AGENDA
IRVINE RANCH WATER DISTRICT
ENGINEERING AND OPERATIONS COMMITTEE
WEDNESDAY, SEPTEMBER 13, 2017

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

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

ALSO PRESENT

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. SANTIAGO AREA DISTRIBUTION SYSTEM STUDY – ROBINSON/AKIYOSHI/BURTON

   Recommendation: Receive and file.

ACTION

6. ENVIRONMENTAL COMPLIANCE CONSULTANT SELECTION FOR THE SYPHON RESERVOIR IMPROVEMENT PROJECT – COREY/WELCH/SANCHEZ/WEGHORST

   Recommendation: That the Board authorize the General Manager to execute a Professional Services Agreement with ESA to complete an Environmental Impact Report for the Syphon Reservoir Improvement Project for the not-to-exceed amount of $611,226.

ACTION - Continued

7. IRVINE LAKE PIPELINE NORTH CONVERSION RESERVOIR CONTRACT CHANGE ORDER – MOEDER/MORI/BURTON

Recommendation: That the Board approve Contract Change Order No. 10 with Pascal & Ludwig Constructors in the amount of $473,623 for design changes associated with the postponement of the Santiago Hills II development for the Irvine Lake Pipeline North Conversion Reservoir, Project 05407.

8. MICHELSON WATER RECYCLING PLANT BIOSOLIDS AND ENERGY RECOVERY FACILITIES CONTRACT CHANGE ORDER NO. 62 AND RETENTION BOND – MALLOY/BURTON

Recommendation: That the Board approve Contract Change Order No. 62 in the amount of $708,162.72 with Filanc/Balfour Beatty for electrical and controls modifications; and authorize the General Manager to execute the Retention Bond Agreement for the Michelson Water Recycling Plant Biosolids and Energy Recovery Facilities, Project 04286.

OTHER BUSINESS

9. A. Directors Comments

B. Adjourn

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

September 13, 2017
Prepared by: Robinson /Akiyoshi
Submitted by: K. Burton
Approved by: Paul A. Cook

ENGINEERING AND OPERATIONS COMMITTEE

SANTIAGO CANYON AREA DISTRIBUTION SYSTEM STUDY

SUMMARY:

Staff will present the results of the Santiago Canyon Area Distribution System Study that field tested fire flow capabilities and developed alternatives for providing enhanced flows of 1,000 Gallons Per Mintue (gpm) and 1,500 gpm to the main distribution system. Additionally, the study evaluated alternatives for providing local emergency storage.

BACKGROUND:

Due to recent events, IRWD hired Stantec Consulting Services to complete the Santiago Canyon Area Distribution System Study. Those events included: developing the comprehensive potable system hydraulic model that recommended more detailed analysis in the Santiago Canyon areas, the Irvine Company (TIC) donating the former East Orange Area I and East Orange Lake Village developments to the County as permanent open space (reducing future development by approximately 2,500 dwelling units), and TIC making major changes to the Santiago Hills II development plans.

Staff field tested existing fire flow capabilities and developed alternatives for providing enhanced flows of 1,000 gpm and 1,500 gpm to the main distribution system. Additionally, the study evaluated alternatives for providing local emergency storage. A presentation that outlines the study and the results is attached as Exhibit "A".

FISCAL IMPACTS:

None

ENVIRONMENTAL COMPLIANCE:

This project is exempt from the California Environmental Quality Act (CEQA) as authorized under the California Code of Regulations, Title 14, Chapter 3, Section 15262, which provides exemption for planning studies.

RECOMMENDATION:

Receive and file.

LIST OF EXHIBITS:

Exhibit "A" – PowerPoint Presentation

Engineering and Operations Committee

Santiago Canyon Area Distribution System Study

September 13, 2017

Presentation Overview

1. Project background
2. Existing fire flow
3. Fire flow enhancements
4. Local storage concept
5. Project costs

Irvine Ranch WATER DISTRICT

Project Background

July 2006
Santiago County Water District Consolidation

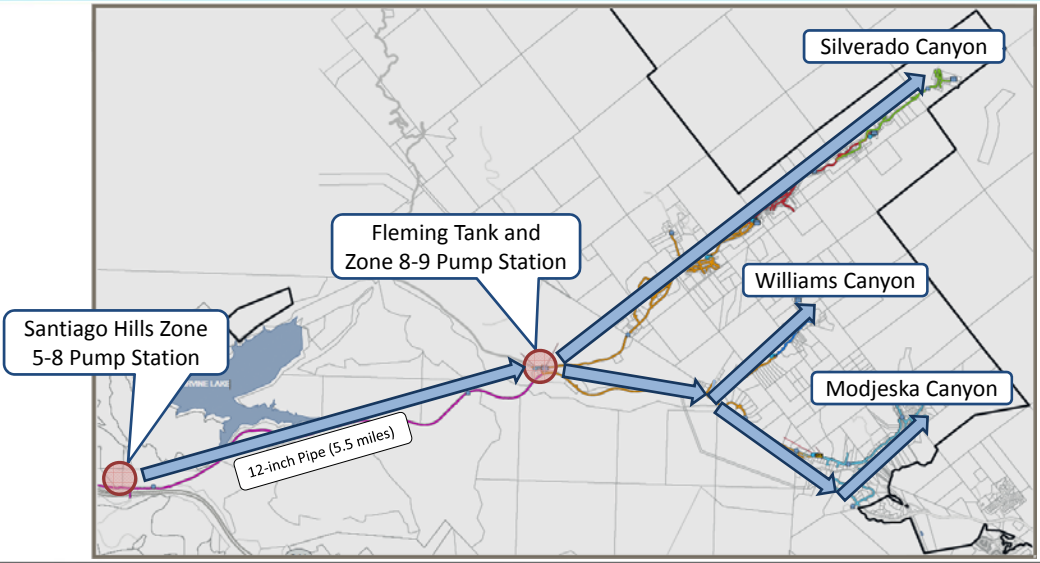
Jan 2008
Completed SCWD Integration Study and introduced "Two Supply Source" Concept

2014
Irvine Company Donates East Orange Development Sites

August 2017
Completed Santiago Canyon Area Distribution Study

Toured Santiago Canyon with OCFA

Santiago Canyon Area - Potable System Overview



Irvine Ranch WATER DISTRICT

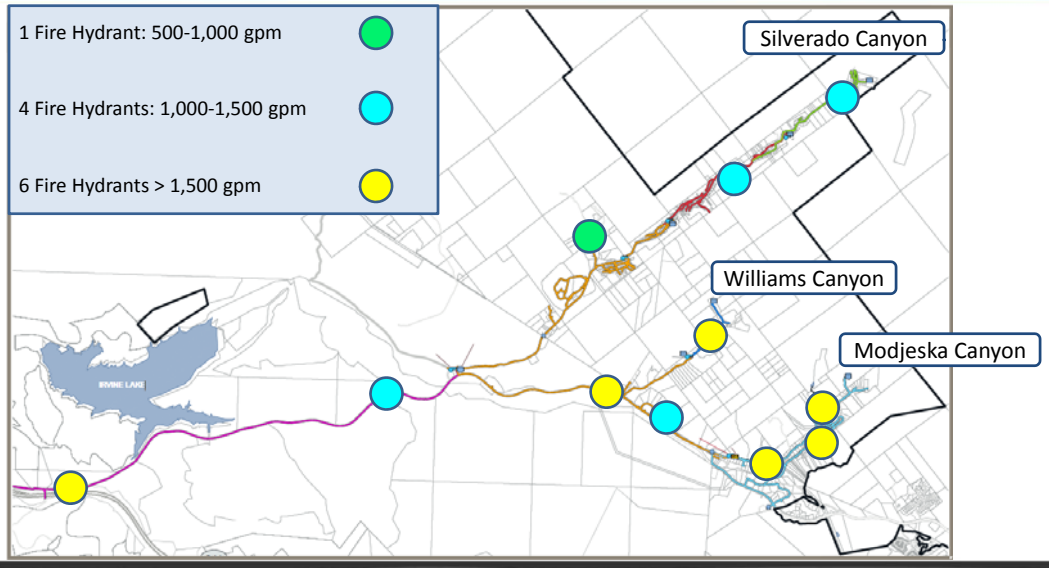
Existing System Fire Flow and Potential Fire Flow Alternatives

Existing Field Tested Fire Flow

- Tested 11 locations on 6-inch and larger “transmission” mains
- Identified actual field conditions
  - Fire hydrant flows are not projected to OCFA theoretical “20 psi residual” flows

Irvine Ranch WATER DISTRICT

Field Tested Fire Flow Results



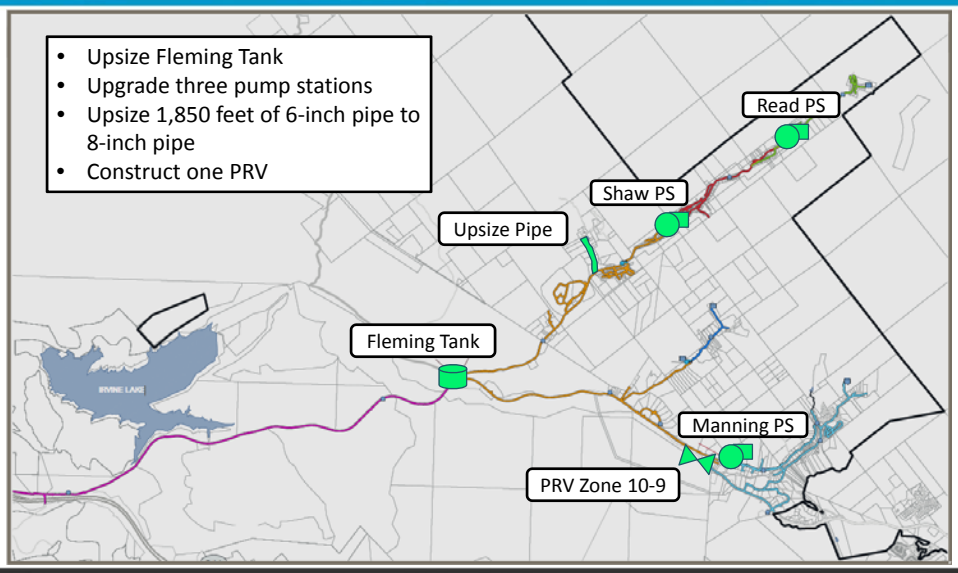
Fire Flow Alternatives

- Developed two sets of alternatives:
  - Tier 1 – 1,000 gpm minimum fire flow
  - Tier 2 – 1,500 gpm minimum fire flow
- Maintain system pressures of 20 psi and flows for two hours
- Updated OCFA fire flow requirements for new areas (e.g. St. Michael's Abbey required to have 1,750 gpm for 4 hours)

Irvine Ranch WATER DISTRICT

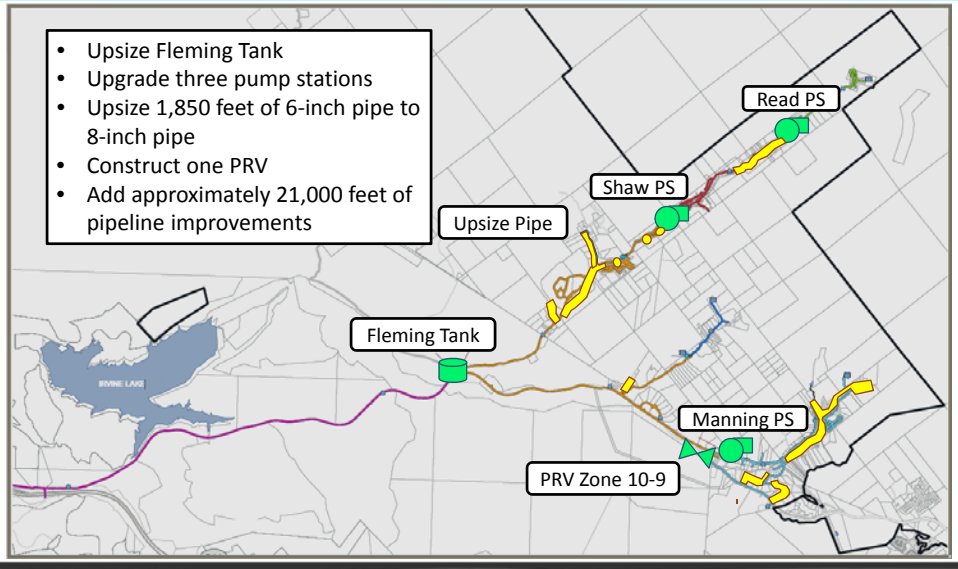
Tier 1 – "1,000 gpm Alternative"

- Upsize Fleming Tank
- Upgrade three pump stations
- Upsize 1,850 feet of 6-inch pipe to 8-inch pipe
- Construct one PRV



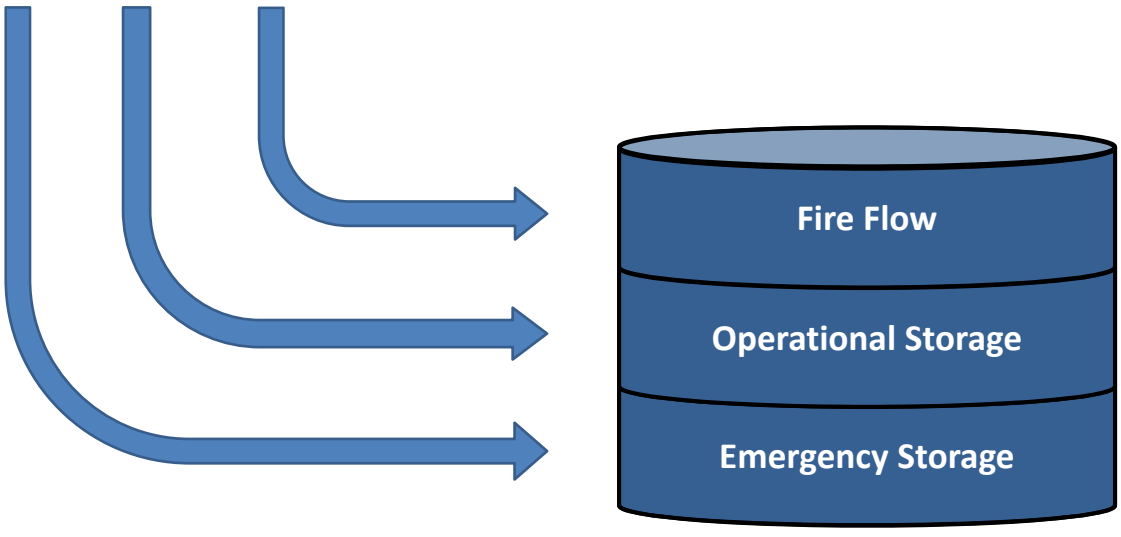
Tier 2 – "1,500 gpm Alternative"

- Upsize Fleming Tank
- Upgrade three pump stations
- Upsize 1,850 feet of 6-inch pipe to 8-inch pipe
- Construct one PRV
- Add approximately 21,000 feet of pipeline improvements



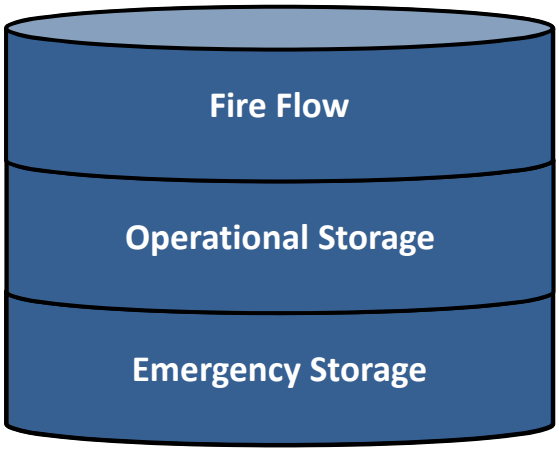
Santiago Canyon Local Storage Concept

IRWD Storage Components

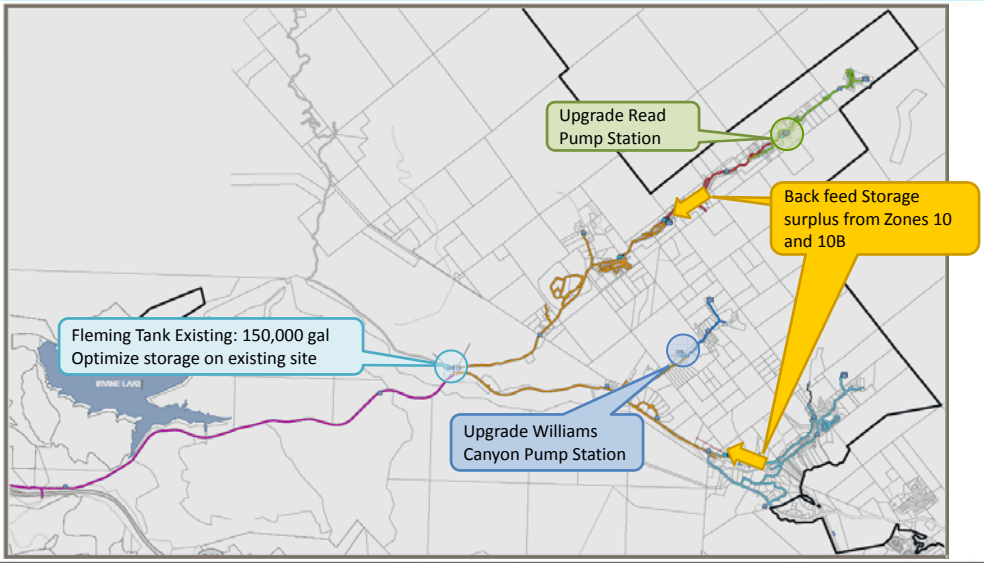


Local Storage Concept

1. Increase local storage
2. Supplement storage with additional pumping



Local Storage Concept for Tier 1 (1,000 gpm) and Tier 2 (1,500 gpm)



Irvine Ranch WATER DISTRICT

Project Costs and Project Financing

Construction Costs

Facility	"1,000 gpm" Enhancements	"1,500 gpm" Enhancements
Pipelines	$700,000	
Pump Stations	$3,200,000	
PRV	$400,000	
Storage Tanks	$4,900,000	
Total	$9,200,000	

Construction Costs

Facility	"1,000 gpm" Enhancements	"1,500 gpm" Enhancements
Pipelines	$700,000	$8,500,000
Pump Stations	$3,200,000	$3,200,000
PRV	$400,000	$400,000
Storage Tanks	$4,900,000	$4,900,000
Total	$9,200,000	$17,000,000

Overall Project Costs

Facility	"1,000 gpm" Enhancements	"1,500 gpm" Enhancements
Construction	$9,200,000	$17,000,000
Design and CA&I (35%)	$3,200,000	$6,000,000
Contingency (50%)	$4,500,000	$9,000,000
Total	$16,900,000	$32,000,000

Irvine Ranch WATER DISTRICT

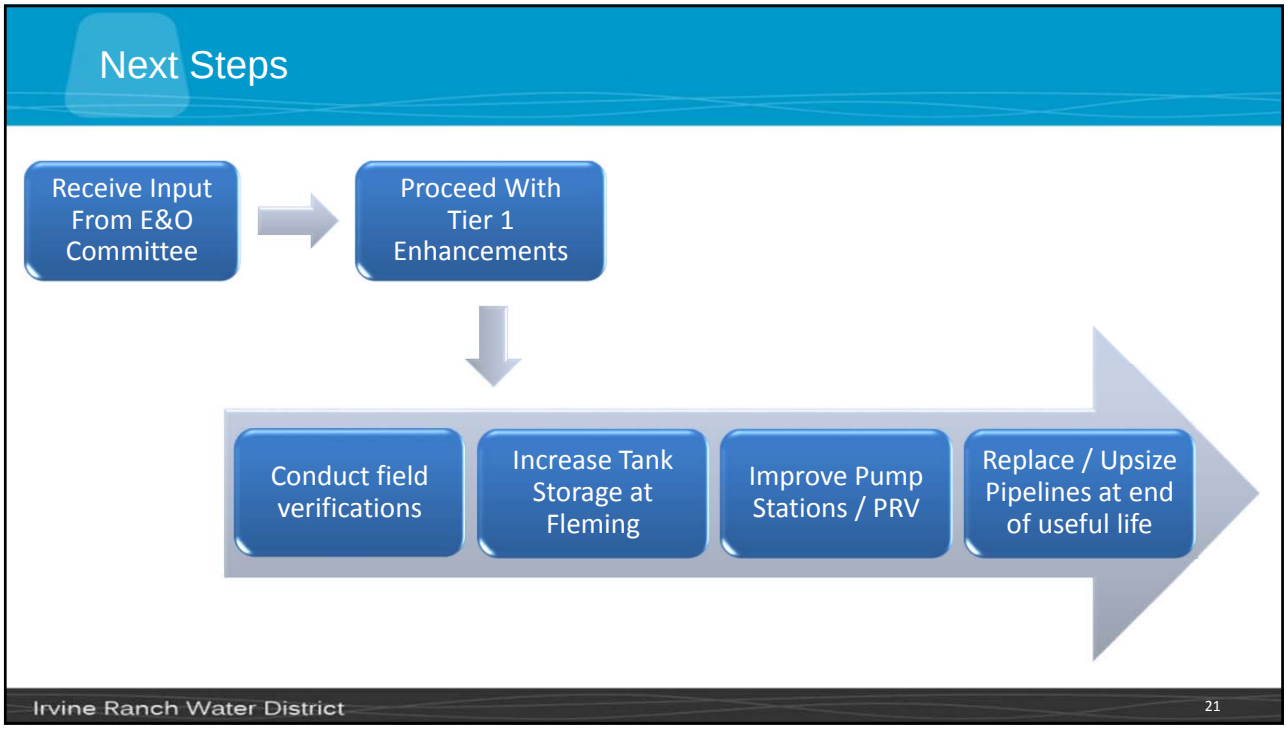
Current Long-Term Capital Program Projects

Project No.	Project Name	Capital Budget
10101	Santiago Canyon Fleming Storage	$11,207,500
10102	Santiago Canyon Potable Pipeline Replacements	$6,726,000
	Total	$17,933,500

Conclusions

- Existing fire flow in transmission mains throughout the canyon provide greater than 500 gpm at various “residual pressures.”
- Tier 1 and Tier 2 improvements provide fire flow for 1,000 gpm and 1,500 gpm at 20 psi for 2 hours respectively.
- Tier 1 and Tier 2 improvements do not address many smaller distribution lines in the canyon.

Irvine Ranch WATER DISTRICT


Next Steps
Receive Input From E&O Committee
Proceed With Tier 1 Enhancements
Conduct field verifications
Increase Tank Storage at Fleming
Improve Pump Stations / PRV
Replace / Upsize Pipelines at end of useful life
Irvine Ranch Water District
21

September 13, 2017
Prepared by: J. Corey / K. Welch
Submitted by: F. Sanchez / P. Weghorst
Approved by: Paul A. Cook

ENGINEERING AND OPERATIONS COMMITTEE

ENVIRONMENTAL COMPLIANCE CONSULTANT SELECTION FOR THE SYPHON RESERVOIR IMPROVEMENT PROJECT

SUMMARY:

The proposed Syphon Reservoir Improvement Project will allow Irvine Ranch Water District to increase its seasonal recycled water storage capacity by approximately 4,100 acre-feet (AF). An Environmental Impact Report (EIR) needs to be prepared for the project consistent with the California Environmental Quality Act (CEQA) and the requirements of the National Environmental Policy Act (NEPA). Staff has evaluated four proposals to prepare the EIR and conducted interviews with the top two firms. Staff recommends the Board authorize the General Manager to execute a Professional Services Agreement with Environmental Science Associates (ESA) in the amount of $611,226 to prepare an EIR for the proposed Syphon Reservoir Improvement Project.

