. W-16 and W-19 and as shown on the plans, Complete	LF	518	\$ 95.00	\$ 49,210.00	\$ 73.00	\$ 37,814.00	\$ 100.00	\$ 51,800.00	\$ 115.00	\$ 59,570.00	\$ 215.00	\$ 111,370.00
44.	Furnish and Install 10" Butterfly Valve, Cl. 150B, Flg'd., including Initial Raise, valve box per IRWD Std. W-22, Complete	EA	4	\$ 4,000.00	\$ 16,000.00	\$ 3,250.00	\$ 13,000.00	\$ 3,000.00	\$ 12,000.00	\$ 3,360.00	\$ 13,440.00	\$ 8,000.00	\$ 32,000.00
45.	Furnish and Install 12" Butterfly Valve, Cl. 150B, Flg'd., including Initial Raise, valve box per IRWD Std. W-22, Complete	EA	5	\$ 4,500.00	\$ 22,500.00	\$ 3,600.00	\$ 18,000.00	\$ 4,000.00	\$ 20,000.00	\$ 3,600.00	\$ 18,000.00	\$ 9,000.00	\$ 45,000.00
46.	Furnish and Install 16" Butterfly Valve, Cl. 150B, Flg'd., including Initial Raise, valve box per IRWD Std. W-22, Complete	EA	2	\$ 6,500.00	\$ 13,000.00	\$ 5,450.00	\$ 10,900.00	\$ 6,500.00	\$ 13,000.00	\$ 6,000.00	\$ 12,000.00	\$ 10,000.00	\$ 20,000.00
47.	Furnish and Install 2" Air-Vac Assembly, Case 3, per IRWD Std. DWG. W-11, Complete	EA	1	\$ 4,500.00	\$ 4,500.00	\$ 5,300.00	\$ 5,300.00	\$ 5,500.00	\$ 5,500.00	\$ 3,700.00	\$ 3,700.00	\$ 12,000.00	\$ 12,000.00
48.	Furnish and Install Temporary Flush-Out Assembly per IRWD Std. W-12, including 1 Raise, Complete	EA	3	\$ 3,500.00	\$ 10,500.00	\$ 1,912.00	\$ 5,736.00	\$ 2,500.00	\$ 7,500.00	\$ 1,000.00	\$ 3,000.00	\$ 9,000.00	\$ 27,000.00
49.	Furnish and Install Recycled Water Wharf Head Hydrant, Condition 2, per IRWD Std. W-9 w/ blue reflective marker per OCFA guidelines, including 1 Raise, Complete	EA	1	\$ 5,000.00	\$ 5,000.00	\$ 4,742.00	\$ 4,742.00	\$ 6,500.00	\$ 6,500.00	\$ 3,200.00	\$ 3,200.00	\$ 17,000.00	\$ 17,000.00
50.	Raise Valve Can to Final Grade After Improvements are Complete or Requested by Developer including Extra Move, Complete	EA	13	\$ 500.00	\$ 6,500.00	\$ 450.00	\$ 5,850.00	\$ 385.00	\$ 5,005.00	\$ 650.00	\$ 8,450.00	\$ 1,500.00	\$ 19,500.00
SUBTOTAL, IMPROVEMENTS				\$337,855.00		\$257,844.00		\$398,055.00		\$345,928.00		\$1,125,055.00	\$0.00
TOTAL, IMPROVEMENTS				\$736,732.00		\$598,335.00		\$813,860.00		\$1,048,077.00		\$2,485,355.00	\$0.00

EXHIBIT "D"

CHANGE NO.: _____

DATE: _____

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 issued.

Contract No.: 20551701 (RCO#1790b) Owner: Heritage Fields El Toro, LLC

Sewer ☒ Contractor: FYDAQ Company Inc.
Domestic Water ☒
Reclaim Water ☒ Design Engineer: Hunsaker & Associates
Other ☐ IRWD Mgr. Kelly Lew

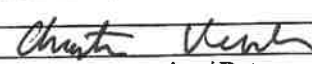
Project Description: District 5 Chinon Street Joint Backbone IRWD Capital Facilities IRWD Code 6971
Chinon Segment 2 - [From "P" Street to Cadence]

PART A - POTENTIAL CHANGE OF WORK:

Plan Revision Required: ☒ YES ☐ NO Estimated Cost: _____

Change Initiated By: December 12, 2017 Rev D, signed by Kevin Burton

Work Description:
Perform revisions from Bid Set to Approved Plan revisions, due to IRWD SAMP changes.

1. Submitted by:  Owner Representative / Date
- 2a. In IRWD's opinion the aforementioned work does ☒ does not ☐
qualify as a potential change in work.
- 2b. IRWD comments (required if representative does not concur with the potential change):
- 2c. Reviewed by:  5/24/18
IRWD Representative / Date
3. Received and Recorded by: _____
Owner Representative / Date

PART B - CHANGE OF WORK VALUE: \$ 124,418.98

Detailed Backup Attached ☒

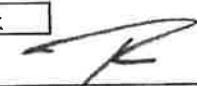
1. Submitted by:  5-29-18
Owner Representative / Date
2. Recommended by: _____
IRWD Representative / Date

EXHIBIT "F"

CHANGE NO.: 3
DATE: _____

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 issued.

