

AGENDA  
IRVINE RANCH WATER DISTRICT  
ENGINEERING AND OPERATIONS COMMITTEE MEETING  
TUESDAY, AUGUST 19, 2025

This meeting will be held in-person at the District’s headquarters located at 15600 Sand Canyon Avenue, Irvine, California. The meeting will also be broadcasted via Webex for those wanting to observe the meeting virtually.

To observe this meeting virtually, please join online using the link and information below:

Via Web: <https://irwd.webex.com/irwd/j.php?MTID=m2b76d44c0c2a14a171b3103619028038>

Meeting Number (Access Code): 2489 679 9047

Meeting password: XBcdKM2tm77

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

CALL TO ORDER 1:30 p.m.

ATTENDANCE Committee Chair: Daniel Ferons \_\_\_\_\_  
Committee Member: John Withers \_\_\_\_\_

ALSO PRESENT

Paul Cook	_____	Kevin Burton	_____	Wendy Chambers	_____
Neveen Adly	_____	Paul Weghorst	_____	Steve Choi	_____
Jim Colston	_____	Jason Manning	_____	Jose Zepeda	_____
Eric Akiyoshi	_____	Malcolm Corez	_____	Jacob Moeder	_____
Harry Cho	_____	Alex Murphy	_____	Scott Giatpaiboon	_____
Belisario Rios	_____	Joe Lam	_____	Lance Kaneshiro	_____
Cameron Smith	_____	_____	_____	_____	_____
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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 8:00 a.m. on Tuesday, August 19, 2025.

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## COMMUNICATIONS

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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 and determine which items may be approved without discussion.

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## INFORMATION

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| <ol style="list-style-type: none"><li>4. <u>UPCOMING PROJECTS STATUS REPORT – AKIYOSHI / MOEDER / RIOS / WAITE / BURTON</u><br/><br/>Recommendation: Receive and file.</li><li>5. <u>IRWD RESEARCH BUSINESS PLAN UPDATE – GIATPAIBOON / COLSTON / BURTON</u><br/><br/>Recommendation: Receive and file.</li><li>6. <u>RISK PRIORITIZATION FOR POTABLE RECYCLED PIPELINES – ROBINSON / AKIYOSHI / BURTON</u><br/><br/>Recommendation: That the Committee provide input regarding the Risk Prioritization for Potable and Recycled Pipelines project.</li><li>7. <u>IRWD SUPPORT FOR FIRE SERVICES AT IRVINE LAKE – MOEDER / BURTON</u><br/><br/>Recommendation: Receive and file.</li></ol> |  |
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## OTHER BUSINESS

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8. Directors' Comments
9. Adjournment


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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.

August 19, 2025

Prepared by: E. Akiyoshi / J. Moeder /  
B. Rios / B. Waite

Submitted by: K. Burton

Approved by: Paul A. Cook 

## ENGINEERING AND OPERATIONS COMMITTEE

### UPCOMING PROJECTS STATUS REPORT

#### SUMMARY:

A status report of Irvine Ranch Water District's Upcoming Projects is presented to the Committee for information.

#### BACKGROUND:

The information, which is provided as Exhibit "A", is a status report submitted quarterly to the Committee for review.

#### FISCAL IMPACTS:

Not applicable.

#### ENVIRONMENTAL COMPLIANCE:

Not applicable.

#### RECOMMENDATION:

Receive and file.

#### LIST OF EXHIBITS:

Exhibit "A" – Upcoming Projects Status Report

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## Exhibit "A"

