

AGENDA
IRVINE RANCH WATER DISTRICT
ENGINEERING AND OPERATIONS COMMITTEE
TUESDAY, OCTOBER 17, 2017

CALL TO ORDER 7:00 a.m., IRWD's Operations Center, First Floor Committee Room,
3512 Michelson Drive, Irvine, California

ATTENDANCE Committee Chair: Steve LaMar _____
Committee Member: John Withers _____

<u>ALSO PRESENT</u>	Paul Cook _____	Patrick Sheilds _____	Harry Cho _____
	Kevin Burton _____	Eric Akiyoshi _____	Paul Weghorst _____
	Rich Mori _____	Scott Toland _____	Tom Roberts _____
	Kellie Lew _____	Ken Drake _____	Ken Pfister _____
	Lars Oldewage _____	Arseny Kalinsky _____	Steve Malloy _____
	Malcolm Cortez _____	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

5. BIOSOLIDS PELLETS MARKET ASSESSMENT – ZEPEDA/SHEILDS

Staff will provide the Committee an update on the status of conducting a market assessment and developing a Marketing and Distribution (M&D) plan for the pellets produced at the Biosolids and Energy Recovery Facilities starting in early 2019. Staff issued an RFP, and retained the services of Brown and Caldwell (B&C) to perform a market assessment and to develop an M&D plan that will accomplish 100% beneficial reuse of the pellets with an associated revenue stream.

ACTION

6. AUTOMATION SUPPORT CONSULTANT SERVICES – NASH/MORI/
BURTON

Recommendation: That the Board authorize the General Manager to execute a new Professional Services Agreement, in the amount of \$200,000, with Vertech Industrial Systems, LLC for automation support services for upcoming projects.

ACTION (Continued)

7. ORANGE PARK ACRES SEWER SERVICE AGREEMENT AMENDMENT –
KESSLER/LEW/BURTON

Recommendation: That the Board approve a revised Addendum No. 9 to the Application for Service and Agreement with the Irvine Ranch Water District for sewer service within Orange Park Acres (Improvement District 256).

8. REIMBURSEMENT AGREEMENT BETWEEN IRWD AND THE CITY OF
IRVINE FOR RELOCATION AND ADJUSTMENT OF IRWD FACILITIES
FOR THE UNIVERSITY DRIVE WIDENING – SMYTH/CORTEZ/BURTON

Recommendation: That the Board authorize budget increases in the amount of \$100,000 each for Projects 07170, 07171, and 07172, each from \$148,000 to \$248,000; and authorize the General Manager to execute a Reimbursement Agreement with the City of Irvine for relocating and adjusting IRWD facilities as part of its University Drive Widening Project, Capital Improvement Project No. 311306.

9. MICHELSON WATER RECYCLING PLANT BIOSOLIDS AND ENERGY
RECOVERY FACILITIES CONTRACT CHANGE ORDERS NO. 64 AND
NO. 65 – STEWART/MALLOY/BURTON

Recommendation: That the Board approve Contract Change Order No. 64 in the amount of \$231,100.22 with Filanc/Balfour Beatty for structural, electrical, instrumentation, and controls modifications; and approve Contract Change Order No. 65 in the amount of \$149,591.14 with Filanc/Balfour Beatty for mechanical, electrical, and instrumentation changes for the Michelson Water Recycling Plant Biosolids and Energy Recovery Facilities, Project 04286.

OTHER BUSINESS

10. A. Directors Comments
- B. 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.

October 17, 2017

Prepared by: J. Nash/R. Mori

Submitted by: K. Burton

Approved by: Paul A. Cook



ENGINEERING AND OPERATIONS COMMITTEE

AUTOMATION SUPPORT CONSULTANT SERVICES

SUMMARY:

Since March 2014, Vertech Industrial Systems, LLC (Vertech) has provided automation support services including programmable logic controller (PLC) and operator interface terminal (OIT) programming, supervisory control and data acquisition (SCADA) development, and field commissioning services for multiple projects within the District. With the majority of the scoped projects either complete or in the final stages of completion, staff recommends that the Board authorize the General Manager to execute a new Professional Services Agreement, in the amount of \$200,000, with Vertech for additional automation support services for upcoming projects.

BACKGROUND:

Staff previously retained Vertech to provide automation support services for various projects including the Zone 1-3 Meter Replacement, Reservoir Management Systems for Foothill Zone 6 and Portola Zone 8 Reservoirs, San Joaquin Marsh Electrical Upgrades, Newport Coast Lift Station, IDF Sodium Hypochlorite Storage and Feed System, ILP North Conversion Zone C+ Reservoir, and the Michelson Water Recycling Plant Operations Center Permanent Generator. Vertech has completed its work on all projects except for the Newport Coast Lift Station, IDF Sodium Hypochlorite Storage and Feed System, and the Zone C+ Reservoir, which are currently in construction and underway.

Through the execution of these projects, Vertech staff have become proficient with the District's automation hardware and software systems, programming standards and requirements, and automation development processes. Vertech has also developed an unparalleled understanding of the District's facility startup and commissioning practices, which has improved the overall facility startup process with the District's contractors. Vertech has completed the work on time and on budget and has demonstrated an in-depth understanding of the District's automation practices throughout the execution of the work.

Professional Services Agreement with Vertech:

Based on the successful partnership with Vertech over the past few years, staff has evaluated upcoming projects and identified a need for additional automation support services associated with the Dyer Road Wellfield Surge Tanks, Eastwood Zone A to B and Zone A to C Pump Stations, Second Zone 1 Reservoir, and the PDF Sodium Hypochlorite Storage and Feed System projects.

Staff recommends that a Professional Services Agreement, in the amount of \$200,000, be executed with Vertech to provide additional automation support services for the projects described above. A copy of Vertech's billing rate schedule is provided as Exhibit "A". The billing rate for the controls integrator will increase from \$130 per hour to \$145 per hour, but the

billing rates for all other staff will remain unchanged from the original proposed billing rates established in 2014. The proposed billing rates are comparable with those of other automation consultants performing this type of work.

FISCAL IMPACTS:

Automation support services will be provided for projects that are included in the FY 2017-18 Capital Budget. The available budgets and existing Expenditure Authorizations for those projects will be used to fund these services.

ENVIRONMENTAL COMPLIANCE:

Activities such as executing agreements for consulting services are exempt from the California Environmental Quality Act (CEQA) as authorized under the California Code of Regulations, Title 14, Chapter 3, Section 15061 (b) (3). These types of activities are covered by the general rule that CEQA applies only to projects which have the potential for causing a significant direct effect on the environment or reasonably indirect effect on the environment. In addition, the specific projects identified herein, are subject to CEQA and have either already completed, or are currently undergoing, the CEQA review process.

RECOMMENDATION:

That the Board authorize the General Manager to execute a new Professional Services Agreement, in the amount of \$200,000, with Vertech Industrial Systems, LLC for automation support services for upcoming projects.

LIST OF EXHIBITS:

Exhibit "A" – Vertech Billing Rate Schedule



Vertech typically provides fixed price quotes for projects requiring our services. However, for clients who prefer to work on a time and materials basis, or for clients requiring consulting or repair services, we provide the following hourly rates.

SERVICE DESCRIPTIONS AND RATES

Scheduled Services

Control system consulting or repair services scheduled more than one week in advance are considered scheduled services.

High Priority / Emergency Services

Services offered per availability. Rates can also be negotiated depending on availability.