Contract No.: 20351601 (RCO#1694) Owner: Heritage Fields El Toro, LLC

Sewer ☐
Domestic Water ☐
Reclaim Water ☐
Other ☒

Contractor: FYDAQ

Design Engineer: _____
IRWD Mgr. Kelly Lew

Project Description: Bid results for District 3 Marine Way Sewer. Additional scope of work including D3 Marine Way Sewer IRWD Code 6376 Capital facilities, geotechnical observation/testing, field coordination, survey and staking and archeo/paleo monitoring. Revision C of Plans.

PART A - POTENTIAL CHANGE OF WORK:

Plan Revision Required: ☐ YES ☒ NO Estimated Cost: \$226,934.00

Change Initiated By: _____

Work Description: _____

1. Submitted by: [Signature]
Owner Representative / Date

2a. In IRWD's opinion the aforementioned work does ☒ does not ☐
qualify as a potential change in work.

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:

\$226,934.00

\$

Detailed Backup Attached ☒

1. Submitted by: [Signature]
Owner Representative / Date

2. Recommended by: _____
IRWD Representative / Date

June 19, 2018

Prepared by: R. Lao

Submitted by: F. Sanchez / P. Weghorst

Approved by: Paul A. Cook



ENGINEERING AND OPERATIONS COMMITTEE

PRETREATMENT PROGRAM DEVELOPMENT AND IMPLEMENTATION CONSULTANT SELECTION

SUMMARY:

IRWD's pretreatment programs for the Michelson Water Recycling Plant (MWRP) and the Los Alisos Water Recycling Plant (LAWRP) are currently implemented by the Orange County Sanitation District (OCSD) and the South Orange County Wastewater Authority (SOCWA), respectively. Staff reviewed a plan to transition to an in-house pretreatment program with the Committee on January 16, 2018. In accordance with this plan, staff solicited and reviewed consultant proposals for the development and implementation of an IRWD pretreatment program. After having completed a thorough review of the proposals that were received, staff recommends that the Board authorize the General Manager to execute a Professional Services Agreement with EEC Environmental (EEC) to develop and implement a pretreatment program in the amount of \$140,580.

BACKGROUND:

Both MWRP and LAWRP operate under National Pollutant Discharge Elimination System (NPDES) permits for the treatment of sewage, the production and distribution of recycled water and the discharge of effluent to ocean outfalls. Pursuant to federal regulations, IRWD is required to implement a pretreatment program that is intended to:

- Protect sewage treatment plants from interference or upset of treatment operations;
- Prevent pass-through of pollutants;
- Prevent harm to collections system or sewage treatment plant infrastructure;
- Protect biosolids quality; and
- Protect public health, safety and the environment.

Currently, IRWD does not implement its own pretreatment program. OCSD operates a pretreatment program on behalf of IRWD for the sewersheds that are both tributary to MWRP and to OCSD sewage treatment facilities. This program is implemented in accordance with a Memorandum of Understanding (MOU) executed with OCSD in 1987. SOCWA is the permit holder for the NPDES permit regulating LAWRP discharges to the Aliso Creek ocean outfall, and accordingly SOCWA operates a pretreatment program in IRWD's sewershed that is tributary to LAWRP.

It is important that IRWD implement its own pretreatment program within the sewersheds that are tributary to MWRP for the following reasons:

- To protect the quality and end uses of biosolids products that will be produced at the Biosolids and Energy Recovery Facility;
- To protect IRWD's recycled water quality and end uses;

- To protect IRWD's ability to discharge its recycled water into storage reservoirs;
- To meet new and increasingly more stringent water quality objectives;
- To meet enhanced source control program requirements that could be imposed on IRWD should it pursue a potable reuse project; and
- To respond in a timely manner to compliance, health and safety issues associated with customers discharging into the collection system.

Pretreatment Development and Implementation:

In order to implement its own pretreatment program, IRWD must obtain approval from the Santa Ana Regional Water Quality Control Board of pretreatment design documents such as an Administrative Procedures Manual, an Enforcement Response Plan and an Industrial Waste Survey. Prior to implementing the program, IRWD must also modify its Rules and Regulations for Sewer Use, update the 1987 MOU with OCSD, procure resources such as software for the implementation of the pretreatment program, perform industry and city outreach, and modify its website.

Need for Consulting Services:

A May 2017 evaluation of the IRWD pretreatment program that was performed by Larry Walkers & Associates (LWA), recommended the use of an experienced consultant to expedite the preparation of the required documents and to establish the structure of IRWD's pretreatment program. It was recommended that the consultant also provide support to staff on an as-needed basis in implementing the program, including assisting with reviewing and/or preparing wastewater discharge permits, performing inspections and monitoring as well as conducting enforcement activities. In addition, it was recommended that the consultant provide ancillary on-the-job training that may be required to ensure that staff have proper certifications and experience to implement the program.