BACKGROUND:

Syphon Reservoir is located east of Portola Parkway between Bee Canyon Access Road and State Route 133 (SR-133). The existing dam and reservoir was constructed in 1949 and was historically used by the Irvine Company to store agricultural irrigation water. In 2010, IRWD purchased Syphon Reservoir for storing recycled water. In 2012, IRWD completed the "Syphon Reservoir Expansion Feasibility Study" and the "Syphon Reservoir Environmental Regulatory Evaluation" to determine the feasibility of expanding the usable storage capacity of the reservoir. In 2014, IRWD constructed interim facilities to integrate the existing reservoir into IRWD's recycled water system for use as a small, recycled water seasonal storage facility.

Project Overview:

The proposed Syphon Reservoir Improvement Project would allow IRWD to increase its seasonal recycled water storage capacity by approximately 4,100 AF. IRWD proposes to increase the reservoir storage capacity by replacing the existing 59-foot high dam with a new 136-foot high embankment dam. The final usable storage capacity at Syphon Reservoir will be 4,900 AF. The existing onsite strainer and disinfection facilities that were constructed under the interim facilities project would be replaced with larger facilities. Necessary conveyance facilities to integrate the expanded reservoir into IRWD's recycled water system will include a pump station and associated pipeline. The pump station is currently in design as a part of the Eastwood Recycled Water Pump Station Project.

Preparing Project EIR:

An Environmental Impact Report (EIR) needs to be prepared for the proposed project consistent with the California Environmental Quality Act (CEQA). To support IRWD's efforts in securing

federal funding for the project, the EIR also needs to fulfill the requirements of the National Environmental Policy Act (NEPA).

Consultant Selection:

A Request for Proposals for preparing an EIR for the proposed project was issued to four environmental firms: Dudek, ESA, LSA Associates, and Psomas. Staff completed a thorough review and evaluation of each proposal, and conducted interviews with the top two firms. The Environmental Consultation Selection Matrix for the proposed project is shown in Exhibit "A". Staff recommends the selection of ESA to complete the work. The key strengths of ESA's proposal are as follows:

- A project management team with a superior depth of expertise and knowledge of IRWD;
- Outstanding understanding of the key issues associated with the project;
- An informed approach that reflects an understanding of the project, IRWD's expectations and the requirements of CEQA and NEPA;
- A scope of work that reflects the expected level of effort;
- The outstanding qualifications of their project team;
- Appropriate commitments to the project by the Principal in Charge and Project Manager;
- Prior experience with dam construction projects; and
- A superior level of support and collaboration on public outreach efforts.

ESA proposes a 20-month schedule to prepare and certify an EIR for the project. ESA's cost estimate to complete the work is $611,226. ESA's scope of work, cost estimate and schedule are included as Exhibit "B".

Additional Steps:

In addition to the environmental consultant award, staff has been working with the Katz & Associates communications firm on a draft plan overview for third-party outreach support. Staff intends to finalize this plan later this month and then issue an a Request for Proposals (RFP) in early fall to several communications firms. Over the past few months, staff have met with engineering firms expressing interest in the Owner's Representative as well as detailed design project efforts. Staff is currently drafting the RFP for the Owner's Representative scope of services and expect to advertise in October.

FISCAL IMPACTS:

The Syphon Reservoir Improvement Project (Project 03808), is included in the FY 2017-18 Capital Budget as a flagged project. On July 7, 2017, the Board approved an Expenditure Authorization in the amount of $2,500,000 for design, environmental compliance and permitting work associated with the project. The amount of funds reserved for environmental and permitting work is $1,000,000, which is adequate to fund the work proposed by ESA.

RECOMMENDATION:

That the Board authorize the General Manager to execute a Professional Services Agreement with ESA to complete an Environmental Impact Report for the Syphon Reservoir Improvement Project for the not-to-exceed amount of $611,226.

LIST OF EXHIBITS:

Exhibit "A" – Environmental Compliance Consultation Selection Matrix for the Syphon Reservoir Improvement Project
Exhibit "B" – ESA's Scope of Work, Schedule and Cost Estimate for Preparing and EIR for the Syphon Reservoir Improvement Project

EXHIBIT "A"

ENVIRONMENTAL CONSULTANT FOR SYPHON RESERVOIR IMPROVEMENT PROJECT

Item	Description	Weights	Dudek	Psomas	ESA	LSA
A	**TECHNICAL APPROACH**					
1	Project Understanding	30%	3	4	1	2
2	Project Approach	30%	2	4	1	3
3	Scope of Work / Level of Effort	30%	2	4	1	3
4	Schedule	10%	2	4	1	3
	Weighted Score (Technical Approach)	**60%**	2.3	4.0	1.0	2.7
B	**QUALIFICATION AND EXPERIENCE**					
1	PIC		Joe Monaco, AICP MA, 28 yrs experience	Kathleen Brady, AICP BS, 39 yrs experience	Tom Barnes BA, 22+ yrs experience	Nicole Dubois MA, 15 yrs experience
		30%	2	3	1	4
2	Project manager		Sarah Lozano, AICP MA, 17 yrs experience	Jennifer Marks BS, 17 yrs experience	Jennifer Jacobus, PhD PhD,15+ yrs experience	Nicole West MS, 16 yrs experience
		20%	2	3	1	4
3	Project Team (See Team Evaluations)	30%	2	3	1	4
4	Firm's Relevance Experience	20%	2	3	1	4
	Weighted Score (Experience)	**40%**	2.0	3.0	1.0	4.0
	COMBINED WEIGHTED SCORE	**100%**	**2.18**	**3.60**	**1.00**	**3.22**

C	**SCOPE OF WORK**									
TASK		Task Hours	FEE		Task Hours	FEE	Task Hours	FEE	Task Hours	FEE
1	Project Initiation/Mgmt/Initial Study Screening	364	$68,780		77	$10,170	310	$50,531	429	$66,319
2	Collect & Review Existing Information/RFIs	124	$22,480		34	$4,950	44	$6,776	80	$11,492
3	Project Schedule	32	$5,840		10	$1,750	32	$4,974	96	$15,218
4	Technical Studies	154	$22,130		297	$36,510	1,120	$149,792	857	$119,576
5	Coordination w/Consultants (Design/PR)	108	$18,360		40	$5,875	84	$13,020	140	$21,089
6	Develop Project Description/Identify Alternatives	150	$25,210		53	$7,420	180	$27,393	158	$19,699
7	AB52 Tribal Cultural Resources	17	$2,500		20	$2,260	58	$9,228	8	$1,080
8	Prepare NOP/Initial Study/NOC	160	$25,480		34	$3,985	105	$13,525	18	$2,292
9	Public Scoping	56	$10,290		54	$6,440	132	$19,202	128	$17,173
10	Prepare Admin Draft EIR	1,541	$253,425		455	$58,040	821	$116,923	764	$96,026
11	Prepare Screencheck DEIRs	314	$47,985		202	$26,785	284	$38,779	340	$42,702
12	Prepare Public Review DEIR/NOA/NOC	177	$28,815		60	$8,780	74	$8,965	236	$26,513
13	Conduct Public Review Mtg	70	$11,850		52	$5,960	84	$12,244	128	$17,173
14	Prepare Final EIR/Response to Comments	278	$46,390		51	$7,505	216	$33,229	692	$90,851
15	Prepare MMRP	16	$2,310		11	$1,305	30	$4,118	52	$6,787
16	Prepare Findings/Statement of Overiding Concerns/NOD/Finalize EIR	72	$10,960		73	$9,225	80	$10,604	76	$10,723
	Subtotal Tasks 1 - 16	**3,633**	**$602,805**		**1,523**	**$196,960**	**3,654**	**$519,302**	**4,202**	**$564,713**
D	**MISCELLANEOUS**				178	$33,925		$16,227		
	Direct Costs/Reimburseables		$11,850			$25,200		$12,535		20,930
	Sub-Consultants (Costs&Fees)		$20,355					$41,580		$25,266
	Total Misc		**$32,205**		**178**	**$59,125**		**$70,342**		**$46,196**
	TOTAL CONSULTANT SERVICES (CEQA +)	**3,633**	**$635,010**		**1,701**	**$256,085**	**3,654**	**$589,644**	**4,202**	**$610,909**
17	NEPA Compliance (Optional)	540	$89,960		246	$35,235	120	$21,582	747	$108,594
	TOTAL CONSULTING SERVICES (w/ NEPA)	**4,173**	**$724,970**		**1,947**	**$291,320**	**3,774**	**$611,226**	**4,949**	**$719,503**

E	**OTHER**				
	Multiplier	N/A	N/A	3.40	3.15
	Sub Consultants	Trames Solutions	Linscott Law & Greenspan	VisionScape, Fehr&Peers	Cornerstone, Ninyo&Moore
	Exceptions taken to IRWD Std. Contract	None	None	None	None
	Insurance Provided (General Liability)	Yes	Yes	Yes	Yes
	Insurance Provided (Professional)	Yes	Yes	Yes	Yes
	Forced Rankings: (Enter 1, 2, 3 or 4, 1 being best)	**2**	**4**	**1**	**3**

ESA

Irvine Ranch Water District

Proposal for Environmental Documentation for the Proposed Syphon Reservoir Improvement Project

Work That Matters

08.14.17 | proposal

ESA

Irvine Ranch Water District

Proposal for Environmental Documentation for the Proposed Syphon Reservoir Improvement Project

Work That Matters

August 14, 2017

Prepared for:
Irvine Ranch Water District

Fiona M. Sanchez
Director of Water Resources

ESA
626 Wilshire Boulevard
Suite 1100
Los Angeles, CA 90017
213.599.4300
www.esassoc.com

P170348.00

ESA

626 Wilshire Boulevard
Suite 1100
Los Angeles, CA 90017
213.599.4300 phone
213.599.4301 fax

www.esassoc.com

August 14, 2017

Fiona M. Sanchez
Director of Water Resources
Irvine Ranch Water District
15600 Sand Canyon Avenue
Irvine, CA 92718

Subject: Proposal for Environmental Documentation for the Proposed Syphon Reservoir Improvement Project

Dear Fiona:

Irvine Ranch Water District (IRWD) is embarking on an ambitious project to expand Syphon Reservoir to provide critical operational storage capacity and ensure maximum beneficial use of recycled water as part of IRWD's water supply portfolio. We understand that the Syphon Reservoir Improvement Project is important for the region because it will reduce dependency on imported water, especially during summer months, and maintain operational efficiency at IRWD's water recycling plants. Successful completion of the environmental documentation for this complex opportunity will require a team fully versed in environmental impacts associated with construction of new dams and reservoirs and the intricacies of the Central and Coastal Natural Community Conservation Plan/Habitat Conservation Plan (NCCP/HCP). Our ESA Team includes Jennifer Jacobus, PhD as Project Manager, a known and trusted partner to IRWD. Jennifer is supported by Tom Barnes as Project Director and a technical team that includes seasoned biologists with decades of experience working in Orange County and within the NCCP/HCP area. Combined with Jennifer and Tom's experience with projects at Crafton Hills Reservoir and Lake Perris Dam, our ESA Team has the unique expertise required to complete the environmental documentation for the Syphon Reservoir Improvement Project and keep the project on track and on schedule.

Why ESA?

A Known and Trusted Partner: Jennifer, Tom, and our technical team have worked on numerous IRWD projects, understand your expectations and infrastructure, and will deliver customer service of the highest caliber. ESA has provided environmental compliance services to IRWD since 2005, including California Environmental Quality Act (CEQA)/National Environmental Policy Act (NEPA) documentation; technical surveys and assessments for biological resources, cultural resources, air quality, surface hydrology, and water quality; and mitigation monitoring during project construction. ESA has held an on-call services contract with the District since 2009. We pride ourselves on building relationships with clients such as we have with IRWD, working to understand agency culture and expectations, and partnering with staff to understand their needs. We understand and appreciate IRWD's high standards for quality professional services and have built institutional knowledge of District water and wastewater infrastructure, giving us insight that allows us to provide such services in a cost-efficient manner.

CEQA/NEPA Experts and a Team that Specializes in Water Projects: Jennifer and Tom are leaders in our southern California Water Practice Group, which is unmatched in our exclusive focus on water industry clients like IRWD. We deliver environmental compliance strategies that are legally defensible at a level of effort that is appropriate for every project, and with a holistic vision for how CEQA can serve and benefit project design, operation, and permitting.

Recent and Relevant Experience with CEQA Compliance for Dam and Reservoir Projects: Our Management Team and Technical Team will bring their understanding of critical issues associated with new dams and expanded reservoirs – such as the Lake Perris Dam Retrofit and Crafton Hills Reservoir Enlargement – to ensure environmental issues are not

overlooked. Key issues we identify in our proposal include biological impacts onsite on deed-restricted lands in the NCCP/HCP; construction-related impacts to traffic, air quality and noise; and visual impacts of a new and higher dam. ESA's Technical Team includes all in-house staff, with the exception of two subconsultants: VisionScape will provide visual simulations of the new dam, and Fehr & Peers will provide a Traffic Study that focuses on project construction.

NCCP/HCP and Agency Consultation Expertise: With the acquisition of PCR in 2015, ESA gained a seasoned team of biologists in our Irvine office with decades of experiences working with Orange County habitats, species, and the NCCP/HCP. Steve Nelson, Scott Holbrook, and Maile Tanaka have extensive understanding of coastal sage scrub habitat and associated species and have put forth a scope of work that is proactive and can support creative solutions for biological mitigation strategies for the Syphon Reservoir site. Our ESA team has relationships with regulatory agencies, such as the NCC, CDFW, USFWS, and Reclamation, and experience consulting early with such agencies to negotiate mitigation strategies.

Proven Customer Service: IRWD will require strict schedule management and regular progress reporting for this Project. Through our working history with IRWD, ESA has repeatedly demonstrated our ability to be flexible to meet the schedules the District requires. As Project Manager, Jennifer will draw on her experienced team to ensure that our work assignments are completed efficiently and on time, keeping the project moving forward. She will be ESA's primary point of contact and responsible for ensuring all correspondence and updates are provided so IRWD staff can keep its and Executive Management team and Board of Directors informed about progress as required.

We appreciate this opportunity to submit our proposal to IRWD for the Syphon Reservoir Improvement Project. Please feel free to contact me or Jennifer Jacobus at 213 599-4300, or tbarnes@esassoc.com, jjacobus@esassoc.com, if you have any questions or need additional information.

Sincerely,

Tom Barnes
Vice President and Director
ESA Water Group

Jennifer Jacobus, PhD
Senior Managing Associate
ESA Water Group

Table of Contents

Irvine Ranch Water District, Syphon Reservoir Improvements Project

1

Scope of Work

ESA

Section 1

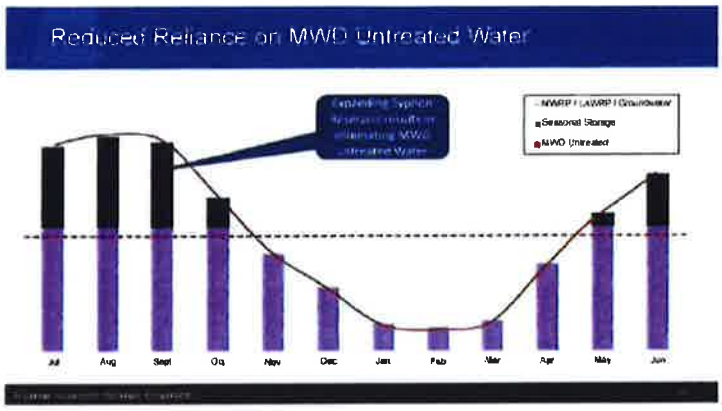
Scope of Work

Project Understanding

Syphon Reservoir is an existing recycled water storage reservoir located in Irvine, California. Irvine Ranch Water District (IRWD) acquired Syphon Reservoir in 2010 from the Transportation Corridor Agency (TCA) and implemented the Syphon Reservoir Interim Facilities, which made minor improvements to integrate the reservoir into IRWD's recycled water system. IRWD produces recycled water at its Michelson Water Recycling Plant (WRP) and Los Alisos WRP and provides this water to customers primarily for agricultural and landscape irrigation, as well as industrial processes, toilet flushing and cooling towers. When recycled water production exceeds seasonal demands, recycled water can be stored at Syphon Reservoir, as well as San Joaquin, Rattlesnake, and Sand Canyon Reservoirs.

IRWD is proposing to implement the Syphon Reservoir Improvement Project, which would increase the reservoir storage capacity by replacing the existing 59-foot high Syphon Dam with a new embankment dam that would be up to 136 feet high. By replacing the Dam, the storage capacity at Syphon Reservoir would increase from 535 acre feet (AF) to 4,960 AF. Existing onsite strainer and disinfection facilities would be replaced with larger facilities. The Project would be integrated into IRWD's recycled water system through a new pumping station and offsite pipeline that are already built.

Improvements to Syphon Reservoir would provide seasonal storage to optimize the use of recycled water and meet current and future recycled water demands. Annual recycled water demands, which are dominated by



irrigation uses, fluctuate considerably due to seasonal variations. IRWD's existing recycled water storage reservoirs allow IRWD to store surplus recycled water produced at the WRPs during periods of low demand (winter months) and then use the stored water during periods of high demand (summer months). Currently, once the storage reservoirs are full in winter months, excess recycled water supplies are lost to ocean disposal, and then IRWD must purchase supplemental imported water from Metropolitan Water District of Southern California (MWD) to meet summer demands. Based on projected demands and supplies, IRWD estimates that it will need an additional 3,200 AF of seasonal storage in 2020 and about 4,500 AF by the year 2030. The Syphon Reservoir Improvement Project would provide the necessary additional storage to allow IRWD to meet its projected seasonal storage needs. The Project would also reduce reliance on MWD imported water during summer months, reduce diversions of sewage to Orange County Sanitation District, and reduce discharges of recycled water to the ocean that could otherwise be used by IRWD customers.

Syphon Reservoir is located within the Central and Coastal Natural Community Conservation Plan/Habitat Conservation Plan (NCCP/HCP) and is included as an operating reservoir allowed within the NCCP/HCP Reserve. Implementation of expanded seasonal storage for recycled water purposes was anticipated and identified as a permitted use in the NCCP/HCP. In addition, the Syphon Reservoir property is subject to deed restrictions; TCA as the previous owner committed lands for mitigation of impacts associated with the Eastern Transportation Corridor Project. As a result of the Syphon Reservoir Improvement Project, the water surface elevation would increase from 376 feet above mean sea level (amsl) to 456 feet amsl, expanding the shoreline and inundating up to approximately 78 acres that currently support upland and wetland vegetation communities that are within the NCCP/HCP Reserve area and deed restricted lands (Syphon Reservoir Environmental Regulatory Evaluation, Dudek 2012).

Water levels at Syphon Reservoir would fluctuate seasonally; however, as water is stored in winter when recycled water supply exceeds demand and the reservoir is drawn down in summer when demand exceeds supply. The estimated minimum operating capacity of the reservoir would be about 180 AF to maintain water quality (GEI 2012).

Requested Services

IRWD has requested environmental documentation for the Project, specifically preparation of an environmental impact report (EIR) in accordance with the California Environmental Quality Act (CEQA). IRWD intends to pursue funding for the Project from the U.S. Bureau of Reclamation (Reclamation), and as such, environmental documentation must meet the requirements of the National Environmental Policy Act (NEPA). As stated in the Addendum to the RFP, IRWD requests a CEQA-Plus document that is NEPA-ready.

IRWD has completed an Engineering Feasibility Study for the Project (GEI Consultants 2012). Further preliminary design and engineering work will occur concurrently with preparation of the CEQA/NEPA document. Although a geotechnical assessment was completed to support the Feasibility Study, IRWD expects additional and substantial geotechnical investigation will be required to inform the design of the dam and reservoir.

Approach

Specialized Project Management Team

ESA has been a partner with IRWD, providing environmental compliance services for over 10 years. **ESA's team for this Project will be led by Jennifer Jacobus as designated Project Manager, supported by Tom Barnes as the Project Director.** Jennifer has maintained a long-standing relationship with IRWD staff and has a proven track record of successful CEQA compliance for many IRWD projects, including large controversial projects and those with vocal local community stakeholders, such as the Michelson WRP Phase II and III Expansion Project Supplemental EIR (a.k.a. the Biosolids Project) and the Baker Water Treatment Plant EIR and Addenda. Through these projects, Jennifer has a history of working with IRWD's Public Affairs staff to discuss messaging and prepare public presentation materials. Jennifer also has a history of working with IRWD's Engineering staff as integral and crucial members of project teams. These experiences will serve the Syphon Reservoir Improvement Project, given Jennifer's understanding of IRWD's expectations and style. Jennifer will be the cornerstone of ESA's team as the primary contact, participating in all meetings and providing consistency and reliability in the flow of information between IRWD and ESA's team.

In addition, Jennifer and Tom both have experience completing the CEQA process for similar dam and reservoir projects. Jennifer managed the EIR for the Department of Water Resources' Crafton Hills Reservoir Enlargement Project, which built a new dam in the drainage adjacent to the existing reservoir to enlarge the reservoir. Tom managed the EIR for DWR's Perris Dam Remediation Project, which implemented a seismic remediation of the Lake Perris Dam, requiring lowering of the lake elevation and 2 million cubic yards of soil hauling. Tom led the preparation of the EIR and permit process strategy required for inclusion in Riverside County's Multi-Species Habitat Conservation Plan (MSHCP).

Coordination and Project Development

The Project Team will include IRWD staff (Planning, Public Affairs, Engineering) and separate consultants for program management, design, public outreach, and environmental compliance. As the environmental compliance consultant, ESA will maintain open channels of communication with all Project Team members, focusing on responsiveness, reliability, and transparency. Starting with the kick-off meeting, ESA will work with IRWD to develop a clear expectation for communication protocols among team members to ensure efficient coordination and make sure schedule and progress reports are provided as needed.

The design process for the Project will proceed in parallel with the CEQA/NEPA process. A preliminary design report may not be complete prior to release of the CEQA document. IRWD has indicated there will be an owner's representative and engineering design

consultant that will provide the information ESA needs to develop an adequate Project Description for purposes of CEQA/NEPA. Our starting point will be the dam design options included in the Engineering Feasibility Study (GEI 2012), as well as other options identified by the owner's representative and design consultant team. In addition, the design consultant will provide information about the nature and extent of additional geotechnical investigation required, along with methods and materials. The benefit to tandem design and environmental processes is the opportunity for ESA to provide early feedback regarding environmental constraints that may inform the dam and reservoir design, and potentially avoid schedule delays.