Scheduled Services – Normal Business Hours (M-F 7am-5pm):

Type	Rate
Project Manager/Senior Controls Integrator	\$165.00/hour
Controls Integrator	\$145.00/hour

Scheduled Services - After Business Hours:

Type	Rate
Project Manager/Senior Controls Integrator	\$225.00/hour
Controls Integrator	\$165.00/hour

High Priority / Emergency Services:

Type	Rate
Project Manager/Senior Controls Integrator	\$255.00/hour
Controls Integrator	\$225.00/hour

Designer Services

Designer

\$100.00/hour

Travel Time

Travel time will be charged at our standard rates round trip from our office to your location.

Expenses and Materials

All travel related expenses will be billed at cost plus 15%. All materials will be billed at cost plus 20%. Travel costs are determined as detailed below:

Expense Type	Cost Method	Bill Amount
Mileage	GSA Mileage	Cost + 15%
Meals	GSA Per diem rates and rules	Cost + 15%
Airfare	Actual cost with receipts	Cost + 15%
Hotel	Actual cost with receipts	Cost + 15%
Car rental	Actual cost with receipts	Cost + 15%
Incidentals	Actual cost with receipts	Cost + 15%
Materials	Actual cost with receipts	Cost + 20%

October 17, 2017

Prepared by: C. Kessler/K. Lew

Submitted by: K. Burton

Approved by: Paul A. Cook



ENGINEERING AND OPERATIONS COMMITTEE

ORANGE PARK ACRES SEWER SERVICE AGREEMENT AMENDMENT

SUMMARY

Due to low customer support for a community-wide sewer system in Orange Park Acres (OPA), staff recommends that the Board approve a revised Addendum No. 9 to the Application for Service and Agreement with the Irvine Ranch Water District for sewer service within Orange Park Acres (Improvement District 256).

BACKGROUND:

IRWD and the Orange Park Acres Mutual Water Company consolidated in June 2008. As a part of the consolidation, IRWD committed to investigate the feasibility of a community-wide sewer system. In October 2009, Stantec Consulting prepared a Sub Area Master Plan (SAMP) that outlined a back-bone sewer system suitable to serve the OPA community and identified the costs associated with the design and construction of that system.

In February 2011, the Board approved a resolution that established sewer connection fees in OPA to facilitate customers seeking immediate sewer service. The purpose of setting sewer connection fees for OPA was to establish a fee for individual homeowners who were interested in connecting to the existing public sewer system in advance of the proposed community-wide sewer system and to provide them with a cost basis for a sewer connection fee that could be compared to the cost obligation for a proposed General Obligation (G.O.) bond to construct a community sewer system as documented in the OPA SAMP. In addition, staff recommended offering customers an option of deferring payment of the connection fees given the unique situation of a potential bond authorization within the following year or two. Due to low support for a community-wide sewer system, the bond measure never progressed to a community vote and the proposed sewer system was placed on hold.

Since establishment of the 2011 connection fee, only nine customers of OPA paid sewer connection fees and connected to the sewer. With no community sewer system funding mechanism in place, staff concluded that a new approach to sewer construction in OPA was necessary. Therefore, in June 2017, the Board approved a reduction to the sewer connection fees for OPA from \$24,500 to \$5,900. This new approach to OPA sewer connection eliminated any design and construction components of the 2011 connection fee and passed any design and construction costs to the customer(s) proposing construction of new sewer mains. The current connection fee of \$5,900 represents full buy-in into the OCSD capital outlay. The District is currently processing refunds to the nine customers for any sewer connection fees paid in excess of the current \$5,900 connection fee.

With this new approach, customers will now be required to build and donate proposed sewer mains to IRWD and seek reimbursement from their neighbors if they connect. Future customers that benefit from a customer-funded sewer project will be required to reimburse fair-share

construction costs to the customer who funded the project in addition to the standard \$5,900 IRWD connection fee prior to execution of the Application for Service and Agreement with the District.

Reimbursement agreements will identify parcels that could benefit by connecting to the proposed sewer main. If a customer whose parcel is listed within the reimbursement agreement proposes to connect to the sewer main, IRWD would collect fair-share construction costs as defined in the reimbursement agreement on behalf of the customer who funded the project prior to approving the connection. Specific terms of these types of reimbursement agreements will be brought to the Board as needed.

Staff proposes several revisions to Addendum No. 9 of the Application for Service and Agreement, included as Exhibit "A". The following summarized revisions reflect this new approach to the sewer connections within OPA:

- Removed references to G.O. bond measures;
- Removed connection fee deferment and loan option; and
- Revised language relating to reimbursement agreements.

Addendum No. 9 to the Agreement has been reviewed by legal counsel.

FISCAL IMPACTS:

None.

ENVIRONMENTAL COMPLIANCE:

This item is not a project as defined in the California Environmental Quality Act (CEQA), Code of Regulations, Title 14, Chapter 3, Section 15378.

RECOMMENDATION:

That the Board approve a revised Addendum No. 9 to the Application for Service and Agreement with the Irvine Ranch Water District for sewer service within Orange Park Acres (Improvement District 256).

LIST OF EXHIBITS:

Exhibit "A" – Addendum No. 9 to Application for Service and Agreement with IRWD for Sewer Service – Improvement District No. 256 Orange Park Acres

EXHIBIT "A"

DATE: XXXX
W.O.: Oracle PR XXXX
TRACT: Ref. Code XXXX
I/D #: OPA ID 256

**ADDENDUM NO. 9
TO
APPLICATION FOR SERVICE AND AGREEMENT WITH
IRVINE RANCH WATER DISTRICT
SEWER SERVICE - ID NO. 256 (ORANGE PARK ACRES)**

1. Sewer main extension. Check applicable paragraph(s):

- ☐ No reimbursable District sewer main extensions will be used or constructed by Applicant. Checking this box will not change the sewer connection fee specified in Exhibit "A."
 - ☐ Applicant's Property is to be connected to an existing sewer located at [*insert location] _____ . This existing sewer or a portion thereof was previously installed under the terms of a reimbursement agreement between the District and another District customer. Applicant acknowledges and agrees that as a condition of connection, standard sewer connection fees and fair share of the construction costs as set forth under the terms of the reimbursement agreement will be paid to the District by the Applicant. The District will then reimburse collected construction costs to the party entitled to receive such amount under the applicable reimbursement agreement. Checking this box will not change the sewer connection fee specified in Exhibit "A."
 - ☐ Applicant's sewer service will require the construction by Applicant of a reimbursable District sewer main extension. Concurrent with or prior to this Application, Applicant and District are entering into/have entered into a reimbursement agreement containing provisions regarding Applicant's design and construction of the Facilities, as defined therein, and the circumstances under which Applicant shall be entitled to reimbursement. Execution of a reimbursement agreement does not release Applicant from their obligation to pay the sewer connection fee. Checking this box will not change the sewer connection fee specified in Exhibit "A."
2. Applicant will be responsible for paying all of Applicant's on-site costs for connection to the District sewer, including lateral piping, abandonment of septic systems, and any other facilities and costs to connect Applicant's Property to District's public system as defined in the Rules and Regulations. The sewer connection fee does not cover any of these on-site costs, and District will not reimburse any on-site costs.
3. This Addendum has no effect on water service to Applicant. If Applicant's Property does not currently have water service, the Application includes separate provisions concerning water service.