## IRWD UPCOMING PROJECTS STATUS REPORT

	Project Name	Program	Project	Planning	Design	Construction	Construction
		Manager	Manager				Final Acceptance
1	Coastal Zone B and Coastal Zone D Pump Station Electrical System Replacement	Waite	Alvarez	In-Process	Sep-25	-	-
2	East Irvine Zone 3-4 Pump Station Rehabilitation	Waite	Alvarez	In-Process	Oct-25	-	-
3	MWRP Phase 3 Expansion Flow/Loading Study	Waite	Alvarez	In-Process	-	-	-
4	Park Plaza Recycled Water Pipeline Replacement	Waite	Foo	Completed	Completed	In-Process	Oct-25
5	Sand Canyon Headquarters and Operations Center HVAC Upgrades	Waite	Foo	Completed	In-Process	Jan-26	Apr-27
6	Wells 6, 12, 14, and 15 Site Improvements	Waite	Foo	Completed	In-Process	Jan-26	Aug-27
7	Operations Center Warehouse and Water Quality Storage Building	Waite	Foo	Completed	Completed	In-Process	Aug-26
8	Rehabilitation of Irvine Desalter Wells 76, 110, 115R and Destruction of Wells 72, 106	Waite	Foo	Completed	Completed	In-Process	Oct-25
9	Silverado Canyon Bridge 174 Water Pipeline Improvements	Waite	Foo	Completed	Completed	In-Process	Jan-27
10	Silverado Canyon Bridge 175 Water Pipeline Improvements	Waite	Foo	Completed	In-Process	May-27	Jul-27
11	Silverado Canyon Bridge 177 Domestic Water Relocation	Waite	Foo	Completed	Completed	In-Process	Aug-26
12	Rehabilitation of Dyer Road Wellfield Well No. 7	Waite	Foo	Completed	In-Process	Oct-25	Mar-26
13	Biosolids Solids Handling Building Dust Mitigation	Waite	Mai	Completed	In-Process	Jan-26	Jun-26
14	MWRP Biosolids Lift Station and Sewer Pipeline	Waite	Mai	Completed	Completed	In-Process	Feb-27
15	Radio Tower Improvements	Waite	Mai	Completed	Completed	In-Process	May-26
16	Manning Pump Station Replacement	Waite	Mai	Completed	In-Process	Jan-26	Sep-26
17	Lake Forest Woods Sewer Improvements	Waite	Murphy	Completed	Completed	In-Process	Sep-26
18	MWRP Biosolids Handling Upgrades	Waite	Murphy	Completed	In-Process	Aug-26	Jul-27
19	Coastal Zone 1 to 2 and Zone 2 to 4 Pump Stations Rehabilitations	Waite	Murphy	Completed	Completed	In-Process	Jan-27
20	MWRP Fueling Facility	Waite	Ovcharenko	Completed	Completed	In-Process	Jan-26
21	MWRP Tertiary Filter Rehabilitation	Waite	Ovcharenko	Completed	Completed	In-Process	Sep-26
22	LAWRP Effluent Transmission Pump Station Tank Repair	Waite	Ovcharenko	Completed	In-Process	-	-
23	Santiago Creek Dam Improvements	Moeder	Moeder	Completed	In-Process	Aug-26	-
24	Syphon Reservoir Improvements	Moeder	Moeder	Completed	In-Process	Jun-25	-
25	Howler Supply Pipeline Vault Rehabilitations	Moeder	Burk	In-Process	-	-	-
26	Orange Heights SAC/Baker Pipeline Relocation	Moeder	Burk	Completed	Completed	Sep-25	Apr-26
27	Orange Heights Zn 5 to 6 and C+ to E Pump Stations	Moeder	Burk	Completed	In-Process	-	-
28	SWD Interconnection Pipeline	Moeder	Burk	Completed	In-Process	Jan-26	-
29	Howler to Zone 5 Pump Station	Moeder	Burk	In-Process	Nov-25	-	-
30	Zone A to Rattlesnake Reservoir BPS	Moeder	Burk	Completed	Completed	Completed	Aug-25
31	Rattlesnake Dam Risk Reduction Investigation	Moeder	Cho	Completed	In-Process	-	-
32	Santiago Canyon Fleming Zone 8 Tank and Zone 8-9 BPS	Moeder	Cho	Completed	Completed	In-Process	Oct-25
33	Orange Heights Zone 6 Reservoir	Moeder	Cho	Completed	Completed	On Hold	-
34	Generator Fuel Storage Upgrades	Moeder	Cho	Completed	Completed	In-Process	Dec-25
35	San Joaquin Reservoir Outlet Valve Replacement	Moeder	Cho	Completed	Completed	In-Process	Dec-26
36	San Joaquin Reservoir Filtration	Moeder	Lu	Completed	Completed	In-Process	Sep-25
37	Sewer Siphon Improvements Phase II	Moeder	Lu	Completed	Completed	In-Process	May-26
38	BWTP Chemical Line Repair	Moeder	Lu	In-Process	-	-	-
39	Rattlesnake Dam Outlet Pipeline Rehabilitation	Moeder	Lu	In-Process	-	-	-
40	Santiago Hills Zone 5 Tank Repair	Moeder	Lu	In-Process	-	-	-
41	Lake Forest Zone 4 Tank Rehabilitations	Moeder	Mwe	Completed	In-Process	Sep-25	Jun-27