Consultant Selection:

In January 2018, staff presented a plan to the Committee for the transition to IRWD's own in-house pretreatment program. One of the key tasks listed in the plan was to issue a Request for Proposal (RFP) from qualified firms to assist with the development and implementation of the pretreatment program. An RFP for Pretreatment Program Development and Implementation services was issued to 13 firms on April 5, 2018. Of the 13 firms, only LWA and EEC submitted proposals.

Staff has completed a thorough review of the two proposals and the qualifications of each of the proposed teams. As a result of this review, staff recommends the selection of EEC for the development and implementation of IRWD's pretreatment program. A copy of the consultant selection matrix is provided as Exhibit "A". A copy of EEC's scope of work and fee proposal is presented as Exhibit "B". Key strengths of the EEC proposal are as follows:

Engineering and Operations Committee: Pretreatment Program Development and
Implementation Consultant Selection

June 19, 2018

Page 3

- The EEC project management team is skilled in developing and implementing municipal pretreatment programs;
- A demonstrated strong understanding of the current state of the IRWD pretreatment program, along with a thorough understanding of the OCSD pretreatment program;
- Familiarity with the IRWD's service area and an established and strong working relationships with OCSD and local regulators;
- Experience with outreach campaigns, educational materials and information to deliver an effective message to regulated industries; and
- An effective approach to training IRWD staff that is designed to successfully balance enforcement and education while emphasizing good working relationships with regulated industries.

As a result of staff's proposal review process, staff recommends that the Board authorize the General Manager to execute a Professional Services Agreement with EEC in the amount of \$140,580.

FISCAL IMPACTS:

The total cost of EEC's two-year effort is \$140,580 and considered by staff to be fair and reasonable. The cost for the first year of the pretreatment program development and implementation will be \$87,900 and adequate funds exist in the FY 2018-19 Operating Budget to cover these costs. Funding in the amount of \$52,680 for the second year of the program development and implementation will be requested in the FY 2019-20 Operating Budget.

ENVIRONMENTAL COMPLIANCE:

This item is not a "project" as defined in the California Environmental Quality Act (CEQA) as authorized under the California Code of Regulations, Title 14, Chapter 3, Section 15378. The District is required to implement a pretreatment program pursuant to Section 307 of the Federal Clean Water Act and Parts 35 and 403 of Title 40, Code of Federal Regulations (40 CFR 35 and 40 CFR 403); and/or Section 2233, Title 23, California Code of Regulations.

RECOMMENDATION:

That the Board authorize the General Manager to execute a Professional Services Agreement with EEC Environmental to develop and implement a pretreatment program in the amount of \$140,580.

LIST OF EXHIBITS:

Exhibit "A" – Consultant Selection Matrix

Exhibit "B" – EEC Environmental Scope of Work and Fee Proposal

EXHIBIT "A"
CONSULTANT SELECTION MATRIX

Pretreatment Program Evaluation Consultant Selection Matrix

Item	Description	Weights	LWA	EEC	
A	TECHNICAL APPROACH	45%			
1	Adherence to RFP Requirements	10%	2	1	
2	Understanding of required services and project details	25%	2	1	
3	Approach and Methodology	45%	2	1	
4	Schedule	20%	1	2	
	Weighted Score (Technical Approach)		1.80	1.20	
B	QUALIFICATIONS AND EXPERIENCE	45%			
1	Project Manager	20%	2	1	
			Gorman Lau, 15 yrs	Najib Saadeh, 20 yrs John Shaffer, 25 yrs	
2	Technical Leads	30%	2	1	
			Betsy Elzouf, 30 yrs Alina C., 9 yrs and Suzanne Brown, 4yrs	Keith Silva, 40 yrs Joe Jenkins, 10+ years	
3	Project Team Experience (sub and prime)	30%	2	1	
4	Firm's Relevant Experience	10%	2	1	
5	Project Team Availability	10%	2	1	
	Weighted Score (Experience)		2	1	
C	COST	10%	2	1	
	COMBINED WEIGHTED SCORE		1.81	1.09	
Ranking of Consultants					
TASK		Task Hours	FEE	Task Hours	FEE
1	Project Management and Meetings	228	\$47,240	58	\$11,160
2a	Pretreatment Program Documents: Industrial Survey	44	\$7,500	30	\$5,610
2b	Pretreatment Program Documents: Templates, Admin. Procedures Manual & Comments	244	\$46,200	114	\$21,540
2c	Pretreatment Program Documents: Enforcement Response Plan	32	\$6,420	40	\$7,560
3a	Modification of Sewer Rules and Regulations	70	\$14,360	38	\$7,260
3b	Modification of MOU	84	\$16,940	30	\$5,820
4	Resource Identification and Procurement	102	\$19,350	52	\$10,080
5	Industry/City Outreach Efforts	120	\$23,900	59	\$11,130
6	Website Modifications	44	\$7,800	40	\$7,740
7	Pretreatment Program Implementation (Year 2)	336	\$67,100	278	\$52,680
	SUB-TOTAL ENGINEERING SERVICES, FEES (Does Not Include Optional Items)	1,304	\$258,810	739	\$140,580
	TOTAL ENGINEERING SERVICES, FEE	1,304	\$258,810	739	\$140,580
	Does not include optional tasks	Avg \$/hr	\$197		\$190
D	OTHER				
	Miscellaneous Items				
	Multiplier	No	No		
	Conflict of Interest	No	No		
	Joint Venture	No	No		
	Scope of Work Exclusions	No	No		
	Exceptions taken to IRWD Std. Contract	No	No		
	Insurance (Professional & General Liability)	Yes	Yes		
	***Where 1 = Best and 2 = Worst; Lowest score is the best				

