AGENDA IRVINE RANCH WATER DISTRICT ENGINEERING AND OPERATIONS COMMITTEE TUESDAY, SEPTEMBER 15, 2020

Due to COVID-19, this meeting will be conducted as a teleconference pursuant to the provisions of the Governor's Executive Orders N-25-20 and N-29-20, which suspend certain requirements of the Ralph M. Brown Act. Members of the public may not attend this meeting in person.

Participation by members of the Committee will be from remote locations. Public access and participation will only be available telephonically/electronically.

To virtually attend the meeting and to be able to view any presentations or additional materials provided at the meeting, please join online via Webex using the link and information below:

Via Web:

https://irwd.my.webex.com/irwd.my/j.php?MTID=md4995ff07ebd68125ca69ae4e5509967 Meeting Number (Access Code): 126 652 4906

Meeting Password: 5KmXCbQcU44 (55692272 from phones and video systems)

After joining the meeting, in order to ensure all persons can participate and observe the meeting, please select the "Call in" option and use a telephone to access the audio for the meeting by using the call-in information and attendee identification number provided.

As courtesy to the other participants, please mute your phone when you are not speaking.

PLEASE NOTE: Participants joining the meeting will be placed into the Webex lobby when the Committee enters closed session. Participants who remain in the "lobby" will automatically be returned to the open session of the Committee once the closed session has concluded. Participants who join the meeting while the Committee is in closed session will receive a notice that the meeting has been locked. They will be able to join the meeting once the closed session has concluded.

CALL TO ORDER 1:30 p.m.

<u>ATTENDANCE</u>	Committee Chair: Committee Memb	Dou ber: Jol	g Reinhart hn Withers	
ALSO PRESENT	Paul Cook		Kevin Burton	Wendy Chambers
	Jose Zepeda		Paul Weghorst	Cheryl Clary
	Rich Mori		Eric Akiyoshi	Richard Mykitta
	Kelly Lew		Jim Colston	Ken Pfister
	Lars Oldewage		Malcolm Cortez	Scott Toland
	John Dayer		Bruce Newell	Mitch Robinson
	Belisario Rios			

Engineering and Operations Committee September 15, 2020 Page 2

PUBLIC COMMENT NOTICE

If you wish to address the Committee on any item, please submit a request to speak via the "chat" feature available when joining the meeting virtually. Remarks are limited to three minutes per speaker on each subject. You may also submit a public comment in advance of the meeting by emailing comments@irwd.com before 10:30 a.m. on Tuesday, September 15, 2020.

ALL VOTES SHALL BE TAKEN BY A ROLL CALL VOTE.

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. IRWD RESEARCH BUSINESS PLAN – COLSTON / BURTON

Recommendation: Receive and file.

6. <u>FATS, OILS, AND GREASE PROGRAM UPDATE – HANEY / COLSTON /</u> <u>BURTON</u>

Recommendation: Receive and file.

7. <u>OPERATION OF OCWD'S SANTIAGO RECHARGE BASINS – WEGHORST</u>

Recommendation: Receive and file.

ACTION

8. <u>ASSET MANAGEMENT CAPITAL IMPROVEMENT PROGRAM</u> <u>CONSULTANT SELECTION – ROBINSON / AKIYOSHI / BURTON</u>

Recommendation: That the Board authorize the General Manager to execute a Professional Services Agreement with Black & Veatch in the amount of \$425,951 and approve the addition of Projects 11686, 11687, and 11688, each in the amount of \$225,500, for a total of \$676,500 to the Fiscal Year 2020-21 Capital Budget for the Asset Management Capital Improvement Program project.

ACTION

9. <u>REIMBURSEMENT AGREEMENT BETWEEN IRWD AND THE CITY OF</u> <u>IRVINE FOR THE FISCAL YEAR 2020-21 ANNUAL STREET</u> <u>REHABILITATION AND SLURRY SEAL PROJECT – RIOS / LEW /</u> <u>BURTON</u>

Recommendation: That the Board authorize the General Manager to execute the Reimbursement Agreement between Irvine Ranch Water District and the City of Irvine for Adjustment of Street Utilities to Grade for the Fiscal Year 2020-21 Annual Street Rehabilitation and Slurry Seal Project, subject to non-substantive changes.

10. <u>SAN JOAQUIN RESERVOIR FILTRATION PROJECT VARIANCE NO. 3 –</u> <u>CHO / CORTEZ / BURTON</u>

Recommendation: That the Board authorize the General Manager to execute Variance No. 3 in the amount of \$128,503 with Carollo Engineers for the San Joaquin Reservoir Filtration Project, Project 10379.

OTHER BUSINESS

- 11. Directors' Comments
- 12. Adjourn

Availability of agenda materials: Agenda exhibits and other writings that are disclosable public records distributed to all or a majority of the members of the above-named Committee in connection with a matter subject to discussion or consideration at an open meeting of the Committee are available for public inspection in the District's office, 15600 Sand Canyon Avenue, Irvine, California ("District Office"). If such writings are distributed to members of the Committee less than 72 hours prior to the meeting, they will be available from the District Secretary of the District Office at the same time as they are distributed to Committee Members, except that if such writings are distributed one hour prior to, or during, the meeting, they will be available electronically via the Webex meeting noted. Upon request, the District will provide for written agenda materials in appropriate alternative formats, and reasonable disability-related modification or accommodation to enable individuals with disabilities to participate in and provide comments at public meetings. Please submit a request, including your name, phone number and/or email address, and a description of the modification, accommodation, or alternative format requested at least two days before the meeting. Requests should be emailed to comments@irwd.com. Requests made by mail must be received at least two days before the meeting. Requests will be granted whenever possible and resolved in favor of accessibility.

September 15, 2020 Prepared by: J. Colston Submitted by: K. Burton Approved by: Paul A. Cook

ENGINEERING AND OPERATIONS COMMITTEE

IRWD RESEARCH BUSINESS PLAN

SUMMARY:

Staff will provide an update on the research projects in which IRWD is currently involved.

BACKGROUND:

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

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

FISCAL IMPACTS:

Not applicable.

ENVIRONMENTAL COMPLIANCE:

Not applicable.

RECOMMENDATION:

Receive and file.

LIST OF EXHIBITS:

Exhibit "A" - Research Projects Summary Table

Exhibit "A"

Research Projects Summary Table

ſ	No. Project	Title	Project Description	IRWD Contact	Organizations Involved	Type of Research	IRWD Participation Resource	Start Date	Projected Completion Date	Comments/Next Steps
	1 Practical Fra for Water Infrastructure Resilience (\ 5014)	mework T u v VRF p s fi r r	This project will help water utilities better understand the relationships between various "enterprise risk management" blanning tools, performance, and level of service. The Project will also develop frameworks summarizing currently available resources, approaches, and legislation regarding infrastructure risk and resilience.	Akiyoshi	Water Research Foundation and Black & Veatch	Case study, data review, best practice analysis and technical report.	Staff time for review of reports, sharing information, and site analysis.	Oct-19	Feb-21	The research team recently released two project papers, "AWIA Execution: Lessons Learned" and a literature review regarding Water Infrastructure Resilience. The next steps are for the team to develop a series of utility case studies based on AWWA's Utility Resiliency Index during the Summer of 2020.
	2 UCI Industry University Re Center-Perfle Compound S and Loading Wastewater Treatment P Sewershed-S Analysis	- T esearch n uorinated in ources at ants-A Scale	This project will develop and implement methodology for sewershed analysis to dentify raw wastewater sources of PFAS.	Weghorst	UCI Industry- University Research Center	Case study, data review, best practice analysis and technical report.	Staff time for review of reports, sharing information, and site analysis.	Sep-20	TBD (1-2 years)	The Civil and Environmental Engineering Department at UCI began the research on September 1. The Inland Empire Utilities Agency, Eastern Municipal Water District, Wester Municipal Water District and San Bernardino Valley Municipal Water District are considering making contributions to expand the research.
	3 Developing A Strategies To Climate-Rea Infrastructure Systems in C	Adaptive T oward s dy p e n California in c	This proposed project will identify adaptive strategies that will help develop resilient public works infrastructure-specifically mitigating the impacts to public works nfrastructure from climate change and natural disasters associated with climate change.	Akiyoshi	UC Irvine		IRWD will consult and provide feedback on the project.			IRWD provided a letter of support to UCI and the principal investigator, Professor AghaKouchak, anticipates hearing back from the California Strategic Council by the end of June 2020. The funding agency informed Professor Aghakouchak that the project was not selected. The team will re- evaluate the opportunity to resubmit the project for funding next year.
	4 Sampling De Study for SA 2 in Wastew	sign E RS-Cov- p ater c u a ii ii iii	Drs. Rosso and Jiang from UC Irvine propose to sample IRWD sewersheds to develop a sampling design to measure the presence (signal) of SARS-Cov-2 virus. The ultimate goal is to provide an early warning and location determination for outbreaks or ncreases in cases of Covid-19 ahead of ndividual testing.	Colston	UC Irvine with grant from the Water Research Foundation (WRF)		Provide access to IRWD sewer facilities for sampling.	Apr-20	TBD	UC Irvine conducted a proof of concept with six MWRP influent samples for SARS-Cov-2. Based on this work, UC Irvine has been provided a grant opportunity from WRF. The final application is due to WRF on September 15, 2020. Dr. Jiang will follow-up with IRWD staff after the application has been approved or denied. Future monitoring site locations are under discussion between UC Irvine and IRWD staff.
	5 Restoration of Recharge So from Invasive Mussels	of Local T purces a e E N r E N C	This is an independent study that supports a larger effort by the Metropolitan Water District to control invasive Dreissenid Mussels. Task 1 is to establish dose- response curves for mussel control with EarthTec Qz at locations that feed IRWD MWD water. Task 2 will evaluate the toxicity of EarthTec QZ to other species including	Colston	Trussel Technologies, Inc.	In situ	IRWD provides funding and access to Irvine Lake	Jul-20	Dec-21	Trussel has begun Task 1; however, insufficient mussels have been found in Irvine Lake. This is likely due to the fact that only limited amounts of MWD water have been added to the lake during the last two years (which have been wet years). IRWD staff is monitoring the lake monthly for the presence of sufficient mussels for study.

September 15, 2020 Prepared by: L. Haney Submitted by: J. Colston / K. Burton Approved by: Paul A. Cook

ENGINEERING AND OPERATIONS COMMITTEE

FATS, OILS, AND GREASE PROGRAM UPDATE

SUMMARY:

At the Committee meeting, staff will provide an overview and update on IRWD's Fats, Oils, and Grease Program.

BACKGROUND:

The Fats, Oils, and Grease (FOG) program is critical as it protects IRWD's source water for the recycled water program, helps reduce odors and harmful gases within the system, and mitigates environmental and regulatory risks of sanitary sewer overflows. Staff will provide an overview of the program, its importance, how it is evolving to meet the needs of IRWD, and improvements to the fees and billing process.

FISCAL IMPACTS:

Not applicable.

ENVIRONMENTAL COMPLIANCE:

Not applicable.

RECOMMENDATION:

Receive and file.