# IRWD UPCOMING PROJECTS STATUS REPORT

	Project Name	Program	Project	Planning	Design	Construction	Construction
		Manager	Manager				Final Acceptance
42	Chapman Tank Rehabilitation	Moeder	Mwe	In-Process	-	-	-
43	Shaw Tank Replacement	Moeder	Mwe	In-Process	-	-	-
44	IDF Chemical Pump Replacement	Moeder	Mwe	Completed	Completed	In-Process	Dec-25
45	San Joaquin Dam Drainage Improvements	Moeder	Mwe	Completed	In-Process	Aug-25	Dec-25
46	Sand Canyon Dam Spillway Rehabilitation	Moeder	Sanchez	In-Process	-	-	-
47	Sand Canyon Dam Instrumentation	Moeder	Sanchez	Completed	In-Process	Jun-25	-
48	Sand Canyon Dam Seepage Improvements	Moeder	Sanchez	Completed	In-Process	Jun-26	-
49	PA 1, Jeffrey Road Extension RW and DW (RA w/CDC)	Rios	Rios	Completed	Completed	Completed	Sep-25
50	PA 51, District 5 South Chinon DW, RW (RA with Heritage Fields)	Rios	Rios	Completed	Completed	In-Process	Sep-25
51	PA 51, Marine Way Stage 2 from Skyhawk to Treble DW, RW (RA with Heritage Fields)	Rios	Rios	Completed	Completed	Completed	Sep-25
52	PA 51 Marine Way Stage 3 from County to Lynx	Rios	Rios	Completed	Completed	In-Process	Sep-25
53	PA 51 Marine Way Stage 4 from Lynx to OCTA Rail	Rios	Rios	Completed	In Process	Nov-25	Jun-26
54	PA 51, Treble from GP5 to Marine Way DW, RW (RA with Heritage Fields)	Rios	Rios	Completed	Completed	In-Process	Sep-25
55	PA 51 Lynx from Harrier to Marine Way DW, SS (RA with Heritage Fields)	Rios	Rios	Completed	Completed	In-Process	Sep-25
56	PA 1, Orchard Hills Neighborhood 4 DW (RA with TIC)	Rios	Rios	Completed	Completed	In-Process	Sep-25
57	PA 1, Orchard Hills Neighborhood 4 RW (RA with TIC)	Rios	Rios	Completed	Completed	In-Process	Sep-25
58	East Orange, Orange Heights Tract 16199 SS, RW	Rios	Rios	Completed	In-Process	Nov-25	Aug-26
59	East Orange, Orange Heights Tract 17995 DW, RW	Rios	Rios	Completed	In-Process	Nov-25	Aug-26
60	East Orange, Orange Heights Jamboree and Chapman DW SS, RW	Rios	Rios	Completed	In-Process	Nov-25	Aug-26
61	Discovery Apartments 12-inch Sewer Up-size	Rios	Rios	Completed	Apr-25	In-Process	Dec-25
62	PA 40 Marine Way Capital Domestic	Rios	Rios	Completed	Completed	In-Process	Oct-25
63	Land Management and Permitting Enterprise System Implementation	Rios	Rios	In-Process	-	-	-
64	I-5 Widening Sand Canyon 12 inch DW Relocation Seg1	Rios	Botello	Completed	In-Process	Oct-25	Jan-26
65	I-5 Widening Sand Culver 36 inch RW Relocation Seg2	Rios	Botello	Completed	In-Process	Oct-25	Jan-26
66	Modjeska Grade Road DW Pipeline Relocation	Rios	Botello	Completed	In-Process	Oct-25	Jan-26
67	Orange Heights SAC/Baker Pipeline Relocation	Rios	Botello	Completed	Completed	On Hold	-
68	Effluent Transmission Main Reach A Rehabilitation	Rios	Botello	In-Process	-	-	-
69	San Joaquin Hills Road RW Pipeline Replacement	Rios	Botello	In-Process	-	-	-
70	Silkwood/Willowleaf RW Pipeline Replacement	Rios	Botello	In-Process	-	-	-
71	Recycled Water PRVs Decommissioning	Rios	Ige	Completed	In-Process	Sep-25	Dec-25
72	Technology Drive and Ada RW Pipeline Replacement	Rios	Ige	Completed	Completed	In-Process	Feb-26
73	Turtle Rock/Concordia RW Pipeline Replacement	Rios	Ige	Completed	In-Process	Oct-25	May-26
74	Irvine Business Complex Appurtenance Relocations Phase 3	Rios	Ige	Completed	In-Process	Oct-25	Mar-26
75	EV Charging Facilities	Rios	Ige	Completed	In-Process	-	-
76	Cabinland DW Pipeline Sizing Verification	Rios	Ige	In-Process	-	-	-
77	Replacement Planning Model Update	Akiyoshi	Robinson	In-Process	Aug-25	-	-