Scope of Work

Task 1

Program Management and Meetings

Project Management

Najib Saadeh will serve as the Program Manager and will be the main point of contact for the pretreatment program development and implementation. The EEC Program Manager will communicate and coordinate with IRWD's Project Manager and staff, prepare status progress reports (technical, schedule, budgets), direct procurement tasks, coordinate training, and direct stakeholder engagement. Mr. Saadeh has already managed a critical project for IRWD consisting of a local limits technical evaluation and has extensive experience on large pretreatment projects for many municipalities including the Orange County Sanitation District (OCS), the Santa Ana Water Powers Authorities (SAWPA), County of Ventura District 1 and others.

EEC Program Manager will attend all regularly scheduled status calls and meetings. It is anticipated that weekly meetings will be held to discuss the status of various tasks and/or for discussions regarding a specific topic. Mr. Saadeh has managed numerous large client portfolios and programs during his career which included budget and schedule tracking on a large number of projects and tasks for several clients.

Quality Control/Quality Assurance

As part of project management, a quality assurance/quality control (QA/QC) process will be implemented at every step of the project. The process includes periodic reviews at pre-determined stages during the planning and execution phases.

Mr. Saadeh will ensure that all the required elements are effectively incorporated into the project. John Shaffer, principal-in-charge, will ensure that the project manager is routinely performing this verification.

All reports and presentations will be reviewed by the project manager and the principal-in-charge for content and format. In addition, draft and final reports, as well as presentations, will be edited by EEC's in-house technical editor.

To ensure effective budget control, the project manager has created a budget based on experience with similar projects and a thorough review of the information provided in the RFP. In order to control the budget in the project implementation phase, the project manager will continually compare the budget with actual expenditures and note any discrepancies. In situations where a particular task's cost might rise above the amount accounted for in the original budget, the variation will be noted and discussed with the IRWD's project manager. Conversely, there may be some savings on a task because it required less effort than originally expected; this variation will also be noted and discussed with IRWD. Additionally, EEC has developed a formal QA/QC system to ensure timely and efficient delivery of the tasks involved in a project.

A quality control plan (QCP) will be prepared and implemented. The QCP establishes the requirements of the project and includes technical areas of responsibility for each staff member. The project manager will

serve as the single point of contact and liaison for all work required. In addition, the procedures that will be employed to ensure compliance with appropriate laws, regulations, policies, and technical review protocols will be identified. All work will be accomplished with adequate internal controls and review procedures to eliminate conflicts, errors, and omissions to ensure the technical accuracy of the work for the project. The QCP will include all activities appropriate for managing the quality of the project based on the anticipated planning and complexity of the project features.

EEC will prepare a quality assurance project plan (QAPP). The QAPP is a formal document describing in comprehensive detail the necessary QA/QC and other technical activities that should be implemented to ensure that the results of the work performed would satisfy the stated performance criteria. The QAPP provides data specifications for all anticipated analyses and tables comparing the detection limits to the relevant regulatory level, and establishes procedures for data review and assessment. The QAPP also outlines a clear document preparation process, including development of an annotated outline to final senior review and technical editing. The QAPP has become an instrumental system that has resulted in the highest quality work product for EEC's clients.

At the beginning of the project, EEC will finalize the Microsoft Project schedule submitted as part of this proposal and developed to track milestones for deliverables and other critical project tasks. As the project progresses, the schedule will be updated and adjusted to the changing conditions of the project.

EEC uses the most up-to-date software and hardware to track, coordinate, and invoice projects. Each project is given a specific project number in EEC's project management program. All project time is recorded and tracked through electronic timesheets that require a description of work performed so that the IRWD can view exactly what tasks EEC staff members have accomplished. Project managers can track day-to-day costs up to the moment and adapt specific project tasks to accommodate client needs.

EEC's engineers and project managers meet on a regular basis to discuss and manage project schedules. Project schedules are also managed using specific software, such as Microsoft Office Project, where all project tasks and timelines are constantly updated, allowing project managers to quickly and efficiently address any sudden changes.

Task 2

Pretreatment Program Development Documents

In developing IRWD's pretreatment program, EEC will include the following six elements. These elements parallel the pretreatment compliance schedule activities specified in most POTWs' NPDES permits.