LIST OF EXHIBITS:

Exhibit "A" – Draft PowerPoint Presentation









FSE:	Food	Service	Estab	lishments

Establishment Type	Plan Checks (Initial, Additional)	Gen & Admin (Database and Monitoring, Billing)	Inspections	Enforcement	Permits
Individual & Shared Interceptors	Х	Х	X – initial and recurring		Х
Conditional Waiver	Х	Х	X – initial		Х
Limited Food Prep.	Х				
Special Services				Х	

5

FOG Program Overview

EEC Environmental

- FSE Inspections
- Best Management Practices Audits
- FOG Response/Inspection

Regulatory Compliance

- Business Plan Check review
- Enforcement Letters <u>– Fines</u>
- Rules and Regs Section 7 Program
- EEC Contract Oversight









September 15, 2020 Prepared and Submitted by: P. Weghorst Approved by: Paul A. Cook

ENGINEERING AND OPERATIONS COMMITTEE

OPERATION OF OCWD'S SANTIAGO RECHARGE BASINS

SUMMARY:

The Orange County Water District (OCWD) manages the groundwater basin in its service area. In the vicinity of IRWD's Well OPA-1, OCWD manages groundwater elevations by delivering water for recharge at the Santiago Recharge Basins. To help the Committee understand how OCWD operates its Santiago Recharge Basins, a representative from OCWD will provide an overview of the operations of this facility.

BACKGROUND:

IRWD's Well OPA-1 is located in the Orange Park Acres area near the Santiago Recharge Basins. The location of the basins and IRWD's well are shown on Exhibit "A". OCWD manages groundwater elevations in the area by delivering water for recharge at the Santiago Recharge Basins. The water recharged in the basins affects the quantity and quality of water available in Well OPA-1.

An overview of how OCWD operates the Santiago Recharge Basins is provided as Exhibit "B". At the Committee meeting, Mr. John Kennedy, OCWD's Executive Director of Engineering and Water Resources, will describe how OCWD operates the recharge basins.

FISCAL IMPACTS:

Not applicable.

ENVIRONMENTAL COMPLIANCE:

Not applicable.

RECOMMENDATION:

Receive and file.

LIST OF EXHIBITS:

Exhibit "A" – Location Map of Santiago Recharge Basins and Well OPA-1 Exhibit "B" – Overview of the Operation of the Santiago Basins

EXHIBIT "A"



ICF

INTERNATIONAL

Figure 2-1 Regional Location

EXHIBIT "B"

OPERATION OF THE SANTIAGO BASINS

By John Kennedy at OCWD

The Santiago Basins (Basins) are located in the cities of Orange and Villa Park as shown on the aerial figure below. The combined storage of the three Basins is approximately 14,000 acre-feet (af). The combined recharge capacity is approximately 110 cubic feet per second (cfs). Water captured in the Basins primarily recharges through their sidewalls as the bottoms of the Basins are clogged with silty materials.

Orange County Water District (OCWD) primarily uses the Basins to capture winter storm flows traveling down the Santa Ana River (SAR). Up to 200 cfs of SAR storm flows can be pumped from the Burris Pit pump station located near Ball Road and the river to the Basins via a 66-inch pipeline in North Main Street and West Collins Avenue.

The main operation and purpose of the Basins is to allow OCWD to quickly release and recharge storm flows that are captured and pooled behind Prado Dam. This operation requires the Basins to be relatively empty prior to the storm season. The Basins are typically completely full by March or April.

OCWD is allowed to store up to approximately 20,000 af (a pool) of SAR storm flows behind Prado Dam. Whenever there is a pool behind Prado Dam, OCWD operators request the highest release rate possible to drain the pool as quickly as possible, without losing any water to the ocean, to make room for potential future storms. Starting on March 1st, there is an average release rate OCWD must maintain to minimize possible harm to habitat behind the Dam. During this period, depending upon the condition of OCWD's recharge facilities, the required release rates can be greater than OCWD's ability to capture the water which results in losses to the ocean.

In an optimum winter storm season, OCWD will capture two or three pools of water behind the dam, provided the storms and resulting pools are spaced far enough apart. This gives the District time to empty a pool in preparation for another storm.

OCWD also constructed a floating pump station in Bond Basin that allows for water to be pumped into Santiago Creek during the summer and fall months which helps to empty the Basins for the upcoming winter period.

In the past OCWD has pumped a small amount of untreated imported water to the Basins (from the Burris Pit Pump Station) and has received untreated imported water via Irvine Lake and Santiago Creek. OCWD is currently not allowed by the California Fish and Wildlife Department to transmit any water to the Basins containing quagga mussels. OCWD is exploring options to remedy this issue.

OCWD is also working to implement a project to allow GWRS water to be pumped to the Basins via the Burris Basin Pump Station. A turn-out would be constructed on the GWRS pipeline along the westerly levy of the SAR just north of Ball Road to allow GWRS water to be discharged into Burris Pit. The primary purpose of this turnout is to allow for temporary discharges (estimated at up to 25 cfs) when seasonal high groundwater conditions can periodically reduce the amount of GWRS water that can be injected into the Talbert Seawater Barrier and/or the Mid Basin injection wells – thereby allowing the GWRS to continue operating at full capacity.

With this option, OCWD will have to prove to the state Division of Drinking Water and the Santa Ana Regional Board that GWRS water will not reach the Irvine Ranch Water District - OPA 1 well prior to the current 4-month travel time requirement. Preliminary modeling has shown that the well can meet the 4-month travel time requirement. This work will be refined and finalizing this fall and included it in the OCWD permit application to the Regional Board. OCWD will still be required to run a tracer test in Bond Basin to verify the travel times before or as a part of the initial introduction of GWRS water. The results of this tracer test will be the ultimate determinant of whether the OPA 1 well complies with the travel time requirements.

Because OCWD uses the Santiago Basins to capture stormflows that accumulate behind Prado Dam during the winter and operationally needs to create storage there in the summer and fall, it would be detrimental to have large amounts of untreated imported water in these basins at the beginning of the storm season. OCWD's current operation of taking untreated imported water into Anaheim Lake would work best from an operational and cost basis.



September 15, 2020 Prepared by: M. Robinson / E. Akiyoshi Submitted by: K. Burton Approved by: Paul A. Cook

ENGINEERING AND OPERATIONS COMMITTEE

ASSET MANAGEMENT CAPITAL IMPROVEMENT PROGRAM CONSULTANT SELECTION

SUMMARY:

The Asset Management Capital Improvement Program (CIP) is a new and major initiative to expand and optimize IRWD's approach to planning capital replacement and rehabilitation projects. Phase 1 of the program will develop a risk-based five-year prioritized CIP project list for wells, pump stations, tanks, and sewage lift stations. Staff recently received proposals from five, well qualified teams. Staff evaluated the proposals, conducted interviews with three firms, and requests that the Board:

- Authorize the General Manager to execute a Professional Services Agreement with Black and Veatch in the amount of \$425,951, and
- Approve the addition of Projects 11686, 11687, and 11688 to the Fiscal Year 2020-21 Capital Budget, each in the amount of \$225,500, for a total of \$676,500.

BACKGROUND:

The Asset Management CIP will provide a comprehensive approach for planning capital replacement and rehabilitation (R&R) projects. IRWD currently plans for R&R projects through individual studies (e.g., the Santiago Canyon Fire Flow Improvement Study), regular operational capital project meetings between Engineering and Operations teams, and updates to the Water Resources, Sewer Treatment, and Sewage Collection Master Plans. Staff anticipates implementing the Asset Management CIP in multiple phases to consolidate capital related R&R project planning. This will optimize efficiencies, coordination, timing, and financing of capital related R&R improvements for vertical and linear facilities.

Phase 1 of the program focuses on developing a five-year risk-based prioritized CIP for pump stations, lift stations, tanks, and wells. Future phases will include water and sewer pipelines and treatment plants. The scope of work includes a desktop condition assessment, ranking facilities based on likelihood of failure, developing consequences of failure and levels of service expectations, calculating facilities' remaining useful lives, estimating replacement costs, and producing a five-year prioritized CIP project list.

Consultant Selection:

Staff invited seven consultants to propose on the project and received proposals from five consultants: Black and Veatch, Kennedy Jenks, HDR, GHD, and Brown and Caldwell. Two consultants, Woodard & Curran and Dudek, declined to submit proposals early in the proposal process. Based on team experience, displaying innovative ideas for proposed tools, and articulating a clear approach to risk assessment, three consultants: Black and Veatch, Kennedy

Engineering and Operations Committee: Asset Management Capital Improvement Program Consultant Selection September 15, 2020 Page 2

Jenks, and HDR were selected for interviews. All the firms presented qualified teams and well thought out approaches to the project and scope of work.

While all the teams were well qualified, Black and Veatch presented a well-balanced team, clear project approach, and excellent understanding that meets IRWD's goals and objectives for this project.

- <u>Project Team:</u> Black & Veatch's team couples solid project management with technical expertise. Additionally, during the proposal period, the team demonstrated a strong commitment to the project by developing a business intelligence reporting tool for the project using IRWD's well evaluation data. Lastly, Black and Veatch is a proven leader in the Southern California area and recently completed successful CIP and Asset Management projects for Metropolitan Water District, Western Municipal Water District, City of San Diego, and Coachella Valley Water District.
- <u>Project Understanding</u>: In both the proposal and interview, Black & Veatch demonstrated a clear project understanding that matched with IRWD's vision for Asset Management and CIP. This will help ensure that the resulting five-year CIP meets IRWD's needs, is accurate, and defensible. Black and Veatch also demonstrated the ability to transfer knowledge in a clear and effective way, resulting in a project that is scalable and repeatable. This approach will enable the Asset Management and CIP to be successful in future phases and repeated by staff on a regular basis.
- <u>Technical Approach</u>: While all the teams had solid technical approaches and industry expertise, Black & Veatch's clearly articulated approach to integrating Level of Service, calculating facilities remaining useful life, and using technology for developing useful reporting tools best aligned with IRWD's goals for the project. Black and Veatch will utilize Microsoft's Power Business Intelligence (Power BI) package to incorporate the final data and results into a dynamic reporting and analysis tool. Power BI is a leading industry tool for business intelligence that allows for understandable data visualization, effective analysis, and useful business reporting. It also helps standardize and automate linking of various enterprise data systems (e.g, Maximo and Replacement Planning Model). Lastly, as part of IRWD's Microsoft enterprise licensing, Power BI is included with no additional licensing fees.

Staff anticipates that the Asset Management CIP Phase 1 work for wells, pump stations, tanks, and sewage lift stations will be completed in May 2021. Concurrent with Phase 1, staff will evaluate the process and overall project goals to optimize the scope of work for Phase 2. Staff anticipates starting Phase 2 in summer of 2021.

The consultant selection matrix is provided as Exhibit "A", and Black and Veatch's scope of work and fee proposal are provided as Exhibit "B".

FISCAL IMPACTS:

The Asset Management CIP-DW, Asset Management CIP-RW, and Asset Management CIP-SS, Projects 11686, 11687, and 11688, will be funded through replacement funds and are not

Engineering and Operations Committee: Asset Management Capital Improvement Program Consultant Selection September 15, 2020 Page 3

included in the FY 2020-21 Capital Budget. Staff requests the addition of each project in the amount of \$225,000 for a total budget of \$676,500 to fund the project as shown in the following table.