Leveraging Existing Documentation

There is extensive information already available about the project site, design, constructability, and environmental constraints included in the following existing reports:

- Phase I Environmental Site Assessment (2009)
- Syphon Reservoir Expansion Engineering Feasibility Study (GEI 2012)
  - Constructability Analysis
  - Geotechnical Data Report
  - Water Quality Study of Expanded Syphon Reservoir
  - Inundation Study
- Syphon Reservoir Environmental Regulatory Evaluation (Dudek 2012)
- Syphon Reservoir Interim Facilities IS/MND (Dudek 2013)

ESA will leverage the existing information to the extent feasible in developing the project description and in our environmental impact analyses. These reports will be our first stop for information, upon which we will build through coordination with the greater Project Team and then supplement with additional research and analysis as needed.

CEQA Compliance Options

According to IRWD, additional geotechnical investigation will be required to inform the design of the Syphon Dam and Reservoir. Based on conversations with IRWD staff, we understand that the results of the investigation will determine the feasibility of reusing soils onsite versus the need to import large quantities of materials to construct the dam. IRWD has the option to prepare one CEQA document that simultaneously assesses both the geotechnical investigation and the Project, or two separate documents that separates the geotechnical from the larger dam construction project. There are benefits and risks associated with each approach.

Two Documents: If two documents are prepared, we assume that IRWD would first prepare an Initial Study/Mitigated Negative Declaration (IS/MND) for the geotechnical investigation requiring 9 to12 months to complete (see schedule below). The IS/MND would require technical studies for Biological Resources and Cultural Resources and early consultation with the NCCP/HCP Natural Communities Coalition, California Department of Fish and Wildlife, and U.S. Fish and Wildlife Service to develop appropriate mitigation strategies. According to IRWD, the geotechnical investigation may require lowering the water elevation, construction of temporary access roads, and use of heavy equipment that will substantially disturb the site. The primary benefit associated with this approach is to allow the geotechnical work to proceed as soon as possible to inform the design process. Assuming a 3-month period to secure permits, the geotechnical work could start after 12 to 15 months. The permits required may include but not be limited to a California Fish and Game Code Section 1600

Streambed Alteration Agreement, Clean Water Act Section 404/401 permit; and mitigation plan under the NCCP/HCP.

The spectrum of benefits and risks associated with this approach is summarized in **Table 1-1**. Under this approach, it may take up to 33 months to complete the environmental documentation for the Project (see schedule below). Generally, this approach is not recommended because the extent of site disturbance associated with geotechnical work will likely be similar to the disturbance associated with the dam and reservoir construction. Processing two separate sets of permit applications for the same site disturbance creates redundancy in effort and cost. In addition, this approach introduces a risk for claims of piecemealing the CEQA document

One Document: If one document is prepared, then the Project EIR will evaluate both activities, the geotechnical investigation and dam/reservoir construction. Without the results of the geotechnical investigation, the EIR may need to include a range of options for Project design and construction methods. Since the geotechnical investigation would result in substantial disturbance to a large part of the Syphon Reservoir property, including the area that would be disturbed due to implementation of the Project itself, covering all activities in one CEQA document may avoid the need for two sets of permit applications.

The spectrum of benefits and risks associated with this approach is summarized in **Table 1-2**. Under this approach, the schedule indicates a total of 20 months to complete the environmental documentation for the Project, in accordance with the schedule in the RFP. Given the shorter schedule and the potential to consult with wildlife agencies and develop mitigation strategies once for both activities, **ESA recommends preparing one CEQA document for the Project**, which is in line with IRWD's request in the RFP. However, given the universe of benefits and risks associated with this decision, ESA would welcome the opportunity to discuss the two approaches with IRWD, particularly once a design consultant is engaged, to vet this decision and make adjustments if necessary to best serve the Project schedule and goals. For the purposes of this scope of work, ESA has assumed the one document approach. The scope and cost would need to be modified if the two-document approach is ultimately chosen.

Table 1-1. Benefits and Risks of Preparing Two Environmental Documents

Benefits	Risks
Geotechnical investigation can be completed sooner.	Segmenting the permitting efforts for the geotechnical investigation and the full Project creates redundant level of effort.
Geotechnical results can inform Project design sooner and provide greater certainty regarding Project feasibility and design.	Potential risk for claims of piecemeal for the CEQA document.
Project EIR could include a refined Project Description that incorporates geotechnical results, reducing the range of options to be evaluated and potential associated impacts and mitigation.	CEQA/NEPA process overall takes 33 months to complete.
Lower risk of having to do a subsequent CEQA document due to changes in the Project after the geotechnical investigation is complete.	Costs may be greater due to longer schedule and two separate documents.

Table 1-2. Benefits and Risks of Preparing One Environmental Document

Benefits	Risks
The CEQA process is completed more quickly in 20 months instead of 33 months.	Project is less defined and therefore greater effort is required to analyze a range of options, which results in a more complex document and potentially greater number of mitigation measures.
Lower costs associated with a shorter schedule and consolidated efforts to consult with resource agencies once and secure permits.	The results of the geotechnical investigation could change the Project Description and, if the change is great enough, require a subsequent CEQA document.
Avoid potential risk for claims of piecemeal for the CEQA document.	The ability to initiate the geotechnical investigation is delayed by about a year.
Combine permitting effort – one consultation and mitigation negotiation with wildlife agencies to cover both geotechnical investigation and Project.	
CEQA document covers the whole of the action which is preferable for Section 106 consultation for impacts to cultural resources	

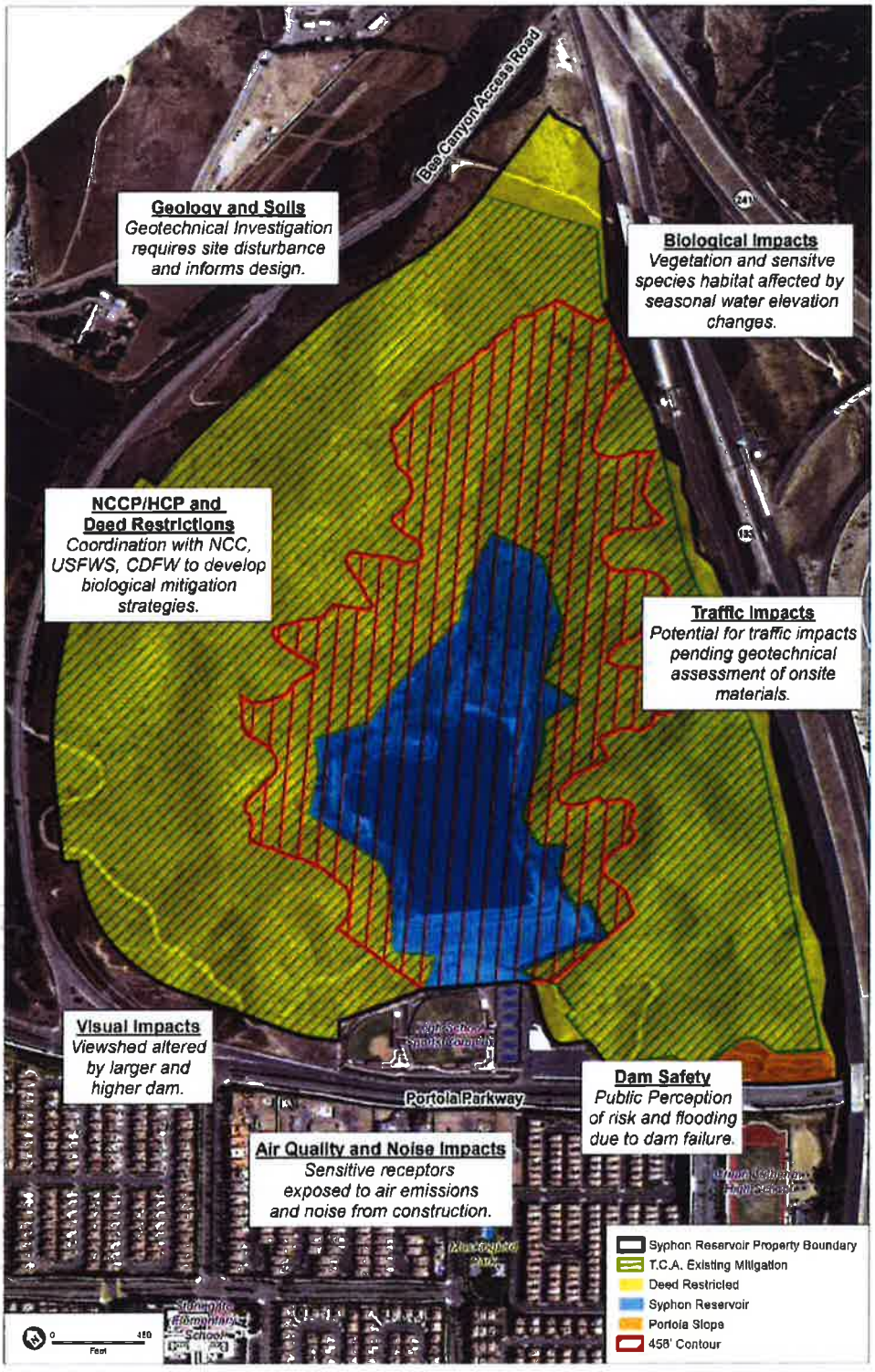
NEPA Compliance

For funding through the U.S. Bureau of Reclamation, our experience is that CEQA-Plus is sufficient for NEPA compliance. The State Water Resources Control Board has developed CEQA-Plus guidelines as a way to streamline NEPA compliance through the CEQA process. CEQA-Plus documents resemble standard CEQA documents but with additional information to assist with federal government consultations. CEQA-Plus documents typically include robust technical reports for biological resources and cultural resources. Our scope of work assumes a CEQA-Plus EIR will be prepared for the Project.

ESA works with Reclamation early in the CEQA/NEPA process to understand the necessary format and content of the biological and cultural technical reports, which Reclamation uses for its federal agency consultations with the U.S. Fish and Wildlife Service and the Office of Historic Preservation. Our team includes Steve Nelson and Michael Bever, who oversee ESA's teams of biologists and archaeologists, respectively, who regularly prepare technical reports, including Biological Assessments and Phase I Cultural Resources Assessments, for purposes of such consultations. Previously, Jennifer has coordinated with Reclamation on behalf of IRWD to facilitate NEPA compliance for the Strand Ranch and Stockdale Integrated Banking Projects.

Key Issues

Our scope of work will cover all environmental topics required by CEQA, as described further below. However, the following are key issues associated with the Project and drive our approach to successful CEQA compliance. These key issues are also highlighted in **Figure 1-1**.



SOURCE: Google Earth, 2016-10-16 (Aerial); IRWD, 2009

IRWD Syphon Reservoir

Figure 1-1
Key Issues

ESA

Biological Resources and NCCP/HCP Consistency

IRWD is a Participating Landowner in the NCCP/HCP. In preparation of this proposal, ESA reviewed the Syphon Reservoir Environmental Regulatory Evaluation (Dudek 2012), which estimates that the Project would seasonally inundate up to approximately 78 acres that currently support upland and wetland vegetation communities that are within the NCCP/HCP Reserve area, as well as deed restricted lands associated with the Syphon Canyon Dam and Reservoir Conveyance Agreement. The vegetation communities include coastal sage scrub and grasslands, freshwater marsh, mulefat scrub, and southern willow scrub. Although the Project is included in the NCCP/HCP, IRWD's NCCP/HCP reserve take allocation is less than 78 acres – e.g., 44.5 acres for coastal sage scrub – and therefore additional mitigation options would be required.

ESA's approach to evaluating impacts to biological resources and developing mitigation strategies for the Project will start with leveraging and building upon the work already done, to the extent possible. Then early consultation with wildlife agencies is recommended to ensure mitigation strategies presented in the EIR will be acceptable for purposes of future permitting and Project implementation. Once the Project is defined by the Project Team, ESA would work with IRWD to develop an approach for early consultation with the Natural Communities Coalition (NCC), which is the managing body for the NCCP/HCP. The main purpose of NCC is to coordinate the land management, monitoring and research within 38,000 acre Reserve System. The NCC Board of Directors includes representatives from the wildlife agencies (e.g., CDFW and USFWS). These consultations would facilitate discussion about impacts, NCCP/HCP take allocations, and mitigation strategies that are forward-looking to ensure the mitigation measures in the EIR are feasible and acceptable to wildlife agencies and will smooth the way for future permitting. In addition, consultation with USFWS and potentially TCA regarding the deed restricted lands will be required to ensure any mitigation strategies are in conformance with the grant deed, or if necessary, to modify the grant deed (Dudek 2012).

Aesthetics and Visual Impacts

Replacing and raising the height of Syphon Dam will alter the visual landscape and views of the Project site from surrounding public vantage points, including the Crean Lutheran Church High School Sports Complex immediately below the dam and the adjacent residential areas and parks. Our approach includes visual simulations of the new dam from surrounding public view points, to inform the assessment of impacts to aesthetics, including visual character of the Project site and scenic vistas. ESA's Team includes VisionScape Imagery, Inc. (VisionScape) as a subconsultant to provide digital imagery and two "before-and-after" simulations of the dam, based on preliminary concepts and footprint to be provided by IRWD.

Construction Impacts and Sensitive Receptors

Implementation of the Project will result in disturbances within and around the site boundaries, including potential onsite road construction, mobilization, staging and operation of heavy equipment, delivery of equipment and materials, offsite disposal of excavated soils. Ground disturbance, equipment operation, truck trips and construction crew commutes all result in air emissions, noise and traffic. The Project site is adjacent to sensitive receptors such as residential areas, schools, and parks that are particularly affected by these temporary effects. Such impacts are important to local communities and may be issues of particular interest to localized stakeholders for this Project. Our approach is to evaluate the worst-case impacts to air quality, greenhouse gas (GHG) emissions, noise and traffic associated with the range of potential design and construction methods for the dam and reservoir. Our scope of work includes stand-alone technical studies for air quality and GHG emissions and traffic impacts. According to the Engineering Feasibility Study (GEI 2012), blasting is not expected for construction of the reservoir; therefore, we propose that a noise technical

study is not warranted. The technical studies will identify potential mitigation strategies to support the EIR analysis and ensure the adverse effects to the local community are minimized. Mitigation strategies will be flexible and adaptable to the ultimate Project design and construction methods.

Dam Safety

An Inundation Study has already been completed for the dam as part of the Engineering Feasibility Study (GEI 2012). The Inundation Study shows the flood extent and travel time from Syphon Reservoir to the Pacific Ocean at Newport Beach, generally following the Peters Canyon Channel and San Diego Creek floodplains. The land uses directly adjacent and downstream of Syphon Reservoir, which are characterized by recreational facilities, residences, and school facilities, would be flooded within 15 minutes in the event of a dam breach (GEI 2012, Figure 7.2). While the presence of the Syphon Dam and Reservoir is an existing condition and residential neighbors have been informed of the expansion project, public outreach and consistent messaging to the local community will be an important component to successful Project implementation. The Inundation Study will be used as the basis for the analysis in the EIR, but ESA's approach includes diligent coordination with IRWD's Public Affairs Department and public outreach consultant regarding description of the Project, its objectives and benefits, and the potential environmental impacts. Such coordination will be essential during every step of the CEQA process, from preparing scoping materials, to public meeting presentations, to development of impact language, to responding to comments.

Scope of Work

For the purposes of this scope of work, ESA has assumed that one EIR will be the appropriate document required for CEQA and NEPA compliance. The scope and cost would need to be modified if the two-document approach as identified in the Approach is ultimately chosen.

Task 1: Project Initiation/Management and Initial Study Screening

ESA will initiate the Project kick-off as well as manage day-to-day coordination and Project deliverables, as described in detail below.

Draft Initial Study, EIR Outline, Schedule

ESA will prepare a draft Initial Study based on our understanding of the Project as described in the Engineering Feasibility Study and it environmental effects. The Initial Study is not meant to be a comprehensive analysis, but rather a tool to identify critical environmental concerns associated with the Project. The Initial Study will inform the EIR outline, and determine which technical sections need to be discussed in detail in the EIR.

Based on the Project understanding, various components of the EIR and timelines, ESA will prepare an initial schedule for discussion with the Project Team. This initial schedule will be expanded upon under Task 3.

Deliverables:

- Draft EIR Outline
- Draft Initial Study
- Schedule

Project Kick-Off

The Project kick-off will include ESA's presentation of the Draft EIR outline and draft Initial Study at the Project ***Kick-off Meeting***. Together, the Project Team will review and discuss the EIR outline, draft Initial Study, as well as Project concepts, responsibilities, initial schedule concepts, and scope of work. The Project Team will discuss the milestone deliverables, as well as determine frequency of regularly scheduled progress meetings/conference calls and progress reports. It should be noted that Project coordination and public meetings are covered under associated tasks within this scope of work. The Project Team will also discuss the Project alternatives as presented in the Engineering Feasibility Study, and IRWD will present the availability of data.

Project Management

ESA understands that IRWD intends the CEQA consultant to act as the Project Manager, ensuring adherence to IRWD's schedule and budget, conducting communication between IRWD and other IRWD consultants (design and public outreach), and ensuring quality control and assurance of deliverables. This will involve weekly communication between IRWD and Project Team members about Project process, schedules, deliverables, and budget. Every two weeks, the ESA Project Manager, Jennifer Jacobus, will prepare a brief Project status report that summarizes upcoming Project activities and recent developments. The status report will also include any relevant schedule updates as defined in Task 3. ESA understands these biweekly updates to be critical for IRWD staff to update management about the process of the Project.

This scope includes 19 coordination meetings with IRWD, which have been included in the respective tasks outlined below. ESA recognizes IRWD's need for the CEQA consultant to strategize meeting agendas and prepare meeting minutes that identify main discussion outcomes and action items from the meetings. While budget for meetings has been included in respective tasks as identified below, budget has been included in this task for meeting agenda and minute preparation.

ESA will manage the scope and budget and internal Project Team coordination. Written monthly progress reports will be submitted with billings that identify target dates for completion of current work tasks, deliverables, and meetings. It is assumed ESA's Project Manager will require 10 hours per month of project management time over the duration of the contract (October 2017 to May 2019; 20 months).

Task 2: Review Existing Information/Submit a Request for Information

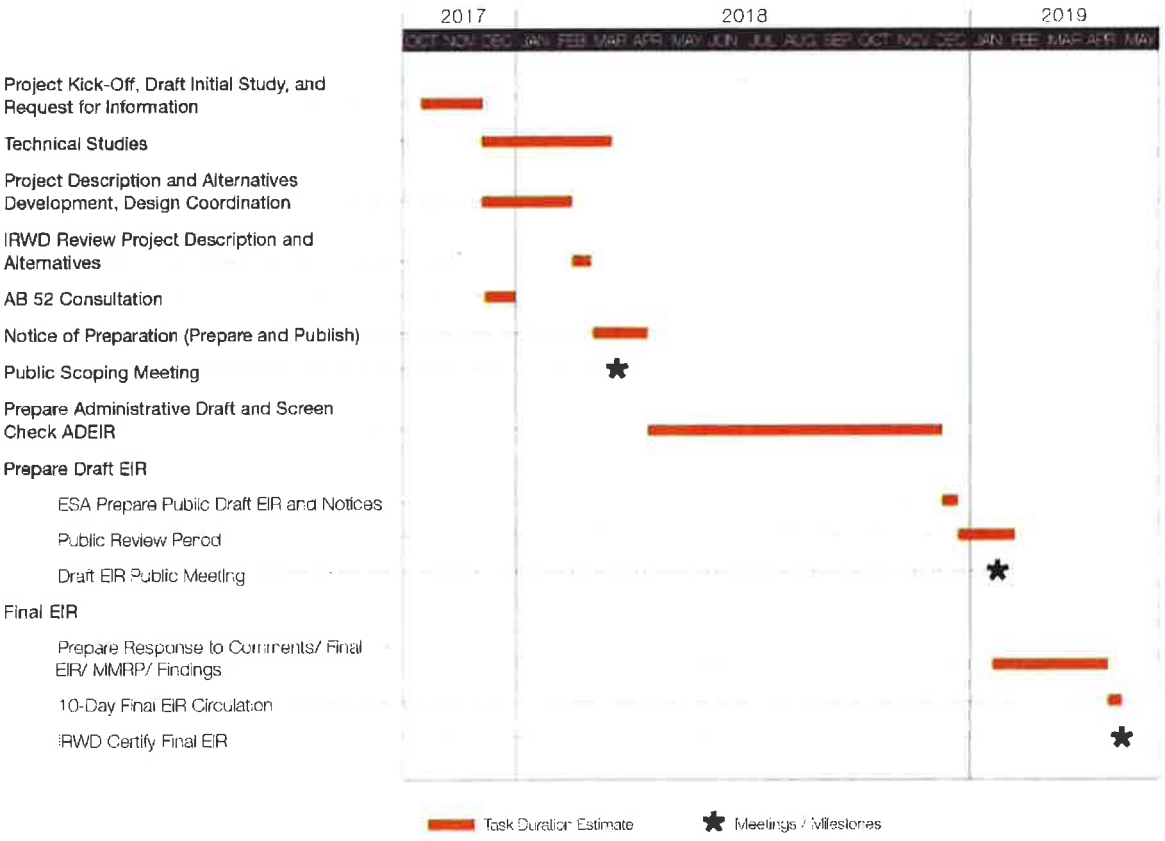
A number of documents have been prepared by IRWD consultants to determine the feasibility and regulatory and environmental constraints of the Project. ESA will review these documents, including the Syphon Reservoir Expansion Engineering Feasibility Study, Syphon Reservoir Environmental Regulatory Evaluation, and the Mitigated Negative Declaration (MND) for the Syphon Reservoir Interim Facilities Project. ESA will prepare a Request for Information (RFI) based on review of existing documentation. The RFI will also include extensive data needs to support the technical reports/studies included in Task 4 below. ESA understands that IRWD will assist in reviewing reports and providing the necessary data to conduct the environmental analysis.

Deliverables:

- Request for Information

Task 3: Project Schedule

Based on discussions with IRWD and information reviewed under Task 1 and Task 2, ESA will prepare a detailed schedule providing adequate preparation of all phases of environmental documentation and public notices, review of deliverables by IRWD, and coordination with IRWD and its consultants. ESA understands that IRWD wishes to certify the CEQA document by May 2019. Based on the schedule provided by IRWD, ESA assumes the Project will require approximately 20 months between October 2017 and May 2019. ESA will make revisions to the schedule as necessary throughout the duration of the Project to inform the Project Team of the progress and status of the environmental process. Bi-weekly updates will be provided to IRWD as part of the Project status reports. When compiling the schedule, ESA understands that IRWD will require two weeks to review the draft Project Description and three weeks to review each CEQA documentation deliverable. ESA has prepared a draft Project schedule below to demonstrate how the 20 month schedule can be achieved based on main Project milestones provided in the RFP. This schedule is also included in Section 4.



Task 4: Technical Studies

Upon review of available Project-related documents, ESA has determined that the following technical studies and documents will be required to support the CEQA documentation: Visual Simulations of the proposed dam; Air Quality/Greenhouse Gas Technical Report; Biological Resources Technical Report; Cultural Resources Assessment; Noise Study; and Traffic Study. The scope of work for each technical study is described below.

Aesthetics – Visual Simulations

ESA's subconsultant, VisionScape, will prepare two visual simulations to illustrate the impacts of constructing the proposed 136-foot high dam in a "before & after" analysis as it would appear following construction. VisionScape will use photo-realistic 3D modeling, GPS engineered site photography and digital imaging. The visual simulations will be based on preliminary concepts and footprint to be provided by IRWD.