1. Industrial Waste Survey – To identify and evaluate the nondomestic discharges to IRWD's treatment system.
2. Legal Authority – To ensure that IRWD operates under a legal authority that will enable it to apply and enforce the requirements of the General Pretreatment Regulations and any other State or local rules needed to control non-domestic discharges.
3. Technical Elements/Local Limits – To protect the operation of its treatment plant, the quality of its receiving water and the quality of its sludge, IRWD must characterize discharges to its treatment system and establish local effluent limits. In 2016, EEC completed a technical evaluation and developed local limits for IRWD.

4. Compliance Monitoring – Procedures must be developed and implemented for monitoring its industrial users to determine compliance and noncompliance.
5. Procedures – Administrative procedures must be developed for the implementation of the pretreatment program.
6. Resources – Sufficient and adequate resources (funds, equipment, and personnel) must be secured in order to operate an effective and sustainable program.

In particular, EEC will develop all basis elements for a robust pretreatment program and will provide training on all program elements. Such elements include procedures for conducting an industrial waste survey, determining all applicable industrial categories, issuing IU permits, enforcing all applicable permit conditions (categorical standards, local limits and general prohibitions) in accordance with the Enforcement Response Plan developed by EEC. EEC will provide all necessary support in addressing any comments the Regional Board may have on any of the pretreatment program elements.

Specific to the 1987 Memorandum of Understanding (MOU) between IRWD and OCSD, EEC will provide all necessary support and will assist with negotiations with OCSD in order to modify the MOU to reflect the new arrangement between IRWD and OCSD.

Industrial Waste Survey

EEC will utilize the tools available to conduct surveys to identify industrial facilities within IRWD's service area. Examples of tools include business licenses, changes in sewer service, new tenant improvements and field observations. EEC will develop a Master Industrial User Tracking List and will track deletions and additions on the list. Based on the type and size of the business, EEC will determine if industrial facilities on the list are potentially categorical and/or significant industrial users.

Legal Authority

EEC will ensure that IRWD is operating pursuant to legal authority which enables it to apply and to enforce the requirements of its newly developed pretreatment program. EEC will assess the best strategy to contain such authority, whether in a statute, ordinance, or contracts (memorandum of understanding) and will do so in accordance with 40 CFR 403.8 (f) (1).

Regardless of the recommended strategy, EEC will ensure that IRWD has the legal authority to enable it, ultimately, to protect its wastewater treatment and recycling, maintain compliance with its NPDES permit, protect its personnel and avoid any negative impact to its biosolids management practices. More specifically, EEC will ensure that IRWD has the authority to:

- a. Control new or increased contributions of pollutants from IUs in situations where IU effluent does not meet applicable Pretreatment Standards and Requirements or where such contributions cause harm to IRWD's treatment and recycling processes.
- b. Require IU's compliance with all applicable categorical limits, local limits and Pretreatment Standards and Requirements, and
- c. Control, by issuing IU permits, the contribution to IRWD's treatment system to ensure compliance with all applicable conditions.

Technical Elements/Local Limits

In 2016, EEC completed its technical evaluation of IRWD's local limits. The evaluation involved the re-determination of the Pollutants of Concern, an evaluation of wastewater sampling data for suitability and applicability, a re-determination of the treatment plant removal efficiencies, the re-calculation of Maximum Allowable Headworks Loadings (MAHLs), a determination of the methods of allocation, and a resulting re-determination of the local limits.

The 2017 local limits evaluation was conducted in accordance with EPA's guidance and resulted in defensible local limits. In order to facilitate future local limits evaluations, EEC provided recommendations to IRWD to address data gaps through more comprehensive and better targeted monitoring in the future and to improve the empirical foundation of subsequent local limits evaluations.

Compliance Monitoring

Compliance monitoring encompasses a range of techniques that EEC would train the IRWD staff on. With the goal of providing assistance to enhance IU's compliance, EEC will develop a compliance monitoring program for the review of self-monitoring data and for on-site compliance evaluation.

EEC will develop and implement an inspection and monitoring program, independent of information supplied by IUs, to determine compliance or noncompliance with IRWD's pretreatment standards and requirements. The program elements will include compliance sampling, compliance inspections, requesting, receiving and analyzing reports as well as slug discharge control plans (if required).

Procedures

EEC will identify and assist IRWD with the development of procedures (documented in standard operating procedures [SOPs]) that are necessary for managing an industrial pretreatment program. This is a requirement under 40 CFR 403.8 (f)(2). Examples of SOPs that EEC would develop include:

- Conducting Industrial Waste Surveys
- Issuing and Managing Permits
- Conducting Sampling
- Industrial User Inspections

EEC's approach to maximizing the benefits of SOPs consists of developing well-written SOPs that facilitate training. Furthermore, people tend to be supportive of the things they help create. Therefore, involving employees in developing SOPs can help assure the final product is more complete, useful and accepted. Well-written SOPs facilitate training (and cross training) and is an excellent reference document on how a task is done, whether it involves sampling, permitting, inspecting or responding to an audit by the Regional Water Quality Control Board.

Resources

As required under 40 CR 403 (f)(3), IRWD is required to have sufficient resources and qualified personnel to operate its pretreatment program. Similarly to EEC's support for Salt Lake City and more recently, to Santa Ana Water Powers Authority (SAWPA), EEC will assess the resources needed and will assist in identifying competent and knowledgeable staff with pretreatment expertise. Most importantly, EEC will ensure that the staff is knowledgeable in issuing and renewing IU control mechanisms (permits) to control

the discharges from nondomestic dischargers.