Project	Current	Addition	Total
No.	Budget	<reduction></reduction>	Budget
11686	\$0	\$225,500	\$225,500
11687	\$0	\$225,500	\$225,500
11689	\$0	\$225,500	\$225,500
Total	\$0	\$676,500	\$676,500

ENVIRONMENTAL COMPLIANCE:

This study 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:

That the Board authorize the General Manager to execute a Professional Services Agreement with Black & Veatch in the amount of \$425,951 and approve the addition of Projects 11686, 11687, and 11688, each in the amount of \$225,500 for a total of \$676,500, to the Fiscal Year 2020-21 Capital Budget for the Asset Management Capital Improvement Program project.

LIST OF EXHIBITS:

Exhibit "A" – Consultant Evaluation Matrix Exhibit "B" – Black & Veatch Scope of Services and Cost Estimate

EXHIBIT "A"

CONSULTANT EVALUATION MATRIX Capital Improvement Plan and Asset Management for Pump Stations, Lift Stations, Tanks and Wells

ltem	em Description V		KENNEDY/JENKS		HDR		BLACK & VEATCH		
Α	TECHNICAL APPROACH	60%							
1	Overall Project Understanding	20%		3		1		2	
2	Scalability and Repeatability	15%		2		3		1	
3	Condition Assessment (LoF, CoF, Risk Score)	25%		3		1		2	
4	Remaining Useful Life	10%		2		3		1	
5	Level of Service	10%		3		2		1	
6	Five-Year Prioritized Capital Plan	20%		2		3		1	
	Weighted Score (Technical Approach)	100%		2.55		2.00		1.45	
В	QUALIFICATIONS AND EXPERIENCE	40%							
				1		2		3	
1	Project Manager	40%	Adity	a Ramamurthy,	Mi	chael Flores	Der	ek Kurtti, PF	
2	Tashriad Landa	250/	PE, F	PMP, PMI-ACP		2		1	
2	Team Makeun (Team Size, Cohesiveness, Experience)	35% 25%		3		2		1	
,	Weighted Score (Qualifications and Experience)	100%		2.20	2 00		1 90		
		200/0	2.41		2 00		1 50		
	Ranking of Consultants			2.71		2.00		1.35	
<u> </u>									
C			Task		Task		Task		
TASK			Hours	FEE	Hours	FEE	Hours	FEE	
1	TASK 1 - Project Management		124	\$31,601	189	\$53,700	174	\$34,058	
2	TASK 2 - Data Analysis and Asset Inventory		546	\$100,615	130	\$27,500	566	\$109,066	
3	TASK 3 - Risk Analysis		644	\$133,725	640	\$149,000	384	\$78,072	
4	TASK 4 - Remaining Useful Life and Replacement Costs		188	\$35,895	220	\$49,200	136	\$29,348	
5	TASK 5 - Prioritized Capital Improvement Plan Project List and Report		148	\$27,469	515	\$114,200	219	\$41,157	
0							700	\$150,740	
	SUB-TOTAL ENGINEERING SERVICES, FEE		1,650	\$329,305	1,694	\$393,600	2,239	\$428,441	
9.1	Optional Tasks								
	TOTAL ENGINEERING SERVICES, FEE		1,650	\$329,305	1,694	\$393,600	2,239	\$428,441	
	Avg \$/hr			\$200		\$232		\$191	
D	<u>OTHER</u>								
	Miscellaneous Items		T						
	Multiplier			-		-		-	
	Conflict of Interest			No		No		No	
	Joint Venture			No		No		No	
	Addendum Acknowledgement			N/A		N/A		N/A	
	Scope of Work Exclusions			No		No		No	
	Exceptions taken to IKWD std. Contract				Voc	INU Certs Provided	Voc	Tes Certs Provided	
			Yes		185, 0	Lei is ri uviueu	185,1	Yes, Certs Provided	

EXHIBIT "B"



PROPOSAL -

CAPITAL IMPROVEMENT PLAN AND ASSET MANAGEMENT FOR PUMP STATIONS, LIFT STATIONS, TANKS, AND WELLS

IRVINE RANCH WATER DISTRICT

– August 6, 2020 –



ΤΕΑΜ

As global leaders in asset management, the Black & Veatch Team is excited to support you with this important next step in your asset management strategy. The team is comprised of many local professionals with ideal asset management experience, and supported by nationally recognized experts. All the leadership team is close by, located just a few miles from your headquarters, making it easy to stay coordinated and keep our team aligned with yours. This section provides a brief overview of our Team. Detailed resumes are provided in an appendix. Our Team organization, shown here, is streamlined for efficiency.



BLACK & VEATCH LEADERSHIP drives alignment, gains stakeholder support, and positions IRWD for success in all phases of your asset management program.



DR. JEFF NEEMANN, PE PROJECT DIRECTOR

HIGHLIGHTS

- Industry leader with proven technical skills
- Provides high level guidance
- Authority to assign resources

EDUCATION

- Doctor of Engineering, Kansas University
- MS, Mo. University of Science and Technology
- BS, University of Mo



DEREK KURTTI, PE PROJECT MANAGER

HIGHLIGHTS

- Water and wastewater designer and contractor experience
- Team oriented
- Organized and collaborative
- Guides team and gains alignment

EDUCATION

 BS, Civil Engineering, California Polytechnic State University, San Luis Obispo

B - 2





KATTY FLEMING, CPM, ENV SP ENGINEERING MANAGER

HIGHLIGHTS

- Asset management expert
- Clear focus on project objectives
- Excellent listening skills
- Excellent teacher

EDUCATION

- MS, Civil and Infrastructure Engineering, George Mason University
- BS, Civil Engineering George Mason University

IRVINE RANCH WATER DISTRICT |

CIP AND ASSET MANAGEMENT FOR PUMP STATIONS, LIFT STATIONS, TANKS, AND WELLS

Detailed Scope of Work

[The following scope of work generally follows the provided scope within the RFP. We have provided specific details to enhance this project's scope or provide clarification shown in italics. The intention is to allow IRWD to easily distinguish these enhancements from the originally listed scope.]

TASK 1. PROJECT MANAGEMENT

The Consultant shall conduct project management activities to ensure adherence to scope, schedule, and budget; promote efficient communication between the Consultant, IRWD, and others as required; and implement an effective quality assurance/quality control (QA/QC) program. To encourage this, a kick-off meeting will be held to review the Consultant's proposed work plan/project schedule and establish communication protocols. Other components of the Project Management Task are listed within this section.

IRWD's Project Manager will be copied on all correspondence related to this Project, including e-mails, between the Consultant's team and the District or other public entities.

Task 1.1. Project Managemnet

The Consultant shall conduct project management activities to deliver the scope, schedule, and budget, to promote efficient communication between the Consultant, IRWD, and others as required, and to implement an effective quality assurance/quality control (QA/QC) program. IRWD anticipates the involvement of engineering staff, operations staff, and senior management. The Consultant will facilitate input and gain buy-in from the diverse IRWD team. The Consultant shall schedule and lead meetings with the IRWD team to assure that planning, design, operational, and maintenance issues are addressed.

Task 1.2. Quality Control

Consultant shall perform appropriate quality assurance/quality control (QA/QC) of deliverables prior to sending to IRWD for review.

A quality control review will be scheduled at key Project milestones and will be conducted by senior staff members who will be selected for their experience and expertise in the specific issues contained in this Project. All deliverables will be reviewed by the Consultant's Project Manager and a member of the Consultant's QC Review Team prior to submission to IRWD. Documentation of the Consultant's internal QC review will be included with each submittal to IRWD.

Consultant shall provide IRWD with a brief email summary every week on the project progress of the prior week.

A weekly progress summary will be provided by the Consultant's Project Manager and submitted via email to IRWD's Project Manager. During the kickoff meeting IRWD will identify other personnel who may be included on this email summary.

The Consultant shall maintain/update a Gantt-style milestone-based project schedule using MS Project 2010 (or earlier).

The schedule shall include all tasks and subtasks related to the completion of project deliverables. The

schedule shall identify key milestone dates and include periods for IRWD review of submittals as well as meetings and/or workshops requiring IRWD and Consultant schedule coordination. The schedule shall be monitored and updated monthly or more frequently. A complete schedule update shall be included with monthly invoice submittals and a written summary of project progress/milestones shall be provided with key deliverables.

Within two weeks of award of contract, the Consultant shall submit an updated project schedule to IRWD for review. The schedule should show the tasks and activities required to complete the work and identify dependencies (logic ties) and key milestones.

Progress reports shall be submitted with the monthly invoice in a written as part of the invoice cover letter. The narrative shall include a summary of the project progress including activities completed within the current progress period, activities planned for the upcoming period, and outstanding items or issues that may impact the project. Progress reporting will also include an update of the schedule.

Task 1.3. Project meetings

Organizing and/or attending project meetings (for proposal purposes, assume one meeting per month as a minimum). This includes preparing agendas for meetings and compiling meeting minutes.

- *Kick-Off Meeting*. The Consultant, with input from the IRWD's Project Manager, will prepare for and conduct an initial Kick-off meeting with IRWD staff.
- Meetings/Workshops. The Consultant will prepare for and conduct up to 18 meetings/workshops with IRWD staff. These sessions are included in Task 2 through Task 6. The following meetings shall occur throughout the course of these tasks:

NO.	MEETING	PURPOSE
1	Kickoff Meeting	Discuss Project overview, goals and objectives, communications and management, schedule, scope clarifications, etc.
2	Condition Assessment Criteria Workshop	Develop assessment criteria, discussing integration into existing CMMS system.
3	Eight (8) Criticality Assessment Workshops	Develop a defined approach and guideline to categorize critical assets utilizing a simple scoring system to create a Consequence of Failure (CoF) score for each asset.
4	Risk Assessment Workshop	Review results of risk assessment, identify adjustments to risk calculations, and review top risks in system.
5	Levels of Service Workshop	Discuss approach to levels of service and identify selection of performance indicators for tracking.

TABLE 1. PROJECT MEETINGS

NO.	MEETING	PURPOSE
6	Two (2) Module Development Workshops	Dynamic AMP Modules will be developed to support the work completed during Tasks 2 to 5.
7	Two (2) Dynamic Asset Management Platform Meetings (Module Training & Updates)	A four-hour training session for all potential IRWD Dynamic AMP users, and a four-hour training session for the technical IRWD staff who will be the owners of the Dynamic AMP.
8	Future Dynamic AMP Expansion Meeting	A workshop to gather IRWD input on the future platform expansion opportunities.
9	Final Report Meeting	 Present and review proposed draft dashboard Modules with IRWD: Pump Stations Module Lift Stations Module Tanks Module Wells Module

DELIVERABLES:

- Consultant shall prepare draft agendas for IRWD review no later than 3 days prior to any meeting. Consultant shall receive and incorporate IRWD comments to the agenda for use in the meeting.
- A draft set of meeting minutes shall be prepared by the Consultant and submitted to IRWD within one (1) week of the meeting. All review comments shall be incorporated into the final minutes and submitted to IRWD.

