

AGENDA
 IRVINE RANCH WATER DISTRICT
 ENGINEERING AND OPERATIONS COMMITTEE MEETING
 TUESDAY, JANUARY 18, 2022

Due to COVID-19, this meeting will be conducted as teleconference pursuant to the provisions of Government Code Section 54953(e).

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.webex.com/irwd/j.php?MTID=mae108464a00e0a54d2ee9a6e2d3834a2>
 Meeting Number (Access Code): 2489 272 8733
 Meeting Password: pD7EpvemR43

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.

ATTENDANCE Committee Chair: Doug Reinhart _____
 Committee Member: Karen McLaughlin _____

ALSO PRESENT

Paul Cook	_____	Kevin Burton	_____	Wendy Chambers	_____
Jose Zepeda	_____	Paul Weghorst	_____	Cheryl Clary	_____
Rich Mori	_____	Eric Akiyoshi	_____	Richard Mykitta	_____
Jacob Moeder	_____	Jim Colston	_____	Ken Pfister	_____
Lars Oldewage	_____	Malcolm Cortez	_____	Scott Toland	_____
Belisario Rios	_____	Bruce Newell	_____	Mitch Robinson	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

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. Public comments 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 9:00 a.m. on Tuesday, January 18, 2022.

ALL VOTES SHALL BE TAKEN BY A ROLL CALL VOTE.

REMOTE MEETING DETERMINATION

1. AB 361 FINDING FOR A REMOTE MEETING

Recommendation: That the Committee find that it is holding the meeting pursuant to Government Code Section 54954(e)(1)(A) during the proclaimed COVID-19 state of emergency and that state and/or local officials have recommended measures to promote social distancing.

COMMUNICATIONS

2. Notes: Burton
3. Public Comments
4. 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.
5. Determine which items may be approved without discussion.

INFORMATION

6. UPDATE ON PFAS IN THE IRWD SERVICE AREA – COLSTON / BURTON

Recommendation: Receive and file.

ACTION

7. MICHELSON WATER RECYCLING PLANT TERTIARY FILTER IMPROVEMENTS VARIANCE – BURK / CORTEZ / BURTON

Recommendation: That the Board authorize the General Manager to execute Variance No. 3 in the amount of \$81,430 with HDR Engineering, Inc. for additional engineering design services to rehabilitate the backwash supply tank for the MWRP Tertiary Filter Improvements, Project 07892.

OTHER BUSINESS

8. Directors' Comments
9. 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

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January 18, 2022
Prepared by: J. Colston
Submitted by: K. Burton
Approved by: Paul A. Cook



ENGINEERING AND OPERATIONS COMMITTEE

UPDATE ON PFAS IN THE IRWD SERVICE AREA

SUMMARY:

At the Committee meeting, staff will provide a presentation on Per- and Poly-Fluoroalkyl substances (PFAS) in IRWD's service area. The update will include:

- Evolution of PFAS Regulations on a state and federal level;
- Environmental Protection Agency's Strategic Roadmap for PFAS Action 2021-2024;
- IRWD potable wells;
- IRWD non-potable wells and Shallow Groundwater Unit (SGU);
- MWRP/LAWRP: PFAS in Recycled Water and Biosolids; and
- IRWD Treatment systems: OPA-1, ET-1, and SGU.

BACKGROUND:

PFAS compounds have been found in local groundwaters, and they are also found in sewer discharges from residential, commercial and industrial sources. The California State Water Resources Control Board has initiated a statewide investigation and phased sampling of potential industrial and municipal sources of PFAS threatening groundwater supplies. IRWD and other water and sewer agencies around the state have been issued orders from the State Board to conduct monitoring of wells and wastewater treatment plants for PFAS. A draft of staff's presentation, provided as Exhibit "A", will be used to provide an update on PFAS in the IRWD service area, including wells and the water recycling treatment plants.

FISCAL IMPACTS:

Not applicable.

ENVIRONMENTAL COMPLIANCE:

Not Applicable.