October 17, 2017

Prepared by: J. Smyth/M. Cortez

Submitted by: K. Burton

Approved by: Paul A. Cook 

ENGINEERING AND OPERATIONS COMMITTEE

REIMBURSEMENT AGREEMENT BETWEEN IRWD AND THE CITY OF IRVINE FOR RELOCATION AND ADJUSTMENT OF IRWD FACILITIES FOR THE UNIVERSITY DRIVE WIDENING

SUMMARY:

The City of Irvine (City) is proceeding with its University Drive Widening project. As part of this project, IRWD pipeline appurtenances will be relocated and adjusted to grade. This project requires a Reimbursement Agreement (RA) since the estimated construction cost is over \$100,000. Staff recommends that the Board:

- Authorize budget increases in the amount of \$100,000 each for Projects 07170, 07171 and 07172, each from \$148,000 to \$248,000; and
- Authorize the General Manager to execute a Reimbursement Agreement with the City for relocating and adjusting IRWD facilities as part of its University Drive Widening project.

BACKGROUND:

IRWD has had an RA in place with the City since 1995 for managing various street rehabilitation projects. Typically included in the City's Capital Improvement Projects are alternate bid items for raising IRWD sewer manhole covers, sewer cleanouts, and water valve frames and lids to the new pavement grade. Any project up to \$100,000 in reimbursable costs can be authorized by the General Manager as an addendum to this "umbrella" RA.

IRWD and the City have also agreed that any City street improvement project which involves the construction, modification, or relocation of IRWD facilities with an estimated construction cost over \$100,000 will be administered through a separate RA. This project will construct the relocation and adjustment of IRWD facilities in support of the City's University Drive Widening project between MacArthur Boulevard and Campus Drive. The estimated construction cost is \$449,883. Staff retained the City's design engineer, Harris and Associates, to provide civil engineering design services to prepare plans and specifications for relocating IRWD's appurtenances as part of the City's construction bid package. Harris and Associates completed the design and the project was approved by the City Council on September 12, 2017. The City will advertise the project for bidding in October and anticipates construction starting in January 2018.

A Vicinity Map is attached as Exhibit "A" and the RA as Exhibit "B". The RA has been reviewed by IRWD's legal counsel.

FISCAL IMPACTS:

Staff anticipates receiving invoices from the City in February 2018. Projects 07170, 07171 and 07172 are included in the FY 2017-18 Capital Budget. Staff requests budget increases in the amount of \$100,000 per project to fund construction as shown in the following table:

Project No.	Current Budget	Addition <Reduction>	Total Budget
07170	\$148,000	\$100,000	\$248,000
07171	\$148,000	\$100,000	\$248,000
07172	\$148,000	\$100,000	\$248,000
Total	\$444,000	\$300,000	\$744,000

ENVIRONMENTAL COMPLIANCE:

Activities such as executing reimbursement agreements are not subject to the California Environmental Quality Act (CEQA) as authorized under the California Code of Regulations, Title 14, Chapter 3, Section 15061 (b)(3), in that CEQA applies only to projects which have the potential for causing a significant effect on the environment. Construction of the relocation of IRWD facilities as a part of the University Drive Widening Project is subject to CEQA. As the lead agency, the City of Irvine is responsible for CEQA compliance.

RECOMMENDATION:

That the Board authorize budget increases in the amount of \$100,000 each for Projects 07170, 07171 and 07172, each from \$148,000 to \$248,000, and authorize the General Manager to execute a Reimbursement Agreement with the City of Irvine for relocating and adjusting IRWD facilities as part of its University Drive Widening Project, Capital Improvement Project No. 311306.

LIST OF EXHIBITS:

Exhibit "A" – Vicinity Map
Exhibit "B" – Reimbursement Agreement

EXHIBIT "A"



PROJECT SITE

LOCATION MAP

NO SCALE

EXHIBIT "B"

File No.

REIMBURSEMENT AGREEMENT BETWEEN
IRVINE RANCH WATER DISTRICT
AND THE CITY OF IRVINE
FOR
RELOCATION AND ADJUSTMENT OF STREET UTILITIES FOR
UNIVERSITY DRIVE WIDENING PROJECT
CIP NO. 311306

This Agreement is made and entered into as of this ____ day of _____, 2017, by and between IRVINE RANCH WATER DISTRICT, a California water district formed and existing pursuant to the California Water District Law, hereinafter referred to as "DISTRICT," and the CITY OF IRVINE, a municipal corporation, hereinafter referred to as "CITY."

W I T N E S S E T H:

WHEREAS, CITY proposes to construct street improvements for the University Drive Widening Project, CIP No. 311306 (the "Project"), within the jurisdictional boundaries of DISTRICT and the City of Irvine; and

WHEREAS, such construction will necessitate the following: excavation and trench safety measures; removal of 9 ea. existing air-vacuum valve assemblies; removal of 4 ea. existing 4" blow offs; removal of 2 ea. existing 8" blow offs; protection of an existing 24" pipe and manual air release; removal of 1 ea. existing fire hydrant, removal of 21 ea. existing cathodic protection test stations; removal of 38 lf. existing 16" CML&C domestic water pipelines; removal, replacement and adjustment to grade of 26 ea. valve cans; removal, replacement and adjustment to grade of 4 ea. valve assemblies; installation of 10 ea. new 2" air release and vacuum valves; installation of 4 ea. new 4" blow off/ bottom drain assemblies; installation of 2 ea. new 8" blow off/ bottom drain assemblies; installation of 1 ea. new traffic rated meter box (sized for 2" meter) with metal lid; installation of 1 ea. new fire hydrant assembly; installation of 21 ea. new cathodic protection stations; construction of 50 lf of new 16" (1/4" thick) CML&C steel domestic water pipeline; installation of 1 ea. new brass plug on an existing saddle; construction of 70 sf of new 6" reinforced PCC pad over 6" of sand; construction of 12 lf of new 6" curb; adjustment to grade 6 ea. IRWD sewer manhole frames and covers; adjustment to grade

1 ea. IRWD recycled water manhole frame and cover; removal of 2 ea. existing valves and installation of 2 ea. blind flanges on existing tees; abandonment of 1 ea. existing 6" fire service lateral; removal of 5 ea. existing corp stops and installation of plugs per IRWD W-11; installation and adjustment to grade of 3 ea. new valves; removal of 2 ea. existing manual air releases; removal of 1 ea. existing valve and installation of 1 ea. new flanged spool; Installation of 3 ea. new ball corp stops on existing saddles, as depicted on Exhibit "A" attached hereto incorporated by reference herein (hereinafter referred to as the "IRWD FACILITIES"); and

WHEREAS, the parties have determined that it would be more expedient for CITY to construct the IRWD FACILITIES rather than for DISTRICT to do so; and

WHEREAS, DISTRICT is amenable to the CITY constructing the IRWD FACILITIES with the CITY agreeing to advance the costs; and

WHEREAS, DISTRICT agrees to fully reimburse the CITY through payments billed by the CITY and approved by DISTRICT for the entire cost of the IRWD FACILITIES; and

WHEREAS, except as otherwise provided herein, upon the completion of the IRWD FACILITIES, the IRWD FACILITIES shall become the property of DISTRICT in accordance with the terms and conditions hereinafter set forth.

NOW, THEREFORE, in consideration of the mutual promises and covenants hereinafter set forth, the parties hereto agree as follows:

SECTION 1. IRWD FACILITIES. In conjunction with the Project, CITY agrees to initiate and pursue to completion the design and construction of the IRWD FACILITIES.