August 19, 2025

Prepared by: J. Colston

Submitted by: K. Burton

Approved by: Paul A. Cook 

## ENGINEERING AND OPERATIONS COMMITTEE

### IRWD 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 Research Business Plan ensures 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. The following summarizes the updates or changes since the previous quarterly report:

- Biosolids Pellets Land Application Crop Study – The first manuscript from the research has been published, and additional research is ongoing. More results are expected later this year.
- UCI CDC Sponsored PFAS Epidemiological Study – UCI conducted a Centers for Disease Control (CDC) sponsored study of health impacts from the public drinking potable water tainted with Per- and Poly-fluoroalkyl substances (PFAS). Researchers added a PFAS Child Immune Study to this research. The data collection portion of the research has been completed. The data has been reviewed, and numerous scholarly manuscripts are under production. One recent manuscript with summary data is *Multi-site study of communities with PFAS-contaminated drinking water: Methods, demographics, and PFAS serum concentrations*. The Director for Water Quality & Regulatory Compliance participated in a webinar hosted by the Center for Disease Control (CDC) to go over the nationwide results. **This research is complete.**

A summary of 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

## 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
1	Biosolids Pellets Land Application Crop Study	The primary goal is to determine if ~40-50 of the roughly 400 unregulated organic contaminants listed in the 'EPA contaminants in biosolids database' can be found in, or remain in, the edible portions of food and feed crops following land application at standard agronomic rates based on the nitrogen needs of the test crop.	Zepeda	UC Riverside/South Coast Research and Education Center in Irvine with funding by USEPA	Field study with laboratory analysis of biosolids and crops	Provide Class A biosolids pellets (approximately 1-2 tons of material)	Apr-22	Oct-25
2	UCI CDC Sponsored PFAS Epidemiological Study	UCI is conducting a Centers for Disease Control (CDC) sponsored study of health impacts from the public drinking potable water. Due to localized PFAS contamination in some Orange County drinking water sources, the CDC is sponsoring research to determine potential public health effects. IRWD's Irvine service area is seen as an ideal control population due to the lack of PFAS in IRWD's served potable water.	Colston	UCI, OCWD, IRWD, CDC	Epidemiological that seeks 1,000 adults and 300 children for blood serum level testing.	Assistance in determining historic sources of drinking water in IRWD's service area.	Jan-23	Aug-25

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August 19, 2025

Prepared by: M. Robinson / E. Akiyoshi

Submitted by: K. Burton

Approved by: Paul A. Cook



## ENGINEERING AND OPERATIONS COMMITTEE

### RISK PRIORITIZATION FOR POTABLE AND RECYCLED PIPELINES

#### SUMMARY:

IRWD completed a comprehensive risk-based analysis to prioritize replacements and condition assessments for potable and recycled water pipelines. The work evaluated 1,600 miles of potable and 525 miles of recycled water pipelines for both likelihood and consequence of failure. The project developed recommendations for levels of service, pipe replacements, and detailed condition assessments over the next 30 years. Staff will present the findings to the Committee.

#### BACKGROUND:

IRWD continues building its district-wide risk-based decision-making efforts for dams, vertical facilities, and linear assets. Risk-based prioritization has helped develop IRWD's dam safety program, and pump stations, tanks, wells, and sewer siphon rehabilitations.

Over the past year, IRWD has been working with HDR to analyze and prioritize replacements and condition assessments for 1,600 miles of potable and 525 miles of recycled water pipelines. This project will help ensure that IRWD can maintain its excellent service levels by implementing detailed condition assessments and prioritizing pipeline replacements using risk-based analytics. Results were visualized using geographic information system (GIS) and Power BI tools integrated with Maximo and live GIS data providing dynamic dashboards for planning replacements and tracking projects.

Staff's draft presentation regarding the project and its results is provided as Exhibit "A."

#### FISCAL IMPACTS:

None.