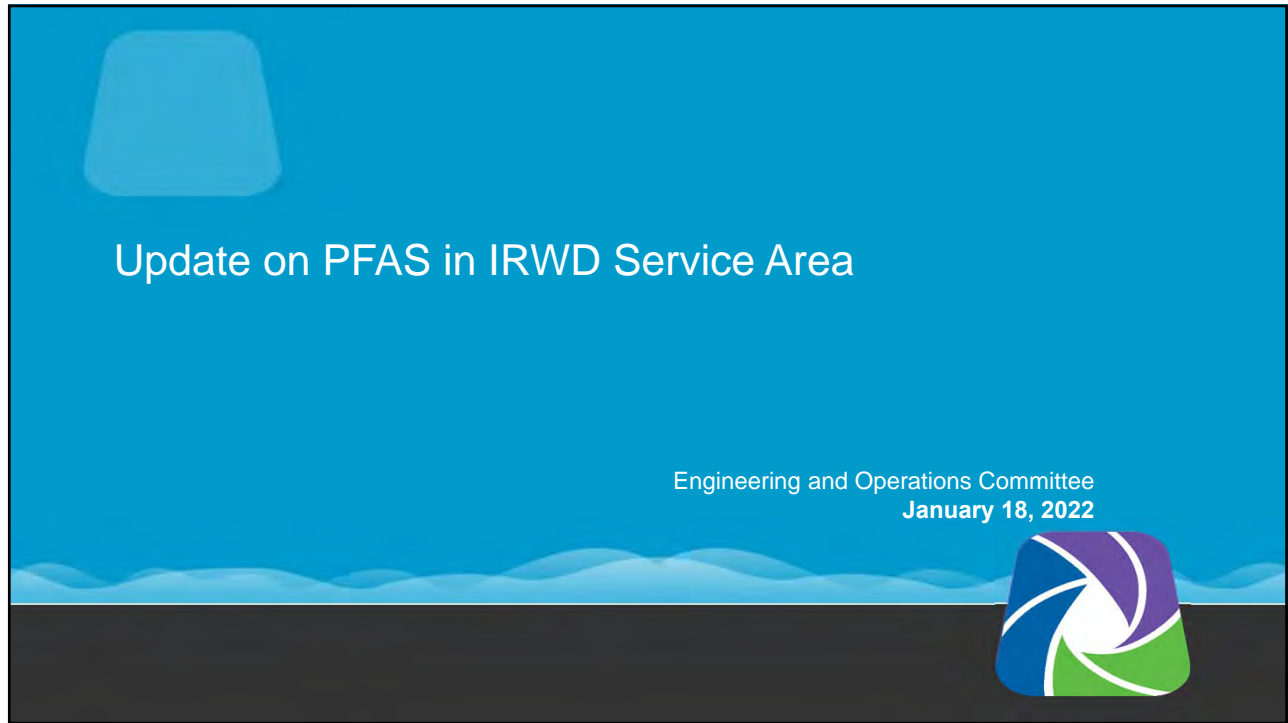
RECOMMENDATION:

Receive and file.

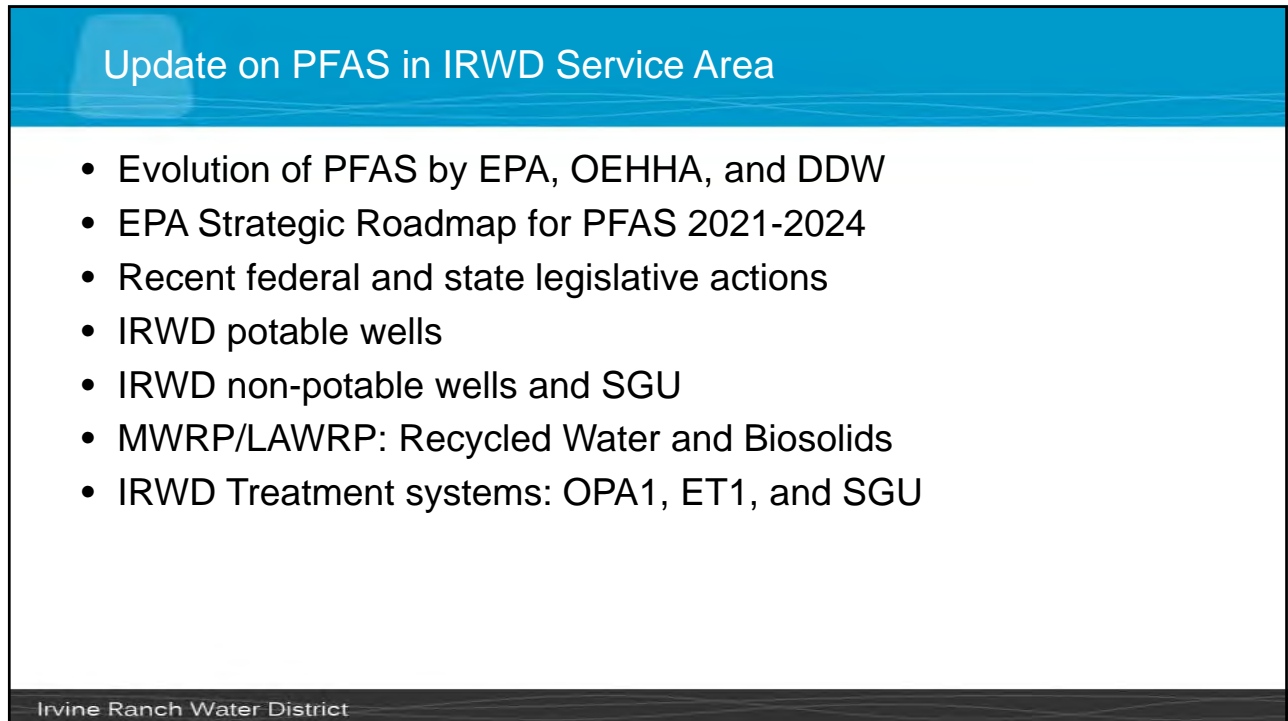
LIST OF EXHIBITS:

Exhibit "A" – PFAS Draft Presentation

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Definitions

- PFAS: per- and poly-fluoroalkyl substances. Found in many products that resist heat, oil, stains, grease and water
- PFOA: perfluorooctanoic acid (C8)
- PFOS: perfluorooctane sulfonate
- AFFF: aqueous film forming foam
- MCL: Maximum Contaminant Level
- PHG: Public Health Goal
- RL: Response Level
- NL: Notification Level

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Regulatory Thresholds

- EPA Health Advisory 70 ppt for PFOA+PFOS
- DoD Screening Levels: PFOA or PFOS 40, PFBS 40,000
- SWRCB RLs: PFOA 10, PFOS 40, PFBS 5,000
- SWRCB NLs: PFOA 5.1, PFOS 6.5, PFBS 500
- OEHHA Draft PHGs: PFOA 0.007, PFOS 1
- Future RLs and NLs by OEHHA: PFHxS, PFHxA, PFHpA, PFNA, PFDA, and ADONA
- MCLs and California MCLs (2023-2024)

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EPA Strategic Roadmap for PFAS 2021-2024

- Goals: Research on exposure, toxicities, and interventions; Restrictions on PFAS entering the environment; Expand and accelerate cleanup of PFAS
- Actions:
 - Consider listing of PFOA/PFOS (CERCLA-Superfund)
 - Establish MCLs for PFOA/PFOS by Fall 2023 as well as public health advisories for GenX and PFBS
 - UCMR 5: Monitoring for 29 PFAS compounds (2023-2025)
 - Evaluate mitigating options for Air Emissions as hazardous air pollutants under the Clean Air Act
 - Limit PFAS discharges via NPDES permits and Pretreatment Limits
 - Improve and add analytical methods for PFAS

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Recent Legislative Action of Interest

- Federal Infrastructure Law includes \$600 million to California for wastewater and drinking water through the State Revolving Loan Fund for cleanup of PFAS and other emerging contaminants
- California Safer Food Packaging and Cookware Act prohibits the sale and distribution of paper and other plant-based packaging items containing PFAS as of January 2023

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IRWD PFAS Well Monitoring

Well # (NL/RL)	PFOA (5.1/10)	PFOS (6.5/40)	PFBS (500/5,000)	PFHxS ² (TBD)
OPA 1	14.8	22.8	9.2	13.4
3	3.1	ND	ND	ND
21	4.5	3.1	3.1	4.8
110	3.7	ND	ND	ND
Wells 21/22 WTP; DRWF Well Composite; 2, 5, 6, 22, 76, 77, 107, 115	ND	ND	ND	ND
ET-1/ET-2/78	207/12/18	40/ND/ND	7 (ET-1)	--
SGU Discharge	240	395	94	--