Deliverable:

> Draft and final visual simulations

Air Quality/Greenhouse Gas Technical Report

ESA will perform air quality and greenhouse gas (GHG) analyses pursuant to the standards and guidelines set forth by the California Air Resources Board (CARB) and the South Coast Air Quality Management District (SCAQMD). The analysis will describe the existing environmental setting and pertinent statutes and regulations at the local, regional, state and federal level.

ESA will also quantify construction and operational air pollutant and GHG emissions using SCAQMD's recommended California Emissions Estimator Model (CalEEMod) or other appropriate methods. Construction emissions will be based on the provided construction schedule, equipment mix, earthmoving operations, and number of construction worker and delivery trips for one scenario associated with the Project design options – either reuse of on-site of soils, or export/import of soils. Operational emissions will be based on estimated vehicle trips based on the Project's traffic study and default trip length assumptions. ESA will include a quantitative analysis of construction and operational emissions. Localized impacts will be evaluated using the SCAQMD Localized Significance Threshold (LST) mass-rate lookup tables. Analysis of localized operational emissions would not include on-site combustion equipment such as gas turbines, large boilers or other industrial equipment requiring an SCAQMD permit. ESA will also include a qualitative evaluation of carbon monoxide hotspots, a brief discussion of long-term operational health risks, odor impacts, and cumulative air quality impacts.

Based on the proximity of the Project to pollutant-sensitive land uses (e.g., residences south-west of the Project site) and revised health risk assessment guidance from the Office of Environmental Health Hazard Assessment (OEHHA), ESA recommends that the potential for construction toxic air contaminant (TAC) impacts be assessed with a refined health risk assessment (HRA). The refined HRA will be performed using the AERMOD dispersion model and the CARB Hot Spots Analysis Reporting Program (HARP) model or spreadsheet methodology in accordance with the OEHHA guidance to quantify potential impacts from diesel particulate emitted during construction. The HRA would focus on impacts to nearby residential uses resulting from DPM emitted from construction equipment and trucks. If potentially significant health risk impacts are identified, ESA will develop mitigation measures where feasible to address and reduce the significant impacts.

ESA will analyze GHG emissions of Project construction and operation in accordance with the latest CEQA GHG guidelines. The analysis will estimate GHG emissions attributable to the Project for the following sources: construction, area sources, mobile sources, energy consumption (electricity and natural gas), water consumption, and solid waste generation, consistent with the recommendation by the Governor's Office of Planning and Research (OPR) in its Technical Advisory: CEQA and Climate Change (2008). Construction- and operations-related GHG emissions will be quantified using the most recent version of the CalEEMod computer

model. The Project's GHG emissions may be compared to the goals and recommended actions of the State's Climate Change Scoping Plan and other applicable state regulations.

This scope assumes that details regarding construction of the proposed Project (i.e. schedule, excavation and import/export volumes, construction equipment list and weeks/hours of operations, etc.) will be provided by IRWD.

Deliverables:

> Draft and final air quality/GHG technical report

Biological Resources Technical Report

1. Conduct Literature Review

ESA will review relevant literature and environmental documentation for the project and related actions, including pertinent regulatory documentation, including but not limited to the following:

> Syphon Reservoir Environmental Regulatory Evaluation, Preliminary Draft (Dudek 2012)
> Syphon Reservoir Expansion Engineering Feasibility Study Engineering Summary Report (GEI Consultants, Inc. 2012)
> Final Syphon Reservoir Interim Facilities Initial Study/Mitigated Negative Declaration (Dudek 2013)
> County of Orange NCCP/HCP, for the Central & Coastal Subregion and Implementation Agreement
> Conveyance Agreement / Grant Deed – Syphon Canyon Dam and Reservoir (The Irvine Company 2009)
> Documentation regarding TCA's mitigation commitments for the Reservoir property

ESA will also review relevant literature regarding sensitive resources that have the potential to occur in the project site and vicinity. The literature review will include an inquiry to the California Natural Diversity Data Base (CNDDB) and California Native Plant Society (CNPS) Online Inventory, for information regarding sensitive species and habitats in the region. Additional information sources may include U.S. Fish and Wildlife Service (USFWS) and California Department of Fish and Wildlife (CDFW) publications, scientific journal articles, and historic and current aerial photographs, as appropriate.

2. Conduct Agency /Stakeholder Coordination

Conveyance Agreement/Grant Deed – ESA recommends early coordination with the USFWS, TCA, and other appropriate parties (e.g., the Natural Communities Coalition (NCC), The Irvine Company) to discuss and determine mitigation commitments and potential modifications of the Conveyance Agreement and/or the Grant Deed restrictions over areas affected by the proposed Reservoir Expansion. The preliminary draft environmental regulatory evaluation (2012) notes that "no conservation easement exists on the property; however, restrictions were incorporated into the grant deed to provide for conservation of biological resources." Moreover, since the Transportation Corridor Agencies (TCA) and USFWS are third party beneficiaries of the grant deed, and as discussed during IRWD's 2011 meeting with the USFWS, it is expected that the grant deed would need to be modified to allow the project to be approved and implemented. Determining the process for

modifying the grant deed, and any replacement mitigation should be prioritized, since this may affect the project's schedule. IRWD will likely need to consult their legal counsel during this process.

NCCP/HCP Minor Amendment – The regulatory evaluation also notes that at the meeting in 2011 with IRWD, a USFWS representative confirmed that a Major Amendment to the NCCP/HCP would not be required for the proposed reservoir expansion. However, a Minor Amendment may be necessary. ESA anticipates that we would participate with IRWD in discussions and coordination with USFWS and with the Natural Communities Coalition (NCC), formerly Nature Reserve of Orange County (NROC), and California Department of Fish and Wildlife (CDFW) regarding the specifics of any minor amendment.

Develop Mitigation Strategy and Coordinate with Agencies/Stakeholders – ESA will also work with IRWD to facilitate discussion and coordination with USFWS and other stakeholders and resource agencies (e.g., NCC, CDFW, TCA, U.S. Army Corps of Engineers [USACE], and Regional Water Quality Control Board [RWQCB]) regarding potential mitigation options for the proposed project. The 2012 Environmental Regulatory Evaluation presented and discussed a range of different mitigation options and associated costs. Prior to initiating discussion with the resource agencies and other stakeholders, ESA would use that information as the starting point for considering mitigation scenarios and identify a one or more preferred options and strategies in coordination with IRWD. Once certain goals have been identified, we would work with IRWD to present and discuss the most appropriate and reasonable mitigation strategies to the agencies and stakeholders.

Confirm Requisite Studies - ESA will prepare a brief outline of the work plan for proposed biological studies and coordinate with the USFWS to confirm that the focused surveys identified in our work plan are both necessary and sufficient for completion of the analysis for both the CEQA-Plus environmental document and other requisite consultations. It is assumed that the focused surveys identified under this scope of work will be required by the USFWS and/or CDFW, because the results of special-status species surveys are not considered valid for more than two years. However, since coastal California gnatcatchers have already been documented on the project site from previous years of focused surveys, it is possible that USFWS could forego more surveys since the species is assumed to be present and occupying the coastal sage scrub habitat. It is our understanding that no protocol surveys for least Bell's vireo (LBV) or Southwestern willow flycatcher have been conducted on the subject property, although LBV have been observed during cowbird trap maintenance. Since the site contains suitable habitat, we would expect USFWS to request protocol surveys for both species, to better understand the numbers of LBV that may occur and to confirm presence/absence for the flycatcher.

Identify Information Needs to Confirm Jurisdictional or Non-Jurisdictional Determination – ESA recommends early coordination with the U.S. Army Corps of Engineers (USACE) and the Environmental Protection Agency (EPA) to obtain a written determination regarding whether the reservoir is subject to federal jurisdiction as "waters of the U.S.". Notes from an IRWD meeting with a USACE representative in 2011, indicated that there was no formal determination regarding jurisdiction and it was indicated that a potentially lengthy review could be necessary for a final determination. ESA proposes to coordinate with IRWD regarding this issue and then initiate contact with these agencies to formally identify the information that would be needed to assist in their determination. The information obtained would be used to refine the task identified below to prepare a jurisdictional assessment in accordance with USACE and EPA guidelines.

Although not required for the EIR, it will be critical to determine whether the reservoir would be subject to federal jurisdiction because the outcome may substantially affect the requisite environmental analyses and,

potentially, the project schedule if such a determination is not made in the near term and it turns out to be subject to federal regulatory authority as "waters". If it is, then the project would almost certainly need to complete an application for an Individual Permit which includes a federal environmental review (NEPA) and a potentially cumbersome alternatives analysis in accordance with Section 404(b)(1) of the Clean Water Act.

ESA believes a strong case exists for the reservoir to be determined non-jurisdictional since it does not appear to be an impoundment of jurisdictional waters but could be considered a "wastewater recycling facility constructed on dry land" and as such, not "waters" (see 33 CFR §230.3 (o)(2)(vii)). However, as it is ultimately the federal agency(ies) that make the determination, if the reservoir is considered jurisdictional "waters", and an Individual Permit will be required, it will be essential to plan for and provide the necessary NEPA review and alternative analyses, sufficient to support the Individual Permit application, as part of this environmental review for efficiency and to avoid project schedule impacts.

3. Update/Refine Jurisdictional Delineation

ESA biologists and regulatory/environmental scientists will perform an updated analysis and assessment of wetlands and "waters of the U.S./State" within the project site potentially subject to the jurisdiction of the USACE, RWQCB, and/or CDFW. Based on information and guidance obtained under item 2, above, the reservoir itself will be considered with regard to federal jurisdiction. If specified by USACE or EPA, a jurisdictional assessment will be prepared for review by these agencies to facilitate their specific determination regarding the reservoir. Otherwise, any potentially jurisdictional areas on site will be delineated in accordance with current guidelines and practices provided by Section 404 of the Clean Water Act (CWA), and in keeping with specific guidance issued by the L.A. District, and also by the CDFW under Section 1600-1607 of the California Fish and Game Code. Wetlands will be delineated using the procedures required by the USACE's 1987 *Wetland Delineation Manual* and the 2008 *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region*.

Upon completion of the field work, ESA will prepare a report to document and described the current conditions and extent of potential jurisdictional waters and wetlands within the project site. The findings will include a map illustrating the location, extent, and acreage of all jurisdictional waters (including soil pit locations, if applicable); the field data sheets which include information on soils, vegetation, and hydrology; a brief discussion of the relative quality of each stream or wetland; and, an approximation of duration of surface flow (i.e., ephemeral, intermittent, or perennial).

4. Conduct Biological Studies

Update Vegetation Mapping / General Biological Survey – The general biological survey will focus primarily on characterizing plant communities. Any raptor nests or special status wildlife species occurrences noted during general surveys and mapping efforts will be included in the technical report (see item 5 below). ESA biologists will update and refine the vegetation map that was previously prepared for the project site to reflect current conditions. The study area is assumed to be the property itself plus a buffer of open space extending out to the various roads that surround the property. The study area will be discussed with IRWD and confirmed under item 2 above. Plant community map checking and refinements will be accomplished using current aerial photography and topographic mapping (if available) to accurately delineate each plant community. The field map will be digitized using Geographic Information System (GIS) technology and the resultant baseline mapping used to determine the extent of potential project effects on each plant community.

Conduct Presence/Absence Survey for Coastal California Gnatcatcher - ESA biologists will perform USFWS protocol surveys for the federally-threatened coastal California gnatcatcher (*Polioptila californica californica*). A maximum of six surveys are proposed to be performed during the breeding season within all potentially suitable habitat on the site, each at least one week apart. ESA will notify the USFWS at least 15 working days prior to the anticipated start date of survey work.

A letter report of findings including required information and map data will be submitted to the USFWS within 45 days of completion of protocol surveys. The letter report will include the project site location plotted on U.S. Geological Survey (USGS) 7.5-minute topographic map; plant community map, qualitative description of the habitat, and description of plant composition on and adjacent to the area surveyed; survey methodology including list of all biologists, number of acres of habitat surveyed, and the number and dates of surveys; characterization of land uses surrounding the project site; mapping of precise locations where any coastal California gnatcatcher are detected; a full account of numbers and behavior of any coastal California gnatcatcher detected; and completed field forms showing the locations of coastal California gnatcatcher, if observed, which will be utilized by the CNDDB.

Conduct Presence/Absence Survey for Least Bell's Vireo and Southwestern Willow Flycatcher - ESA biologists will perform standard USFWS protocol surveys to determine presence/absence of the federally- and State-endangered least Bell's vireo (*Vireo bellii pusillus*). Eight surveys of all suitable habitat are proposed to be conducted, each survey at least 10 days apart between April 10 to July 31.

ESA biologists will also perform approved USFWS protocol surveys to determine presence/absence of the federally- and State-endangered southwestern willow flycatcher (*Empidonax traillii extimus*) to coincide with the LBV surveys. Five surveys of all suitable habitat on-site will be conducted as follows, one survey between May 15 and May 31, the second between June 1 and June 24, and the last three between June 25 and July 17. All surveys will be conducted at least five days apart and will begin at dawn and end between 9:00 and 10:00 A.M. depending on the temperature, wind, background noise, and other environmental factors. Survey methods will include the use of "pishing" and tape recordings in order to elicit responses. ESA will notify the USFWS 15 days prior to the anticipated start date of survey work.

A letter report of findings will be submitted to the USFWS and the CDFW within 45 days of completion of surveys. The letter report will include the project site location plotted on USGS 7.5-minute topographic map; plant community map, qualitative description of habitat, and description of plant composition within the area surveyed; survey methodology including list of all biologists, number of acres of habitat surveyed, and the number and dates of surveys; mapping of precise locations of any least Bell's vireo or southwestern willow flycatcher detected; full account of numbers and behavior of any least Bell's vireo detected; full account of numbers and locations of all brown-headed cowbirds detected; and, completed field forms showing the locations of LBV or southwestern willow flycatcher, if observed.

Conduct Presence/Absence Survey for Western Spadefoot Toad - ESA biologists will perform presence/absence surveys for the western spadefoot toad (*Spea hammondii*), a California Species of Special Concern. Since this species is an upland species that requires water for breeding purposes only, surveys will include two diurnal surveys of water margins to search for egg clusters, and two nocturnal surveys during or immediately after rain events to search for individuals detectable by calls or eye-shine and visual identification.

A letter report of findings will be prepared that includes the project site location plotted on USGS 7.5-minute topographic map; plant community map, qualitative description of habitat, and description of plant composition within the area surveyed; survey methodology including list of all biologists, number of acres of habitat surveyed, and the number and dates of surveys; mapping of precise locations of any western spadefoot toad detected; full account of numbers and behavior of any western spadefoot toad detected; and, completed field forms showing the locations of western spadefoot toad, if observed, which will be utilized by the CNDDB.

Conduct Presence/Absence Survey for Western Pond Turtle - ESA biologists will perform surveys using guidance available from the U.S. Geological Survey (USGS) to determine the presence/absence of the western pond turtle (*Emys marmorata*), a USFWS Sensitive Species and a California Species of Special Concern. Five surveys of suitable habitat will be conducted at approximately weekly intervals between April 20 and July 31, between the hours of 9:00 A.M. and 5:00 P.M., preferably on sunny days. Observations of suitable habitat will take place from several vantage points to provide complete visual coverage of the water body. Aquatic habitat (e.g., open pools or possible basking areas) will be searched with and without binoculars for the presence of basking or underwater pond turtles, first from a distance and then approached slowly and quietly to prevent disturbance to any potential basking turtles. ESA biologists will also listen for the splash of water from unseen turtles entering the water.

A letter report of findings will be prepared that includes the project site location plotted on USGS 7.5-minute topographic map; plant community map, qualitative description of habitat, and description of plant composition within the area surveyed; survey methodology including list of all biologists, number of acres of habitat surveyed, and the number and dates of surveys; mapping of precise locations of any western pond turtle detected; full account of numbers and behavior of any western pond turtle detected; and, completed field forms showing the locations of western pond turtle, if observed, which will be utilized by the CNDDB.

Conduct Survey for Special-Status Plant Species - ESA biologists will conduct focused surveys to determine the presence/absence of special-status plant species. Particular emphasis will be given to federally- and/or State-listed plant species and those plants identified as special-status by the CNPS and results from previous survey efforts in the area will be reviewed. Surveys will consist of two separate field survey efforts, one in April/May and the other in June/July to include the blooming periods of all potentially present special-status plants. The location of any observed special-status species will be recorded and mapped on an aerial photograph of the project site.

At the completion of the special-status plant surveys, the results will be incorporated into the updated Biological Technical Report (see below), and will include a description of survey methodology and the numbers and locations of any special-status plants observed.

5. Prepare Biological Technical Report

ESA will prepare a technical report which incorporates the findings of the general biological survey and focused surveys, and will include survey dates and methodology, a description of the existing conditions, an assessment of impacts based on the proposed project, and mitigation measures necessary to alleviate any resulting potentially significant impacts. This technical report will be prepared according to accepted scientific and technical standards consistent with requirements of the National Environmental Policy Act (NEPA), California Environmental Quality Act (CEQA), and other pertinent reviewing agencies and organizations.

Biological Assessment/NCCP Relevance – This task assumes that the federal resource agencies reviewing the technical report will expect it to serve much the same function as a Biological Assessment prepared for an informal consultation and that it would be adequate for federal agency review and consideration. Therefore, this scope anticipates including a definition of the "Action Area", consideration and analyses of cumulative effects on listed species, recognition and discussion of the project in the context of the NCCP/HCP, and how the project (inclusive of proposed mitigation) would be addressed in terms of its effects on listed and NCCP-Covered or non-covered species, as well as on the NCCP/HCP as a whole.

This task includes one set of revisions based on receiving one round of combined comments from the project team on the draft technical report, and a second revision based on comments from up to two reviewing federal agencies (Bureau of Reclamation, USFWS).

6. Develop Comprehensive Mitigation Plan

Based on the results of Task 2C, above, ESA will prepare a concise description of the mitigation being proposed for the project. It is anticipated that this description will be prepared in the form of a plan that would be appended to the Biological Technical Report. The plan may be expected to include both a conceptual plan to provide upland and riparian/wetland habitat mitigation on the project site and also to describe the extent and manner whereby off-site mitigation may be provided to compensate for project effects that cannot be adequately mitigated on site. The plan will be prepared in collaboration with IRWD and may involve additional coordination with external parties (e.g., The Irvine Company, NCC, and TCA). Therefore, this scope anticipates the need to conduct several meetings with these parties to consider and refine alternate mitigation options and clarify the preferred mitigation approach. The goal will be to determine which mitigation approach(es) will satisfy the mitigation requirements considering costs and schedule. The draft plan will be submitted to IRWD and the project team for review and would be revised or refined based on a single set of comments.

Deliverables:

- Draft and final biological resources technical report

Cultural Resources Technical Report

ESA cultural resources staff will conduct a Cultural Resource Assessment of the Project site and associated components. This includes the site for the new dam, expanded reservoir, and proposed wetlands. The purpose of the study will be to identify any archaeological, architectural, or paleontological resources within the Project site or immediate vicinity that could be impacted by the Project. All studies will be conducted in accordance with CEQA, NEPA, and Section 106 of the National Historic Preservation Act (NHPA). Specific tasks will include cultural and paleontological resources records searches and archival research, a Sacred Lands File (SLF) search through the Native American Heritage Commission (NAHC), archaeological and built resources field survey, and reporting. Assistance with Native American coordination and consultation is discussed under *Task 7: Assembly Bill 52 Tribal Cultural Resources.*

As part of the assessment, ESA will also document and evaluate the existing Syphon Dam and associated facilities, which would be demolished as part of the Project. Constructed in 1949, the dam is over 45 years of age and therefore meets the California Office of Historic Preservation's threshold for consideration as a historical resource. To comply with CEQA and Section 106 of the NHPA, ESA will evaluate the eligibility of the reservoir as a historical resource under CEQA and as a historic property under the NHPA, and assess potential impacts. There

is also potential for indirect impacts, primarily visual, to nearby resources. The Syphon Reservoir is located along the High Line Canal, which was constructed in the 1930s. A "splitter" on the High Line Canal ahead of the Syphon Reservoir diverted water south to the Laguna Reservoir. Approximately ¼-mile north of the Syphon Reservoir is the Rattlesnake Canyon Reservoir, constructed in 1959. The High Line Canal and Rattlesnake Canyon Reservoir, both greater than 45 years of age, could be subject to indirect impacts from the Project. ESA staff will assess the potential for indirect impacts as part of the built environment studies.

Records Searches and Archival Research

ESA cultural resources staff will conduct a records search at the South Central Coastal Information Center (SCCIC) at California State University, Fullerton. The purpose of the records search will be to identify previous cultural resources investigations and previously recorded cultural resources within a ½-mile radius of the Project site, including the pipeline. A review of topographic maps and aerial photos will be conducted to identify historic uses of the Project area and to assess the potential for buried archaeological resources. ESA will also collect and analyze pertinent research materials to document the history, construction, and alterations of the Syphon Dam and Reservoir and consider its history in the context of IRWD and the surrounding community. Focused site-specific research may include review of available building permits, engineering drawings (as-built), topographic maps, and historic aerial photographs. Research will be conducted at the Orange County Building and Safety Department, Orange County Assessor's Office, UCI Library, Irvine Historical Society, Orange County Public Library, IRWD archive, relevant internet sites, and other archives to be identified as applicable.

An IS/MND for Syphon Reservoir Interim Facilities (2013) indicates that, based on bedrock geology, most of the Project area has limited potential for significant paleontological resources but that a small portion has a moderate potential. Given this, a paleontological fossil locality check will be requested from the Natural History Museum of Los Angeles County. In addition, an SLF search will be requested from the NAHC to solicit information on sensitive or undocumented Native American resources in the vicinity of the Project area. This SLF search is separate from IRWD's AB 52 consultation requirements, described in *Task 7*.

Pedestrian Survey

For purposes of compliance with Section 106 of the NHPA, a preliminary Area of Potential Effects (APE) for direct impacts will be established. The APE will include all components of the Project, including the proposed new dam and associated facilities and the expanded reservoir area; all access roads and staging areas; and any other areas where cultural resources could be subject to impacts. A pedestrian survey of the Project area/APE will be conducted to identify and document archaeological and paleontological resources. For archaeological resources, the survey will follow professional standards, using transects spaced no greater than 15 meters apart. ESA architectural historian will also conduct a site visit to survey and document the existing historic built environment of the Syphon Dam and Reservoir, which will include, minimally, the culverts, spillway, dam, boat dock, landscape features, and the segment of the High Line Canal within the property. ESA staff will also assess the potential for indirect impacts to the High Line Canal and the Rattlesnake Canyon Reservoir. All survey work will be consistent with procedures established by local, state, and federal guidelines for conducting archaeological and historic preservation work.

Cultural resources encountered in the Project area will be recorded on California State Department of Park and Recreation (DPR) 523 site record forms and plotted with sub-meter handheld GPS instruments. Previously recorded resources, as identified through the SCCIC records search, will be relocated and documented on DPR 523 update forms. Given the generally low paleontological sensitivity of the Project site and the high degree of

landscape disturbance, it is expected that no paleontological resources will be identified through surface survey and so a paleontological survey will not be required. However, a cultural resources specialist also trained in paleontological resources will participate in the field survey.