TASK 2. DATA ANALYSIS AND ASSET INVENTORY

Table 2 on the following page presents asset management efforts implemented for operational, capital, and financial needs. These items were implemented to assist with 1 to 30-day maintenance, 1 to 5 year capital improvements, and up to 100-year replacement funding. All major assets are included in an Access database that is currently used for asset inventory. The Consultant shall develop a cohesive asset inventory for pump stations, lift stations, tanks, and wells.

The asset management project will consolidate data from these sources and create a five year prioritized CIP. In addition to the items listed below, information from O&M manuals, record drawings, and other sources are available by request. Information from each of these items are described in more detail on the following page.

Item	Implementation Year	Usage Description
IRWD Facility Database	2000	Access database to house all assets Districtwide
Well Evaluation Matrix	2010	Developed in-house and updated annually to prioritize well rehabilitation. This tool identifies capital needs for wells for the 1 to 2-year time frame.
Replacement Planning Model	2019	Identifies all capital facilities and forecasts 100-year expenditures. Main purpose is for long term financial projections.
Sewage Collections System Master Plan	2016	InfoMaster was used as a proof-of-concept for risk-based analysis.
Maximo	2017	Preventative and Corrective Maintenance for 1 to 30-day time frame

Table 2 – IRWD Asset Management Efforts and Information Sources

Task 2.1 – Data Analysis

The Consultant shall evaluate available sources of data in preparation for developing likelihood and consequence of failure metrics. As noted above, five sources have been identified by IRWD as particularly relevant to this study. Other data sources, such as the geographic information system, operational manuals, prior master plans and studies, etc., may have relevant data for inclusion as well. The Consultant shall work with IRWD to identify potential sources and include relevant data where applicable for the asset management plan.

• **IRWD Facilities Database:** The IRWD Facility database is Microsoft Access based, implemented in 2000, and contains capital assets districtwide. The database is used primarily for generating vertical asset Facility Identification numbers. Using this database as a reference, the Consultant shall develop a cohesive asset inventory for pump stations, lift stations, tanks, and wells.

The IRWD Facilities Database will be used as the basis for identifying existing assets to be included in the evaluation and the the asset inventory. Attribute data is expected to be compiled from other sources.

• Well Evaluation Matrix: The Well Evaluation Matrix is an internally developed and maintained spreadsheet tool that assists in prioritizing well rehabilitation projects. It contains all the active potable and non-potable wells and was successfully implemented in 2010. This tool contains key parameters for condition assessment, including specific capacity, sanding and cascading conditions, last rehab, and other observations through video inspection. In order to update the Well Evaluation Matrix, Engineering staff meets with the Operations department to discuss field and operational conditions of the wells. Performance and operational information are combined to calculate a weighted score and a forced ranking for the wells. Typically, 2-3 wells are refurbished or rehabilitated on an annual basis. The Consultant shall review, modernize, and recommend updates to the Well Evaluation Matrix as part of this project. *In this task, review and recommendations will be made. Updates will be made as part of tasks 3, 4, and 5 in parallel with the other asset systems. The Consultant will work with IRWD to determine the appropriate future format of the well matrix as part of Task 2.2.*

- **Replacement Planning Model (RPM)**: The RPM was completed by Kayuga Solutions in 2020, and contains a comprehensive list of all District capital facilities that provides 50 and 100-year replacement funding requirements. The RPM contains established criteria that was developed to determine each facility's overall and major component (e.g. mechanical, electrical, site, structural) replacement costs, including construction and all-in costs. Information from the RPM project should be used for Task 4, Remaining Useful Life and Replacement Costs.
- Sewage Collection System Master Plan: The Sewage Collections System Master Plan (SCSMP) was completed in 2016, and primarily focused on sewer pipes (gravity and force mains), lift stations, siphons, and diversion structures. Hydraulic Modeling analysis was completed with InfoSWMM, and criticality analysis was completed with InfoMaster. Recently, the siphon risk analysis was used to kickoff rehabilitation projects on the top four priority siphon structures. IRWD does not currently have an InfoMaster license, and the criticality analysis has not been updated since project completion.

DELIVERABLES:

Consultant shall prepare a summary of data sources, which will be used as the basis for developing an Asset Inventory (spreadsheet or database) encompassing all pump stations, lift station, tanks, and wells in Task 2.2. The summary will be presented in a "chapter" format such that it can later be incorporated into the Draft prioritized Capital Improvement Plan and Report as part of Task 5. An electronic copy shall be submitted via email to IRWD's Project Manager.

ASSUMPTIONS

- IRWD will provide all background information within 10 calendar days of Notice To Proceed.
- Data sources will be limited to available digital data that is structured consistently with the asset hierarchy it does not include data cleanup or data collection from hard-copy records. Field visits to facilities are not included.
- All data will be provided in digital format in native data files (e.g. InfoMaster files as opposed to PDF report of InfoMaster output).
- A consistent definition of assets and consistent asset IDs are used throughout, or relationships are readily identifiable. Manual effort will not be needed to align data sets in database format.

Task 2.2 – Asset Inventory Development

The Consultant shall develop a cohesive asset inventory for pump stations, lift stations, tanks, and wells. This task includes an in-depth coordination of available data, data structures, and updates, including recommendations in preparation for development of business intelligence dashboards.

Task 2.2.1 – Data Catalog

Consultant shall work with IRWD to identify data sources required to support the development of modules identified under Tasks 2 to 5 for pump stations, lift stations, tanks and wells. It is assumed that this data will include the following enterprise systems and sources:

- IRWD Facility Database (MS Access)
- Well Evaluation Matrix (MS Excel)
- Replacement Planning Model (MS Excel)
- Innovyze InfoMaster
- Maximo

Consultant will conduct a workshop to discuss available data and potential improvements. A Data Catalog will be developed and serve as a detailed inventory for each data source. The Data Catalog will include the following information for each required data source:

- Format of the data source (e.g. Access, SQL, geodatabase)
- Location of the data (e.g. cloud, IRWD server, local hard drive)
- Ownership of the data (are there access considerations which must be taken into account?)
- Security considerations (is the data sensitive, located behind a firewall, on premises?)
- *Refresh interval (how often is data updated? Once per day, once per month, once per year?)*
- Identification of key data (e.g. tables) within each data source which will be required to support the development of the Dynamic Asset Management Platform modules
- Current state and future state
- Assessment of data completeness and accurary (if data clean-up is required, identify proposed data clean-up activities and procedures)

Task 2.2.2 – Data Engineering

Consultant shall conduct a Data Architecture Workshop with IRWD's IT staff to share the objectives of the project and develop the framework for the architecture of the solution.

Consultant shall determine the anticipated (future state) system architecture that will host the Dynamic AMP modules for all four (4) classes, including if it will be hosted on-premise within the District's enterprise IT environment or if an on-premise data gateway will be required to keep data in sync between each enterprise system and a hosted Power BI environment.

Consultant will develop an understanding of the current and desired future state of each data source. During this stage, Consultant will identify these challenges and develop a plan for preserving linkage to historical information from to-be-phased-out systems as well as potential new systems.

Consultant will develop conceptual Extract, Transform and Load (ETL) processes for each required data source. The ETL process will define how key data is extracted from each required data source and fed into the Dynamic AMP. ETL processes may include SQL queries, REST APIs or other scheduled refresh functions. As part of this process, issues with access to data and security concerns will be addressed. The purpose of this stage will be to understand the shape of each data source (e.g., column names and format) for the purpose of generating a static data export which can be used during development of the Dynamic AMP.

Based on the conceptual ETL process for each required data source / data table, the Consultant will work with the IRWD's IT department to develop a static, representative data export to be used during development of the Dynamic AMP. This step will ensure that all queries and logic used for each module will be based on the exact data structure (column names, data shape, etc.) which will be produced by the individual ETL processes for each data source. This will reduce effort during the full implementation of the Dynamic AMP in the future.

DELIVERABLES:

Consultant shall prepare a summary of the asset inventory for all pump stations, lift station, tanks, and wells. The data inventory will be presented in a "chapter" format such that it can later be incorporated into the Draft prioritized Capital Improvement Plan and Report as part of Task 5. An electronic copy shall be submitted via email to IRWD's Project Manager.

<u>ASSUMPTIONS</u>

The Dynamic AMP Modules will be developed using static exports from each data source. The static exports will be stored on Consultant's cloud (SharePoint) during development. Static exports will be transitioned to IRWD's SharePoint (or similar) during implementation. IT work required to establish automatic data refreshes (e.g. directly from Maximo) is not included in the base level of effort.

Task 2.3 – Maximo Data Analysis and Integration Recommendations

Maximo: IRWD implemented Maximo in 2017 as its computerized maintenance management system (CMMS) for work order management, inventory, and preventative maintenance. This software is useful for maintenance for determining work orders for the 1 to 30-day time frame. Vertical facility assets were implemented in 2017, and linear facility implementation for sewer, potable, and recycled systems is in progress. As part of this project, the Consultant shall evaluate data gaps for Pump Stations, Lift Stations, Tanks, and Wells in Maximo to be used in future phases of the project. Since vertical facility integration was implemented recently, data may be limited for this phase of the project.

Black & Veatch will perform a Maximo review that includes meeting with core users, administrators, and other key stakeholders to review high level configuration, integration, and usability. Additionally, a review of the Maximo database(s) will be performed to help assess data completeness and identify gaps in data management efforts. Black & Veatch will meet with stakeholders remotely (e.g. via Microsoft Teams) for up to six interviews to review and document the deficiencies with use and integrating current hardware. Interviews are expected to include the following:

- Group 1 system administrators, key power users, and active end users (2 hours)
- Group 2 Management stakeholders who require data out of the systems (2 hours)
- Follow-up interviews individual meetings to follow-up on details identified in first two interviews (4 meetings, each 1 hour)

Based on the findings from the data review and interviews, Black & Veatch will develop a set of recommendations to implement in future phases to help improve data management and information flow for processes associated with the Maximo environment. This may include activities like integration of GIS with Maximo; deployment of new Maximo workflows, integration of condition scoring with work order management or GIS. Recommendations will be associated by weakness along with a high level overview of the level of effort or additional planning required to implement each recommendation.

DELIVERABLES:

Consultant shall provide a summary analysis and recommendations for integrating Maximo into the asset management and CIP development system, identifying missing improvement information for pump stations, lift stations, tanks, and wells. The analysis will be submitted in "chapter" format such that it can later be incorporated into the Draft prioritized Captial Improvement Plan and Report as part of Task 5. An electronic copy shall be submitted via email to IRWD's Project Manager.

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ASSUMPTIONS

- Maximo data to be provided by IRWD in agreed format within 10 days of Notice to Proceed.
- Arrangements to be made for Consultant access to Maximo and/or staff to be available to demonstrate Maximo as needed to identify aspects of configuration and usage.

TASK 3. RISK ANALYSIS

Complete a risk analysis by rating each asset as a measure of criticality (Consequence of Failure / CoF) and condition (Likelihood of Failure / LoF).

Task 3.1 - Condition Assessment

Consultant shall complete a high-level desktop condition assessment, based on available data compiled in Task 2. The condition assessment shall be completed for Wells, Pump Stations, Lift Stations, and Tanks to develop appropriate scoring factors that will contribute to calculating the LoF and the expected remaining useful life for each asset. The intent is to develop a unique condition scoring approach for each asset type, based on attribute data appropriate to that asset type, while having the overall condition scores be consistent, to facilitate a consistent calculation of LoF and remaining useful life.