#### ENVIRONMENTAL COMPLIANCE:

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

#### RECOMMENDATION:

That the Committee provide input regarding the Risk Prioritization for Potable and Recycled Pipelines project.

#### EXHIBITS:


Exhibit "A" – Pipeline Risk Prioritization Presentation

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# RISK PRIORITIZATION FOR POTABLE AND RECYCLED PIPELINES

Engineering and Operations Committee  
August 19, 2025


 Irvine Ranch  
Water District

DRAFT




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## GOALS




Develop risk-based condition assessment and pipe replacement programs



Develop levels of service to optimize pipeline break rates



Present pipe condition assessment and replacement project packages

 Irvine Ranch  
Water District

2

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## AGENDA

Pipe Break History and Project Overview

Prioritizing Pipe Replacements and Condition Assessments

Level of Service

Condition Assessment Plan

Project Packaging

Conclusions and Recommendations



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## Pipe Break History and Project Overview



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## SYSTEM AND BREAK HISTORY OVERVIEW



1,600 miles of potable pipe distribution lines



525 miles of recycled pipe distribution lines



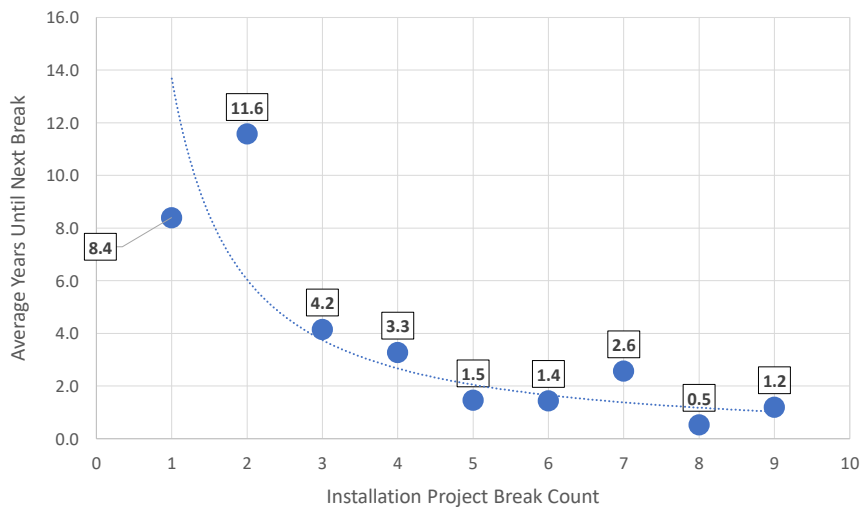
583 Breaks from 2010 through 2024



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## BREAK FORECASTING



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# Prioritizing Pipe Replacement and Condition Assessments



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## APPROACH AND CONCEPTS

### Using Risk to Prioritize Replacements

- Industry accepted methodology to prioritize pipe replacements
- Combines Likelihood of Failure (LoF) and Consequence of Failure (CoF)
- Used to prioritize condition assessment and pipe replacement projects

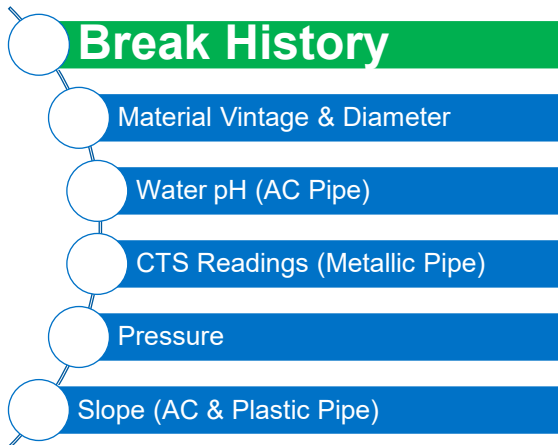


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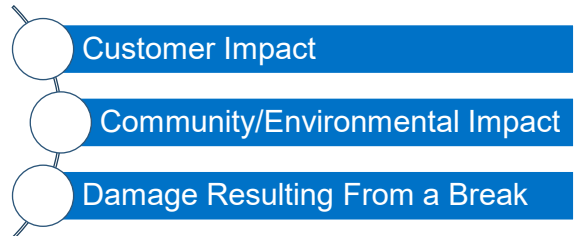
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## LIKELIHOOD AND CONSEQUENCE OF FAILURE