Technical Reporting

The results of the studies will be documented in a single Cultural Resources technical report, prepared to meet CEQA and Section 106 requirements. The report will include a Project Description; regulatory and cultural/historical background contexts; methods and results of the archival research and field studies, including a discussion of the evaluation methods, integrity, and eligibility status of the dam and reservoir; and recommendations for mitigation or any additional studies that might be required. ESA will also prepare and append DPR site record forms to the report, including a DPR Primary Form (DPR523A) and BSO Form (DPR523B) for the dam and reservoir. The report will be used as the basis for the cultural resources section of the ADEIR, following Appendix G of the CEQA Guidelines. ESA will prepare a draft report and a final report incorporating one round of IRWD comments.

This scope of work is based on the following assumptions:

- The entire Project area will be accessible to the surveyors.
- The survey area for the new dam, expanded reservoir, wetland area, and related facilities (not including the pipeline and conveyance facilities) will not exceed 100 acres.
- Archaeological resources survey and documentation will be completed by two surveyors in two days.
- Built environment survey and documentation will be completed by two staff persons in one day.
- No more than three cultural resources, including the Syphon Dam itself, will require documentation.
- A Native American monitor will not be required during the pedestrian survey.
- The Water District will provide access to historic plans, engineering drawings, photos and other materials to document the construction history of the dam and reservoir.
- Any follow-on studies that might be required as a result of the assessment, such as archaeological resources evaluation or treatment, would be covered under a separate scope and cost. Only the evaluation of the dam and associated facilities is included in this scope of work.

Deliverables:

- Draft and final cultural resources technical report

Noise Study

ESA will prepare a Noise Study to evaluate potential noise impacts associated with construction activities and operation of the Project. The scope of services for the noise analysis will include identifying and describing relevant local plans, regulations, ordinances, criteria, and guidelines associated with noise. ESA will characterize the existing noise environment by surveying noise-sensitive land uses, identifying existing noise sources and features affecting noise transference in the Project area, and conducting noise monitoring at one location for 24 hours (one weekday) and at up to three locations for 15 minutes during peak traffic hours to establish ambient noise levels in proximity to potentially affected noise- sensitive land uses. ESA will assess temporary noise levels at nearby noise sensitive uses from Project construction based on the provided construction schedule and equipment usage. ESA will evaluate Project operational noise from Project-related vehicular traffic and outdoor mechanical equipment (e.g., air conditioning units). Vehicular noise impacts will be assessed based on data from the traffic study using computer noise prediction models that

incorporate the Federal Highway Administration (FHWA) traffic noise model (FHWARD-77-108). In addition, ESA will provide an assessment of vibration impacts associated with use of heavy-duty equipment during construction of the Project. If potentially significant impacts are found, ESA will develop mitigation measures for where feasible. The scope of services for the noise section does not include post construction noise and vibration monitoring and analysis.

This scope assumes that details regarding construction of the proposed Project (i.e. schedule, excavation and import/export volumes, construction equipment list and weeks/hours of operations, etc.) will be provided by IRWD.

Deliverables:

> Draft and final noise study

Traffic Study

ESA's subconsultant, Fehr & Peers, will complete the Traffic Study for the Project, as explained below.

Information Needs

Fehr & Peers will work with the Project Team to understand the scope of the construction activities generated by the Project. In coordination with ESA, Fehr & Peers will generate a traffic-related RFI that will be submitted to IRWD under Task 2 of this scope of work. The following information will be needed to understand the potential trip generation associated with the construction phase of the Project:

> Total number of workers accessing the site(s), time of arrival, and parking locations.
> Delivery information, including number of deliveries, types of vehicles (e.g. what type of trucks will be delivering construction material or hauling material from the site), number and type of vehicles removing material from the site, and estimated time of these activities.
> Verification of delivery/haul routing to/from the Project.
> Duration and intensity of construction activities.

In addition to the Project construction information noted above, on-going staffing of the site will be verified through the RFI to better estimate the on-going trip generation. ESA and Fehr & Peers understand that on-going staffing needs are minimal and are not sufficient to warrant evaluation of transportation-related impacts after construction is completed. As such, the traffic assessment will focus on near-term impacts associated with the construction activities of the Project.

Fehr & Peers, under ESA's direction, will summarize the above information and develop preliminary trip generation, trip distribution, and trip assignment estimates, and will document these assumptions in a technical memorandum that will be submitted for review and approval.

Field Work and Existing Conditions

Fehr & Peers will spend one day in the field collecting information for the Project. This will include reviewing all access locations to verify existing roadway cross-sections, verification of appropriate sight distance at access locations, and collection of geometrics at study locations. Fehr & Peers will collect counts at the study locations as noted above, and will utilize the count data to evaluate existing conditions in the study area using methodologies identified per local requirements (e.g. intersection capacity utilization (ICU) for intersections and volume to capacity ratio for roadway segments).

Evaluation of Existing plus Construction Conditions

Fehr & Peers will add construction related traffic to the study facilities to evaluate Existing Plus Project Conditions and conduct level of service assessment to evaluate the operating conditions of the study facilities. If impacts are identified, mitigation measures will be developed to mitigate the impacts. Since impacts are anticipated to be temporary in nature and would occur during the construction phase of the Project, mitigation measures could consist of temporary traffic control, changes to work schedules, or other measure that would mitigate impacts to a less than significant level.

Access locations will also be reviewed to verify that they can accommodate access from the delivery vehicles and that sight distance is appropriate. If there are any geometric deficiencies noted during our field review, Fehr & Peers will provide recommendations to improve those deficiencies. Fehr & Peers will also review the Project's consistency with existing and approved bicycle, pedestrian, and transit facilities in the area, if any, and note the potential for the Project to conflict with those facilities.

Although traffic studies typically require a cumulative assessment for transportation impacts, given the expected low trip generation associated with the operations and maintenance phase of the Project, the Project likely does not have the potential to result in a cumulative impact to the surrounding transportation system. As such, Fehr & Peers scope proposes to only identify impacts associated with the construction phase of the Project and not a complete cumulative assessment.

Documentation & Meetings

Under the direction of ESA, Fehr & Peers will prepare a draft report for review by IRWD, which will undergo one round of revisions from IRWD. Fehr & Peers will also be available to participate in up to four team meetings or public meetings (associated with various phases of CEQA document review included in this scope of work) in conjunction with the Project.

This scope of work is based on the following assumptions. These assumptions and associated fee estimate may need to be expanded or reduced based on trip generation assumptions:

- Fehr & Peers will evaluate only the Existing Condition and Existing plus Construction Activity Conditions in the assessment.
- Fehr & Peers will evaluate up to 20 intersections (during the morning (AM) and evening (PM) peak hours) or roadway segments (daily conditions) in the analysis.
- One day of traffic counts at all study locations is assumed in the fee estimate.

Deliverables:

- Draft and final noise study

Task 5: Coordination with Design and Public Outreach Consultants

ESA understands that IRWD intends the CEQA consultant to act as the Project Manager, which will involve coordination between IRWD and various consultants throughout the environmental review process. Since the CEQA document will be prepared in parallel to additional design work to support the environmental review process, ESA will coordinate with IRWD, the owner's representative, and design consultant to ensure that the appropriate information is available and obtained in order to complete the Project Description and CEQA analysis. ESA understands a Project Design Report (PDR) will not be prepared for this Project prior to publication

of the Draft EIR. Information obtained could include site exploration program design and implementation, earthwork quantities, construction equipment to be used and construction methods, location of borrow materials, in addition to other necessary information. This type of information was estimated in the Constructability Analysis provided in the RFP Addendum and can serve as one point of departure for discussing certain information required for the Project Description.

ESA understands that IRWD has a public affairs team, including a public outreach consultant. ESA looks forward to developing a close relationship with the public outreach consultant, and will coordinate outreach efforts seamlessly between the consultant and IRWD.

As part of this task, ESA will also prepare maps, graphics, charts, and descriptions that can be used by IRWD's public outreach staff and consultant to conduct Project-related public outreach efforts. This coordination ensures that visual representation of the Project is consistent among all public outreach materials.

Deliverables:

- Graphics for use during public outreach efforts

Task 6: Development of Project Description and Identification of Alternatives

Project Description

ESA will develop a Project Description based on information gathered in Tasks 2 and 5. This Project Description will serve as the basis for the CEQA analysis. This task assumes attendance at ***two meetings*** with IRWD to discuss Project Descriptions components and details. Three rounds of Project Description deliverables are assumed under this task.

Project Alternatives and Workshop

ESA will assist IRWD to identify a reasonable range of Project alternatives, per CEQA Guidelines Section 15126.6. ESA will start with the information contained within the Syphon Reservoir Engineering Feasibility Study to begin development of alternatives. These and additional potential alternatives will be discussed and refined via ***one alternative meeting workshop*** with IRWD, the Design consultant, and ESA. This scope assumes no more than two alternatives to the Project are chosen to include in the Draft EIR. Alternatives may be included even if they may not be feasible. These alternatives will be used for the environmental analysis.

Deliverables:

- Draft Project Description
- Revised draft Project Description
- Final Project Description
- Alternatives workshop materials
- Description of alternatives

Task 7: Assembly Bill 52 Tribal Cultural Resources

Per the RFP, ESA will prepare draft Assembly Bill (AB) 52 consultation letters for IRWD to review. The letters will follow requirements outlined in Section 21080.3.1 of the Public Resources Code. Specifically, the letters, which will serve as an official invitation to consult on the Project, will describe the proposed Project, include a Project location map, list a contact person at IRWD, and cite the 30-day deadline for responses. Following approval by

IRWD, ESA will mail the signed letters on official letterhead (via either FedEx or certified USPS mail) to the three California Native American tribes on IRWD's contact list: the Gabrieleño Band of Mission Indians – Kizh Nation, Juaneno Band of Mission Indians – Acjachemen Nation, and the Torres Martinez Desert Cahuilla Indians. IRWD will be responsible for any additional tribal consultation under AB 52. The consultation efforts will be summarized in the tribal cultural resources section of the EIR, following CEQA Guidelines and in accordance with the confidentiality requirements of AB 52.

Deliverables:

- Draft AB 52 letters for IRWD review
- Final letters (three) for delivery to California Native American tribes on IRWD's contact list

Task 8: Notice of Preparation and Notice of Completion

ESA will finalize the Initial Study (Task 1) and prepare the Notice of Preparation (NOP) as required by the State CEQA Guidelines including a brief description of the Project, site map, and summary of potential environmental impacts of the Project. The NOP will also serve as notice of the public scoping meeting (see Task 9 below). ESA will provide IRWD with a Draft NOP for review and comment. ESA will incorporate any comments into a Final NOP to be published for a 30-day public review period. ESA will confer with IRWD to create a mailing list that identifies appropriate stakeholders, including the State Clearinghouse, responsible and trustee agencies, affected property owners and persons requesting notice. ESA will also prepare the Notice of Completion (NOC) for the NOP, which will be delivered to the State Clearinghouse and Orange County Clerk. ESA will distribute the NOP to the entities agreed to on the mailing list. ESA will also publish the NOP in the Orange County Register (one time). ESA will attend ***one meeting*** with IRWD to review the contents of the NOP and NOC.

Deliverables:

- Draft and Final NOP
- Prepare and distribute NOP
- Prepare and distribute NOC
- Publish NOP in the Orange County Register

Task 9: Conduct Public Scoping Meeting

Public Scoping Meeting and Material Preparation

ESA will coordinate and organize one public scoping meeting. The purpose of the meeting will be to present information to the public and collect information on environmental issues. ESA will prepare presentation materials (including maps and handouts) in consultation with IRWD and IRWD's public outreach consultant and conduct the presentation. Information regarding the need for the Project, potential environmental impacts, and the CEQA alternatives will be provided by ESA in the presentation at the public scoping meeting. ESA will work with IRWD and its public outreach team on the meeting agenda, schedule and format; all materials will be approved by IRWD prior to presentation at the scoping meeting.

This task includes ***two preparation meetings*** between ESA and the Project Team, in addition to attendance by ESA staff at the ***one public scoping meeting***.

Comment Memorandum

ESA will capture all written and verbal comments made at the public scoping meeting and prepare a Comment Memorandum summarizing significant comments received at the scoping meeting and during the NOP review period. The Comment Memorandum will be used by the Project Team to clarify Project assumptions, the Project Description, alternatives, and the scope of the environmental impact analysis. The Comment Memorandum will be included in the Appendix to the Draft EIR.

Deliverables:

- Public scoping meeting agenda
- Draft and final scoping meeting presentation
- Scoping meeting presentation materials (handouts and maps)
- Comment Memorandum

Task 10: Prepare an Administrative Draft EIR

ESA will prepare an Administrative Draft EIR (ADEIR) in accordance with State CEQA Guidelines (2017). ESA understands that IRWD included an optional task in the Request for Proposal (RFP) for National Environmental Policy Act (NEPA) compliance based on pursuit of federal grant opportunities from the U.S. Bureau of Reclamation (Reclamation) through Title XVI. ESA has extensive work pursuing Title XVI funding through Reclamation, particularly with the Temecula office. Therefore, ESA has included preparation of a CEQA-Plus document for purposes of NEPA compliance in the scope of work. Additional time for agency coordination and consultation has been included in Task 17 below.

The Project Description prepared under Task 6 will be included in the ADEIR. The ADEIR will summarize the environmental setting, regulatory framework, potential environmental impacts, and proposed mitigation by resource area. The ADEIR will also reflect comments received during the NOP review period. As required by CEQA, the setting will describe the Project area's existing conditions and the effects of the Project on those baseline conditions. The impact analysis will identify direct, indirect, and cumulative impacts for construction and operation based on established thresholds of significance. The analysis will include all issue areas included in Appendix G and Appendix F (energy) of the CEQA Guidelines, unless otherwise screened out in the Initial Study. Based on preliminary evaluation and the Syphon Reservoir Interim Facilities Project MND prepared in 2012, agricultural and forestry resources and mineral resources will likely be screened out of the ADEIR. Mitigation measures will be identified to avoid or substantially lessen potential environmental effects. The ADEIR will also provide an analysis of CEQA Project alternatives as identified under Task 6. ESA will attend up to ***three meetings*** with IRWD staff to review CEQA documentation and approach for the ADEIR. It is expected that ESA will communicate any issues and concerns to IRWD in these meetings prior to submitting the ADEIR deliverable. As requested by IRWD, ESA will submit a **complete ADEIR** for review, unless otherwise discussed and approved by IRWD. The following issue areas will be addressed in the ADEIR.

Aesthetics

The ADEIR will summarize the aesthetic and visual impacts associated with construction and operation of the Project. The ADEIR will include a description of existing visual conditions in the Project area and will evaluate whether the proposed Project will substantially degrade the existing visual character of the surrounding area. The ADEIR will evaluate the potential effects to public view corridors that result from raising of the dam and determine whether the proposed Project would substantially alter the character of the site or create substantial

new sources of light and glare. The evaluation will include photographs of the existing environment. ESA's subconsultant, VisionScape, will provide two visual simulations of the proposed Project based on Project design details (Task 4) that will be incorporated into the ADEIR section. Mitigation measures will be identified if necessary to reduce aesthetic impacts.

Air Quality

Based on the technical study prepared in Task 4, ESA will summarize the impacts from emissions of criteria air pollutants and TAC during construction and operation. The ADEIR will also evaluate the Project's consistency with the regional air quality attainment plans. If potentially significant impacts are found, ESA will develop mitigation measures which are feasible, implementable, and verifiable. Mitigation measures will be based on those recommended by the IRWD, SCAQMD, and CARB, as well as other appropriate measures.

Biological Resources

ESA's biologist will incorporate the information provided in the Biological Resources Technical Report (Task 4) into the ADEIR. Potential impacts to sensitive species and habitats will be documented and mitigation strategies will be identified that would minimize the impacts. The analysis will include a comprehensive list of permits required from resource agencies to implement the Project.

Cultural Resources

ESA's cultural resources staff will incorporate the information provided in the Cultural Resources Assessment (Task 4) into the ADEIR. The ADEIR will summarize the results of the records searches, historical research, surveys, and dam evaluation, and assess the sensitivity of the Project site for the presence of unknown resources. The section will also assess the potential of the Project to impact significant cultural resource, and will identify mitigation measures to minimize impacts, as necessary.

Geology and Soils

ESA will review and incorporate available information from the Syphon Reservoir Expansion Engineering Feasibility Study. The ADEIR will include regional and local geologic, seismologic, and geological data pertinent to the proposed Project area, including information from the U.S. Geological Survey and California Geological Survey as well as data from other projects in the area. As described in the Engineering Feasibility Study, the Project site includes two faults, one of which runs directly beneath the existing reservoir and dam. However, neither fault is considered active or potentially active. Additional geotechnical investigation is recommended to confirm the inactivity of the faults and identify the appropriate measures to mitigate any potential impacts associated with groundshaking or seepage from the reservoir. The ADEIR will identify such potential geologic impacts of the Project and will provide mitigation strategies that require geotechnical investigation and recommendations for design criteria that ensure any and all potential hazards associated with geology and soils will be implemented as required by California standards and the Division of Safety of Dams to minimize the effects and protect public safety.

Greenhouse Gas Emissions and Energy

Based on the technical study prepared in Task 4, ESA will summarize the impacts from emissions of GHGs during construction and operation. The ADEIR will also evaluate the Project's consistency with the State's 2030 Scoping Plan. If potentially significant impacts are found, ESA will develop mitigation measures which are feasible, implementable, and verifiable. Mitigation measures will be based on those recommended by the IRWD,

SCAQMD, CARB, and California Association of Air Pollution Control Officers (CAPCOA), as well as other appropriate measures.

In order to assure that energy implications are considered in Project decisions, CEQA requires that EIRs include a discussion of the potential energy impacts of proposed projects, with particular emphasis on avoiding or reducing inefficient, wasteful and unnecessary consumption of energy. Recent court opinions have held that a Project's energy impacts should be analyzed under Appendix F of the CEQA Guidelines, including transportation energy use and relevant energy-related factors external to a building's envelope. Impacts may include:

- The Project's energy requirements and its energy use efficiencies by amount and fuel type for each stage of the Project including construction, operation, maintenance and/or removal. If appropriate, the energy intensiveness of materials may be discussed.
- The effects of the Project on local and regional energy supplies and on requirements for additional capacity.
- The effects of the Project on peak and base period demands for electricity and other forms of energy.
- The degree to which the Project complies with existing energy standards.
- The effects of the Project on energy resources.
- The Project's projected transportation energy use requirements and its overall use of efficient transportation alternatives.

In accordance with recent court opinions and the requirements of Appendix F of the CEQA Guidelines, ESA proposes to identify relevant information that addresses the energy implications of the proposed Project. ESA will utilize the information from the Project's air quality, GHG, and transportation analyses to quantitatively evaluate construction energy demand (for example, gallons of diesel and gasoline) from construction equipment, haul trucks, vendor trucks, and construction workers. ESA will also quantify the Project's anticipated operational energy needs, including direct consumption of electricity to pump water and fuel needed for maintenance operations.

ESA proposes to assist IRWD in developing appropriate Significance Thresholds. IRWD may consider the following preliminary list:

A project would result in a significant impact if it would:

a. Conflict with adopted energy conservation plans;
b. Violate State or federal energy standards;
c. Cause wasteful, inefficient, and unnecessary consumption of energy during construction, operation, and/or maintenance; or
d. Result in an increase in demand for electricity or natural gas that exceeds available supply or distribution infrastructure capabilities that could result in the construction of new energy facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.

ESA will summarize the Project's anticipated energy needs and conservation measures. ESA will describe Project commitments, design features, and mitigation measures that would minimize and reduce the Project's consumption of fuel and energy and determine the potential for energy impacts based on the evidence and

determine the significance of the impacts. If potentially significant impacts are found, ESA will recommend additional feasible energy efficiency design features or mitigation measures to reduce impacts.

Hazards and Hazardous Materials

The ADEIR will summarize known contamination sites within the construction areas and will list potentially hazardous materials used and stored during construction and operation of the Project. ESA will use the Phase 1 Environmental Site Assessment (2009) and the Engineering Feasibility Study as a primary source of information regarding existing onsite hazards and hazardous materials, as well as conduct a new database search for Cortese List properties as required by CEQA Guidelines Appendix G. The Phase 1 Environmental Site Assessment revealed no evidence of Recognized Environmental Concerns (REC); historical activities, including the use of the property site for agricultural use, from approximately 1968-2002, may have contributed to residual concentrations of insecticides, pesticides, or herbicides. The ADEIR will disclose these and other chemicals currently used onsite at the Syphon Reservoir disinfection facilities, which may be expanded as a result of the Project. The ADEIR will address potential soil contamination, groundwater contamination, and the potential for asbestos-containing building materials and lead-based paint if there are any structures proposed for demolition. The ADEIR will develop mitigation measures for management of contaminated soils and outline applicable hazardous materials handling and disposal requirements.

Hydrology/Water Quality/Flooding

The ADEIR will identify surface water and groundwater resources within the Project area and will evaluate potential impacts posed by the Project. The ADEIR will address potential flooding impacts to housing developments south and west of the dam as a result of dam improvements. An Inundation Study has already been completed for the dam as part of the Engineering Feasibility Study (GEI 2012). The result of this study will be used to describe the regulatory requirements of the Division of Safety of Dams, the potential flood hazards associated with a dam breach, and the design requirements that will ensure the low probability of a dam breach. The ADEIR will describe storm water runoff control requirements and provide mitigation if necessary to meet construction and operational storm water runoff quality requirements.

Land Use and Planning

ESA will identify and map existing land uses in the Project area. Local General Plans, airport master plans, and habitat conservation plans will be identified and summarized if applicable. The ADEIR will identify the adopted goals and policies that could be affected by replacing the existing 59-foot high dam with a 136-foot high dam. The ADEIR will evaluate consistency of the proposed Project with existing land uses within the Project area and develop mitigation measures to avoid or substantially lessen inconsistencies where feasible.

Noise and Vibration

The ADEIR will evaluate potential short-term construction noise impacts and long-term noise effects associated with implementation of the proposed Project. ESA assumes that no blasting activities will be required as a result of the Project. The ADEIR will summarize the results of the Technical Study from Task 4, evaluating the Project's ability to comply with existing noise standards and policies. Mitigation measures will be developed to ensure that neighboring land uses are not adversely affected by construction noise and vibration.

Population, Housing, and Growth-Inducement

The ADEIR will summarize the Project area's growth projections based on the Southern California Association of Governments (SCAG) projections and General Plan projections and discuss applicable General Plan build-out

assumptions. The ADEIR will address the Project's potential to induce indirect population growth due to expansion of water storage capacity at Syphon Reservoir. The ADEIR will describe the Project's relationship to growth and secondary effects of growth in the region. The ADEIR will evaluate the Project's potential to induce growth in the region and identify mitigation measures as necessary.

Public Services and Utilities

The ADEIR will review the potential effects of the proposed Project on utilities and public services resulting from both construction and operation of the Project. The ADEIR will evaluate landfill capacity to accommodate the Project's solid waste and potential soil disposal needs and compliance with federal, state, and local regulations related to solid waste.

Recreation

The ADEIR will discuss potential impacts to recreational activities within the Project area as a result of dam expansion. The ADEIR will identify thresholds of significance for impacts to recreational facilities and will evaluate the Project's effects based on these thresholds. The ADEIR will identify feasible mitigation measures to reduce the Project's effects to the accessibility of recreation facilities in the area.