For wells, this process will use the District's existing Well Evaluation Matrix for performance condition assessment as a foundation, and calculations will be modernized to align with the calculations for the other asset types.

As part of this task, proposed calculations will be developed for each asset type, for review by IRWD. In addition to presentation in Microsoft Word, Powerpoint, or similar, the calculations will concurrently be developed as part of draft AMP modules in PowerBI (discussed in Task 6). This will enable review of the results and refinemnet of proposed calculation methods prior to acceptance by IRWD.

The Consultant shall also develop simple criteria and descriptions for the condition assessment and will prepare a summary guide for future use by IRWD. The Condition Assessment Guide will include criteria for physical condition and asset performance and reliability. All criteria will be scored on a 1-5 scale and will be developed to provide the likelihood of failure score for the asset risk assessment in the next phase. The Consultant shall conduct workshops to train staff on the process for condition assessment data capture.

Additionally, the Consultant shall develop recommendations to incorporate Maximo maintenance data to improve condition assessment analysis for Pump Stations, Lift Stations, Tanks, and Wells.

DELIVERABLES:

- Consultant shall conduct a condition assessment workshop to present the following: desktop condition assessment results for each asset type (Wells, Pump Stations, Lift Stations, and Tanks); scoring approaches and preliminary results for each asset type; a guideline for IRWD staff to accurately self-perform condition assessments; and recommendations for incorporating Maximo maintenance data into the guidelines.
- This assessment shall be provided in "chapter" format such that it can later be incorporated into the Draft prioritized Captial Improvement Plan and Report as part of Task 5. An electronic copy shall be submitted via email to IRWD's Project Manager.
- Dynamic AMP dashboard modules will be developed to support visualization of the condition assessment results. Effort module development is included in Task 6.

<u>ASSUMPTIONS</u>

- Assessments will be based on available asset data and databases. No facility visits will be performed.
- The guidance document is assumed to be based on operator visual assessment to facilitate frequent updates and identify if more rigorous assessment may be required. It will not include specialized condition assessment methodologies.

Task 3.2 - Criticality Assessment

Develop a defined approach and guideline to categorize critical assets utilizing a simple scoring system to create a Consequence of Failure (CoF) score for each asset.

The Consultant will determine the Consequence of Failure (CoF) for each of IRWD's assets (wells, pump stations, lift stations, and tanks). The Consultant will utilize triple bottom line factors for environmental, social, and financial effects of the asset's failure to deliver the expected level of service. Based on available information, the Consultant shall propose a method to determine the CoF for each asset, for review by the District.

For each asset type, Consultant will lead up to two 2-hour meetings (eight meetings total) with appropriate District staff familiar with the assets and system, to develop appropriate scoring. To the extent that scoring cannot be completed in these calls, District staff will be responsible for populating remaining scores.

The results of this task shall be summarized in a report chapter outlining the CoF score for each asset type, the basis for the scoring system, and a list identifying assets and sub-assets of concern. The results will be summarized using the AMP dashboard (PowerBI).

DELIVERABLES:

- Consultant shall perform a criticality assessment that includes a defined approach and guidelines for categorizing critical asset's Consequence of Failure (CoF). Consultant will lead up to two 2-hour meetings for each asset type (eight meetings total).
- The assessment shall be provided in "chapter" format such that it can later be incorporated into the Draft prioritized Captial Improvement Plan and Report as part of Task 5. An electronic copy shall be submitted via email to IRWD's Project Manager.
- Dynamic AMP dashboard modules will be developed to support visualization of the condition assessment results. Effort module development is included in Task 6.

ASSUMPTIONS

• Existing CoF factors and scores are not available. District staff will be responsible for populating agreed scoring factors for each asset, with guidance and some assistance from Consultant.

Task 3.3 - Risk Score

Combine analysis for LoF and CoF to develop a risk score for each asset.

The Consultant shall develop a risk-based methodology for prioritizing how the District manages its wells, pump stations, lift stations, and tanks. This will serve as a means for refining maintenance and replacement priorities among these assets and will help the District identify assets that pose a higher-than-acceptable risk, thereby allowing the District to prioritize projects/approaches to mitigate these risks.

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The Consultant shall determine the risk for each of the Districts well, pump station, lift station, and tank assets. The BRE calculations shall consider both the PoF and the CoF, previously developed as part of this Project.

The result of this task shall be summarized in AMP dashboard modules providing a risk matrix, BRE scores, and prioritized lists filterable according to the asset hierarchy and other relevant parameters. A risk scoring chapter outlining the basis for the scoring system, the scoring assigned to each asset, and a list identifying assets of concern. The Consultant shall lead a 2-hour workshop to review the results of the risk assessment, discuss top risks in the system, and identify any needed modifications to the risk scores.

DELIVERABLES:

- Consultant shall prepare and submit the resultant Risk Score based on previous LoF and CoF scores for individual assets. The competed risk scores shall be provided in "chapter" format such that it can later be incorporated into the Draft prioritized Captial Improvement Plan and Report as part of Task 5. An electronic copy shall be submitted via email to IRWD's Project Manager.
- Dynamic AMP dashboard modules will be developed to support visualization of the condition assessment results. Effort module development is included in Task 6.

Task 3.4 - Level of Service

Consultant will develop and incorporate Level of Service Concepts as appropriate in the Risk Analysis.

Consultant will develop materials to discuss the approach to Levels of Service, as well as potential performance indicators for tracking in the future. Consultant will lead a 2-hour workshop to review proposed performance indicators and review levels of service.

DELIVERABLES:

- Consultant shall summarize conclusions related to Level of Service Concepts as applicable to IRWD assets. These concepts and applications shall be prepared and provided in "chapter" format such that it can later be incorporated into the Draft prioritized Captial Improvement Plan and Report as part of Task 5. An electronic copy shall be submitted via email to IRWD's Project Manager.
- Dynamic AMP dashboard modules will be developed to support visualization of the condition assessment results. Effort module development is included in Task 6.

TASK 4. REMAINING USEFUL LIFE AND REPLACEMENT COSTS

Task 4.1 - Remaining Useful Life

Using information developed from the Condition Assessment, determine the remaining useful life for capital assets. The Consultant shall develop clear guidelines for determining basis of remaining useful for each facility, and also identify data gaps in condition assessment to better determine remaining useful life and creating failure curves in the future.

DELIVERABLES:

• Consultant shall establish guidelines and provide recommendations for analyzing existing facilities and estimating the remaining useful life; prepare a summary of data gaps; and provide recommendations for resolving data gaps. A summary of these tasks shall be provided in

"chapter" format such that it can later be incorporated into the Draft prioritized Captial Improvement Plan and Report as part of Task 5. An electronic copy shall be submitted via email to IRWD's Project Manager.

• Dynamic AMP dashboard modules will be developed to support visualization of the condition assessment results. Effort module development is included in Task 6.

Task 4.2 - Replacement Costs

The District's Replacement Planning Model (RPM) contains established criteria that was developed to determine each facility's overall and major component (e.g. mechanical, electrical, site, structural) replacement costs, including construction and all-in costs. Use the RPM to determine costs and incorporate into Task 5, Prioritized Capital Improvement Plan and Report.

DELIVERABLES:

Consultant shall establish replacement cost estimates including base costs, construction costs, and all-in costs. The costs analysis shall be provided in "chapter" format such that it can later be incorporated into the Draft prioritized Captial Improvement Plan and Report as part of Task 5. An electronic copy shall be submitted via email to IRWD's Project Manager.

Dynamic AMP dashboard modules will be developed to support visualization of the condition assessment results. Effort module development is included in Task 6.

TASK 5. PRIORITIZED CAPITAL IMPROVEMENT PLAN AND REPORT

Develop a Prioritized Capital Improvement Plan (CIP) utilizing information from the previous tasks. This task includes the following:

- Prepare a five year prioritized Capital Improvement Plan project list, incorporating information from the previous tasks.
- Include risk management guidelines, procedures, and methodology for condition and criticality assessment. These guides should be clearly defined for staff to use for future use.
- Summarixe data gap and next steps to refine risk analysis in the future.

DELIVERABLES:

- Consultant shall provide a detailed roadmap for identifying an resolving identified data gaps, and conduct a Final Report meeting. Roadmap shall include the identified data gaps and provide recommendations to populate missing data and formulate a complete risk analysis. The roadmap shal be provided in "chapter" format such that it can later be incorporated into the Draft prioritized Captial Improvement Plan and Report as part of Task 5. An electronic copy shall be submitted via email to IRWD's Project Manager.
- Consultant shall provide a draft form of the proposed 5-year CIP. A searchable PDF copy in addition to five (5) paper copies shall be submitted.
- Consultant shall submit the final 5-year CIP including all IRWD comments and associated changelog. The CIP shall include an appendix with all associate meeting minutes. A searchable PDF copy, five (5) paper copies, and all native digital files (word.doc, excel files, etc.) shall be provided as part of this submittal.

• Dynamic AMP dashboard modules will be developed to support visualization of the condition assessment results. Effort module development is included in Task 6.

TASK 6. DYNAMIC ASSET MANAGEMENT PLATFORM

Task 6 is an integral component of Tasks 2-5. However, the work is summarized here to avoid repetition in each task.

Develop a Dynamic Asset Management Platform (AMP) using Microsoft Power BI which contains dashboard modules designed to support Task 2 to 5.

Task 6.1 – Module Development

Dynamic AMP Modules will be developed to support the work completed during Tasks 2 to 5. A Module Identification Workshop will be conducted with IRWD at the beginning of the project to discuss the goals and benefits of each proposed module, including the decisions each module will support. The workshop will include discussion of the data required to support each module as well as feasibility of implementation. Output of this workshop will be a module list to be included in the Dynamic AMP.

For each module on the final list identified during the workshop, Consultant will develop a draft concept module, including submodules (if applicable). The goal of the draft concept is to establish connectivity with the static data sources and develop the logic, functionality and basic visualizations for each module.

A Draft Module Workshop will be conducted to present each draft module to IRWD for feedback, review, and comment.

Modules will be updated, refined and finalized based on input from IRWD. Final modules will be shared with IRWD on the web through Power BI Pro.

Task 6.2 – Platform Development

<u>Platform Framework and Hierarchy.</u> Consultant will develop the structure of Dynamic AMP, including the Main Landing Page, individual Module Landing Pages, modules, and sub-modules. This task will include development of a schematic hierarchy diagram of the Dynamic AMP which illustrates the relationship between all landing pages and modules.

<u>User Experience and Functionality.</u> Consultant will develop the usability of the Dynamic UMP to maximize ease of use for the IRWD. This will include development of an "App Workpace" in Power BI to consolidate modules from multiple PBIX files (developed during Tasks 2 to 5) into a single accessible and easily navigable location.