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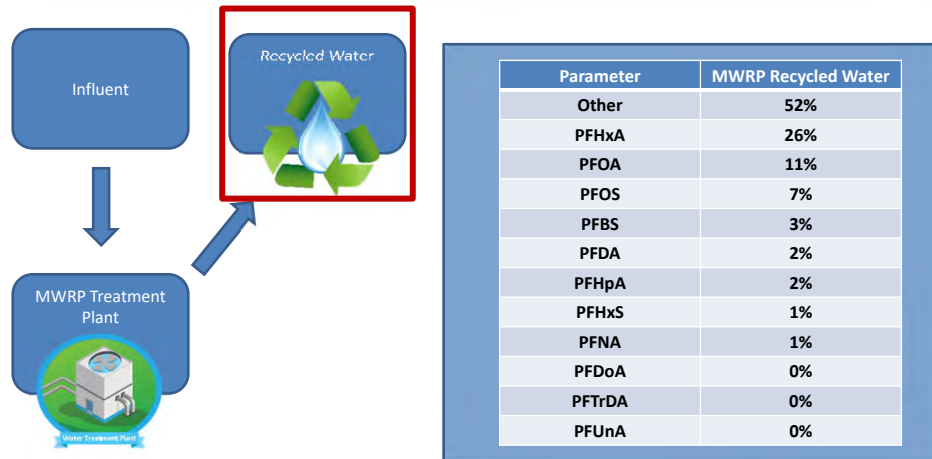
PFAS at MWRP and LAWRP

- MWRP Average Recycled Water:
 - PFOA: 15 ppt & PFOS: 2.5 ppt
- LAWRP Average Recycled Water:
 - PFOA: 11.8 ppt & PFOS: 4.8 ppt
- Biosolids (MWRP)
 - Cake: PFOA 2 ng/g & PFOS 7 ng/g
 - Pellets: PFOA 1 ng/g & PFOS 4 ng/g

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MWRP Treatment Schematics and Recycled Water Annual Average PFAS Percent Composition Results



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Conclusions Regarding Recycling Plants

- Visual Interpretation
 - Some higher concentrations after going through the treatment process
 - LAWRP and MWRP see different PFAS compounds and concentrations
 - The other remaining chemicals make up close to 50% of the annual average composition at MWRP sampling points; LAWRP varies composition across sampling points
 - PFAS levels in biosolids are low relative to thresholds

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IRWD PFAS Treatment Systems & Next Steps

- IRWD PFAS Treatment Systems: OPA1, ET1, and SGU
- Key planned SWRCB actions include regulating more PFAS compounds and developing draft California MCLs
- Engage on EPA Roadmap, specifically the CERCLA Hazardous Substance determination and the development of pretreatment limits
- Support OCWD cost recovery for PFAS treatment systems via government and litigation

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IRWD Contact Information

Jim Colston
Director of Water Quality & Regulatory Compliance
(949) 453-5620
colston@irwd.com




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January 18, 2022

Prepared by: R. Burk / M. Cortez

Submitted by: K. Burton

Approved by: Paul A. Cook 

ENGINEERING AND OPERATIONS COMMITTEE

MICHELSON WATER RECYCLING PLANT TERTIARY FILTER IMPROVEMENTS VARIANCE

SUMMARY:

The Michelson Water Recycling Plant (MWRP) Tertiary Filter Improvements project will rehabilitate the tertiary filters to improve performance and reliability by replacing deteriorating and obsolete equipment and infrastructure at the tertiary filter tanks area, air scour blower area, and the backwash supply pumps area. Staff recommends the Board authorize the General Manager to execute Variance No. 3 in the amount of \$81,430 with HDR Engineering, Inc. for additional engineering design services to rehabilitate the backwash supply tank for the MWRP Tertiary Filter Improvements.

BACKGROUND:

In April 2021, IRWD retained HDR Engineering to design improvements to replace deteriorating and obsolete equipment and infrastructure at the tertiary filter tanks area, air scour blower area, and the backwash supply pumps area, including valves, slide gates, instrumentation, above-ground piping, air compressor, air scour blower, backwash supply pumps, a programmable logic controller (PLC), electrical equipment, and conduits. The scope also includes detailed construction sequencing, temporary backwash supply pumping, and temporary instrumentation and control systems to allow the work to proceed while maintaining operation of the tertiary filters.

The backwash supply tank was originally constructed in 1978 and has been observed to have exposed aggregate throughout the structure. The original design scope of work included engineering services for basic structural repairs to the exposed aggregate at the backwash supply tank. In August 2021 HDR conducted a comprehensive condition assessment of the concrete structure for the backwash supply tank and spent backwash tank to confirm the degree of concrete repair needed prior to construction. The assessment included visual inspection, photo documentation, in-situ pH testing, corrosion-potential mapping of rebar, and laboratory analyses of concrete cores for pH and chloride values.