Transportation and Traffic

ESA will incorporate the results of the Traffic Study prepared by subconsultant Fehr & Peers into the traffic section. The ADEIR will characterize roadway traits, traffic flow, access, and circulation conditions on affected roadways and at major intersections in the Project area. The ADEIR will assess the potential for construction traffic and operational traffic to affect local roadways. Mitigation measures will be developed to reduce adverse effects to traffic and circulation, as necessary.

Tribal Cultural Resources

ESA's cultural resources staff will assess the potential for impacts to tribal cultural resources in the ADEIR. The section will include the results of the Sacred Land File search through the Native American Heritage Commission, IRWD's outreach efforts to California Native American tribes per AB 552, a the results of Native American consultation, following CEQA Guidelines and in accordance with the confidentiality requirements of AB 52. The section will also assess the potential of the Project to impact tribal cultural resources, and will identify mitigation measures to minimize impacts, as necessary.

CEQA-Plus Analysis

ESA plans on complying with NEPA requirements associated with Title XVI funding through Reclamation by preparing a CEQA-Plus document. The analysis will include all federal cross-cutting regulations for purposes of CEQA-Plus compliance, which may include but may not be limited to: Clean Air Act, Costal Barriers Resources Act, Coastal Zone Management Act, Endangered Species Act, Farmland Protection Policy Act, Floodplain Management Act, Magnuson-Stevens Fishery Conservation and Management Act, Migratory Bird Treaty Act, National Historic Preservation Act, Protection of Wetlands, Environmental Justice, Safe Drinking Water Act, Sole

Source Aquifer Protection Act, and Wild and Scenic Rivers Act. This section of the ADEIR will include analysis of Environmental Justice.

Cumulative Impacts

ESA will address potential cumulative impacts of implementing the proposed Project in conjunction with past, present, and reasonably foreseeable public and private projects in the immediate Project area. The analysis will include a description of the geographic area in which cumulative impacts could be experienced for each resource area. ESA will evaluate the local General Plan along with contacting relevant agencies (city and county planning and public works departments, as well as CalTrans) to compile a list of major projects planned within or near the area over the next 10-15 years as well as under way or completed in the last five years. Based on experience in this part of Orange County, ESA anticipates future residential/commercial growth in the Foothill Ranch and North Tustin areas. A brief description of the relevant past, present, and proposed future projects occurring in the area that could contribute to cumulative effects will be provided.

Alternatives

Based on the alternatives development and selection conducted under Task 6, ESA will evaluate alternatives to the Project including the No Project Alternative. This scope assumes no more than two alternatives, in addition to the No Project Alternative required by the CEQA Guidelines, are analyzed in the ADEIR. The ADEIR will compare these alternatives to determine if any would substantially meet the Project objectives and reduce significant impacts associated with the proposed Project. As required by CEQA, IRWD will consider any alternatives identified by agencies or others at scoping meetings or in response to the NOP and determine whether they should be included in the ADEIR as feasible or infeasible. IRWD will identify the environmentally superior alternative based on the conclusions of the analysis.

Deliverables:

- Five hard-copies of the ADEIR
- All technical appendices submitted on CD/DVD

Task 11: Prepare a Screen Check Draft EIR

ESA will revise the ADEIR per the comments received from IRWD staff. ESA will prepare a first Screen Check DEIR for review by IRWD. ESA will then incorporate comments from IRWD staff and prepare a second Screen Check DEIR. ESA understands that both Screen Check iterations will be complete and coherent documents with all appropriate sections, chapters, and appendices. ESA is prepared to attend ***four meetings*** with IRWD staff and appropriate consultants to review the Screen Check drafts.

Deliverables:

- Five hard-copies of the first Screen Check DEIR
- Five hard-copies of the second Screen Check DEIR
- All technical appendices submitted on CD/DVD

Task 12: Prepare Public Draft EIR, Notice of Availability, and NOC

After receiving final approval from IRWD of the second Screen Check DEIR, ESA will prepare the Public Draft EIR, Notice of Availability (NOA), and NOC. ESA will compile the mailing list and conduct the mailing and public noticing via the NOA required by CEQA. Anyone who received the NOP or requested to be notified of the Draft EIR will

receive a NOA plus a CD containing the Draft EIR. ESA anticipates this will be up to 100 entities; however as requested in the RFP, for budgeting purposes we have assumed 10 hard copies of the NOA and Public Draft EIR and 10 CDs. ESA will file the NOC and 15 copies of the Public Draft EIR with the State Clearinghouse, and will file the NOA with the Orange County Clerk. The notices will include the date and location of public hearing on the Draft EIR (see Task 13). ESA will publish the NOA one time in the Orange County Register.

Deliverables:

- 10 hard-copies of the Public Draft EIR and 10 DVDs for IRWD
- 15 hard-copies of the Public Draft EIR for State Clearinghouse
- 10 hard-copies of the NOA and Public Draft EIR for interested parties; plus 10 CDs
- Two hard-copies of the NOC
- One DVD with PDF files of the Public Draft EIR, NOA, NOC, for IRWD's records

Task 13: Conduct Public Meeting

ESA will organize and arrange ***one public meeting*** to receive comments on the Draft EIR during the 45-day public review period. ESA will prepare presentation materials, maps, handouts, and an agenda and conduct a presentation to present the results of the environmental analysis. ESA will work with IRWD and the public outreach consultants to prepare meeting materials; all materials will be approved by IRWD in advance of the meeting. ESA will attend ***one preparation meeting*** with IRWD and its outreach consultant to review the presentation.

ESA will document all verbal and written comments received during the public meeting. ESA will then prepare an itemized list of all comments received at the public meeting and by mail, and will incorporate them into the Final EIR, if applicable.

Deliverables:

- Public meeting agenda
- Draft and final public meeting presentation
- Public meeting presentation materials (handouts, maps, presentation)
- Itemized list of all comments received

Task 14: Prepare Final EIR and Response to Comments

At the conclusion of the public review period, ESA will work with IRWD to obtain all comments received on the Draft EIR. ESA will provide a detailed review and evaluation of all of the comments received. ESA will develop a strategy for addressing the comments and will present this approach to IRWD and its public outreach consultant. An Administrative Final EIR containing proposed responses to comments to the Draft EIR will be prepared once ESA's approach is agreed with by IRWD staff.

After incorporation of comments on the Administrative Final EIR, ESA will prepare a Screen Check Final EIR for review by IRWD. ESA assumes that comments on the Screen Check Final EIR will be minimal, due to early consultation with IRWD when comments are received.

This task assumes ***two meetings*** will be held with IRWD to discuss comments received and to develop a strategy for response to comments.

Deliverable:

- Administrative draft Final EIR or RTC and Draft EIR in electronic format
- Screen Check Final EIR

Task 15: Prepare a Mitigation Monitoring Reporting Program

In compliance with Public Resources Code Section 21081.6, ESA will prepare a draft Mitigation Monitoring and Reporting Program (MMRP) for review by IRWD. The MMRP describes the required mitigation necessary to avoid or reduce significant impacts, the responsible parties, tasks, and schedule necessary for monitoring mitigation compliance. ESA will attend ***one meeting*** with IRWD to review the MMRP.

Deliverable:

- MMRP in electronic format

Task 16: Finalize EIR, Prepare Findings, Statement of Overriding Considerations, Notice of Determination

After IRWD has reviewed the Final EIR, ESA will incorporate the necessary revisions into the document and will mail a copy to each entity that commented.

ESA will prepare draft Findings of Fact and a Statement of Overriding Considerations (SOC) (if necessary) for review by the IRWD's Boards of Directors. ESA will incorporate IRWD's comments and will prepare the final Findings. ESA will also attend one (1) Board of Directors EIR ***certification hearing***. ESA will prepare and file the Notice of Determination (NOD) with the Orange County Clerk and the State Clearinghouse following certification by IRWD. The 2017 CEQA filing fees for California Department of Fish and Wildlife and the Orange County Clerk are included as part of this task, and ESA assumes the 2019 increases will be minimal and covered under the budget presented with this scope of work.

Deliverables:

- Final EIR mailed to each entity that commented on Draft EIR (up to 10 copies)
- Notice of Determination
- Statement of Overriding Considerations (if necessary)
- File Final EIR and NOD with the County of Orange and the State Clearinghouse
- Check for County filing fee and CDFW filing fee

Task 17: NEPA Compliance

Technical Reports and Consultation

According to past experience with Reclamation, submittal of a CEQA-Plus document with technical studies for biological and cultural resources impacts would be sufficient in meeting all of the Reclamation requirements for federal consultations with U.S. Fish and Wildlife Service and State Historic Preservation Office. As such, the stand-alone Biological Resources Technical Report included in Task 4 can be used by Reclamation to conduct consultations with federal agencies per funding requirements. In addition, the Cultural Resources Technical Report prepared under Task 4 will be amended to delineate the Area of Potential Effect (APE) in accordance with the requirements for Section 106 of the National Historic Preservation Act, per NEPA requirements.

ESA will assist IRWD with coordination of Section 106 compliance through Reclamation. This task includes time for general coordination with the Bureau archaeologist and attendance at up to two conference calls with Reclamation. This scope assumes one meeting between ESA and IRWD to coordinate the NEPA and federal consultation efforts, and up to two consultation meetings with agencies.

4

Schedule and Budget

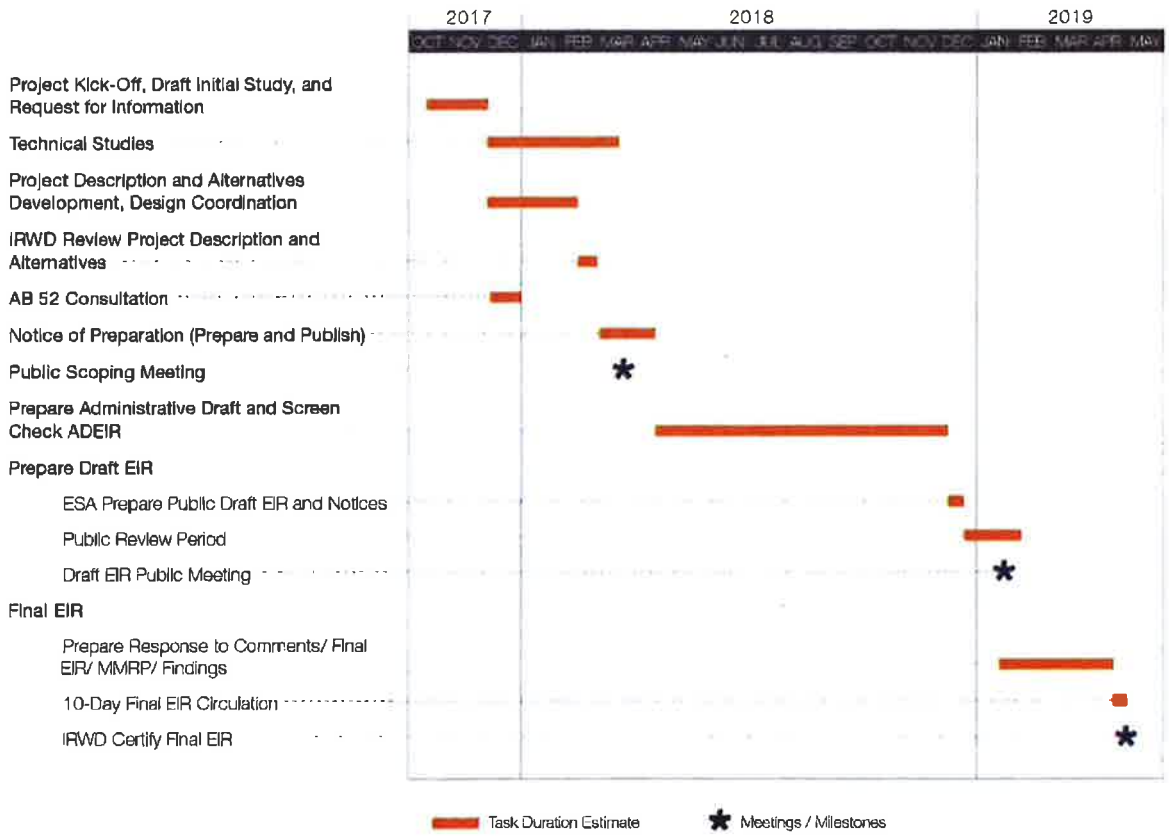
Section 4

Schedule and Budget

Schedule

Based on the RFP, IRWD requests a 20-month schedule for preparation of an EIR for the Project. As mentioned in **Section 1, Approach**, ESA recommends preparation of one CEQA-Plus document that covers both geotechnical investigation and construction/operation of the proposed dam and reservoir. ESA has prepared a draft Project schedule below to demonstrate how the 20-month schedule can be achieved for one CEQA-Plus document based on main Project milestones provided in the RFP. This schedule is also included in **Section 1, Scope of Work.** This schedule leads to certification of the EIR in May 2019.

As part of the initial start-up tasks and project kick-off, ESA will prepare a more detailed schedule providing adequate preparation of all phases of environmental documentation and public notices, review of deliverables by IRWD, and coordination with IRWD and its consultants. ESA will make revisions to the schedule as necessary throughout the duration of the Project to inform the Project Team of the progress and status of the environmental process.



Budget

Per IRWD's request, our budget spreadsheet is attached to this proposal in a separately sealed envelope.

Table 4-1: Cost Proposal
ESA Labor Detail and Expense Summary

	Employee Names					M. Jerabek		Rosenblum				C. Chiang			Blake barroso			*Graphics*	*Admin*	*GIS*						
						Gerrity		Hutchison		Chan		A. Kainer	M. Vader		A. Ball			*& Pubs*								
						Bever		Holbrook		Steiner		Spano	C. Taylor		M. Gonzalez											
		Nelson	Barnes		Rous	Burns		Jacobus	Schriewind	Tenaka		K. Kim	A. Brown	A. Rajper	S. Hodal	VPT		JaFolla	Rhode							
	Labor Category	Senior Director III	Senior Director II	Senior Director I	Director III	Director II	Director I	Managing Associate III	Managing Associate II	Maneging Associate I	Senior Associate III	Senior Associate II	Senior Associate I	Associate III	Associate II	Associate I	*Subtotal*	Project Technician III	Project Technician II	Project Technician I	*Subtotal*	Total Hours	Direct Labor Price	Fully Burdened Labor Price (w/multiplier)		
Task #	Task Name/Description	$ 97.24	$ 79.58	$ 63.46	$ 88.80	$ 59.81	$ 50.37	$ 54.54	$ 48.79	$ 41.26	$ 42.85	$ 36.90	$ 32.53	$ 31.94	$ 27.96	$ 22.78		$ 36.97	$ 29.43	$ 27.96				3.40		
1.0	**Project Initiation/Management and Initial Study Screening**																									
	Draft Initial Study, EIR Outline, Schedule							8				12			24		$ 1,550.64	4			*$ 148*	48.00	$ 1,699	$ 5,774.97		
	Project Kick-Off	2	2			2		4				4					$ 839.02				$ -	14.00	$ 839	$ 2,852.67		
	Project Management							100				38					$ 11,764.80			20	$ 550	248.00	$ 12,324	$ 41,902.96		
2.0	Review Existing Information/Submit a Request for Information							16		20		8					$ 1,993.04				$ -	44.00	$ 1,993	$ 6,776.34		
3.0	Project Schedule							16				16					$ 1,463.04				$ -	32.00	$ 1,463	$ 4,974.34		
4.0	Technical Studies																									
	Aesthetics - Visual Sims (see subconsultant sheet)											4					$ 147.60				$ -	4.00	$ 148	$ 501.84		
	Air Quality/ GHG Report				12					48					60		$ 4,484.88	2			$ 74	122.00	$ 4,559	$ 15,499.99		
	Noise				6					20		32			16		$ 2,866.48	2			$ 74	76.00	$ 2,940	$ 9,997.43		
	Biological Resources Technical Report																$ -				$ -	-	$ -	$ -		
	Prepare JD	2						16		24		16					$ 2,647.76	2			$ 74	60.00	$ 2,722	$ 9,253.78		
	Conduct surveys							32		32		120	120		80		$ 13,635.60	16		8	$ 815	408.00	$ 14,451	$ 49,133.26		
	Prepare BTR	4						32		20		16	16		40		$ 5,189.52	8		4	$ 408	140.00	$ 5,597	$ 19,030.48		
	Agency consultations	8	8					24		16							$ 3,383.68				$ -	56.00	$ 3,384	$ 11,504.51		
	Mitigation Plan	8	8					24		24							$ 3,713.76	4			$ 148	68.00	$ 3,862	$ 13,129.58		
	Cultural Resources Technical Report					8						8	50	52	4	30	$ 4,856.36	18			$ 665	170.00	$ 5,522	$ 18,774.26		
	Traffic Study (see subconsultant sheet)							16									$ 972.64				$ -	16.00	$ 873	$ 2,966.98		
5.0	Coordination with Design and Public Outreach Consultants		8					24				40					$ 3,421.60	8		4	$ 408	84.00	$ 3,829	$ 13,018.55		
6.0	Development of Project Description and Identification of Alternatives																									
	Project Description		8					16				24			24		$ 3,066.40	4		16	$ 596	92.00	$ 3,662	$ 12,450.66		
	Two meetings with IRWD		4					12				12					$ 1,415.60				$ -	28.00	$ 1,416	$ 4,813.04		
	Project Alternatives and Workshop		8					24				24					$ 2,831.20	4			$ 148	60.00	$ 2,979	$ 10,128.87		
7.0	AB 52 Tribal Cultural Resources					32							16		8		$ 2,602.28			4	$ 112	56.00	$ 2,714	$ 9,228.26		
8.0	Prepare NOP and NOC																									
	Prepare NOP and NOC		1					8				16			32		$ 2,001.68	4		4	$ 260	65.00	$ 2,261	$ 7,688.96		
	Publish NOP and NOC							4				4			12		$ 701.52	4			$ 148	24.00	$ 849	$ 2,887.98		
	One meeting with IRWD		4					6				6					$ 866.96				$ -	16.00	$ 867	$ 2,947.66		
9.0	Conduct Public Scoping																									
	Public Scoping Meeting Material Preparation		4					16				16			16		$ 2,229.04	8			$ 296	60.00	$ 2,525	$ 8,584.32		
	Two preparation meetings with IRWD		4					12				12					$ 1,415.60				$ -	28.00	$ 1,416	$ 4,813.04		
	Attend Scoping Meeting		2					6				6			4		$ 819.72				$ -	16.00	$ 820	$ 2,787.05		
	Comment Memorandum							4				4			16		$ 813.44	2			$ 74	26.00	$ 887	$ 3,017.09		
10.0	Prepare an Administrative Draft EIR																									
	Aesthetics							4				32					$ 1,398.96	1		8	$ 205	43.00	$ 1,604	$ 5,452.95		
	Air Quality			2						6					4		$ 497.08	1			$ 37	13.00	$ 534	$ 1,815.77		
	Biological Resources	4						16		32		24			8		$ 3,691.36	8		12	$ 632	104.00	$ 4,323	$ 14,697.79		
	Cultural Resources				8			8		12							$ 1,409.92	1			$ 37	29.00	$ 1,447	$ 4,919.43		
	Geology and Soils				12			8	48								$ 3,399.98	1			$ 37	69.00	$ 3,437	$ 11,685.56		
	Greenhouse Gas Emissions and Energy			4						8					20		$ 1,184.88	1			$ 37	33.00	$ 1,202	$ 4,086.29		
	Hazards and Hazardous Materials							8	42								$ 2,401.50	1			$ 37	51.00	$ 2,438	$ 8,290.80		
	Hydrology and Water Quality and Flooding					12		8	52								$ 3,587.12	1		8	$ 261	81.00	$ 3,848	$ 13,082.96		
	Land Use and Planning							4				32					$ 1,398.96	1			$ 37	37.00	$ 1,436	$ 4,882.16		
	Noise and Vibration			3						6		4					$ 601.56	1			$ 37	14.00	$ 639	$ 2,171.00		
	Population, Housing, and Growth-Inducement							4		24							$ 1,208.40	1			$ 37	29.00	$ 1,245	$ 4,234.26		
	Public Services and Utilities							4							32		$ 1,113.52	1			$ 37	37.00	$ 1,150	$ 3,911.67		
	Recreation							2							16		$ 556.76	1			$ 37	19.00	$ 594	$ 2,018.68		
	Transportation and Traffic							4							32		$ 1,113.52	1		8	$ 261	45.00	$ 1,374	$ 4,672.72		
	Tribal Cultural Resources									8							$ 330.08	1			$ 37	9.00	$ 367	$ 1,247.97		
	CEQA-Plus Section				8			16		8					40		$ 2,800.40	1		8	$ 261	81.00	$ 3,061	$ 10,408.11		
	Cumulative Impacts							6				40					$ 1,803.24	1			$ 37	47.00	$ 1,840	$ 6,256.71		
	Alternatives							6		32							$ 1,647.36		*		$ -	38.00	$ 1,648	$ 5,601.70		
	Three meetings with IRWD		6					18		18							$ 2,201.68				$ -	42.00	$ 2,202	$ 7,486.39		
11.0	Prepare a Screen Check Draft EIR																									
	Prepare First and Second Screen Checks		4			8		40	16	24		40			80		$ 8,431.68	12		12	$ 779	236.00	$ 9,211	$ 31,317.07		
	Four meetings with IRWD							24				24					$ 2,194.56				$ -	48.00	$ 2,195	$ 7,461.50		
12.0	Prepare Public Draft EIR, NOA and NOC		2					8				16			32		$ 2,081.24	12		4	$ 556	74.00	$ 2,637	$ 8,965.12		
13.0	Conduct Public Meeting																									

H:\Proposals\P17xxxx\SoCalP\7044S 00 - IRWD Syphon Reservoir Recycled Water Storage Project\00 Working Files_Separate Cost Proposal\FINAL IRWD Direct Labor Rate Cost Spreadsheet_lcb.xlsm-ESA Labor Cost & Project Total