<u>Module Integration</u>. Modules from Tasks 2 to 5 will be integrated into the Dynamic AMP. It is expected that each Task will produce one or more individual PBIX files which will be linked together in the "App Workspace" to allow for easy and intuitive navigation. As appropriate, module landing pages will be developed to display the "high level" data from each sub-module and include easy access to drill down to additional detail. Engineer will deliver Dynamic AMP based on Static Data Export shared on web (through Power BI Pro) and accompanying .PBIX files.

<u>Platform Specifications.</u> During platform development, Consultant will develop a Platform Specification TM which includes:

- Platform Framework and Hierarchy, including location of all modules
- Data sources for and key data fields for all modules
- Relationships between data sources within modules

Task 6.3 - Implementation

Consultant will work with the IRWD's IT staff (via remote access/screen share) to connect the Dynamic AMP Module PBIX files to IRWD's system. This process will involve updating the data source queries in Power Query from the static data exports on Consultant's Sharepoint to static exports stored on IRWD's sharepoint (or similar).

Following connection of all data sources, Consultant will configure the PBIX files and Power BI App Workspace to mirror the configuration on Consultant's system, to ensure all navigation and usability is maintained throughout the platform. Following connection and configuration of the Dynamic Utility Management Platform on the Consultant's system, Consultant will perform a QA/QC to ensure that all visualizations, outputs and KPIs are producing accurate results.

ASSUMPTIONS

The Dynamic AMP will be linked to static data exports on IRWD's Sharepoint (or similar). No effort has been included to complete the IT tasks required to develop near-real-time connection between the Dynamic AMP and IRWD's enterprise systems (e.g. Maximo). Direct connection of the Dynamic AMP to IRWD's enterprise systems is assumed to be included in a future task or as a supplemental service.

Task 6.4 – Asset Management Platform Training

Use of Dynamic Asset Management Platform Training: A four-hour training session for all potential IRWD Dynamic AMP users which will include an overview of the platform as well as the purpose, functionality, and capabilities of each module. The training will include real-world examples to illustrate to IRWD staff how the platform can be integrated into their normal workflow to save time, enhance their knowledge and provide decision-support.

Modifying and Updating the Dynamic Asset Management Platform Training: A four-hour training session for the technical IRWD staff who will be the owners of the Dynamic AMP. The training will include an overview of the Dynamic AMP Manual (completed as part of this task) as well as training on key topics such as: identifying, diagnosing and debugging refresh errors, updating queries if there are updates / modifications to enterprise systems, creating new modules and adding new KPIs.

Task 6.5 – Future Dynamic Asset Management Platform Expansion

During the project, Consultant and IRWD will identify additional modules which are not part of the base scope but would represent a logical and beneficial expansion of the platform in the future. Consultant will conduct a workshop to gather IRWD input on the future platform expansion opportunities. The goal of the workshop will be a list of desired future modules as well as an initial assessment of the feasibility of each given the currently available data. For modules without sufficient available data, a roadmap will be created to enable IRWD to begin collecting the data which will enable creation of the desired modules in the future. A TM documenting the future platform expansion opportunities including a plan for inclusion of additional asset systems (Potable and Recycled Pipelines and PRVs, Treatment Plants and Seasonal Storage Reservoirs, Gravity Sewer Pipes, Force Mains, Siphons and Diversion Structures) will be developed for reference by IRWD in the future.

OPTIONAL Task 6.6 – On-Call Assistance

If desired by IRWD, Consultant can be available on an on-call / as-needed basis to support IRWD as they continue to get up to speed on the operation, maintenance, and use of the Dynamic AMP. Consultant will be available to provide ongoing technical assistance to troubleshoot and help address any issues faced by IRWD to ensure continued smooth operation of the platform. Effort has not been included for this task in the budget, but can be added if desired.

DELIVERABLES:

- Dynamic AMP Specification Summary Update
- Dynamic AMP Module PBIX Files
- Dynamic AMP Manual (PowerPoint)
- Future Dynamic AMP Expansion Report

September 15, 2020 Prepared by: B. Rios / K. Lew Submitted by: K. Burton Approved by: Paul A. Cook

ENGINEERING AND OPERATIONS COMMITTEE

REIMBURSEMENT AGREEMENT BETWEEN IRWD AND THE CITY OF IRVINE FOR FISCAL YEAR 2020-21 ANNUAL STREET REHABILITATION AND <u>SLURRY SEAL PROJECT</u>

SUMMARY:

The City of Irvine is proceeding with its pavement rehabilitation and slurry seal project for the area of the Irvine Business Complex West. This project requires an individual Reimbursement Agreement (RA) since the estimated construction cost is over \$100,000. Staff recommends the Board authorize the General Manager to execute an RA with the City for the Fiscal Year 2020-21 Annual Street Rehabilitation and Slurry Seal Project, subject to non-substantive changes.

BACKGROUND:

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

IRWD and the City have also agreed that any City street improvement project that involves the construction, modification, or relocation of IRWD facilities with an estimated construction cost over \$100,000 will be administered through a separate RA. The City's Fiscal Year 2020-21 Annual Street Rehabilitation and Slurry Seal Project has an estimated construction cost of \$499,400. Therefore, this project requires a project-specific RA.

This project includes replacement and adjustment to grade of approximately 379 domestic water valve cans and lids, 77 recycled water valve cans and lids, eight sanitary sewer cleanout cans and lids and adjustment to grade of approximately 81 sanitary sewer manholes. The estimated construction cost is \$499,400 plus a City administrative fee equal to 4% of the actual construction cost per the terms of the RA. An engineer's estimate is provided as Exhibit "A", a Location Map is provided as Exhibit "B", and the RA is provided as Exhibit "C". The RA has been reviewed by IRWD's legal counsel.

FISCAL IMPACTS:

Projects 10473, 11109, and 10474 are included in the FY 2020-21 Capital Budget and have adequate budgets to fund the project.

Engineering and Operations Committee: Reimbursement Agreement between IRWD and the City of Irvine for the Fiscal Year 2020-21 Annual Street Rehabilitation and Slurry Seal Project September 15, 2020 Page 2

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 15061 (b) (3). The activity is covered by the general rule that CEQA applies only to projects which have the potential for causing a significant effect on the environment. Where it can be seen with certainty that there is no possibility that the activity in question may have a significant effect on the environment, the activity is not subject to CEQA.

RECOMMENDATION:

That the Board authorize the General Manager to execute the Reimbursement Agreement between Irvine Ranch Water District and the City of Irvine for Adjustment of Street Utilities to Grade for the Fiscal Year 2020-21 Annual Street Rehabilitation and Slurry Seal Project, subject to non-substantive changes.

LIST OF EXHIBITS:

Exhibit "A" – FY 2020-21 Annual Street Rehabilitation and Slurry Seal Engineer's Estimate Exhibit "B" – FY 2020-21 Annual Street Rehabilitation and Slurry Seal Vicinity Map Exhibit "C" – FY 2020-21 Annual Street Rehabilitation and Slurry Seal Reimbursement Agreement

EXHIBIT "A"

REIMBURSEMENT AGREEMENT BETWEEN IRVINE RANCH WATER DISTRICT (IRWD) AND THE CITY OF IRVINE

FOR

FY 20-21 ANNUAL STREET REHABILITATION AND SLURRY SEAL PROJECT, BID NO. 21-1824

ENGINEER'S ESTIMATE

ITEM NO.	DESCRIPTION	QUANTITY	UNITS		UNIT COST	I	EXTENDED AMOUNT	
A-1	INSTALL NEW IRWD WATER VALVE FRAME AND COVER TO GRADE	379	EA	\$	900.00	\$	341,100.00	
A-2	INSTALL NEW IRWD RECLAIM WATER VALVE FRAME AND COVER TO GRADE	77	EA	\$	900.00	\$	69,300.00	
A-3	INSTALL NEW IRWD SEWER CLEANOUT FRAME AND COVER TO GRADE	8	EA	\$	1,000.00	\$	8,000.00	
A-4	ADJUST EXISTING IRWD SEWER MANHOLE FRAME AND COVER TO GRADE	81	EA	\$	1,000.00	\$	81,000.00	
TOTAL CONSTRUCTION ESTIMATE \$ 49								
	4% ADMINSTRATION FEE PER SECTION 5 OF AGREEMENT \$ 19,976.00							
	TOTAL COSTS						519,376.00	



EXHIBIT C

File No. 10473

REIMBURSEMENT AGREEMENT BETWEEN

IRVINE RANCH WATER DISTRICT AND THE CITY OF IRVINE FOR INSTALLATION AND ADJUSTMENT OF STREET UTILITIES TO GRADE FOR FY 2020-21 ANNUAL STREET REHABILITATION AND SLURRY SEAL BID NO. 21-1824

This Agreement is made and entered into as of this _____ day of ______, 2020, by and between IRVINE RANCH WATER DISTRICT, a California water district formed and existing pursuant to the California Water District Law, hereinafter referred to as "DISTRICT," and the CITY OF IRVINE, a municipal corporation, hereinafter referred to as "CITY."

$\underline{W} \underline{I} \underline{T} \underline{N} \underline{E} \underline{S} \underline{S} \underline{E} \underline{T} \underline{H}$:

WHEREAS, CITY proposes to construct street and utility improvements within the area of the Irvine Business Complex West, Bid No. 21-1824 (the "Project"), within the jurisdictional boundaries of DISTRICT and the City of Irvine; and

WHEREAS, such construction will necessitate the following construction work on DISTRICT facilities: replacement and adjustment to grade of approximately 379 Domestic Water Valve cans and lids, replacement and adjustment to grade of approximately 77 Recycled Water Valve cans and lids, replacement and adjustment to grade of approximately 8 Sanitary Sewer Cleanout cans and lids and adjustment to grade of approximately 81 Sanitary Sewer Manholes, all as described on Exhibit "A" attached hereto incorporated by reference herein (the infrastructure above collectively referred to as the "IRWD FACILITIES" and the construction work related to them is the "Work"); and

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

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

WHEREAS, DISTRICT intends to fully reimburse the CITY through payments billed by the CITY and approved by DISTRICT for the entire cost of the IRWD FACILITIES Work; and WHEREAS, except as otherwise provided herein, upon the completion of the IRWD FACILITIES Work, the parties intend that any newly-installed IRWD FACILITIES shall become the property of DISTRICT in accordance with the terms and conditions hereinafter set forth.

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

<u>SECTION 1.</u> <u>IRWD FACILITIES</u>. In conjunction with the Project, CITY agrees to initiate and pursue to completion the design and construction of the IRWD FACILITIES Work pursuant to this Agreement.

SECTION 2. PLANS. CITY agrees that the IRWD FACILITIES Work shall be completed pursuant to project plans and specifications (the "Plans and Specifications") approved by DISTRICT. Prior to commencement of preparation of the Plans and Specifications, CITY shall submit its design engineer's proposed improvement plans for the IRWD FACILITIES to DISTRICT. DISTRICT will have a period of five (5) calendar days from its receipt of such design proposal to review and either indicate its approval or request changes. CITY shall cause its design engineer to review and respond to any requested changes. The Plans and Specifications must incorporate (directly or by reference) the applicable portions of DISTRICT's latest edition of *Construction Manual for the Construction of Water, Sewer, and Recycled Water Facilities* (the "Construction Manual"). CITY shall let the contract for the performance of the IRWD FACILITIES Work (together with non-reimbursable work to be completed by CITY within the Project) pursuant to the approved plans prepared by CITY's design engineer.