Dental Mercury

Dental offices discharge mercury present in amalgam used for fillings and this is being addressed by many pretreatment programs. EEC will discuss with IRWD developing a dental mercury program as part of the Pretreatment Program.

Task 3

Modification of Sewer Rules and Regulations and Memorandum of Understanding

The changes to the boundaries of IRWD service area, alone, would trigger a revision of its Sewer Rules and Regulations that serve as its Sewer Use Ordinance (last revised 12/2011). Also, as stated in the RFP, the analysis conducted by IRWD confirmed that there are a number of required and recommended changes that need to be made.

In addition to the required revisions for the Sewer use Ordinance to comply with 40 CFR Part 403, EEC will recommend changes that should be made based on development of the pretreatment program.

In addition, the MOU will need to be updated to reflect the changes in the responsibilities for pretreatment. The necessary coordination with OCSD will be seamless considering the established good relationship between OCSD and EEC.

Modification of Sewer Rules and Regulations

In addition to revising existing sections of IRWD's Sewer Use Ordinance, EEC will add sections to set uniform requirements for IUs of IRWD's sewerage facilities and enables IRWD to comply with all applicable state and federal laws, including the Clean Water Act (33 United States Code [U.S.C.] section 1251, et seq.) and the General Pretreatment Regulations (Title 40 of the Code of Federal Regulations [CFR] Part 403). The revised Ordinance shall be interpreted in accordance with the definitions set forth in Section 102.

Modification of Memorandum of Understanding

In order to reflect the new arrangement between IRWD and OCSD, modification of the MOU is necessary, in particular, for the pretreatment requirements and the sanitary sewer systems requirements and to a lesser extent, for the biosolids disposal requirements.

Regarding pretreatment requirements, the MOU must reflect the implementation of IRWD's pretreatment program. For the sewer section under IRWD's jurisdiction, IRWD would have the responsibility for enforcement and administration of its pretreatment program through its own Enforcement Management System (ERP) which EEC would make sure it is in compliance with the Federal Pretreatment Regulations in 40 CFR 403 and of the same caliber as OCSD's.

Statewide General Waste Discharge Requirements for Sanitary Sewer Systems require that IRWD develop

sanitary sewer management plans (SSMPs) and report all sanitary sewer overflows (SSOs). These requirements apply to all public agencies that own or operate sanitary sewer systems with greater than one mile of pipes. The requirements also include the operation and maintenance of collection systems and the reporting and mitigating of sanitary sewer overflows. Currently, EEC performs FOG inspections at Food Service Establishments (FSEs) and support in plan checks for grease interceptors and, as previously performed for many agencies, and currently for Ventura County District 1, EEC can develop and implement an SSMP and reflect all these activities in a modified MOU.

Biosolids Disposal Requirements are addressed in the MOU and EEC would reflect any changes in the handling and disposal of the biosolids in the modified MOU.

Task 4

Resource Identification and Procurement

EEC's approach to resource identification and procurement will start with a review of the gap analysis performed by IRWD which identified the resources that will be necessary for IRWD to implement its own pretreatment program.

Multiple skills and tasks are required by a pretreatment program and EEC will assist IRWD in identifying and procuring the additional resources that will be needed. Based on EEC's experience in assisting agencies with new pretreatment programs, as expected, in general, strong programs tend to have technically-skilled staff, adequate resources, good information on their industrial users, and proactive and positive relationships with the FSEs and industrial users.

Even successful programs face challenges in trying to make their programs more effective. Most programs face challenges in cost accounting and budgeting. Also, without good information, program coordinators have a difficult time making efficient decisions, demonstrating the value of pretreatment throughout their jurisdiction or convince the IUs' to invest resources for pollution prevention or improved pollution controls.

Activities that EEC will perform to ensure that IRWD has adequate resources include the following:

- EEC will first perform a gap analysis to identify the needed additional resources whether in personnel, expertise or equipment.
- Training program for staff and the resources available for training activities. These include training using the same approach and material that EEC used in the recent training for over one hundred pretreatment coordinators in Northern California. EEC also presents on FOG and conducts FOG training. In addition, EEC recommends that staff members with pretreatment and FOG control responsibility attend CWEA conferences.
- Develop, or if already in-place, improve on a comprehensive on-line repository of all EPA guidance documents.
- On-line database on pollution prevention opportunities for core discharging industries, and improved data management systems within programs. EEC is very familiar with many software

for compliance tracking and will assist IRWD with fully utilizing its current software or, if necessary, identifying the best option for managing data and tasks for its pretreatment program.

- EEC will assist the new staff members with pretreatment and FOG control responsibility to successfully balance enforcement and education. EEC believes that a good working relationship is needed between pretreatment program staff and IUs in order to identify and solve discharge problems.
- In addition to software, EEC will assess the need for various equipment for monitoring industrial users. EEC will recommend equipment such as automatic samplers for monitoring IUs and tablets or tough books computers for facilitating and documenting site inspections. In addition to its recommendations, ECC will present the associated advantages and disadvantages for each option.