	Employee Names					M. Jerabek		Rosenblum				C. Chiang			Blake barroso			Graphics	Admin	GIS				
						Garrity		Hutchison		Chan		A. Kalner	M. Vader		A. Bell			& Pubs						
						Bever		Holbrook		Stelner		Spano	C. Taylor		M. Gonzalez									
		Nelson	Barnes		Rous	Burns		Jacobus	Schniewind	Tanaka		K. Kim	A. Brown	A. Rajper	S. Hodal	VPT		JaFolla	Rhode					
	Labor Category	Senior Director III	Senior Director II	Senior Director I	Director III	Director II	Director I	Managing Associate III	Managing Associate II	Managing Associate I	Senior Associate III	Senior Associate II	Senior Associate I	Associate III	Associate II	Associate I	Subtotal	Project Technician III	Project Technician II	Project Technician I	Subtotal	Total Hours	Direct Labor Price	Fully Burdened Labor Price (w/multiplier)
Task #	Task Name/Description	$ 97.24	$ 79.68	$ 63.46	$ 68.80	$ 59.81	$ 50.37	$ 54.54	$ 46.79	$ 41.26	$ 42.86	$ 36.90	$ 32.53	$ 31.94	$ 27.98	$ 22.78		$ 36.97	$ 29.43	$ 27.98				3.40
	Prepare Public Meeting Materials		2					12				16			16		$ 1,851.72	8			$ 296	54.00	$ 2,147	$ 7,301.43
	One preparation meeting with IRWD		2					6				4					$ 634.00				$ -	12.00	$ 634	$ 2,155.60
	Attend public meeting		2					6				6			4		$ 819.72				$ -	18.00	$ 820	$ 2,787.05
14.0	Prepare Final EIR and Response to Comments																							
	Prepare Response to Comments/ Final SEIR	4	16		4	8		40	8	16		24			48		$ 7,860.64	16		8	$ 915	192.00	$ 8,676	$ 29,498.40
	Two meetings with IRWD							12				12					$ 1,097.28				$ -	24.00	$ 1,097	$ 3,730.75
15.0	Prepare MMRP																$ -				$ -	-	$ -	$ -
	Prepare MMRP							8							16		$ 884.00				$ -	24.00	$ 884	$ 3,005.60
	Attend one meeting with IRWD							6									$ 327.24				$ -	6.00	$ 327	$ 1,112.62
16.0	Prepare Findings, Statement of Overriding Considerations, NOD and Finalize EIR																							
	Prepare Findings, SOC, NOC, Finalize EIR		4					16				16			40		$ 2,900.56				$ -	76.00	$ 2,900.56	$ 9,861.90
	Attend EIR Certification Hearing							4									$ 218.16				$ -	4.00	$ 218.16	$ 741.74
17.0	NEPA Compliance		8			32		40		32		8					$ 6,347.68				$ -	120.00	$ 6,347.68	$ 21,582.11
Total Hours		32	107	-	31	130	-	648	166	430	-	736	202	52	722	30	3486	182	-	126	288	3,774		
Total Direct Labor Costs		$ 3,111.68	$ 8,515.06	$ -	$ 2,132.80	$ 7,775.30	$ -	$ 46,249.92	$ 7,767.14	$ 17,741.80	$ -	$ 27,155.40	$ 6,571.06	$ 1,660.88	$ 20,201.56	$ 683.40	$ 149,569.00	$ 5,989.14	$ -	$ 3,625.46	$ 9,515		$ 159,083.62	$ 540,884.31
Percent of Effort - Labor Hours Only		0.8%	2.8%	0.0%	0.8%	3.4%	0.0%	22.5%	4.4%	11.4%	0.0%	19.5%	5.4%	1.4%	19.1%	0.8%	92.4%	4.8%	0.0%	3.3%	7.6%	100.0%		
Percent of Effort - Total Project Cost		0.5%	1.4%	0.0%	0.3%	1.3%	0.0%	7.6%	1.3%	2.9%	0.0%	4.4%	1.1%	0.3%	3.3%	0.1%		1.0%	0.0%	0.6%			26.0%	

ESA Labor Cost			**$ 540,884.31**
Labor Cost Communication Fee		**3%**	**$ 16,226.53**
ESA Non-Labor Expenses			
Reimbursable Expenses	(see Attachment A for detail)		$ 12,535.16
ESA Equipment Usage	(see Attachment A for detail)		$ -
Subtotal ESA Non-Labor Expenses			**$ 12,535.16**
Subconsultant Costs	**(see Attachment B for detail)**		**$ 41,680.00**
PROJECT TOTAL			**$ 611,226.00**

Attachment A
Cost Proposal: ESA Non-Labor Expenses Summary

Reimbursable Expenses			
Project Supplies (including CDFW CEQA Filing Fees)		$	3,553
Printing/Reproduction		$	1,100
Document and Map Reproductions (CD + Digital Photo)		$	100
Postage and Deliveries		$	1,040
Mileage		$	2,930
Vehicle Rental		$	-
Lodging		$	-
Airfare		$	-
Other Travel Related		$	-
Newspaper Ads		$	1,600
Records Search		$	1,615
-		$	-
	Subtotal Reimbursable Expenses	$	11,938
5%	Fee on Reimbursable Expenses	$	597
	Total Reimbursable Expenses	**$**	**12,535**

September 13, 2017
Prepared by: J. Moeder/R. Mori
Submitted by: K. Burton
Approved by: Paul Cook

ENGINEERING AND OPERATIONS COMMITTEE

IRVINE LAKE PIPELINE NORTH CONVERSION RESERVOIR
CONTRACT CHANGE ORDER

SUMMARY:

Pascal & Ludwig Constructors (P&L) is constructing the Irvine Lake Pipeline (ILP) North Conversion Reservoir, which is about 40% complete. Staff recommends that the Board approve Contract Change Order No. 10 in the amount of $473,623 for design changes associated with the postponement of the Santiago Hills II development.

BACKGROUND:

As part of IRWD's strategic plan to increase recycled water usage and reduce reliance on imported water supplies, IRWD is converting a significant portion of the ILP from untreated water to recycled water. The ILP North Conversion Reservoir project includes construction of a 2.4 million gallon buried concrete reservoir, modifications at the Rattlesnake complex, and modifications at the Orchard Hills Strainer Facility. Construction of the ILP North Conversion Reservoir project began in October 2016.

Contract Change Order No. 10:

During the design phase, staff and the Irvine Company closely coordinated the project design with the anticipation that the Irvine Company would construct the adjacent Santiago Hills II development and associated infrastructure improvements concurrent with the reservoir project. As such, the project included provisions for connecting to the proposed storm drain, sewer, and grading improvements that were to be constructed with the development. In November 2016, the Irvine Company informed staff that construction of the development was being postponed, which prompted the need to design and construct several improvements at the reservoir site to successfully integrate the project with the existing conditions. The needed improvements consist of several items, but most notably include the following:

- Onsite and offsite storm drain piping, outfall structure, erosion protection, and grading modifications;
- Strainer backwash recycling system that includes a concrete vault, pumps, valves, and a pump control panel; and
- Miscellaneous revisions including site grading, yard piping, and electrical modifications.

Staff developed the design of the improvements with Kleinfelder and requested P&L to submit pricing for its construction. After several rounds of negotiation and scope review, P&L submitted a change request in the amount of $473,623, which includes a request for a Contract Time extension of 56 calendar days. Staff reviewed the change order and confirmed that both the cost and the time extension request are acceptable. Staff recommends approval of Contract Change

Order No. 10, which is presented as Exhibit "A", in the amount of $473,623. A summary of change orders to date is provided as Exhibit "B".

FISCAL IMPACTS:

Project 05407 is included in the FY 2017-18 Capital Budget. The existing budget is sufficient to fund the contract change order.

The ILP North Conversion Project, which includes the reservoir and associated off-site pipelines, is receiving grant funding from the United States Department of Bureau of Reclamation (USBR) and the State Water Resources Control Board (SWRCB). The USBR funding, in the amount of $300,000 is being provided through the Drought Resiliency Grant program with 75% IRWD matching requirements. The SWRCB is providing Proposition 1 Recycled Water Program grant funds, which will contribute up to a 35% match on eligible construction costs up to a maximum of $29,510,300 in project costs.

ENVIRONMENTAL COMPLIANCE:

This project is subject to the California Environmental Quality Act (CEQA) and in conformance with California Code of Regulations Title 14, Chapter 3, Article 6, a Notice of Intent to adopt a Mitigated Negative Declaration was filed with the County of Orange on November 3, 2015. Pursuant to State Guideline § 15073, the Initial Study/Mitigated Negative Declaration (IS/MND) was made available for public review for a period of 30 days from November 4, 2015 through December 3, 2015. The IS/MND was adopted by IRWD Board of Directors at its January 11, 2016 meeting. A Notice of Determination was filed with the Orange County Clerk/Recorder and the CA State Clearinghouse on January 12, 2016.

RECOMMENDATION:

That the Board approve Contract Change Order No. 10 with Pascal & Ludwig Constructors in the amount of $473,623 for design changes associated with the postponement of the Santiago Hills II development for the Irvine Lake Pipeline North Conversion Reservoir, Project 05407.

LIST OF EXHIBITS:

Exhibit "A" – Contract Change Order No. 10
Exhibit "B" – Contract Change Order Summary Log

EXHIBIT "A"

CO[illegible]DER

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

C.O. No. 10
☐ Final

Project No. 05407

ILP N. Conversion Santiago Hills Zone C+ Reservoir
Project Title

Date: 9/5/2017

THE FOLLOWING CHANGE TO CONTRACT, DRAWINGS AND SPECIFICATIONS IS PROPOSED.	$ ADDITIONS	$ DELETIONS	DAYS ±
1. Change Request 21 - Construction of redesign improvements included in Delta 6 that are associated with the Irvine Company's schedule modification for the Santiago Hills II development. Note: With the execution of this contract change order, the revised contract completion date is 02/09/2019.	$ 473,623.00	$ -	56
TOTAL	$ 473,623.00	$ -	56

DAYS ±

1. NET AMOUNT THIS CHANGE ORDER	=	$ 473,623.00	56
2. ORIGINAL CONTRACT AMOUNT	=	$ 9,038,010.00	690
3. TOTAL PREVIOUS CHANGE ORDER(S)	=	$ 1,000,748.00	167
4. TOTAL BEFORE THIS CHANGE ORDER (2+ 3)	=	$ 10,038,758.00	857
5. PROPOSED REVISED CONTRACT AMOUNT TO DATE (1+4)	=	$ 10,512,381.00	913

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

Four Hundred Seventy Three Thousand Six Hundred Twenty Three and 0/100 ---------- Dollars

9/5/17 Date — Pascal & Ludwig Constructors Contractor — By: Scott Floyd

SIGNATURE	DATE	APPROVAL LEVEL REQUIRED	
IRWD Engineer or Consulting Engineer	9/5/17 Date	Department Director Approval Required	☐
Principal Engineer	09/05/17 Date	Executive Director Approval Required	☐
Executive Director of Engineering & Water Quality	9/5/17 Date	General Manager Approval Required	☐
General Manager	Date	Board Approval Required	X
		Purchase Order No.	

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

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

EXHIBIT "B"

ILP N. Conversion Santiago Hills Zone C+ Reservoir Project
PR 05407
Construction Change Order Summary

Date: September 5, 2017
Contractor: Pascal & Ludwig
Design Engineer: Kleinfelder

			Contract Amount						Contract Days				Original Completion Date:
							Original Contract Amount:	$9,038,010.00			Original Days:	690	7/1/2018
Change Order No.	Description	Category	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 Order Days	Cum. Change Order Days	Revised Total Contract Days	Revised Completion Date
1	Approved by Executive Director of Eng and WQ Approved on November 22, 2016			$ 20,846.00	$ -	$ 20,846.00	0.23%	$9,058,856.00	0	0	0	690	7/1/2018
	CR-1: Addition of 4-inch water line at Santiago Canyon Reservoir Site	B	$10,628.00										
	CR-2: Removal of fencing along Santiago Canyon Road	D	$818.00										
	CR-3: Modifications to the strainer backwash pumps	D	$1,491.00										
	CR-4: Modifications to the fencing plan at the Santiago Canyon Hills Reservoir Site	C	$7,159.00										
	CR-5: Addition of a project sign at the Irvine Company disposal site	C	$750.00										
2	Approved by Executive Director of Eng and WQ Approved on March 28, 2017			$21,681.00	$ 20,846.00	$ 42,527.00	0.47%	$9,080,537.00	48	0	48	738	8/18/2018
	CR-6: Additional potholing at Rattlesnake Complex	B	$3,283.00										
	CR-7: Addition of mulch at Rattlesnake Complex	C	$2,065.00										
	CR-8: Modification to the stainless steel tapping sleeve	A	$12,605.00										
	CR-10: Addition of Proposition 1 Funding Agreement requirements	C	$0.00										
	CR-11: Addition of remote control station on 30-inch ball valve	D	$3,728.00										
	CR-12: Time extension request for weather delays	B	$0.00						48				
3	Approved by Executive Director of Eng and WQ Approved on March 31, 2017			$0.00	$ 42,527.00	$ 42,527.00	0.47%	$9,080,537.00	25	48	73	763	9/12/2018
	CR-15: Additional time for delay in disposal site availability	B	$0.00						25				
4	Approved by Board Approved on April 24, 2017			$351,014.00	$ 42,527.00	$ 393,541.00	4.35%	$9,431,551.00	20	73	93	783	10/2/2018
	CR-9: City of Orange modified work hours	C	$83,970.00						10				
	CR-13: Additional handling and disposal	B	$267,044.00						10				
5	Approved by Executive Director of Eng and WQ Approved on April 19, 2017			$65,459.00	$ 393,541.00	$ 459,000.00	5.08%	$9,497,010.00	22	93	115	805	10/24/2018
	CR-15: Modified Shoring for Additional Over Excavation	B	$65,459.00						22				
6	Approved by General Manager Approved on May 24, 2017			$95,380.00	$ 459,000.00	$ 554,380.00	6.13%	$9,592,390.00	0	115	115	805	10/24/2018
	CR-19: Additional Over-Excavation	B	$95,380.00										
7	Approved by General Manager Approved on July 13, 2017			$98,526.00	$ 554,380.00	$652,906.00	7.22%	$9,690,916.00	0	115	115	805	10/24/2018
	CR-20: Slot cutting in front of shoring	B	$98,526.00						0				
8	Approved by Board Approved on July 25, 2017			$314,692.00	$652,906.00	$ 967,598.00	10.71%	$10,005,608.00	52	115	167	857	12/15/2018
	CR-22: Import and Placement of Structural Backfill	B	$314,692.00						52				
9	Approved by Executive Director of Eng and WQ Approved on			$33,150.00	$ 967,598.00	$ 1,000,748.00	11.07%	$10,038,758.00	0	167	167	857	12/15/2018
	CR-18: Air Gap Support Redesign	D	$16,413.00						0				
	CR-23: Surge Tank Piping Modifications	B	$16,737.00						0				
10	Approved by Board Approved on			$473,623.00	$ 1,000,748.00	$1,474,371.00	16.31%	$10,512,381.00	56	167	223	913	2/9/2019
	CR-21 Redesign associated with TIC Development Sch. Mod	A	$473,623.00						56				

Category	Total Amount	Contract
A - Owner Directed Change	$486,228.00	5.38%
B - Differing/Unknown Condition	$871,749.00	9.65%
C - External Agency, Regulatory, and/or Permit Required Change	$93,944.00	1.04%
D - Design Oversight	$22,450.00	0.25%
Total Change Order Amount (A + B + C + D)	$1,474,371.00	16.31%

September 13, 2017
Prepared by: S. Malloy
Submitted by: K. Burton KLB
Approved by: Paul A. Cook

ENGINEERING AND OPERATIONS COMMITTEE

MICHELSON WATER RECYCLING PLANT
BIOSOLIDS AND ENERGY RECOVERY FACILITIES
CONTRACT CHANGE ORDER NO. 62 AND RETENTION BOND

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. 62 includes costs for several electrical and controls items. Staff has negotiated a Retention Bond agreement to assist FBB with cash flow at this stage in the project. Staff recommends that the Board:

- Approve CCO No. 62 in the amount of $708,162.72 with FBB; and
- Authorize the General Manager to execute the Retention Bond Agreement for the Biosolids Project.

BACKGROUND:

Construction of the Biosolids Project was awarded to FBB in March 2013 in the amount of $163,465,940. The Biosolids Project will provide biosolids digestion, dewatering, energy production, and on-site sludge drying. The project includes excavation for subsurface structures; installation of foundation piles; three egg-shaped digesters; a state-of-the-art odor control system; a biogas conditioning system and power generation using microturbines; a fats, oil and grease 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. 62:

Staff negotiated with FBB and agrees to the labor and material costs contained in CCO No. 62, which contains the following items:

- *Fats, Oil, and Grease (FOG) Modifications in the amount of $52,174.90* – Staff reviewed the controls of the FOG station and determined that flexibility was necessary at the local control panel and at SCADA to respond to the actual conditions when FOG is being received. These modifications allow for greater operational flexibility. This item is for the labor and materials to make the necessary modifications.

- *Density Meter Conduit and Cabling Modifications in the amount of $52,518.11* – Staff decided to add flushing functions for the 11 density meters to prevent clogs. These density meters measure the density of the sludge at the thickening and dewatering

centrifuges. The modifications will increase reliability and reduce maintenance of the system. This item is for the labor and materials to make the modifications.

- *Fiber Optic Modifications in the amount of $20,607.14* – To increase reliability of the SCADA system during emergencies, staff decided to install communication lines from both the Digester Control Building and the Solids Handling Building to the SCADA back-up servers systems located in the Operations Center.

- *Sludge Screen Pneumatic Control Panel Conduit and Cabling in the amount of $8,859.95* – During the submittal process, it was discovered that Huber, the manufacturer of the sludge screens, required additional conduit and cabling for the controls and power of the local control panel. This item is for the labor and material to add the additional conduit and cabling.

- *Additional Circuits for Control of the Thickening Centrifuges in the amount of $376,674.08* – During the submittal process, it was discovered that the centrifuge manufacturer required additional circuits for the control of the four thickening centrifuges. Circuits were added from the thickening centrifuges to the local control panels as well as to the electrical panels on the ground floor in the electrical room. This item is for labor and material to provide the additional electrical, instrumentation, controls and SCADA programming requirements.

- *Power Panel PP-8001 Circuit Breakers in the amount of $50,135.26* – To allow for full capacity usage for potential future expansion of the FOG system, it was decided that the feeders should be upsized to 480 volts. This item is for the labor and material to upsize the breakers.

- *Electrical Power Feeders to Electric Water Heaters in the amount of $16,551.27* – The electric water heaters require higher-rated conductors from the original design. This item is for the labor and material to upsize the feeder conductors to 480 volts.

- *Chemical Sump Pump Control Panel Space Heater Wiring Modifications in the amount of $12,822.26* – Space heaters were added for the protection of the chemical sump pumps. This item is for the wiring modifications to allow the addition of the space heaters.

- *Relocate Electrical Feeders to Generator Bus in the amount of $22,785.74* – Staff decided that for better reliability in a loss of power event, selected electrical loads should be moved from a non-emergency generator bus to an emergency bus for continued operation. This item is for the labor and material for the modifications.

- *Electrical and Instrumentation Related Components for the Installation of Thin Client at Dryer Facility Pellet Load-Out in the amount of $49.908.43* – Change Order No. 55 was approved to add a thin client in the pellet load-out bay of the Solids Handling Building

for better 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.

- *Polymer Room Eye Wash Station Flow Switches in the amount of $24,567.89* – For better worker safety, alarm beacons were added at each eye wash. This item is for the labor and material to install the alarm beacons.

- *Chemical Storage and Feed Modifications in the amount of $13,055.18* – For better operation and preventative maintenance, staff decided to add valve configuration logic to SCADA so it allows enhanced equipment isolation to protect mechanical equipment should an emergency occur.

- *PLC Redundancy Hot Standby Status Register in the amount of $7,502.51* – Staff decided to add alarms to SCADA in the event that programmable logic controller (PLC) failures occur. These alarms would provide off-site staff enhanced diagnostic information so staff can troubleshoot the issue and prevent PLC down time.

Staff recommends that the Board approve CCO No. 62 in the amount of $708,162.72, 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. 62 does not extend any of the milestone completion dates. The construction change order summary is attached as Exhibit "B".

Retention Bond:

On December 12, 2016, the Board reduced the contract retention from 10% to 4.36%. As of the August 25, 2017 progress payment, IRWD is withholding $7,828,735.72 which is held in a joint IRWD/FBB escrow account. FBB has requested that IRWD further assist them with better cash flow since the project duration has been extended two years from the original completion date.

FBB has proposed providing a bond for a portion of the remaining contract retention. The retention bond would allow the release of funds from the escrow account to FBB and provide IRWD an alternate means of security. If required IRWD could declare FBB in default and request the bonding company release funds to IRWD within seven business days. The Public Contract Code (PCC) in many other states clearly specifies that retention bonds are an acceptable substitute security for retention, but the California PCC does not clearly authorize their use. IRWD legal counsel has determined that this type of bond is allowable in California, but this may be the first time it would be used.

Attached as Exhibit "C" is the draft version of the proposed Retention Bond Agreement that has been reviewed by legal counsel and is still subject to minor modifications. The Retention Bond Agreement would be for $6,000,000 or 3.34% of the contract amount. IRWD would still hold

$1,828,735.72 in cash in the escrow account, or 1.02% of the contract amount. Therefore, this is not a retention reduction, only an alternate method of retention. Allowing the Retention Bond Agreement would be a good-will step to prevent further financial hardship for many of the subcontractors and suppliers at this late stage of the project.

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 order; however, the remaining budget will be less than $250,000 with approval of CCO No. 62. Staff will submit a capital budget increase to the Board in October 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. 62 in the amount of $708,162.72 with Filanc/Balfour Beatty for electrical and controls modifications; and authorize the General Manager to execute the Retention Bond Agreement for the Michelson Water Recycling Plant Biosolids and Energy Recovery Facilities, Project 04286.

LIST OF EXHIBITS:

Exhibit "A" – Contract Change Order No. 62 with FBB
Exhibit "B" – Construction Change Order Summary
Exhibit "C" – Retention Bond Agreement

Exhibit "A"

CONTRACT CHANGE ORDER

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

C.O. No. 62
☐ Final

Project No. 04286

MWRP Biosolids and Energy Recovery Facilities
Project Title

Date: 09/05/2017

THE FOLLOWING CHANGE TO CONTRACT, DRAWINGS AND SPECIFICATIONS IS PROPOSED.	$ ADDITIONS	$ DELETIONS	DAYS ±
1. Fats, Oil, and Grease (FOG) Modifications (CR-223A) PR 04286 Task 5.30	$52,174.90	$0.00	See Notes
2. Density Meter Conduit and Cabling Modifications (CR-326) PR 04286 Task 5.30	$52,518.11	$0.00	See Notes
3. Fiber Optic Modifications (CR-356) PR 04286 Task 5.30	$20,607.14	$0.00	See Notes
4. Sludge Screen Pneumatic Control Panel Conduit and Cabling (CR-380) PR 04286 Task 5.30	$8,859.95	$0.00	See Notes
5. Additional Circuits for Control of the Thickening Centrifuges (CR-386) PR 04286 Task 5.30	$376,674.08	$0.00	See Notes
6. Upsize of Power Panel PP-8001 Circuit Breaker (CR-414) PR 04286 Task 5.30	$50,135.26	$0.00	See Notes
7. Electrical Power Feeders to Electric Water Heater (CR-426) PR 04286 Task 5.30	$16,551.27	$0.00	See Notes
8. Chemical Sump Pump Control Panel Space Heater Wiring Modifications (CR-461) PR 04286 Task 5.30	$12,822.26	$0.00	See Notes
9. Relocate Electrical Feeders to Generator Bus (CR-462) PR 04286 Task 5.30	$22,785.74	$0.00	See Notes
10. Electrical and Instrumentation Related Components for the Installation of Thin Client at Dryer Facility (CR-485A) PR 04286 Task 5.30	$49,908.43	$0.00	See Notes
11. Polymer Room Eye Wash Station Flow Switches (CR-535) PR 04286 Task 5.30	$24,567.89	$0.00	See Notes
12. Chemical Storage and Feed Modifications (CR-563) PR 04286 Task 5.30	$13,055.18	$0.00	See Notes
13. PLC Redundancy Hot Standby Status Register (CR-568) PR 04286 Task 5.30	$7,502.51	$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	$708,162.72	$0.00	0

DAYS ±

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

1. NET AMOUNT THIS CHANGE ORDER	=	$708,162.72	0
2. ORIGINAL CONTRACT AMOUNT	=	$163,465,940.00	1,278
3. TOTAL PREVIOUS CHANGE ORDER(S)	=	$16,154,915.70	368
4. TOTAL BEFORE THIS CHANGE ORDER (2+ 3)	=	$179,620,855.70	1,646
5. PROPOSED REVISED CONTRACT AMOUNT TO DATE (1+4)	=	$180,329,018.42	1,646

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

----------Seven Hundred Eight Thousand One Hundred Sixty-Two and 72/100 ----------Dollars

_____	Filanc/Balfour-Beatty	_____
Date	Contractor	By: Harry Cosmos, President

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	X
Executive Director of Engineering & Water Quality	Date		
General Manager	Date	Purchase Order No.	