The condition assessment found that the backwash supply tank structure has compromised concrete to five inches of wall depth at all four walls and the floor of the structure. HDR recommends that the rehabilitation process should include removing and replacing five inches of concrete below the waterline and one inch of concrete above the waterline to return the structure to an acceptable condition. Staff met with HDR and a contractor that specializes in the rehabilitation of concrete structures in December 2021. The concrete rehabilitation as recommended is feasible and estimated to take approximately three months to complete. The backwash supply pumps will be replaced as part of the Tertiary Filter Improvements project and will require the backwash supply tank to be taken offline with temporary bypass pumping.

Therefore, temporary bypass pumping was already included in the MWRP Tertiary Filter Improvement project's design scope of work.

As part of its review, HDR also assessed the condition of the spent backwash tanks. HDR recommends rehabilitating the concrete structure at the spent backwash tanks. The shutdown and bypass pumping required for the spent backwash tanks would be different than the current project's planned shutdowns, so the rehabilitation of the spent backwash tanks will be addressed under a separate project.

Variance No. 3:

Variance No. 3 includes additional design work due to removing five inches of wall depth at all four walls and the floor of the backwash supply tank structure. The original design scope of work included engineering services for basic structural repairs to exposed aggregate at the backwash supply tank. Removing five inches of wall depth will require additional structural analysis and design services to provide minimum requirements for temporary shoring of the walls, materials to be used, and monitoring required during construction. The total cost of Variance No. 3 is \$81,430. Staff reviewed the scope of work and fee included in the proposal and found the costs to be fair and reasonable. The sum of the project's previous two variances is \$152,940. The cumulative total of the previous variances and Variance No. 3 is \$234,370. Pursuant to the District's procurement policy, variances with a cumulative total greater than \$200,000 require approval from the Board of Directors. Variance No. 3 is shown in Exhibit "B".

FISCAL IMPACTS:

MWRP Tertiary Filter Improvements, Project 07892, is included in the FY 2021-22 Capital Budget. The existing budget is sufficient to fund the additional engineering services.

ENVIRONMENTAL COMPLIANCE:

This project is exempt from the California Environmental Quality Act as authorized under the California Code of Regulations, Title 14, Chapter 3, Section 15301 which provides exemption for minor alterations of existing public or private structures, facilities, mechanical equipment, or topographical features, involving negligible or no expansion of use beyond that existing at the time of the lead agency's determination. A Notice of Exemption for the project was filed with the Orange County Clerk-Recorder on April 2, 2021.

RECOMMENDATION:

That the Board authorize the General Manager to execute Variance No. 3 in the amount of \$81,430 with HDR Engineering, Inc. for additional engineering design services to rehabilitate the backwash supply tank for the MWRP Tertiary Filter Improvements, Project 07892.

LIST OF EXHIBITS:

Exhibit "A" – Site Plan

Exhibit "B" – HDR's Variance No. 3

EXHIBIT "A"
PROJECT SITE PLAN
MICHELSON WATER RECYCLING PLANT TERTIARY FILTER IMPROVEMENTS



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EXHIBIT "B"
IRVINE RANCH WATER DISTRICT
PROFESSIONAL SERVICES VARIANCE

Project Title: Michelson Water Recycling Plant Tertiary Filter Improvements

Project No.: 07892 Date: 01/04/22

Purchase Order No.: 623550 Variance No.: 3

Originator: IRWD ENGINEER/CONSULTANT Other (Explain)_____

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

Interim and Final design efforts for concrete rehabilitation for the Backwash Supply Tank.

Engineering & Management Cost Impact:

Classification	Manhours	Billing Rate	Labor \$	Direct Costs	Subcon. \$	Total \$
Project Manager	24	\$300	\$7,200	\$0	\$0	\$7,200
Quality Manager/Review	36	\$300	\$10,800	\$0	\$0	\$10,800
Technical Lead	28	\$300	\$8,400	\$0	\$0	\$8,400
Senior Engineer	72	\$240	\$17,280	\$0	\$0	\$17,280
Project Engineer	64	\$150	\$9,600	\$0	\$0	\$9,600
Staff Engineer	100	\$120	\$12,000	\$0	\$0	\$12,000
BIM Manager	10	\$185	\$1,850	\$0	\$0	\$1,850
BIM Technician	100	\$125	\$12,500	\$0	\$0	\$12,500
Document Specialist	12	\$150	\$1,800	\$0	\$0	\$1,800
					Total \$ =	\$81,430

Schedule Impact:


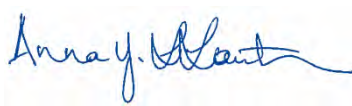
Task No.	Task Description	Original Schedule	Schedule Variance	New Schedule
3	60% Design Submittal	12/14/21	7 days	12/21/21
3	90% Design Submittal	01/25/22	21 days	02/15/22
3	100% Design Submittal	02/08/22	56 days	04/05/22
3	Final Design Submittal	02/22/22	52 days	04/15/22

Required Approval Determination:

Total Original Contract	\$ <u>735,163.00</u>	<input type="checkbox"/> Director: Cumulative total of Variances less than or equal to \$75,000.
Previous Variances	\$ <u>152,940.00</u>	<input type="checkbox"/> Executive Director: Cumulative total of Variances less than or equal to \$125,000.
This Variance	\$ <u>81,430.00</u>	
Total Sum of Variances	\$ <u>234,370.00</u>	<input type="checkbox"/> General Manager: Cumulative total of Variances less than or equal to \$200,000.
New Contract Amount	\$ <u>969,533.00</u>	
Percentage of Total Variances to Original Contract	<u>31.9%</u>	<input checked="" type="checkbox"/> Board: Cumulative total of Variances greater than \$200,000.

ENGINEER/CONSULTANT: HDR Engineering, Inc.
Company Name

IRVINE RANCH WATER DISTRICT

	<u>01/05/22</u>	<i>mac</i> <i>KB</i> <u>Kevin L Burton</u>	<u>1/10/22</u>
Project Engineer/Manager	Date	Department Director	Date
	<u>01/05/2022</u>		
Engineer's/Consultant's Management	Date	General Manager/Board	Date



January 4, 2022

Ms. Rachael Burk
Engineer
Irvine Ranch Water District
3512 Michelson Drive
Irvine, California 92612

Subject: Request for Variance No. 3 to the Michelson Water Recycling Plant Tertiary Filter Improvements Project – Backwash Supply Tank Concrete Rehabilitation

Dear Ms. Burk:

The following outlines our variance request to perform additional design work related to concrete rehabilitation for the Backwash Supply Tank.

The following describes the new scope of work.

TASK 1 – Project Management

Additional Project Management, Administration, and Coordination will be required for additional scope. The increased level of PM effort is estimated to be proportional to the increase in scope.

TASK 3 – Additional Final Design Efforts

HDR will prepare construction documents consisting of drawings and technical specifications to be included with the bid documents for the rest of the Improvement Project.

Structural design:

- Evaluate and determine preferred approach and methodology for safe removal of existing concrete
- Perform finite element analysis of the weakened condition and test for current and construction states
- Develop repair methodology and corresponding design details
- Provide minimum structural design criteria and associated requirements for the temporary shoring required during construction.
- Establish monitoring requirements to be followed during construction with a series of remediation requirements to be implemented based on issues encountered, such as water weeping from the common wall with the Chlorine Contact Basin.

Assumptions

- *Drawings will be developed using record drawings and field photographs as background*
- *Specifications will be limited to those needed to support the rehabilitation work elements; all other specifications, including the front-end documents, will be prepared by others*

Ms. Rachael Burk
January 4, 2022

- *The construction documents will provide the minimum structural requirements that the contractor will need to meet and will require that contractor develop final engineered shoring and scaffolding plans for the work.*
- *A geotechnical exploration will not be conducted for this specific structure. Conservative lateral earth and hydrostatic groundwater pressures will be utilized for analyzing the existing structure and in the development of the temporary shoring structural design criteria. Previous/historical geotechnical reports prepared for other structures in the surrounding areas adjacent to the existing structure will be furnished to HDR by IRWD for use in developing these conservative lateral earth and hydrostatic groundwater pressure values.*

Deliverables

- *Interim drawing and specification set*
- *Final design documents*

SCHEDULE

HDR proposes the following schedule for delivery of the remainder of the project:

Milestone	Date
Notice to Proceed	January 25, 2022
Interim Design Documents	March 4, 2022
100% Design Submittal	April 5, 2022
Final Design Submittal & Plan Signing	April 15, 2022

VARIANCE REQUEST AMOUNT

Our Variance request is in the amount of \$81,430 and summarized in the enclosed fee estimate.

Thank you for the opportunity to provide our engineering services to IRWD. If you have any questions, contact Joe Nye at (213) 218-0805 or at joseph.nye@hdrinc.com.

Sincerely,
HDR Engineering, Inc.

Anna Lantin, P.E.
Vice President

Joe Nye, P.E., PMP
Water Group Area Manager

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