Task 5

Industry/City Outreach Efforts

EEC will lead the efforts of organizing outreach effort and assisting IRWD by developing outreach materials for the industries and cities, and in organizing and participating in meetings as necessary. Outreach activities, as IRWD begins to implement its own pretreatment and FOG program, is essential to guarantee the success of the program. This includes planning and hosting public meetings.

Outreach activities for the current industrial permitted dischargers are different in nature than those targeting the cities within IRWD's service area. For example, outreach to the public can be spread when partnering with other public agencies, such as the police department or the fire department. For the cities, outreach activities are focused on specific functions, such as engineering departments or building departments, for raising awareness around FOG-related challenges.

EEC has provided planning and organizing support for outreach campaigns as well as educational materials and information to assist many municipalities to deliver clear and effective messages to the IUs and FSEs. EEC will prepare binders to provide the FSEs with all the necessary outreach materials to ensure they are fully aware of the program requirements and can maintain consistent compliance.

Creating material specific to IRWD would not require a major effort by EEC staff. It will also include FAQ's in anticipation of questions from the public as well as from IU and FSE owners.

Task 6

Website Modifications

Websites are effective tools in educating the public as well as the regulated community and EEC considers websites as important tools in the outreach program.

EEC will assist in the required modifications to IRWD's website. EEC will supply information and forms for new and current IUs such as new permit applications, permit renewal applications and Q&A's will alleviate some of the work load on IRWD's staff and will allow staff members to focus on more critical tasks.

Specific to the FOG program, EEC will provide, for website modifications, the same information supplied to FSE's including outreach and educational materials as well as Best Management Practices (BMP) that promote the importance of kitchen BMPs to the FSE community as well as to the public.

Task 7

Pretreatment Program Implementation

The second year, or possibly sooner, after the development of all activities and regulatory approvals are received from the IRWD Board of Directors and the Regional Water Quality Control Board, EEC will assist IRWD staff in the implementation of the pretreatment program.

At the beginning, one of EEC's team members, either Najib Saadeh or Joseph Jenkins, will assume the role of lead pretreatment coordinator. This would entail implementing all aspects of the pretreatment program, including but not limited to, inspections, permitting, self-monitoring report review, enforcement, data entry, sampling, regulatory reporting, and serve as the contact for any regulator inspections and/or audits. Currently, EEC is under contract to assume that same role for the City of El Segundo and Joseph Jenkins is the lead pretreatment coordinator with Najib Saadeh as the back-up pretreatment coordinator.

Soon after approval of the pretreatment program is received, EEC recommends that IRWD start its search for a pretreatment coordinator to allow sufficient time for training the new hire prior to fully transitioning the pretreatment program responsibilities.

Fee Schedule and Control

EEC performed an analysis of the estimated hours that each member of the EEC project team will contribute for the individual tasks presented under the scope of work herein. EEC staff has the expertise in pretreatment and FOG program management necessary to develop and implement a robust program for IRWD.

The estimated, not-to-exceed cost for Year 1 is \$ \$87,900. For Year 2, the work will consist of leading the pretreatment program as well as training the new Pretreatment Manager and, ultimately, transition the pretreatment program responsibilities to the Pretreatment Manager. For Year 2, the estimated, not-to-exceed cost is \$ \$52,680. The estimated total cost includes labor, material, equipment and insurance. Please refer to the table below for details on the estimated cost. For the purpose of this proposal, EEC assumed that inspections of FSEs are not included. Inspections of IUs are included. Our estimates are based on standard fee schedule which equates to salary multipliers ranging from 2.0 to 4.0. The cost does not include the FOG-related activities currently being performed by EEC. The assumption is that EEC would continue performing FOG-related activities under a separate budget.

As the Project Manager, Najib Saadeh will be the main point of contact for the project and will communicate and coordinate with IRWD's staff, prepare status progress reports (technical, schedule, budgets). A preliminary project schedule is included in this proposal. It will be refined and expanded based on discussions with IRWD staff.

Mr. Saadeh has managed many large long-term client portfolios and programs during his career which included budget and schedule tracking on a large number of projects and tasks for several clients simultaneously. Mr. Saadeh was responsible for budget and schedule tracking, staffing, technical direction, agency and stakeholder engagement, and generating project status reports.

Once the project has kicked off, we will verify the project budget regularly, checking in if any discrepancies are identified. The EEC Team has standardized processes using lessons learned from other project experience. These processes are used by our planners and engineers to ensure a quality finished project is delivered within budget. The team's track record of delivering projects within budget has been proven time and time again. The team will notify and meet with the IRWD Project Manager immediately if additional scope is added to secure funding and avoid a task going over budget.

