AGENDA
IRVINE RANCH WATER DISTRICT
ENGINEERING AND OPERATIONS COMMITTEE
TUESDAY, JUNE 15, 2021

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.webex.com/irwd/j.php?MTID=m5814487175466132ebd471d17ced4716
Meeting Number (Access Code): 146 441 0356
Meeting Password: SNe7AqEXa68

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.

ATTENDANCE Committee Chair: John Withers _____
Committee Member: Karen McLaughlin _____

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	_____	Jacob Moeder	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

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 9:00 a.m. on Tuesday, June 15, 2021.

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.

INFORMATION

4. RESEARCH BUSINESS PLAN UPDATE – COLSTON / BURTON

   Recommendation: Receive and file.

5. OPERATIONS CENTER COMPRESSED NATURAL GAS, DIESEL, AND GASOLINE FUELING FACILITY PROJECT UPDATE – BURK / CORTEZ / BURTON

   Recommendation: Receive and file.

OTHER BUSINESS

6. Directors' Comments

7. Adjourn

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

June 15, 2021
Prepared by: J. Colston
Submitted by: J. Colston / K. Burton
Approved by: Paul A. Cook

ENGINEERING AND OPERATIONS COMMITTEE

RESEARCH BUSINESS PLAN UPDATE

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. IRWD actively participates in the Technology Approval Group (TAG) sponsored by Isle Utilities. The TAG hosts numerous developing technology providers in order to match interested agencies with their technologies. IRWD has included three recent technologies under consideration. A status update on the current research projects is provided as Exhibit "A".

FISCAL IMPACTS:

Not applicable.

ENVIRONMENTAL COMPLIANCE:

Not applicable.

RECOMMENDATION:

Receive and file.

LIST OF EXHIBITS:

Exhibit "A" – Research Projects Summary Table

Note: This page is intentionally left blank.

Exhibit "A"

Research Projects Summary Table

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 Framework for Water Infrastructure Resilience (WRF 5014)	This project will help water utilities better understand the relationships between various "enterprise risk management" planning 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	Jun-21	Staff received the final report in late May and does not anticipate any substantive changes. The team also generated an Excel based model that assists utilities in navigating the various reliability/resiliance standards (e.g. AWWA, ISO, ANSI, NIST, EPA, and OFWAT). Staff anticipates this being the last update for this project.
2	UCI Industry-University Research Center-Perfluorinated Compound Sources and Loading at Wastewater Treatment Plants-A Sewershed-Scale Analysis	This project will develop and implement methodology for sewershed analysis to identify 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, 2020. UCI is in the process of collecting and analyzing influent samples from OC San to refine analysis methods. Residential sampling is delayed because of the pandemic.
3	Sampling Design Study for SARS-Cov-2 in Wastewater	Drs. Rosso and Jiang from UCI 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 increases in cases of Covid-19 ahead of individual testing.	Colston	UCI with grant from the Water Research Foundation (WRF)		Provide access to IRWD sewer facilities for sampling.	Apr-20	TBD	UCI conducted a proof of concept with six MWRP influent samples for SARS-Cov-2. Based on this work, UCI has been provided a grant from WRF. The final application was submitted to WRF on September 15, 2020. Monitoring was completed in March 2021 at nine Southern California wastewater treatment plants including MWRP and LAWRP.
4	Restoration of Local Recharge Sources from Invasive Mussels	This is an independent study that supports a larger effort by the Metropolitan Water District (MWD) 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 minnow, trout and the water flea.	Colston	Trussel Technologies, Inc.	In situ	IRWD provides $26K funding and access to Irvine Lake.	Jul-20	Dec-21	Trussel has begun Task 1; however, insufficient mussels have been found in Irvine Lake. IRWD staff continues to take samples at Irvine Lake. The research continues at other local sites using MWD imported water. Three of five sites have completed testing.
5	Automated, AI Based CCTV Video Analysis for Pipeline Assessments	The Abyss Extract software utilizes machine learning and AI technologies to automate the analysis of CCTV video footage. CCTV videos of sewer pipes are collected and analysed using machine learning algorithms to identify anomalies. The goal is to decrease the time it takes to inspect, identify and recommend repairs for any defects.	Zepeda	Abyss Solutions	Testing and Optimization	Staff time for review of reports, sharing information, and compare results of software tool against current methods.	Apr-21	Aug-21	Technology will be reviewed by staff for possible implementation to optimize current work practices of inspecting sewer pipelines and identifying defects. A second round of CCTV data will be provided by Abyss Solutions. The first data set was not consistent with field conditions.