SECTION 2. PLANS. CITY agrees that the IRWD FACILITIES shall be completed pursuant to approved project plans and specifications (the "Plans and Specifications") which shall be approved by DISTRICT and used in awarding the construction contract. The Plans and Specifications shall be deemed to incorporate the applicable portions of DISTRICT's latest edition of "Construction Manual for the Construction of Water, Sewer, and Reclaimed Water Facilities" (the "Construction Manual"). The IRWD FACILITIES shall be contracted by CITY together with non-reimbursable work to be completed by CITY within the Project pursuant to plans prepared by DISTRICT's design engineer.

SECTION 3. BIDDING AND AWARD. The parties agree that the construction of the IRWD FACILITIES shall be included in CITY's contract(s) awarded for the Project and that the IRWD FACILITIES shall be bid as a separate item or items that can be deleted. During the bidding process, CITY shall deliver to IRWD one (1) complete set of the bid documents that include the IRWD FACILITIES, including all related addenda concurrently with the distribution thereof to prospective bidders. Upon opening of bids by CITY, CITY will submit the bids or a spread sheet summary of the bids to DISTRICT. DISTRICT will have a period of ten (10) calendar days from its receipt of the bid results for review and approval of the IRWD FACILITIES bid item(s) submitted by the bidder identified to DISTRICT by CITY as CITY's proposed successful bidder. CITY agrees that bids received for the construction of the IRWD FACILITIES bid item(s) shall be subject to the approval of DISTRICT prior to award of the Project construction contract(s) that include the IRWD FACILITIES; and further agrees that in the event DISTRICT does not approve such bids, either party may terminate this Agreement upon twenty-four (24) hours' prior written notice, in which event CITY shall have no further obligation to construct the IRWD FACILITIES, and DISTRICT may elect to install the IRWD FACILITIES with its own contractor. If DISTRICT approves of the IRWD FACILITIES bid item(s) of CITY's successful bidder, CITY agrees to cause the IRWD FACILITIES to be constructed as part of the contract awarded to such bidder. The total estimated construction cost for the IRWD FACILITIES is \$449,883, provided, however, the amount to be reimbursed by DISTRICT shall be based on the actual costs of construction. Upon award of the construction contract, CITY shall provide DISTRICT with one (1) original copy of the fully executed contract documents and one (1) copy of the bid package relating to the IRWD FACILITIES received from the successful bidder.

SECTION 4. DESIGN REVISIONS AND CHANGE ORDERS. DISTRICT agrees to reimburse CITY for any change order(s) for revision(s) requested by DISTRICT or otherwise required to construct the IRWD FACILITIES. CITY shall promptly furnish DISTRICT with copies of any proposed change order(s) to such contract within five (5) working days of the initiation of the changed conditions to such contract, which shall be subject to DISTRICT approval if and to the extent the IRWD FACILITIES are affected therefrom.

DISTRICT shall promptly review proposed change order(s) and provide CITY with a response within five (5) working days or sooner of receiving proposed change order(s) information from CITY. DISTRICT agrees not to unreasonably cause delay(s) to the construction schedule of the Project in reviewing proposed change order(s) for the IRWD FACILITIES. Notwithstanding any other provision herein, any approval required to be given by the DISTRICT under this

Section shall be deemed given if no response to the CITY's request for such approval is received by the CITY within eight (8) working days following the written request for such approval unless the parties agree otherwise in a writing executed by both parties.

SECTION 5. REIMBURSEMENT. DISTRICT agrees to reimburse CITY for the following costs (collectively, the "Costs"): (1) the actual costs of construction, permits, bonds, and legal fees (excluding the costs of preparation of this Agreement) incurred by CITY in connection with the construction of the IRWD FACILITIES, plus (2) an administration fee which shall be equal to four percent (4%) of the actual cost of construction (costs paid directly to CITY's contractor for construction, only, excluding any cost for design, surveying, geotechnical or other work) of the IRWD FACILITIES and which shall be deemed to cover all costs of project administration, including, but not limited to, accounting, inspection, surveying, compaction testing, geotechnical services and engineering. CITY shall keep a separate accounting of all Costs incurred by CITY in relation to the IRWD FACILITIES.

Within sixty (60) days of DISTRICT's acceptance of the IRWD FACILITIES as provided in Section 8, a final accounting of the Costs shall be made by CITY and submitted to DISTRICT along with an invoice for the Costs and any supporting documentation necessary to show the amounts which represent Costs of IRWD FACILITIES. Amounts paid pursuant to progress payment invoices shall be subject to adjustment in the final accounting. Within thirty (30) days of said final accounting, DISTRICT agrees to pay to CITY the total amount of the Costs.

SECTION 6. LAWS, ORDINANCES, RULES AND REGULATIONS. CITY shall require in its contract for the construction of the IRWD FACILITIES that its contractor be fully informed of and comply with all laws, ordinances, rules and regulations, including, but not limited to, all applicable requirements of the California Labor Code, prevailing wage laws, the Construction Manual, and the Rules and Regulations of DISTRICT, in connection with the construction of the IRWD FACILITIES.

SECTION 7. INSPECTION. DISTRICT shall have sole and absolute discretion as to all aspects of design and construction of the IRWD FACILITIES, and DISTRICT shall be entitled to inspect the construction of IRWD FACILITIES as it deems necessary to assure compliance with the Plans and Specifications, including shop drawing review and material inspection thereof. DISTRICT shall have access to all phases of the Project work to be performed by CITY for the purpose of such inspection; provided, however, all questions regarding the work being

performed will be directed to CITY's resident engineer. DISTRICT will promptly notify CITY of any portion of the work on the IRWD FACILITIES which appears not to conform to the Plans and Specifications. The determination of DISTRICT as to conformity of the IRWD FACILITIES with the Plans and Specifications shall be made in DISTRICT's sole and absolute discretion. DISTRICT agrees not to unreasonably withhold its approval as to such conformity of the IRWD FACILITIES with the Plans and Specifications. CITY shall require its contractor to construct the IRWD FACILITIES so that the IRWD FACILITIES conform to the Plans and Specifications. CITY agrees to assume full responsibility for certifying or obtaining certification of the compaction of backfill material over the IRWD FACILITIES.

SECTION 8. ACCEPTANCE. DISTRICT agrees to accept the IRWD FACILITIES when the IRWD FACILITIES have been completed by CITY in accordance with all requirements of the Plans and Specifications, including any change orders approved by DISTRICT as provided in Section 3 hereof. At the time of completion and acceptance of the IRWD FACILITIES, CITY agrees to furnish DISTRICT with one (1) copy of the contractor's redlined set of blue-line "record" drawings (showing all revisions, manufacturer and type of valves, pipe and fittings as required by DISTRICT) and one (1) copy of the compaction reports and certificate, survey notes and cut sheets.

SECTION 9. OWNERSHIP. It is mutually agreed between the parties hereto that notwithstanding the fact that CITY shall accomplish the construction of the IRWD FACILITIES subject to reimbursement, the IRWD FACILITIES to be completed hereunder, together with the necessary franchises, licenses, easements, rights-of-way, and other privileges, shall at all times be subject to the applicable rates, rules and regulations of DISTRICT, as modified or amended from time to time. CITY hereby disclaims any interest in the IRWD FACILITIES and does hereby transfer and assign to DISTRICT any and all right, title, and interest it may have in the IRWD FACILITIES. DISTRICT shall own, operate and maintain the IRWD FACILITIES following acceptance thereof.