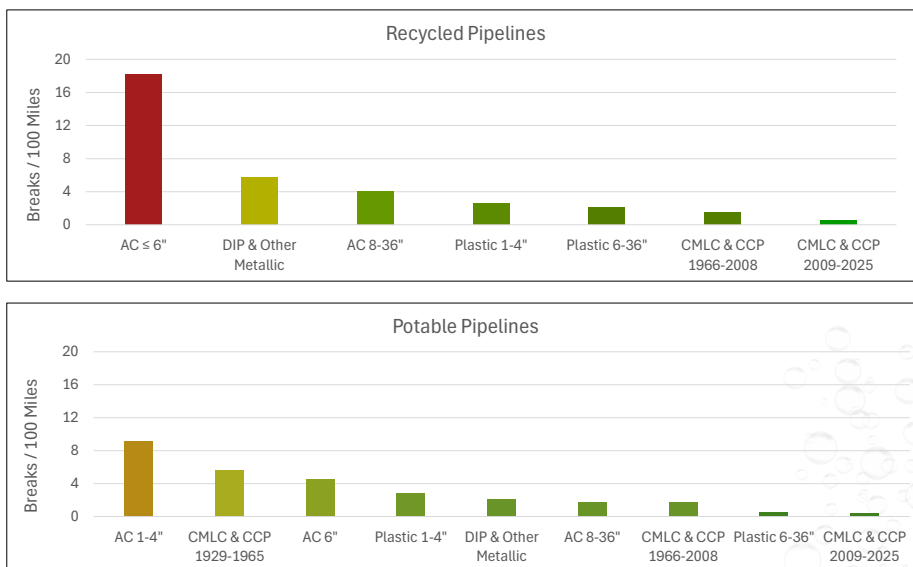
### Likelihood of Failure



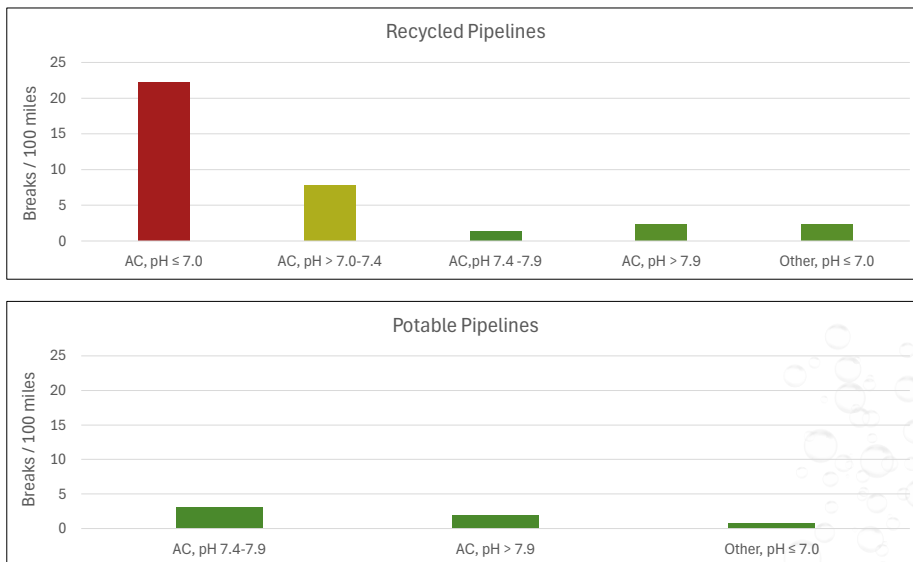
### Consequence of Failure



## BREAK RATES BY MATERIAL VINTAGE AND DIAMETER



## BREAK RATE BY WATER PH (AC PIPE ONLY)



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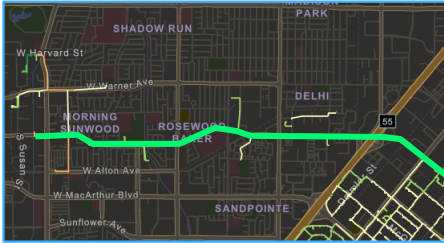
## RISK



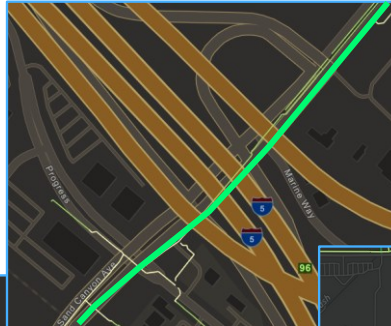
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## CONSEQUENCE OF FAILURE