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

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

CSG-02

EXHIBIT "B"

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

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

Change Order		Description	Category	IRWD or FBB	Contract Amount: Change Order Line Item Amount	Change Order Amount	Previous Change Orders	Cumulative Total of Change Orders	% of Original Contract Amount	Revised Contract Amount	Contract Days: Change Order Days	Previous Change Orders	Cum. Total C.O. days	Revised Total Contract Days	Original Completion Date: Revised Completion Date
					Original Contract Amount: $163,465,940.00						Original Days: 1,278				10/28/2016
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
B - Differing Site Conditions
C - Design Oversight
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

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

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

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

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

Change Order		Description	Category	IRWD or FBB	Contract Amount: Change Order Line Item Amount	Change Order Amount	Previous Change Orders	Cumulative Total of Change Orders	% of Original Contract Amount	Revised Contract Amount	Contract Days: Change Order Days	Previous Change Orders	Cum. Total C.O. days	Revised Total Contract Days	Original Completion Date: / Revised Completion Date
					Original Contract Amount:	$163,465,940.00					Original Days:			1,278	10/28/2016
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				
	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				

A - District Convenience/Initiation - Project Related
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C - Design Oversight
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

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

A - District Convenience/Initiation - Project Related
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C - Design Oversight
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

Change Order		Description	Category	IRWD or FBB	Contract Amount: Change Order Line Item Amount	Change Order Amount	Previous Change Orders	Cumulative Total of Change Orders	% of Original Contract Amount	Revised Contract Amount	Contract Days: Change Order Days	Previous Change Orders	Cum. Total C.O. days	Revised Total Contract Days	Original Completion Date: / Revised Completion Date
					Original Contract Amount:					$163,465,940.00	Original Days:			1,278	10/28/2016
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				

A - District Convenience/Initiation - Project Related
B - Differing Site Conditions
C - Design Oversight
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

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

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

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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

Change Order		Description	Category	IRWD or FBB	Contract Amount: Change Order Line Item Amount	Change Order Amount	Previous Change Orders	Cumulative Total of Change Orders	% of Original Contract Amount	Revised Contract Amount	Contract Days: Change Order Days	Previous Change Orders	Cum. Total C.O. days	Revised Total Contract Days	Original Completion Date: / Revised Completion Date
					Original Contract Amount:	$163,465,940.00					Original Days:			1,278	10/28/2016
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	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: Filanc/Balfour-Beatty
Design Engineer: Black & Veatch

Change Order		Description	Category	IRWD or FBB	Contract Amount: Change Order Line Item Amount	Change Order Amount	Previous Change Orders	Cumulative Total of Change Orders	% of Original Contract Amount	Revised Contract Amount (Original Contract Amount: $163,465,940.00)	Contract Days: Change Order Days	Previous Change Orders	Cum. Total C.O. days	Revised Total Contract Days (Original Days: 1,278)	Original Completion Date: / 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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MWRP Biosolids and Energy Recovery Facilities
PR 21146 (4286)
Construction Change Order Summary

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

Change Order		Description	Category	IRWD or FBB	Contract Amount: Change Order Line Item Amount	Change Order Amount	Previous Change Orders	Cumulative Total of Change Orders	% of Original Contract Amount	Revised Contract Amount	Contract Days: Change Order Days	Previous Change Orders	Cum Total C.O. days	Revised Total Contract Days	Original Completion Date / Revised Completion Date
					Original Contract Amount:					$163,465,940.00	Original Days:			1,278	10/28/2016
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)										
	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										
	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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MWRP Biosolids and Energy Recovery Facilities
PR 21146 (4286)
Construction Change Order Summary

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

					Contract Amount						Contract Days				Original Completion Date:
									Original Contract Amount:	$163,465,940.00			Original Days:	1,278	10/28/2016
Change Order		Description	Category	IRWD or FBB	Change Order Line Item Amount	Change Order Amount	Previous Change Orders	Cumulative Total of Change Orders	% of Original Contract Amount	Revised Contract Amount	Change Order Days	Previous Change Orders	Cum. Total C.O. days	Revised Total Contract Days	Revised Completion Date
31		Approved by Exe. Dir. Of Eng, & Water Quality Approved on July 28, 2015				$74,999.74	$3,325,147.81	$3,400,147.55	2.08%	$166,866,087.55	0	0	0	1,278	10/28/2016
	31.1	Provide Circuit and Breaker for Standby Generator in the Microturbine Area (CR-170) PR 21146 (4286) Task 3510	C	FBB	$4,296.86						0				
	31.2	Additional Pipe Support for 14-inch Air Line at the Centrate Facility (CR-226) PR 21146 (4286) Task 3520	C	FBB	$893.78						0				
	31.3	Addition of E-stops (CR-128) PR 21146 (4286) Task 3510	A	FBB	$57,916.71						0				
	31.4	Structural Support of Jib Crane at Dewatering Feed Pump Station Stairwell (CR-243) PR 21146 (4286) Task 3520	C	FBB	$11,892.39						0				
32		Approved by Exe. Dir. Of Eng, & Water Quality Approved on August 31, 2015				$74,682.96	$3,400,147.55	$3,474,830.51	2.13%	$166,940,770.51	0	0	0	1,278	10/28/2016
	32.1	Additional Conduits and Circuits for Fire Alarm in the Solids Handling	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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Change Order		Description	Category	IRWD or FBB	Contract Amount: Change Order Line Item Amount	Change Order Amount	Previous Change Orders	Cumulative Total of Change Orders	% of Original Contract Amount	Revised Contract Amount	Contract Days: Change Order Days	Previous Change Orders	Cum Total C.O. days	Revised Total Contract Days	Original Completion Date: / Revised Completion Date
					Original Contract Amount: $163,465,940.00						Original Days: 1,278				10/28/2016
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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MWRP Biosolids and Energy Recovery Facilities
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Construction Change Order Summary

Contractor: Filanc/Balfour-Beatty
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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
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										
	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				
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				

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Construction Change Order Summary

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

Change Order		Description	Category	IRWD or FBB	Contract Amount: Change Order Line Item Amount	Change Order Amount	Previous Change Orders	Cumulative Total of Change Orders	% of Original Contract Amount	Revised Contract Amount	Contract Days: Change Order Days	Previous Change Orders	Cum. Total C.O. days	Revised Total Contract Days	Original Completion Date: / Revised Completion Date
					Original Contract Amount:	$163,465,940.00					Original Days:			1,278	10/28/2016
39		Approved by General Manager Approved on March 7, 2016				$98,006.46	$4,012,633.17	$4,110,639.63	2.51%	$167,576,579.63	0	0	0	1,278	10/28/2016
	39.1	SCE Installation - Final Accounting of Work Items Between Negotiated Change Order and Actual Work (CR-146E) PR 4286 Task 3510	B	FBB	$7,809.51						0				
	39.2	Installation of Southern California Gas (SCG) Boxes (CR-146F) PR 4286 Task 3510	A	FBB	$3,479.81						0				
	39.3	Schweitzer SEL-735 Power Monitors for Centrifuge Panels (CR-207) PR 4286 Task 3510	A	IRWD	$34,274.40						0				
	39.4	Hirschmann Ethernet Switches for Centrifuge Panels (CR-208) PR 4286 Task 3510	A	IRWD	$9,569.15						0				
	39.5	Addition of Sample Pump Variable Frequency Drives for Thickening Centrifuges (CR-237) PR 4286 Task 3520	E	IRWD	$24,496.55						0				
	39.6	Upgrade of Exit Signs and Ceiling Lights in the Gas Room of the Digester Control Building to NEC Class 1 Division 1 (CR-313) PR 4286 Task 352	A	IRWD	$18,377.04						0				
40		Approved by General Manager Approved on April 20, 2016				$97,287.05	$4,110,639.63	$4,207,926.68	2.57%	$167,673,866.68	0	0	0	1,278	10/28/2016
	40.1	Brace Plates in Solids Handling Building (CR-069) PR 4286 Task 3505	C	FBB	$40,216.76						0				
	40.2	Relocation of RIO-50 Panel (CR-186) PR 4286 Task 3510	B	FBB	$4,818.64						0				
	40.3	Addition of Two Doors at the bases of the stairways at Methane Digesters Nos. 1 and No. 2 (CR-232) PR 4286 Task 3505	C	FBB	$52,251.65						0				

A - District Convenience/Initiation - Project Related
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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

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

A - District Convenience/Initiation - Project Related
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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

Change Order		Description	Category	IRWD or FBB	Contract Amount: Change Order Line Item Amount	Change Order Amount	Previous Change Orders	Cumulative Total of Change Orders	% of Original Contract Amount	Revised Contract Amount	Contract Days: Change Order Days	Previous Change Orders	Cum. Total C.O. days	Revised Total Contract Days	Original Completion Date: Revised Completion Date
					Original Contract Amount:					$163,465,940.00	Original Days:			1,278	10/28/2016
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				

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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

Change Order		Description	Category	IRWD or FBB	Contract Amount: Change Order Line Item Amount	Change Order Amount	Previous Change Orders	Cumulative Total of Change Orders	% of Original Contract Amount	Revised Contract Amount	Contract Days: Change Order Days	Previous Change Orders	Cum. Total C.O. days	Revised Total Contract Days	Original Completion Date: / Revised Completion Date
					Original Contract Amount: $163,465,940.00						Original Days: 1,278				10/28/2016
45		Approved by Board of Directors Approved on July 25, 2016/December 20, 2016				$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
	45.1	Recovery Plan PR 4286 Task 3510	B	FBB	$9,250,000.00						368				
46		Approved by General Manager Approved on January 27, 2017				$94,696.76	$14,511,450.83	$14,606,147.59	8.94%	$178,072,087.59	0	368	368	1,646	10/31/2017
	46.1	Additional Masonry Anchor in the Solids Handling Building (CR-200) PR	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				

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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

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

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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

Change Order		Description	Category	IRWD or FBB	Contract Amount: Change Order Line Item Amount	Change Order Amount	Previous Change Orders	Cumulative Total of Change Orders	% of Original Contract Amount	Revised Contract Amount	Contract Days: Change Order Days	Previous Change Orders	Cum. Total C.O. days	Revised Total Contract Days	Original Completion Date: / Revised Completion Date
					Original Contract Amount: $163,465,940.00						Original Days: 1,278				10/28/2016
48		Approved by Board of Directors				$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
		Approved on March 13, 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

Change Order		Description	Category	IRWD or FBB	Contract Amount: Change Order Line Item Amount	Change Order Amount	Previous Change Orders	Cumulative Total of Change Orders	% of Original Contract Amount	Revised Contract Amount	Contract Days: Change Order Days	Previous Change Orders	Cum. Total C.O. days	Revised Total Contract Days	Original Completion Date: Revised Completion Date
					Original Contract Amount: $163,465,940.00						Original Days: 1,278				10/28/2016
49		Approved by Board of Directors				($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
		Approved on March 13, 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				$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
		Approved on March 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				($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
		Approved on March 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: Filanc/Balfour-Beatty
Design Engineer: Black & Veatch

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

A - District Convenience/Initiation - Project Related
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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
55		Approved by General Manager Approved on July 3, 2017				$94,352.43	$15,514,296.01	$15,608,648.44	9.55%	$179,074,588.44	0	368	368	1,646	10/31/2017
	55.1	Additional Pipe Supports of 54-Inch Fiberglass Reinforced Air Duct (CR-106A) PR 4286 Task 5.29	C	FBB	$14,211.18						0				
	55.2	Natural Gas Step Down Manifolds and Gas Transition Piping (CR-146G) PR	B	IRWD	$20,489.32						0				
	55.3	Modifications to the West End Stair Landing of the Solids Handling Building (CR-315) PR 4286 Task 5.29	B	IRWD	$5,622.11						0				
	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 5.30	B	FBB	$100,000.00						0				
57		Approved by General Manager Approval on August 5, 2017				$98,886.90	$15,810,392.77	$15,909,279.67	9.73%	$179,375,219.67	0	368	368	1,646	10/31/2017
	57.1	Additional Support at Digester Control Building (CR-342) PR 04286 Task 5.29	C	IRWD	$2,522.47						0				
	57.2	Pipe and Duct Hanger Modifications (CR-362) PR 04286 Task 5.29	C	IRWD	$4,083.12						0				
	57.3	Increase Wire Size of Main Breaker PP-3501 (CR-418) PR 04286 Task 5.30	C	FBB	$696.66						0				
	57.4	Roof Vent at DCB Elevator/Stair Tower (CR-437) PR 04286 Task 5.29	B	IRWD	$8,563.72						0				
	57.5	T-14 Fixed Type Manual Operator per Submittal 16443-0016A (CR-540) PR 04286 Task 5.31	C	IRWD	$1,945.62						0				
	57.6	Area Classification at Methane Digesters to meet NFPA Table 6.2(a) - Plug Valves Limit Switches (CR-557) PR 04286 Task 5.30	C	FBB	$64,195.15						0				
	57.7	Area Classification at Methane Digesters to meet NFPA Table 6.2(a) - Sump Pump Cable Retrofit PR 04286 Task 5.30	C	FBB	$16,880.16						0				

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

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

					Contract Amount						Contract Days				Original Completion Date:
								Original Contract Amount:		$163,465,940.00		Original Days:		1,278	10/28/2016
Change Order		Description	Category	IRWD or FBB	Change Order Line Item Amount	Change Order Amount	Previous Change Orders	Cumulative Total of Change Orders	% of Original Contract Amount	Revised Contract Amount	Change Order Days	Previous Change Orders	Cum Total C.O. days	Revised Total Contract Days	Revised Completion Date
58		Approved by Board of Directors				$182,939.74	$15,909,279.67	$16,092,219.41	9.84%	$179,558,159.41	0	368	368	1,646	10/31/2017
		Approval on August 28, 2017													
	58.1	Concrete Cap over Shallow Pipe Crossings (CR-348) PR 04286 Task 5.31	B	FBB	$7,923.80						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				$98,988.68	$16,092,219.41	$16,191,208.09	9.90%	$179,657,148.09	0	368	368	1,646	10/31/2017
		Approval on September 6, 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		Pending Approved by Exe. Director of Water Quality and Engineering				($34,540.00)	$16,191,208.09	$16,156,668.09	9.88%	$179,622,608.09	0	368	368	1,646	10/31/2017
		Pending Approval on September 5, 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				

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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

Change Order		Description	Category	IRWD or FBB	Contract Amount: Change Order Line Item Amount	Change Order Amount	Previous Change Orders	Cumulative Total of Change Orders	% of Original Contract Amount	Revised Contract Amount	Contract Days: Change Order Days	Previous Change Orders	Cum Total C.O. days	Revised Total Contract Days	Original Completion Date: Revised Completion Date
					Original Contract Amount: $163,465,940.00						Original Days: 1,278				10/28/2016
61		Approved by Exe. Director of Water Quality and Engineering				($1,752.39)	$16,156,668.09	$16,154,915.70	9.88%	$179,620,855.70	0	368	368	1,646	10/31/2017
		Approved on September 6, 2017													
	61.1	Credit for Bulk Polymer Storage Changes per RFI-0863 and Submittal 15140-013B (CR-168) PR 04286 Task 5.16	E	FBB	($1,752.39)						0				
62		Pending Approval by Board of Directors				$708,162.72	$16,154,915.70	$16,863,078.42	10.32%	$180,329,018.42	0	368	368	1,646	10/31/2017
		Pending Approval on September 25, 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						0				
	62.3	Fiber Optic Modifications (CR-356) PR 04286 Task 5.30	A	IRWD	$20,607.14						0				
	62.4	Sludge Screen Pneumatic Control Panel Conduit and Cabling (CR-380) PR 04286 Task 5.30	C	IRWD	$8,859.95						0				
	62.5	Additional Circuits for Control of the Thickening Centrifuges (CR-386) PR 04286 Task 5.30	C	FBB	$376,674.08						0				
	62.6	Upsize of Power Panel PP-8001 Circuit Breaker (CR-414) PR 04286 Task 5.30	A	IRWD	$50,135.26						0				
	62.7	Electrical Power Feeders to Electric Water Heater (CR-426) PR 04286 Task 5.30	B	FBB	$16,551.27						0				
	62.8	Chemical Sump Pump Control Panel Space Heater Wiring Modifications (CR-461) PR 04286 Task 5.30	A	IRWD	$12,822.26						0				
	62.9	Relocate Electrical Feeders to Generator Bus (CR-462) PR 04286 Task 5.30	A	IRWD	$22,785.74						0				
	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						0				
	62.11	Polymer Room Eye Wash Station Flow Switches (CR-535) PR 04286 Task 5.30	A	IRWD	$24,567.89						0				
	62.12	Chemical Storage and Feed Modifications (CR-557B) PR 04286 Task 5.30	A	IRWD	$13,055.18						0				
	62.13	PLC Redundancy Hot Standby Status Register (CR-557B) PR 04286 Task 5.30	A	IRWD	$7,502.51						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

				Contract Amount						Contract Days				Original Completion Date:
							Original Contract Amount:		$163,465,940.00			Original Days:	1,278	10/28/2016
Change Order	Description	Category	IRWD or FBB	Change Order Line Item Amount	Change Order Amount	Previous Change Orders	Cumulative Total of Change Orders	% of Original Contract Amount	Revised Contract Amount	Change Order Days	Previous Change Orders	Cum. Total C.O. days	Revised Total Contract Days	Revised Completion Date

Category	Total Amount	% of Original Contract
A - District Convenience/Initiation - Project Related	$ 2,354,150.21	1.44%
B - Differing Site Conditions	$ 11,774,029.43	7.20%
C - Design Oversight	$ 2,819,134.41	1.72%
D - District Convenience/Initiation - Non-Project Related	$ -	0.00%
E - Contractor Convenience/Initiation	$ (84,235.63)	-0.05%
TOTAL (A + B + C + D)	$ 16,863,078.42	10.32%

Category	Total Amount	% of Original Contract
IRWD-Initiation/Driven	$ 3,129,181.79	1.91%
FBB-Initiation/Driven	$ 13,563,176.41	8.30%
Not applicable	$ 170,720.22	0.10%
TOTAL	$ 16,863,078.42	10.32%

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

Retention Bond

Michelson Water Recycling Plant Biosolids and
Energy Recovery Facilities Project No. 20847/Oracle Project No. 04286

Bond Number: _____

WHEREAS, the Irvine Ranch Water District ("Obligee") has previously awarded a contract to Filanc-Balfour Beatty, JV ("Principal" for construction of the Michelson Water Recycling Plant Biosolids and Energy Recovery Facilities Project No. 20847 (the "Contract"), with a current contract price of $xxxxxxxxxx including Change Orders 1 through 62; and

WHEREAS, the Obligee is currently withholding retention under the Contract totaling $xxxxxxxxxx based on invoices totaling $xxxxxxxxxx, and has the right to withhold 4.36% retention from subsequent invoices; and

WHEREAS, Principal has offered to provide this Retention Bond, and the Obligee is willing to accept it, as a substitute for a portion of the retention, allowing the Obligee to release a portion of the retention it is holding.

NOW, THEREFORE, Filanc-Balfour Beatty, JV, as principal ("Principal") and Travelers Casualty & Surety Company of America as surety ("Surety"), are held and firmly bound unto Obligee in the amount of six million dollars ($6,000,000) (the "Bonded Sum"), for payment of which sum Principal and Surety hereby bind themselves and their successors and assigns, jointly and severally.

The following terms and conditions shall apply with respect to this Retention Bond:

1. Within seven business days after delivery of a written notice from the Obligee to Surety stating that the Obligee has declared the Principal in default under the Contract and demanding payment from the Surety, the Surety shall deliver an amount equal to the Bonded Sum (or portion thereof as stated in the Demand) to or for the benefit of the Obligee in accordance with instructions set forth in the Demand. The Obligee may present one or more Demands at any time in its sole discretion, provided that the aggregate amount of such Demands shall not exceed the Bonded Sum.

2. The Surety's failure to make payment as required by this Retention Bond shall cause the Surety to be additionally liable for any and all reasonable costs and expenses, including attorney's fees and interest, incurred by the Obligee in enforcing this Retention Bond, in addition to the Bonded Sum.

3. Upon Surety's receipt of written notification from the Obligee certifying that the Contract is final and complete, and that the Principal has complied with all requirements and procedures applicable to the Contract, this Retention Bond shall automatically become null and void.

4. No alteration, modification or supplement to the Contract or the nature of the work to be performed thereunder, including without limitation any extension of time for performance, shall in any way affect the obligations of Surety under this Retention Bond. Surety waives notice of any alteration, modification, supplement or extension of time.

5. The Obligee's rights under this Retention Bond shall be cumulative of any and all other rights that the Obligee may have against the Principal or Surety under the Contract and applicable law, and issuance of this Retention Bond shall not affect the validity of existing payment and performance bonds. The Obligee's exercise of any right or remedy hereunder or under any other instrument, or at law or in equity, shall not preclude the concurrent or subsequent exercise of any other right or remedy.

6. This Retention Bond shall not affect Obligee's rights to withhold retention on payments of amounts owing to Contractor under any future Contract change order, unless the Obligee, Principal and Surety agree to an increase in the Bonded Sum covering such retention.

7. Correspondence or claims relating to this Retention Bond shall be made in writing and shall be given by a personal delivery or expedited delivery service, postage pre-paid, addressed to the Surety and Principal at the addresses specified below or to such other addresses as shall have been specified by such parties to each of the parties contemplated hereby:

SURETY:

Via Expedited Delivery to:

Aaron Blankenship, Senior Claim Counsel

Travelers Casualty & Surety Company of America

4000 Kruse Way Pl, Building 1, Suite 255

Lake Oswego, OR 97035

And with a copy via Email to Surety:

BSIclaims@travelers.com

PRINCIPAL:

Filanc-Balfour Beatty, JV

8. No right of action shall accrue on this Retention Bond to or for the use of any entity other than the Obligee or its successors and assigns.

9. The Principal acknowledges and agrees that (a) it has the right to substitute securities for retention in accordance with Public Contract Code section 22300, (b) it has requested the Obligee to accept this Retention Bond in lieu of exercising its rights under said Section 22300, and (c) this Retention Bond is intended to allow the Obligee benefits that are equivalent to those contemplated by said Section 22300. Principal hereby waives its right to substitute securities for retention under said Section 22300.

IN WITNESS WHEREOF, Principal and Surety have caused this bond to be executed and delivered as of _____, 2017.

Principal: Filanc-Balfour Beatty, JV

By: [J R Filanc Construction Company Inc.]

By: _____
Its: _____

By: [Balfour Beatty Construction Company Inc.]

By: _____
Its: _____

Surety: Travelers Casualty & Surety Company of America

By: _____
(Seal) Its: _____

[ADD APPROPRIATE SURETY ACKNOWLEDGMENTS]