SECTION 10. GUARANTEES. CITY will, pursuant to the requirement(s) of the Plans and Specifications, cause its contractor(s) for the IRWD FACILITIES to guarantee the IRWD FACILITIES against defects in workmanship and materials for a period of one (1) year from the date of acceptance by CITY, which acceptance shall be given only after acceptance by DISTRICT as provided in Section 8. It is further agreed that CITY shall cause the IRWD FACILITIES to be brought or restored to full compliance with the requirements of the Plans and Specifications, including any test requirements, for any portions of the IRWD FACILITIES

which during said one (1) year period are found not to be in conformance with the provisions of the Plans and Specifications. This guarantee is in addition to any and all other warranties, express or implied, from CITY's contractors or material manufacturers, with respect to the IRWD FACILITIES. The guarantee and obligations under this section shall in no way be relieved by DISTRICT's inspection and/or acceptance of the IRWD FACILITIES. This section sets forth the entire guarantee and warranty of CITY with respect to the IRWD FACILITIES. The express or implied warranties of other persons with respect to IRWD FACILITIES shall in no way be limited by the guarantee and warranty of CITY contained in this section. If requested by DISTRICT, CITY agrees to assign to DISTRICT the contractor's guarantee and/or any other guarantees or warranties relating to the IRWD FACILITIES.

SECTION 11. INDEMNIFICATION. CITY shall indemnify, defend and hold DISTRICT, its officers, agents, employees, and engineers harmless from any expense, liability or claim for death, injury, loss, damage or expense to persons or property which may arise or is claimed to have arisen during construction of the IRWD FACILITIES as a result of any work or action performed by CITY or on behalf of CITY, save and except to the extent such expense, liability or claim is proximately caused in whole or in part by any act, omission, or negligence of DISTRICT, its officers, agents, employees or engineers or by any act or omission for which DISTRICT, its officers, agents, employees or engineers are liable without fault.

DISTRICT shall indemnify, defend and hold CITY, its officers, agents, and employees, harmless from any expense, liability or claim for death, injury, loss, damage or expense to persons or property which may arise or is claimed to have arisen either (i) as a result of any acts performed by DISTRICT, its officers, agents, or employees, with respect to the IRWD FACILITIES construction; or (ii) following DISTRICT acceptance of the IRWD FACILITIES, with respect to maintenance and operation of the IRWD FACILITIES, save and except to the extent such expense, liability or claim is proximately caused in whole or in part by any negligence of CITY, its officers, agents, employees or engineers, or by any act or omission for which CITY, its officers, agents, employees or engineers are liable without fault.

SECTION 12. INSURANCE AND BONDING. CITY shall cause its contractor(s) to provide performance and payment bonds for the construction of the Project including the IRWD FACILITIES and to obtain insurance coverage sufficiently broad to insure the matters set forth in this Agreement and to include DISTRICT, its officers, agents, employees and engineers, as additional insureds on all insurance policies that CITY requires its contractor(s) to provide. As evidence of such insurance coverage, CITY shall, prior to commencement of construction of the

IRWD FACILITIES, provide DISTRICT with certificates of insurance and insurance endorsements from CITY's contractor(s) in a form acceptable to DISTRICT.

SECTION 13. TERMINATION. DISTRICT shall have the right to terminate this Agreement at any time, subject to the provisions of this section, by providing five (5) business days' prior written notice to CITY, except as noted in Section 3. If at the request or direction of a party other than CITY, the construction of the IRWD FACILITIES is not accomplished or completed, DISTRICT shall remain obligated for the actual amount of the Costs incurred by CITY to the date of termination.

If CITY's Project is canceled or modified so as to eliminate the necessity of the construction of the IRWD FACILITIES, CITY shall have the right to terminate this Agreement and thereby terminate its obligation to construct the IRWD FACILITIES, by providing five (5) business days' prior written notice to DISTRICT. In such case, DISTRICT will not be obligated for any design or any other Costs incurred by CITY. If IRWD elects to construct the IRWD FACILITIES, DISTRICT may, but shall not be obligated to, acquire design or other work from CITY by separate agreement.

SECTION 14. NOTICE. Any notice or other written instrument required or permitted by this Agreement to be given to either party shall be deemed received when personally served or twenty-four (24) hours after being deposited in the U.S. Mail, postage prepaid, registered or certified and addressed as follows:

DISTRICT: Irvine Ranch Water District
15600 Sand Canyon Avenue
P.O. Box 57000
Irvine, CA 92619-7000
Attn: General Manager

CITY: City of Irvine
6427 Oak Canyon, Bldg. 1
Irvine, CA 92618
Attn: Darrell Hartman, Senior Civil Engineer

SECTION 15. SUCCESSORS AND ASSIGNS; INTEGRATION; AMENDMENT.
This Agreement shall be binding upon and inure to the benefit of the successor and assigns of CITY and DISTRICT. This Agreement constitutes the entire Agreement between CITY and DISTRICT and supersedes all prior understandings and agreements between the parties with

respect to the subjects hereof. This Agreement may be modified only in writing signed by both parties hereto.

SECTION 16. LEGAL FEES. In the event of any declaratory or other legal or equitable action instituted between CITY and DISTRICT in connection with this Agreement, the prevailing party shall be entitled to recover from the losing party all of its costs and expenses, including court costs and reasonable attorneys' fees.

SECTION 17. DEEMED APPROVAL. Any approval required to be given by either party pursuant to this Agreement shall be deemed given if no response to the party's request for such approval is received by the requesting party within fifteen (15) days following the written request for such approval.

SECTION 18. SEVERABILITY. If any term, provision, covenant or condition of this Agreement is held to be invalid, void or other unenforceable, to any extent, by any court of competent jurisdiction, the remainder of this Agreement shall not be affected thereby, and each term provision, covenant or condition of this Agreement shall be valid and enforceable to the fullest extent permitted by law.

SECTION 19. APPLICABLE LAW. This Agreement shall be construed and enforced in accordance with the laws of the State of California.

SECTION 20. WAIVER. The waiver of any provision of this Agreement by either party shall not be deemed to be a waiver of any other provision or of any preceding or subsequent breach hereunder.

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

IRVINE RANCH WATER DISTRICT

By _____
Paul Cook, General Manager

Dated _____

ATTEST:

By _____
Secretary/Assistant Secretary

Dated _____

APPROVED AS TO FORM:

By _____
Legal Counsel, IRWD

Dated _____

CITY OF IRVINE
A Municipal Corporation

By _____
Sean Joyce
City Manager of the City of Irvine

Dated _____

By _____
Manuel Gomez
Director of Public Works

Dated _____

ATTEST:

By _____
Molly McLaughlin
City Clerk of the City of Irvine

Dated _____

APPROVED AS TO FORM:

By _____
Jeffrey Melching, RUTAN & TUCKER, LLP
City Attorney of the City of Irvine

Dated _____

EXHIBIT "A"

REIMBURSEMENT AGREEMENT BETWEEN IRVINE RANCH WATER DISTRICT (IRWD) AND THE CITY OF IRVINE FOR RELOCATION AND ADJUSTMENT OF STREET UTILITIES FOR UNIVERSITY DRIVE WIDENING PROJECT CIP NO. 311306