Schedule



Cost Sheet - IRWD Pretreatment Program Development and Implementation

Task Description	Project Regulatory Specialist (Joseph Jenkins) Hours	Senior Regulatory Specialist (Keith Silva) Hours	Project Manager (Najib Saadeh) Hours	Principal In charge (John Shaffer) Hours	Cost (\$)
Task 1 - Project Management and Meetings for Years 1 and 2	16	16	24	2	\$11,160
Task 1 - Subtotal	16	16	24	2	\$11,160
Year 1					
Task 2 - Pretreatment Program Development Documents					
Industrial Survey	16	4	10	0	\$5,610
Permit and Inspection Form Templates	20	8	12	0	\$7,500
Enforcement Response Plan Development	16	8	16	0	\$7,560
Administrative Procedures Manual Development	24	4	12	1	\$7,680
Addressing Comments from the RWQCB	8	8	16	1	\$6,360
Task 2 - Subtotal	84	32	66	2	\$34,710
Task 3 - Modification of Sewer Rules and Regulations and MOU					
Modification of Sewer Rules and Regulations	16	4	16	2	\$7,260
Modification of MOU	8	4	16	2	\$5,820
Task 3 - Subtotal	24	8	32	4	\$13,080
Task 4 - Resource Identification and Procurement					
Identifying of Additional Resources Needed	8	4	8	2	\$4,260
Assistance with Evaluation, Procurement and Implementation	8	4	16	2	\$5,820
Task 4 - Subtotal	16	8	24	4	\$10,080
Task 5 - Industry/City Outreach Efforts					
Outreach to Current Permitted IUs	4	0	4	0	\$1,500
Introduction of IRWD's PTP and FOG Programs to Cities	16	0	16	0	\$6,000
Development of Outreach Materials and Meetings	8	2	8	1	\$3,630
Task 5 - Subtotal	28	2	28	1	\$11,130
Task 6 - Website Modifications					
Addition of Information on Pretreatment Program	8	2	8	2	\$3,870
Update to IRWD's FOG Program Page	8	2	8	2	\$3,870
Task 6 - Subtotal	16	4	16	4	\$7,740
Year 1 - Subtotal	184	70	190	17	\$87,900
Year 2					
Task 7: Pretreatment Program Implementation					
Lead Pretreatment Coordinator Role	80	20	80	4	\$34,860
Training and Transitioning	40	12	40	2	\$17,820
Task 7 - Subtotal	120	32	120	6	\$52,680
Year 2 - Subtotal	120	32	120	6	\$52,680
Total Hours per Function	304	102	310	23	
TOTAL ESTIMATED COST FOR YEARS 1 & 2 = \$140,580					



2018 Fee Schedule

PERSONNEL CHARGES

The charge for all time required for the performance of the Scope of Work, including office, field and travel time, will be billed at the hourly rate according to the labor classifications set forth below:

Labor Classification	Hourly Rate
Jr. Staff Engineer/Geologist/Scientist	\$115
Staff Engineer/Geologist/Scientist	\$130
Sr Staff Engineer/Geologist/Scientist	\$145
Project Engineer/Geologist/Scientist - I	\$170
Project Engineer/Geologist/Scientist - II	\$180
Sr Project Engineer/Geologist/Scientist - I	\$195
Sr Project Engineer/Geologist/Scientist - II	\$215
Principal Geologist	\$240
Principal	\$240
Project Assistant	\$100
Technician	\$100
Drafter	\$125
Sr Technician	\$125
Compliance Inspector	\$120
Technician GIS/Technology	\$105
Analyst GIS/Technology	\$115
Sr Analyst GIS/Technology	\$125
Specialist GIS/Technology	\$135
Sr Specialist GIS/Technology	\$145
Supervisor GIS/Technology	\$160
Director/GIS Technology	\$175
Construction Technician	\$90
Construction Field Supervisor	\$110
Construction Manager	\$115
Sr Construction Manager	\$140
Technical Editor	\$110

Emergency response will be charged at a rate of 1.5 times the standard hourly rate.

When EEC Staff appear as expert witnesses at court trials, mediation, arbitration hearings and depositions, their time will be charged at 2.0 times the standard rate. All time spent preparing for such trials, hearings, and depositions, will be charged at the standard hourly rate.

Travel

Vehicles used on project assignments will be charged at \$75 per day. Mileage is billed at the current rate established by the Internal Revenue Service plus mark up. Per Diem is billed at a unit cost of \$60 per day. Airfare, lodging, rental cars and associated expenses are billed at cost plus 15%.

Field Equipment

Field Equipment is billed at standard unit costs. Rate schedules are available upon request.

Subcontractors and Reimbursables

The costs of subcontractors, materials, equipment rental and costs incurred will be charged at cost plus 15%.

Other Project Charges

The cost of additional report reproduction and special project accounting will be billed as appropriate. Plotting plans are charged by size, black and white or color, and by the number of copies supplied.

Shipping and Postage

Shipping charges include couriers and the postage necessary will be charged at cost plus 15%.

Interest Charges

Interest on late payments will be charged at the rate of 1.5% per month.

Payment Terms

Net 30 days apply to all work performed and invoiced unless superseded by a specific executed contract.

*This Fee Schedule is adjusted each subsequent year to reflect the economic changes for the new year.
The new schedule will apply to existing and new assignments.*