Updated: 6/8/2021

Research Projects Summary Table

No.	Project Title	Project Description	IRWD Contact	Organizations Involved	Type of Research	IRWD Participation Resource	Start Date	Projected Completion Date	Comments/Next Steps
6	Bio-electrochemical Sensor for Real-time Monitoring of Microbial Activity and organic carbon	The SENTRY system can be inserted at various locations at the treatment process (aerobic and anaerobic), providing real-time visualisation of microbial metabolic activity and correlations to bio-available carbon. The sensor provides real-time data for insight on the health of the treatment plant and organic load at key locations (influent, nutrient removal bioreactors, anaerobic digesters and effluent).	Zepeda	Island Water Technologies (IWT)	Treatment Process Optimization	Staff time for review of performance data.	Jun-20	Dec-21	A test unit will be installed at MWRP to collect data. IRWD staff will work with IWT to evaluate the collected data. The goal will be to use the data to optimize CAS, MBR, and digestion processes. No movement; IWT is working on a product delivery date.
7	Aerator for Efficient Odor and Corrosion Control in force mains and aeration in treatment	The Vortex Force™ is a relatively new product designed to solve odor and corrosion problems in municipal wastewater treatment application and collection systems.	Zepeda	IPEX	Odor and Corrosion Control	Staff time for testing of product and reviewing performance results.	Jun-20	Oct-21	Staff is working with the IPEX representative to find a suitable location for testing of the equipment. Project on hold due to IPEX to provide resources.

June 15, 2021
Prepared by: R. Burk / M. Cortez
Submitted by: K. Burton
Approved by: Paul A. Cook

ENGINEERING AND OPERATIONS COMMITTEE

OPERATIONS CENTER COMPRESSED NATURAL GAS, DIESEL, AND GASOLINE FUELING FACILITY PROJECT UPDATE

SUMMARY:

On January 25, 2021, the Board authorized the General Manager to execute a Professional Services Agreement with AECOM for engineering design services for the Operations Center Compressed Natural Gas (CNG), Diesel, and Gasoline Fueling Facility. The Board raised questions during the meeting regarding whether the fueling facility would be visible from the trail on Tree Hill. Staff will make a presentation to address this question, clarify the location of the fueling facility, and show views of the facility from the perspective of a trail-user on Tree Hill.

BACKGROUND:

IRWD's Fleet Services Facility, located at the Michelson Operations Center, maintains a fleet of approximately 300 vehicles fueled by diesel, gasoline, and CNG. A fuel island located in the parking lot adjacent to the Fleet Services Facility is used for fueling vehicles with both diesel and gasoline. Currently CNG vehicles are fueled at the City of Irvine's facility or the City of Santa Ana's facility. This project will install a new CNG Fueling Facility to fuel the District's 11 jetter trucks, vactor trucks, hydraulic excavators, tractor, and boom crane. The CNG Fueling Facility is proposed to be located on the hillside area northeast of the Operations Center access road.

The existing diesel and gasoline fleet fueling systems need to be replaced. The systems consist of a 15,000-gallon underground gasoline storage tank, a 12,000-gallon underground diesel storage tank, fuel dispensers, transition sumps, and piping. This project will replace the existing storage tanks with two 12,000-gallon above ground storage tanks located on the hillside area northeast of the Operations Center access road as well as replace the existing fuel dispensers and associated piping and equipment, relocating the fueling equipment to the hillside area. A portion of the northbound lane of the existing access road will be repurposed for vehicle parking while fueling so that vehicles entering the Michelson Water Recycling Plant will be able to pull over to the right-hand side of the road and fuel. By locating the fueling equipment including the fuel island dispensers along the hillside, additional space will be opened up at the existing parking lot. The existing road will be modified, and some of the existing parking will be used for the new alignment of the road.

IRWD is in the process of increasing emergency fuel storage capacity throughout its service area to account for up to three days of emergency fuel use for generators. The Operations Center has nine stationary generators and 11 portable generators. The remaining component of this project is the installation of an additional 12,000-gallon aboveground diesel storage tank to supply the three days of emergency diesel fuel.

Site Layout Update:

IRWD's consultant AECOM is progressing with the design and has prepared renderings of the fueling facility's location along the hillside. The facility will be 25 feet wide by 266 feet long, and will be located adjacent to the existing roadway, cut into the hillside with an eight foot retaining wall. The fueling facility will be constructed at a ground elevation of approximately 20 feet. With the highest tank at 10 feet tall, the rim of this tank would be at an elevation of 30 feet. Comparatively, the ground elevation along the top of the ridge at the hillside ranges from 40 feet to 55 feet with the trail being located one foot to six feet lower than the elevation of the top of the ridge. Staff photographed 10 different viewpoints along the trail looking in the direction of the fueling facility and found that the ridge at Tree Hill will completely block the fueling facility, and will not be visible from the trail on Tree Hill. Staff will discuss AECOM's site renderings, the fueling facility location and the views of the facility from the trail on Tree Hill, as provided in Exhibit "A".

FISCAL IMPACTS:

This update does not impact the project budget for Projects 07881 and 07882.

ENVIRONMENTAL COMPLIANCE:

This project is subject to the California Environmental Quality Act (CEQA). In conformance with the California Code of Regulations Title 14, Chapter 3, Section 15004, the appropriate environmental document will be prepared when "meaningful information" becomes available.

RECOMMENDATION:

Receive and file.