ENGINEERS ESTIMATE

ITEM NO.	DESCRIPTION	QUANTITY	UNITS	UNIT COST	EXTENDED AMOUNT
1A	EXCAVATION/ TRENCH SAFETY MEASURES	1	LS	\$20,000.00	\$ 20,000.00
2A	REMOVE EXISTING AIR-VACUUM VALVE ASSEMBLY	9	EA	\$ 800.00	\$ 7,200.00
3A	REMOVE EXISTING 4" BLOW OFF	4	EA	\$ 800.00	\$ 3,200.00
4A	REMOVE EXISTING 8" BLOW OFF	2	EA	\$ 2,000.00	\$ 4,000.00
5A	PROTECT EXISTING 24" RECYCLED WATER PIPELINE AND MANUAL AIR RELEASE	1	LS	\$ 1,500.00	\$ 1,500.00
6A	REMOVE EXISTING FIRE HYDRANT	1	EA	\$ 3,250.00	\$ 3,250.00
7A	REMOVE EXISTING CATHODIC PROTECTION TEST STATION	21	EA	\$ 800.00	\$ 16,800.00
8A	REMOVE EXISTING 16" CML&C DOMESTIC WATER PIPELINE	38	LF	\$ 30.00	\$ 1,140.00
9A	REMOVE AND REPLACE VALVE CAN AND ADJUST TO GRADE	26	EA	\$ 1,050.00	\$ 27,300.00
10A	REMOVE AND REPLACE VALVE ASSEMBLY AND ADJUST TO GRADE	4	EA	\$ 4,725.00	\$ 18,900.00
11A	INSTALL NEW 2" AIR RELEASE AND VACUUM VALVE	10	EA	\$ 6,750.00	\$ 67,500.00
12A	INSTALL NEW 4" BLOW OFF/ BOTTOM DRAIN ASSEMBLY	4	EA	\$ 8,000.00	\$ 32,000.00
13A	INSTALL NEW 8" BLOW OFF/ BOTTOM DRAIN ASSEMBLY	2	EA	\$15,750.00	\$ 31,500.00
14A	INSTALL NEW TRAFFIC RATED 2" METER BOX WITH METAL LID	1	EA	\$ 525.00	\$ 525.00
15A	INSTALL NEW FIRE HYDRANT ASSEMBLY	1	EA	\$ 9,000.00	\$ 9,000.00
16A	INSTALL NEW CATHODIC PROTECTION STATION WITH NEW WIRES TO PIPELINE	21	EA	\$ 6,825.00	\$ 143,325.00
17A	CONSTRUCT NEW 16" (1/4" THICK) CML&C STEEL DOMESTIC WATER PIPELINE	50	LF	\$ 265.00	\$ 13,250.00
18A	INSTALL NEW BRASS PLUG ON SADDLE	1	EA	\$ 105.00	\$ 105.00
19A	CONSTRUCT NEW 6" REINFORCED PCC PAD OVER 6" SAND	70	SF	\$ 50.00	\$ 3,500.00
20A	CONSTRUCT NEW B-6 CURB ONLY	12	LF	\$ 30.00	\$ 360.00
21A	ADJUST IRWD SEWER MANHOLE FRAME AND COVER TO GRADE	6	EA	\$ 800.00	\$ 4,800.00
22A	ADJUST IRWD RECYCLED WATER MANHOLE FRAME AND COVER TO GRADE	1	EA	\$ 1,050.00	\$ 1,050.00
23A	REMOVE EXISTING VALVE AND INSTALL BLIND FLANGE ON EXISTING TEE	2	EA	\$ 800.00	\$ 1,600.00
24A	ABANDON EXISTING 6" FIRE SERVICE LATERAL	1	EA	\$ 1,050.00	\$ 1,050.00
25A	REMOVE EXISTING CORP STOP, INSTALL PLUG, CONNECT PER W-11	5	EA	\$ 800.00	\$ 4,000.00
26A	INSTALL NEW VALVE AND ADJUST TO GRADE	3	EA	\$ 3,750.00	\$ 11,250.00
27A	REMOVE EXISTING MANUAL AIR RELEASE	2	EA	\$ 800.00	\$ 1,600.00
28A	REMOVE EXISTING VALVE AND INSTALL NEW FLANGED SPOOL	1	EA	\$ 1,300.00	\$ 1,300.00
29A	INSTALL NEW BALL CORP STOP ON EXISTING SADDLE	3	EA	\$ 525.00	\$ 1,575.00
TOTAL CONSTRUCTION ESTIMATE					\$ 432,580.00
4% ADMINISTRATION FEE PER SECTION 5 OF AGREEMENT					\$ 17,303.00
TOTAL COSTS					\$ 449,883.00

October 17, 2017

Prepared by: W. Stewart

Submitted by: K. Burton

Approved by: Paul A. Cook



ENGINEERING AND OPERATIONS COMMITTEE

MICHELSON WATER RECYCLING PLANT BIOSOLIDS AND ENERGY RECOVERY FACILITIES CONTRACT CHANGE ORDERS NO. 64 AND NO. 65

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. 64 includes costs for several structural, electrical, instrumentation, and controls items. CCO No. 65 includes mechanical, electrical, and instrumentation changes. Staff recommends that the Board:

- Approve CCO No. 64 in the amount of \$231,100.22 with FBB; and
- Approve CCO No. 65 in the amount of \$149,591.14 with FBB.

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. 64:

Staff negotiated with FBB and agrees to the labor and material costs contained in CCO No. 64, in the amount of \$231,100.22, which contains the following items:

- *Modifications to Centrate Treatment Facility Stairs in the amount of \$9,758.16* – Staff determined that the stairs on the east side of the Centrate Treatment Facility would not allow proper surface drainage based on the surrounding grade. This item is for the labor, materials, and equipment to place the stair landing at a higher elevation allowing for proper drainage.
- *Modifications to Ductwork in the Solids Handling Building in the amount of \$9,537.05* – The alignment of ductwork was modified due to a conflict with the odor control piping. To resolve the conflict, the ductwork was lowered six inches. This item is for the labor and materials to make the modifications.

- *Electrical Conduits and Wires for Additional Bridge Breakers for Cake Receiving Pumps in the amount of \$21,678.83* – Following the recommendation of the manufacturer of the cake receiving pumps, staff agreed to add two bridge breakers that will break up the biosolids cake as it travels on conveyors to the heat dryer system. Electrical conduits and wires are required to power the bridge breakers. This item is for the labor and material costs of the electrical conduits and wires for the additional bridge breakers.
- *Handrail Modifications at the Methane Digesters in the amount of \$22,154.53* – Due to headroom limitations, the access ladders to the bottom of each digester required relocation, and were addressed in all three methane digesters. This item is for the labor and materials to make the modifications.
- *Electrical and Instrumentation Related Components for the Installation of the Thin Client at Dryer Facility in the amount of \$53,090.84* – Change Order No. 55 was approved to add a thin client in the pellet load-out bay of the Solids Handling Building for better and more efficient operation of the dryer facility. This item is for the labor and materials related to installing the electrical and instrumentation components of the thin client.
- *Electrical Modifications at the Motor Control Centers for the Acid Phase Sludge Heating Recirculation Pumps in the amount of \$47,611.11* – For equipment protection, a temperature controller connected to a thermocouple monitors the stator temperature of each acid phase sludge heating recirculation pump. Review of the Contract Documents indicate that there were no provisions at the motor control center for the high stator temperature fault. This item is for the labor and materials to make the modifications.
- *FOG Receiving Pumps Thermocouple and Thermostat Wiring in the amount of \$37,826.58* – The Contract Documents do not show the required wiring for the temperature controller and thermostat for the FOG receiving pumps. This item is for the labor and material costs to install the wires.
- *SCADA Programming Changes in the amount of \$23,694.13* – For better monitoring and operation, staff decided to make several SCADA programming changes. These changes include an update to alarm dialer template and the addition of an alarm at the thickened sludge wetwell to alert the operator of a possible blockage in the piping. Also, the addition of a manual override feature for the polymer feed valves will allow the operator to use the valve in manual without impacting the automation for the rest of the process. Lastly, the open/close status of an isolation valve between the two cells of the thickened sludge wetwells was updated to provide better monitoring. This item is for the labor to make these programming changes.
- *Change of Limit Switches for Buried Service in the amount of \$5,748.99* – It was discovered that the specified limit switches for three valves servicing the Centrate Treatment were not designed for buried service. This item is for the labor and materials to install the correct limit switches.