SECTION 3. BIDDING AND AWARD.

The parties agree that the performance of the IRWD FACILITIES Work 3.1 shall be included in CITY's contract(s) awarded for the Project and that the IRWD FACILITIES Work shall be bid as a separate item or items that can be deleted. During the bidding process, CITY shall deliver to IRWD one (1) complete set of the bid documents that include the IRWD FACILITIES Work, including all related addenda concurrently with the distribution thereof to prospective bidders. Upon opening of bids by CITY, CITY will submit the bids or a spread sheet summary of the bids to DISTRICT. DISTRICT will have a period of ten (10) calendar days from its receipt of the bid results for review and approval of the IRWD FACILITIES Work bid item(s) submitted by the bidder identified to DISTRICT by CITY as CITY's proposed successful bidder. CITY agrees that bids received for the construction of the IRWD FACILITIES bid item(s) shall be subject to the approval of DISTRICT prior to award of the Project construction contract(s) that include the IRWD FACILITIES. If DISTRICT does not approve such bids, then either party may terminate this Agreement upon 24 hours' prior written notice, in which event CITY shall have no further obligation to perform the IRWD FACILITIES Work, and DISTRICT may elect to perform the IRWD FACILITIES Work with its own contractor. If DISTRICT approves of the IRWD FACILITIES bid item(s) of CITY's successful bidder, then CITY shall cause the IRWD FACILITIES Work to be performed as part of the contract awarded to such bidder.

3.2 <u>Estimated Costs</u>. The total estimated construction cost for the IRWD FACILITIES Work is \$499,400, but the amount to be reimbursed by DISTRICT will be based on the actual costs of construction plus an administration fee as set forth in further detail in Section 5.

3.3 <u>Contract Documents</u>. Upon award of the construction contract, CITY shall provide DISTRICT with one original copy of the fully-executed contract documents and one copy of the bid package relating to the IRWD FACILITIES received from the successful bidder.

SECTION 4. DESIGN REVISIONS AND CHANGE ORDERS.

4.1 DISTRICT agrees to reimburse CITY for any change order(s) for revision(s) requested by DISTRICT or otherwise required to perform the IRWD FACILITIES Work. CITY shall promptly furnish DISTRICT with copies of any proposed change order(s) to such contract within five (5) working days of the initiation of the changed conditions to such contract, which change orders will be subject to DISTRICT approval if and to the extent the IRWD FACILITIES are affected.

4.2 DISTRICT shall promptly review proposed change order(s) and provide CITY with a response within five (5) working days or sooner of receiving proposed change order(s) information from CITY. DISTRICT agrees not to unreasonably cause delay(s) to the construction schedule of the Project in reviewing proposed change order(s) for the IRWD FACILITIES Work. Notwithstanding any other provision herein, any approval required to be given by the DISTRICT under this Section 4 will be deemed given if no response to the CITY's request for such approval is received by the CITY within eight (8) working days following the written request for such approval, unless the parties agree otherwise in a writing executed by both parties.

SECTION 5. REIMBURSEMENT.

5.1 <u>Costs</u>. CITY shall keep a separate accounting of all costs incurred by CITY in relation to the IRWD FACILITIES Work. DISTRICT shall reimburse CITY for the following costs (collectively, the "**Costs**"):

(1) <u>Actual Costs</u>: the actual costs of design, construction, permits, bonds, and legal fees (excluding the costs of preparation of this Agreement) incurred by CITY in connection with the design and construction of the IRWD FACILITIES;

<u>plus</u>

(2) <u>Administration Fee</u>: an administration fee which shall be equal to four percent (4%) of the actual cost of construction (costs paid directly to CITY's contractor for construction only, excluding any cost for design, surveying, geotechnical or other work) of the IRWD FACILITIES Work. This amount is deemed to cover all costs of project administration, including, but not limited to, accounting, inspection, surveying, compaction testing, geotechnical services and engineering.

5.2 <u>Invoicing & Payment</u>. Within sixty (60) days of DISTRICT's acceptance of the installed, relocated, or adjusted IRWD FACILITIES as provided in Section 8, a final accounting of the Costs shall be made by CITY and submitted to DISTRICT along with an invoice for the Costs and any supporting documentation necessary to show the amounts which represent Costs of performing the IRWD FACILITIES Work. Amounts paid pursuant to progress payment invoices shall be subject to adjustment in the final accounting. Within 30 days after the DISTRICT's receipt of the final accounting, DISTRICT agrees to pay to CITY the total amount of the Costs.

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

SECTION 7. INSPECTION. DISTRICT shall have sole and absolute discretion as to all aspects of design and construction of the IRWD FACILITIES, and DISTRICT shall be entitled to inspect the construction of IRWD FACILITIES Work as it deems necessary to assure compliance with the Plans and Specifications, including shop drawing review and material inspection thereof. DISTRICT shall have access to all phases of the Project work to be performed by CITY for the purpose of such inspection; provided, however, all questions regarding the work being performed will be directed to CITY's resident engineer. DISTRICT will promptly notify CITY of any portion of the Work on the IRWD FACILITIES which appears not to conform to the Plans and Specifications. The determination of DISTRICT as to conformity of the IRWD FACILITIES Work with the Plans and Specifications shall be made in DISTRICT's sole and absolute discretion. DISTRICT shall not unreasonably withhold its approval as to such conformity of the IRWD FACILITIES Work with the Plans and Specifications. CITY shall require its contractor to construct the IRWD FACILITIES so that the IRWD FACILITIES conform to the Plans and Specifications. CITY shall assume full responsibility for certifying or obtaining certification of the compaction of backfill material over the IRWD FACILITIES.

SECTION 8. ACCEPTANCE.

8.1 <u>Acceptance.</u> DISTRICT shall accept the IRWD FACILITIES, as installed, relocated, or adjusted when the IRWD FACILITIES Work has been completed by CITY in accordance with all requirements of the Plans and Specifications, including any change orders approved by DISTRICT as provided in Section 4.

8.2 <u>As-Builts</u>. At the time of completion and acceptance of the IRWD FACILITIES, CITY shall furnish DISTRICT with one copy of the contractor's redlined set of blueline "record" drawings (showing all revisions, manufacturer and type of valves, pipe and fittings as required by DISTRICT) and one copy of the compaction reports and certificate, survey notes, and cut sheets. <u>SECTION 9.</u> <u>OWNERSHIP</u>. Notwithstanding the fact that CITY shall accomplish the construction of the IRWD FACILITIES subject to reimbursement, the IRWD FACILITIES to be completed hereunder, together with the necessary franchises, licenses, easements, rights-of-way, and other privileges, shall at all times be subject to the applicable rates, rules and regulations of DISTRICT, as modified or amended from time to time. CITY hereby disclaims any interest in the IRWD FACILITIES and hereby transfers and assigns to DISTRICT any and all right, title, and interest it may have in the IRWD FACILITIES upon their completion and acceptance. DISTRICT shall own, operate and maintain the IRWD FACILITIES following acceptance thereof.

SECTION 10. GUARANTEES. CITY will, pursuant to the requirement(s) of the Plans and Specifications, cause its contractor(s) for the IRWD FACILITIES to guarantee the IRWD FACILITIES against defects in workmanship and materials for a period of one (1) year from the date of acceptance by CITY, which acceptance shall be given only after acceptance by DISTRICT as provided in Section 8. It is further agreed that CITY shall cause the IRWD FACILITIES to be brought or restored to full compliance with the requirements of the Plans and Specifications, including any test requirements, for any portions of the IRWD FACILITIES which during said one (1) year period are found not to be in conformance with the provisions of the Plans and Specifications. This guarantee is in addition to any and all other warranties, express or implied, from CITY's contractors or material manufacturers, with respect to the IRWD FACILITIES. The guarantee and obligations under this section shall in no way be relieved by DISTRICT's inspection and/or acceptance of the IRWD FACILITIES. This section sets forth the entire guarantee and warranty of CITY with respect to the IRWD FACILITIES Work. The express or implied warranties of other persons with respect to IRWD FACILITIES shall in no way be limited by the guarantee and warranty of CITY contained in this section. If requested by DISTRICT, CITY agrees to assign to DISTRICT the contractor's guarantee and/or any other guarantees or warranties relating to the IRWD FACILITIES Work.

SECTION 11. INDEMNIFICATION.

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

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

any negligence of CITY, its officers, agents, employees or engineers, or by any act or omission for which CITY, its officers, agents, employees or engineers are liable without fault.

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

SECTION 13. TERMINATION.

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

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

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

DISTRICT:	Irvine Ranch Water District 15600 Sand Canyon Avenue P.O. Box 57000 Irvine, CA 92619-7000 Attn: General Manager
CITY:	City of Irvine 6427 Oak Canyon, Bldg. 1 Irvine, CA 92618

Attn: Allison Tran, Associate Engineer

SECTION 15. SUCCESSORS AND ASSIGNS; INTEGRATION; AMENDMENT. This Agreement shall be binding upon and inure to the benefit of the successor and assigns of CITY and DISTRICT. This Agreement constitutes the entire Agreement between CITY and DISTRICT and supersedes all prior understandings and agreements between the parties with respect to the subjects hereof. This Agreement may be modified only in writing signed by both parties hereto.

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

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

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

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

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

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

IRVINE RANCH WATER DISTRICT

By_____ Paul Cook, General Manager

ATTEST:

By______Secretary/Assistant Secretary

APPROVED AS TO FORM:

By_____ Legal Counsel, IRWD

CITY OF IRVINE

A Municipal Corporation

By_____ Marianna Marysheva Interim City Manager of the City of Irvine

By_____ Mark A. Steuer Director of Public Works and Transportation

ATTEST:

By_____ Molly M. Perry City Clerk of the City of Irvine

APPROVED AS TO FORM:

By_

Robert Owen, RUTAN & TUCKER, LLP City Attorney of the City of Irvine

Dated

Dated

Dated _____

Dated _____

Dated _____

Dated _____

Dated

September 15, 2020 Prepared by: H. Cho / M. Cortez Submitted by: K. Burton Approved by: Paul A. Cook

ENGINEERING AND OPERATIONS COMMITTEE

SAN JOAQUIN RESERVOIR FILTRATION PROJECT VARIANCE NO. 3

SUMMARY:

The San Joaquin Reservoir Filtration Project will install a filtration system and disinfection improvements at the reservoir to mitigate algae and debris entering the recycled water system. During final design, additional design tasks were identified that will be required to complete project design. Staff recommends that the Board authorize the General Manager to execute Variance No. 3 in the amount of \$128,503 with Carollo Engineers for the San Joaquin Reservoir Filtration Project.

BACKGROUND:

In February 2019, staff retained Carollo Engineers to design filtration and disinfection improvements at San Joaquin Reservoir to mitigate against algae and debris entering the Zone B system. Currently, there is no filtration system for water drafting out of the reservoir into the system, and recycled water users in the area have reported clogged irrigation equipment and filters on the customer side of the service meter and increased maintenance costs. A site plan is attached as Exhibit "A".