LIST OF EXHIBITS:

Exhibit "A" – Draft PowerPoint Presentation

Operations Center Compressed Natural Gas, Diesel, and Gasoline Fueling Facility

Malcolm A. Cortez, P.E. / Rachael L. Burk, P.E.
Engineering and Operations Committee

June 15, 2021

1

Vicinity Map

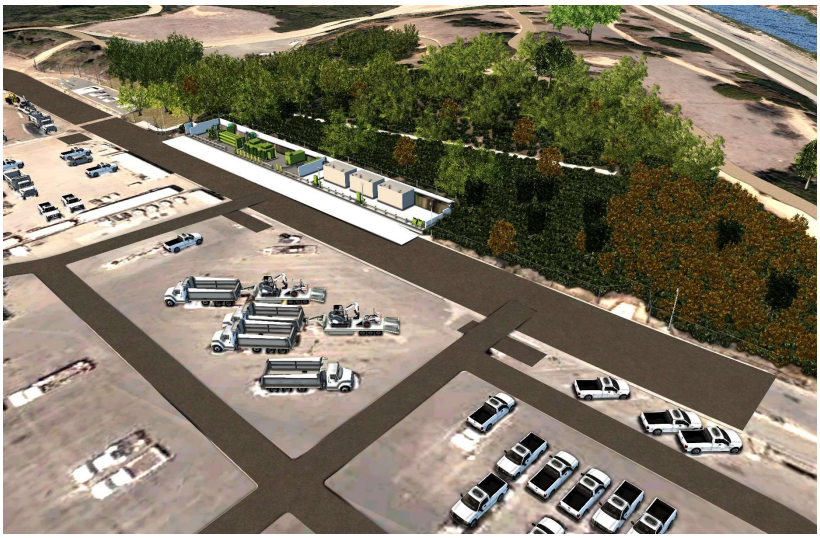
2

Site Plan

Irvine Ranch Water District 3

3

Fueling Facility 3D Rendering (Looking North)



Irvine Ranch Water District 4

4

Irvine Ranch WATER DISTRICT

Fueling Facility 3D Rendering (Looking East)

5

Photos From Tree Hill Trail

6

Trail Location No. 1 – View from Trail

Irvine Ranch Water District 7

7

Trail Location No. 2 – View from Trail

Irvine Ranch Water District 8

8

Irvine Ranch WATER DISTRICT

Trail Location No. 3 – View from Trail

Irvine Ranch Water District 9

9

Trail Location No. 4 – View from Trail

Irvine Ranch Water District 10

10

Trail Location No. 5 – View from Trail

Irvine Ranch Water District 11

11

Trail Location No. 6 – View from Trail

Irvine Ranch Water District 12

12

Trail Location No. 7 – View from Trail

13

Trail Location No. 8 – View from Trail

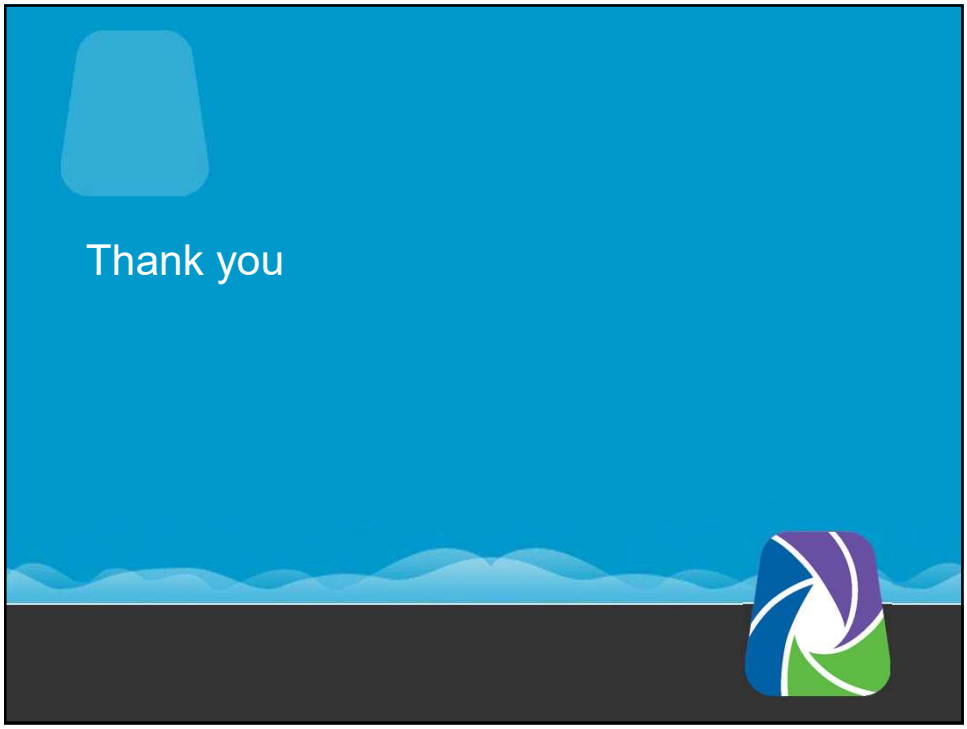
14

Trail Location No. 9 – View from Trail

15

Trail Location No. 10 – View from Trail

16



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Irvine Ranch WATER DISTRICT