Staff recommends that the Board approve CCO No. 64 in the amount of \$231,100.22, which is attached as Exhibit "A". Items that do not claim or grant additional time are considered full compensation for those items. If items require additional time, the items included in this change order are full compensation except for time impacts. The Contractor reserves the right to claim time impacts, but the Contractor must show any time impacts to the project's critical path and how IRWD is responsible for these time impacts. Resolution of these time impacts is scheduled for a later date. CCO No. 64 does not extend any of the milestone completion dates.

CCO No. 65:

The negotiation of CCOs sometimes require an extended period of time to fully agree on the changes, costs, and submission for approval. This extended period of time may adversely impact the cash flow of the contractor, its subcontractors, and suppliers. As an act of good faith, staff is submitting the following items as CCO No. 65. The amounts related to CCO No. 65 are amounts that staff agree to. When staff and FBB agree to a final CCO amount, any cost difference reflected in CCO No. 65 and the final agreed upon amount will be accounted for in a subsequent CCO.

CCO No. 65, in the amount of \$149,591.14, includes:

- *Additional Conduits and Wires for the Engine Generator, Switchgear-16, and Switchgear-16 Programmable Logic Controller (PLC) in the amount of \$100,000 –* Additional conduits and wires are required to connect the engine generator, Switchgear-16 and Switchgear-16 PLC. The additional conduits and wires were not anticipated during design. This item is for the labor and materials to install these additional conduits and wires.
- *Modifications to Spirac Conveyor in the Solids Handling Building in the amount of \$13,641.00 –* There was a conflict between the conveyor and the structural steel on the second floor in the Solids Handling Building. This item is for the labor and materials to make the modifications.
- *Additional Metal Bridge Walkway Structural Support Angles in the amount of \$35,950.14 –* Additional structural angles were required for support of the metal bridge walkway between the Digester Control Building and the Methane Digesters. This item is for the labor and materials to install the support angles.

Staff recommends that the Board approve CCO No. 65 in the amount of \$149,591.14, which is attached as Exhibit "B". The construction change order summary is attached as Exhibit "C".

FISCAL IMPACTS:

The MWRP Biosolids and Energy Recovery Facilities Project 04286 is included in the FY 2017-18 Capital Budget. The existing budget is sufficient to fund the change orders. Staff will submit a capital budget increase to the Board in November 2017.

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. 64 in the amount of \$231,100.22 with Filanc/Balfour Beatty for structural, electrical, instrumentation, and controls modifications; and approve Contract Change Order No. 65 in the amount of \$149,591.14 with Filanc/Balfour Beatty for mechanical, electrical, and instrumentation changes for the Michelson Water Recycling Plant Biosolids and Energy Recovery Facilities, Project 04286.

LIST OF EXHIBITS:

Exhibit "A" – Contract Change Order No. 64 with FBB
Exhibit "B" – Contract Change Order No. 65 with FBB
Exhibit "C" – 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. 64
☐ Final

Project No. 04286

MWRP Biosolids and Energy Recovery Facilities

Project Title

Date: 10/02/2017

THE FOLLOWING CHANGE TO CONTRACT, DRAWINGS AND SPECIFICATIONS IS PROPOSED.	\$ ADDITIONS	\$ DELETIONS	DAYS $\pm$
1. Modifications to Centrate Treatment Facility Stairs (CR-379) PR 04286 Task 5.29	\$9,758.16	\$0.00	See Notes
2. Modifications to Ductwork in Solids Handling Building (CR-401) PR 04286 Task 5.31	\$9,537.05	\$0.00	See Notes
3. Electrical Conduits and Wires for Additional Bridge Breakers for Cake Receiving Pumps (CR-416) PR 04286 Task 5.30	\$21,678.83	\$0.00	See Notes
4. Handrail Modifications at the Methane Digesters (CR-472) PR 04286 Task 5.29	\$22,154.53	\$0.00	See Notes
5. Electrical and Instrumentation Related Components for the Installation of Thin Client at Dryer Facility (CR-485B) PR 04286 Task 5.30	\$53,090.84	\$0.00	See Notes
6. Electrical Modifications at the Motor Control Centers for the Acid Phase Sludge Heating Recirculation Pumps (CR-517) PR 04286 Task 5.30	\$47,611.11	\$0.00	See Notes
7. FOG Receiving Pumps Thermocouple and Thermostat Wiring (CR-525) PR 04286 Task 5.30	\$37,826.58	\$0.00	See Notes
8. SCADA Programming Changes (CR-537/570/573/573A) PR 04286 Task 5.30	\$23,694.13	\$0.00	See Notes
9. Change of Limit Switches for Buried Service (CR-560) PR 04286 Task 5.30	\$5,748.99	\$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	\$231,100.22	\$0.00	0

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.

DAYS ±

1. NET AMOUNT THIS CHANGE ORDER	=	\$231,100.22	0
2. ORIGINAL CONTRACT AMOUNT	=	\$163,465,940.00	1,278
3. TOTAL PREVIOUS CHANGE ORDER(S)	=	\$16,954,843.71	368
4. TOTAL BEFORE THIS CHANGE ORDER (2+ 3)	=	\$180,420,783.71	1,646
5. PROPOSED REVISED CONTRACT AMOUNT TO DATE (1+4)	=	\$180,651,883.93	1,646

We hereby agree to make the above change subject to the terms of this change order for the sum of: _____
 -----Two Hundred Thirty-One Thousand One Hundred and 22/100 -----Dollars

Date _____		Contractor <u>Filanc/Balfour-Beatty</u>		By: <u>Harry Cosmos, President</u>	
SIGNATURE		DATE		APPROVAL LEVEL REQUIRED	
_____		_____		Department Director Approval Required ☐	
IRWD Engineer or Consulting Engineer		Date		Executive Director Approval Required ☐	
_____		_____		General Manager Approval Required ☐	
Principal Engineer		Date		Board Approval Required ☒	
_____		_____		_____	
Executive Director of Engineering & Water Quality		Date		_____	
_____		_____		Purchase Order No. _____	
General Manager		Date		_____	

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.