Design Variance No. 3:

Design Variance No. 3 includes the following additional work items that were identified during the design, and were not included in the original scope of work:

- Coordination with Amiad, the disc filter supplier, to provide control panels that will use IRWD standard parts and that will provide information and control through the IRWD SCADA system. Due to the COVID-19 health emergency, this process has been slow as Amiad and its suppliers have not been available to respond in a timely manner.
- Design of a new canopy and sunscreen structure around the improved sodium hypochlorite tanks at the existing control building.
- Updating the geotechnical report for the site. The project was originally scoped to use the 2003 Lowry & Associates geotechnical report for the site since the project area is the same. During final design, additional geotechnical information is required for meeting current seismic and building codes.
- Changing the pump design criteria for the new pumps that will be installed to pump water out of San Joaquin Reservoir through the new disc filters into Zone B. The project was originally scoped to pump water out of the reservoir to the same Hydraulic Grade Line (HGL) of 450 feet as the existing San Joaquin Reservoir pump station. Operations asked that the new pump station meet the Zone B HGL of 460 feet to allow water to be pumped to Zone B on the other side of the current Zone B split. Additionally, a pump control

Engineering and Operations Committee: San Joaquin Reservoir Filtration Project Variance No. 3 September 15, 2020 Page 2

valve was added to provide backpressure during pump operations when the reservoir level is between 435 feet and 470 feet.

• Additional electrical and instrumentation work updating the filter backwash pump controller, modifying the standard for variable frequency drives, modifying the size of the electrical room in the existing control building, and updating filter conduit routing. Additionally, staff requested additional work on the vertical turbine pump controls.

The total cost of Variance No. 3 is \$128,503 and is shown in Exhibit "B". Staff negotiated the final variance amount with Carollo Engineers and believes the variance to be fair for the additional requested work. The Variance Log is shown in Exhibit "C" and the cumulative variance total requires Board approval. Final design will be completed in January 2021, and construction completion is scheduled for May 2022.

FISCAL IMPACTS:

San Joaquin Reservoir Filtration Project, Project 10379, is included in the FY 2020-21 Capital Budget. The existing budget is sufficient to fund the additional engineering services.

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, IRWD is preparing a Mitigated Negative Declaration for the project.

RECOMMENDATION:

That the Board authorize the General Manager to execute Variance No. 3 in the amount of \$128,503 with Carollo Engineers for the San Joaquin Reservoir Filtration Project, Project 10379.

LIST OF EXHIBITS:

Exhibit "A" – Site Plan Exhibit "B" – Carollo Engineers' Variance No. 3 Exhibit "C" – Variance Log





EXHIBIT "B"



3150 Bristol Street, Suite 500, Costa Mesa, California 92626 P. 714.593.5100 F. 714.593.5101

September 2, 2020

Mr. Harry Cho, P.E. Senior Engineer Irvine Ranch Water District 3512 Michelson Drive Irvine Ranch, CA 92612

Subject: San Joaquin Reservoir Filtration Project Variance 3 Request

Dear Mr. Cho:

Discussions and decisions following the 60% submittal of the San Joaquin Reservoir (SJR) Filtration Project have led to changes from the original basis of design. These changes include modifications to the Reservoir Booster Pump Station design criteria, to the sodium hypochlorite facility (new tank pads, canopy, sunscreen, and revised pump type), to the Control Building electrical room, to the control panels and schematics, coordination with Amiad (filter supplier), and an updated geotechnical report. This has resulted in efforts outside the original scope of work and planned budget, described in the attached table (Exhibit A).

Our estimated effort to complete the additional scope is also included in the table attached to this letter as Exhibit A. We have also included IRWD's Professional Services Variance as Exhibit C. We appreciate your consideration in approving the requested variance issued.

Sincerely,

CAROLLO ENGINEERS, INC.

Jim Meyerhofer, PE

Enclosures: Project Changes and Impacts (Exhibit A) Professional Services Variance (Exhibit C)



EXHIBIT A

Project Changes and Impacts SJR Filtration Project

Item	Date	Description	Forum	Impact	Estimated Impact (\$)
1	1/23/2020	Coordinate with Amiad to get a proposal and negotiate	Email	This is being tracked separetly on	\$ 7,525
				monthly invoices.	۶ <i>۲,</i> 325
2	5/5/2020	Replace sodium hypochlorite chemical metering pumps,	Email	Additional design effort for structural,	
		exposed piping, bulk storage canopy and tank pads. Add		architectural, mechanical, EI&C.	\$ 45,000
		sunscreen.			
3	5/27/2020	Resubmit 60% drawing set with sodium hypochlorite	Email	Additional effort to recompile	ć 1.520
		facility improvements.		deliverable	Ş 1,520
4	6/30/2020	Sole source Milton Roy diaphragm metering pumps.	60% Deliverable	Specifications and drawings done for	
		Provide chemical metering pump VFDs within the MCC.	Meeting	Blue-White peristaltic pump per	
				previous direction provided 5/12/20.	\$ 2,000
				Revise specifications and drawings for	
				diaphragm metering pumps.	
5	6/30/2020	Reduce Control Building Electrical Room Size and new	Various Mtgs	Revise 60% structural/demo, electrical,	
		MCC-100 feeder routing		and HVAC drawings based on reduced	\$ 3,458
				room size.	
6	7/8/2020	Relocate the 6"PVC Exhaust south of the SCE Service	60% EIC	Based on revised SCE Service Entrance	
		Entrance pad and the 6" PVC Intake and 4" Air	Deliverable	location, demo and rerouting is requried	Å
		Rel/Vacuum Valve north of the SCE Service Entrance pad.	Meeting	for existing facilities that were originally	Ş 965
				not impacted by design.	
7	7/8/2020	Remove control panels for the Reservoir Booster Pumps,	60% EIC	CAD rework and lost time for P&IDs and	
		Filter Backwash Supply Pumps, and the Filter Backwash	Deliverable	elevations.	\$ 2,080
		Waste Pumps and only provide E-Stops	Meeting		
8	7/8/2020	Delete schematics for all pumps and utilize IRWD standard	60% EIC	Decipher Rockwell schematics and	
		arrangement schematics for pumps provided by One-	Deliverable	determine if the functionality is met.	\$ 11,175
		Source.	Meeting		
9	7/8/2020	Operate Filter Backwash Waste Pumps (large sump	60% EIC	Design panel and schematic and update	
		pumps) using SEL controller and locating starter in the	Deliverable	P&IDs.	\$ 5,002
		field	Meeting		J,092
		Currently controlled by PLC			

Page 1 of 2

EXHIBIT A

Project Changes and Impacts SJR Filtration Project

Item	Date	Description	Forum	Impact	Estimated Impact (\$)
10	7/8/2020	VFD ductwork and possible exhaust fan to the outside of	60% EIC	HVAC and EPIC [®] coordination on	
		the building.	Deliverable	ductwork. Coordination with Rockwell.	\$ 510
			Meeting		
11	7/8/2020	Update Filter conduit routing	60% EIC	Rework conduit routing throughout the	
			Deliverable	filter building	\$ 2,040
			Meeting		
12		Change Reservoir Booster Pump Design Criteria	Various Emails	Will need new pump selections and	
				control valve within vault in yard. New	
				valve will require modifications to	\$ 28,000
				electrical sheets, new P&ID, new	
				civil/mech	
					\$ 109,365

SUBCO	NSULTANT S	PECIFIC ITEMS		
S.1	4/28/20	Add air conditioning to expanded Control Building	Phone Call	
		Electrical Room. Remove wall louvers		\$3,800
S.2		Add Geotechnical Report		\$15,338
				\$19,138
			TOTAL	\$ 128,503

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IRVINE RANCH WATER DISTRICT PROFESSIONAL SERVICES VARIANCE

Project Title: San Joaquin Reservoir Filtration	
Project No.: 10379	Date: September 2, 2020
Purchase Order No.: 611964	Variance No.: 3

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

Description of Variance (attach any back-up material):

Discussions and decisions following the 60% submittal of the San Joaquin Reservoir (SJR) Filtration Project have led to changes from the original basis of design. These changes include modifications to the Reservoir Booster Pump Station design criteria, to the sodium hypochlorite facility (new tank pads, canopy, sunscreen, and revised pump type), to the Control Building electrical room, to the control panels and schematics, coordination with Amiad (filter supplier), and an updated geotechnical report. This has resulted in efforts outside the original scope of work and planned budget, described in the attached table.

Engineering & Management Cost Impact:

Classification	Manhours	Billing Rate	Labor \$	Direct Costs	Subcon. \$	Total \$
Final Design	560	Varies	\$109,365	-	\$19,138	\$128,503
					Total \$ =	\$128,503

Schedule Impact:

Task	Task	Original	Schedule	New
No.	Description	Schedule	Variance	Schedule
4	Final Design	March 2020	+10 months	Jan 2021
		(variance 2)		

Required Approval Determination:

Total Original Contract	\$ <u>634,888</u>	[] Director: Cumulative total of Variances less than or equal to \$75,000.
Previous Variances \$431,573 This Variance \$128,503		[] Executive Director: Cumulative total of Variances less than or equal to \$125,000
Total Sum of Variances New Contract Amount	\$ <u>560,076</u> \$ <u>1,194,964</u>	[X]General Manager: Cumulative total of Variances less than or equal to \$200,000
Percentage of Total Variances to Original Contract	<u>88 %</u>	[] Board: Cumulative total of Variances greater than \$200,000.
ENGINEER/CONSULTANT: <u>Carollo</u> Company Name	Engineers, Inc.	IRVINE RANCH WATER DISTRICT

1 2	9/2/20	HC Kevin L Burton	9/3/2020
Project Engineer/Manager	Date	Department Director	Date
James A. Meyuhofer	9/2/20		
Engineer's/Consultant's Management	Date	General Manager/Board	Date

IRVINE RANCH WATER DISTRICT

PROFESSIONAL SERVICES VARIANCE REGISTER

Project Title: San Joaquin Reservoir Filtration Project						
Project No.:	10379	Project	Manager: Jim	Meyerhofer		
Variance	e		Dat	es	Variance	
No.		Description	Initiated	Approved	Amount	
1		Pilot study	10/2/19		\$84,444	
2		Additional prelim. and final design	10/4/19		\$347,129	

EXHIBIT "C" San Joaquin Reservoir Filtration Project 10379 Design Variance Summary

Design Engineer: Tetra Tech

Original Contract Amount:						\$634,888.00	
Variance	Description	Variance Amount	Previous Change Orders	Cumulative Total of Change Orders	% of Original Contract Amount	Revised Contract Amount	
1	Approved by Exe. Director of Engineering and Water Quality Approved on October 10, 2019 Disc filter pilot study	\$84,444.00	\$0.00	\$84,444.00	13.30%	\$719,332.00	
2	Approved by Board of Directors Approved on November 25, 2019 Added filter building rather than canopy and 70 micron disc filter instead of 10 micron filters to preliminary design and final design scope of work	\$347,129.00	\$84,444.00	\$431,573.00	67.98%	\$1,066,461.00	
3	Current Additional final design items: Amiad coordination, pump design, sodium hypochlorite system items, update geotech report, electrical and instrumentation items	\$128,503.00	\$431,573.00	\$560,076.00	88.22%	\$1,194,964.00	