CSG-02

CONTRACT CHANGE ORDER**EXHIBIT "B"****Irvine Ranch Water District**

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

C.O. No. 65
☐ Final
Project No. 04286

MWRP Biosolids and Energy Recovery Facilities

Project Title

Date: 10/02/2017

THE FOLLOWING CHANGE TO CONTRACT, DRAWINGS AND SPECIFICATIONS IS PROPOSED.	\$ ADDITIONS	\$ DELETIONS	DAYS $\pm$
1. Additional Conduits and Wires for the Engine Generator, Switchgear-16, and Switchgear-16 Programmable Logic Controller (CR-204) PR 04286 Task 5.30	\$100,000	\$0.00	See Notes
2. Modifications to Spirac Conveyor in the Solids Handling Building (CR-409) PR 04286 Task 5.31	\$13,641.00	\$0.00	See Notes
3. Additional Metal Bridge Walkway Structural Support Angles (CR-420) PR 04286 Task 5.29	\$35,950.14	\$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	\$149,591.14	\$0.00	0

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.

CSG-02

DAYS ±

1. NET AMOUNT THIS CHANGE ORDER	=	\$149,591.14	0
2. ORIGINAL CONTRACT AMOUNT	=	\$163,465,940.00	1,278
3. TOTAL PREVIOUS CHANGE ORDER(S)	=	\$17,185,943.93	368
4. TOTAL BEFORE THIS CHANGE ORDER (2+ 3)	=	\$180,651,883.93	1,646
5. PROPOSED REVISED CONTRACT AMOUNT TO DATE (1+4)	=	\$180,801,475.07	1,646

We hereby agree to make the above change subject to the terms of this change order for the sum of: _____
 -----One Hundred Forty-Nine Thousand Five Hundred Ninety-One and 14/100 -----Dollars

Date _____		Contractor <u>Filanc/Balfour-Beatty</u>		By: <u>Harry Cosmos, President</u>	
SIGNATURE		DATE		APPROVAL LEVEL REQUIRED	
_____		_____		Department Director Approval Required ☐	
IRWD Engineer or Consulting Engineer		Date		Executive Director Approval Required ☐	
_____		_____		General Manager Approval Required ☐	
Principal Engineer		Date		Board Approval Required ☒	
_____		_____		_____	
Executive Director of Engineering & Water Quality		Date		_____	
_____		_____		Purchase Order No. _____	
General Manager		Date		_____	

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.

EXHIBIT "C"

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

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

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Design Engineer: Black & Veatch

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				Original Contract Amount: \$163,465,940.00						Original Days: 1,278				10/28/2016
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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				

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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

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				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 3,373.2 CY 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				

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

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

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				Original Contract Amount: \$163,465,940.00						Original Days: 1,278				10/28/2016
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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	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				

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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

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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				

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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 Undemeath 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				

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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	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 21146 (4286) Task 3510	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				

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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
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				

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Design Engineer: Black & Veatch

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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				

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Design Engineer: Black & Veatch

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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	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				

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PR 21146 (4286)
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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	E	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				

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PR 21146 (4286)
Construction Change Order Summary**

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

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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				

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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				

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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				

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				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
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	E	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
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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

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				Original Contract Amount: \$163,465,940.00						Original Days: 1,278				10/28/2016
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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		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				
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				

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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

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				Original Contract Amount: \$163,465,940.00						Original Days: 1,278				10/28/2016
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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				

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**MWRP Biosolids and Energy Recovery Facilities
PR 21146 (4286)
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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				

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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

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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	E	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				

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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

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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 4286 Task 5.29	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				
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 RFI 1141 (CR-277) PR 4286 Task	B	FBB	\$100,000.00						0				

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

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

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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				

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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	E	FBB	(\$34,540.00)						0				

A - District Convenience/Initiation - Project Related
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D - District Convenience/Initiation - Non-Project Related
E - Contractor Convenience/Initiation

**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				(\$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
	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)					0					
62		Pending Approval by Board of Directors Pending Approval on October 9, 2017				\$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
	62.1	Fats, Oil, and Grease (FOG) Modifications (CR-223A) PR 04286 Task 5.30	A	IRWD	\$52,174.90										
	62.2	Density Meter Conduit and Cabling Modifications (CR-326) PR 04286 Task 5.30	A	IRWD	\$52,518.11										
	62.3	Fiber Optic Modifications (CR-356) PR 04286 Task 5.30	A	IRWD	\$20,607.14										
	62.4	Sludge Screen Pneumatic Control Panel Conduit and Cabling (CR-380) PR 04286 Task 5.30	C	IRWD	\$8,859.95										
	62.5	Additional Circuits for Control of the Thickening Centrifuges (CR-386) PR 04286 Task 5.30	C	FBB	\$376,674.08										
	62.6	Upsize of Power Panel PP-8001 Circuit Breaker (CR-414) PR 04286 Task 5.30	A	IRWD	\$50,135.26										
	62.7	Electrical Power Feeders to Electric Water Heater (CR-426) PR 04286 Task 5.30	B	FBB	\$16,551.27										
	62.8	Chemical Sump Pump Control Panel Space Heater Wiring Modifications (CR-461) PR 04286 Task 5.30	A	IRWD	\$12,822.26										
	62.9	Relocate Electrical Feeders to Generator Bus (CR-462) PR 04286 Task 5.30	A	IRWD	\$22,785.74										
	62.10	Electrical and Instrumentation Related Components for the Installation of Thin Client at Dryer Facility (CR-485A) PR 04286 Task 5.30	A	IRWD	\$49,908.43										
	62.11	Polymer Room Eye Wash Station Flow Switches (CR-535) PR 04286 Task 5.30	A	IRWD	\$24,567.89										
	62.12	Chemical Storage and Feed Modifications (CR-563) PR 04286 Task 5.30	A	IRWD	\$13,055.18										
	62.13	PLC Redundancy Hot Standby Status Register (CR-568) PR 04286 Task 5.30	A	IRWD	\$7,502.51										
63		Pending Approval by General Manager Pending Approval 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										
	63.2	Modifications to RIO-4002 (CR-285) PR 04286 Task 5.30	C	FBB	\$14,563.39										
	63.3	Cap for 12-Inch Storm Drain (CR-351) PR 04286 Task 5.16	B	FBB	\$2,394.54										
	63.4	Access Hatch for Regenerative Thermal Oxidizer Pipe Chase (CR-473) PR 04286 Task 5.31	C	FBB	\$3,958.91										
	63.5	Electrical Upgrades to RIO-4002 (CR-447) PR 04286 Task 5.30	A	FBB	\$40,285.77										
64		Pending Approval by Board of Directors Pending Approval 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										
	64.2	Modifications to Ductwork in Solids Handling Building (CR-401) PR 04286 Task 5.31	C	FBB	\$9,537.05										

A - District Convenience/Initiation - Project Related
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D - District Convenience/Initiation - Non-Project Related
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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
	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				
65		Pending Approval by Board of Directors Pending Approval 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				

Category	Total Amount	% of Original Contract
A - District Convenience/Initiation - Project Related	\$ 2,518,832.06	1.54%
B - Differing Site Conditions	\$ 11,879,605.83	7.27%
C - Design Oversight	\$ 3,055,872.81	1.87%
D - District Convenience/Initiation - Non-Project Related	\$ -	0.00%
E - Contractor Convenience/Initiation	\$ (118,775.63)	-0.07%
TOTAL (A + B + C + D)	\$17,335,535.07	10.60%

-\$149,591.14

Category	Total Amount	% of Original Contract
IRWD-Initiation/Driven	\$ 3,284,141.35	2.01%
FBB-Initiation/Driven	\$ 13,880,673.50	8.49%
Not applicable	\$ 170,720.22	0.10%
TOTAL	\$17,335,535.07	10.60%

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