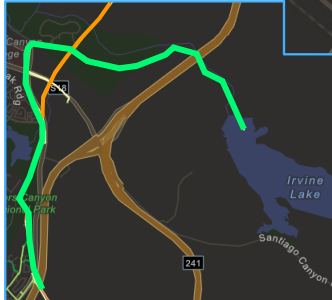
DRWF (PW)



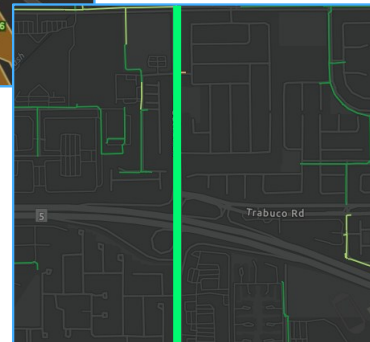
Sand Canyon / 5 Frwy (PW)



SAC and ILP (RW)



Culver 36" (RW)

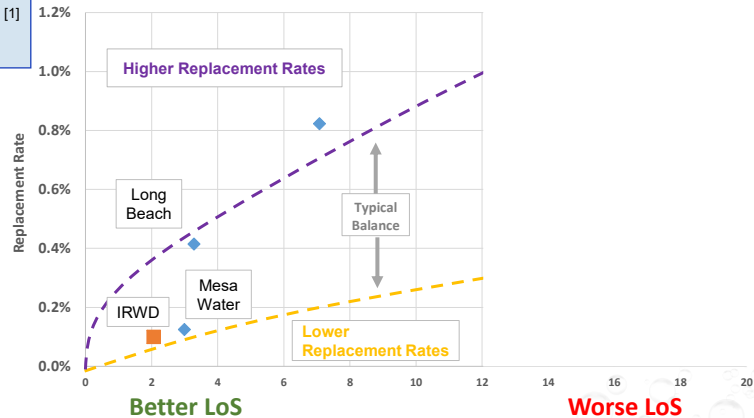


## Level of Service

## LEVEL OF SERVICE

Level of Service defines the acceptable number of breaks per hundred miles per year for the potable and recycled pipelines

Regional Break Rate = 6.2 ABHM [1]  
National Break Rate = 15 ABHM



15

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## LEVEL OF SERVICE SCENARIOS

1. Maintain Historical 10-year Pipe Replacement Rate
2. Allow Break Rates to Increase to Regional Average
3. Maintain Break Rates over the next 20 years



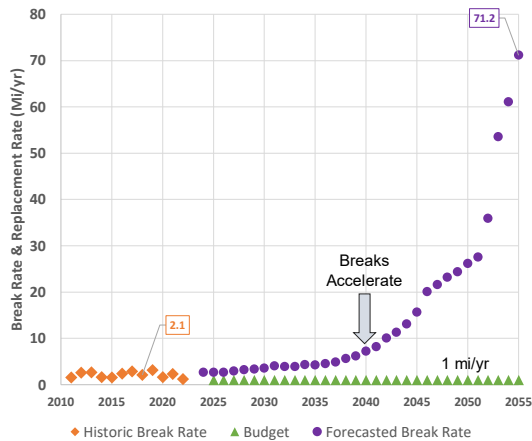
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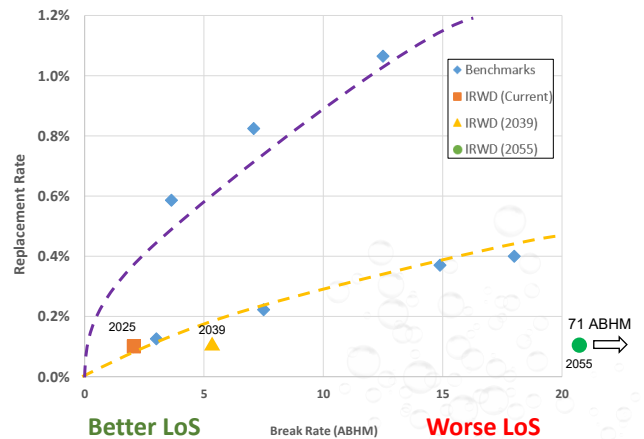


## FORECAST SERVICE LEVELS

### Scenario 1 – Maintain Historical Pipe Replacement Rate of 1 mile/yr



Break rate is in breaks per 100 miles per year

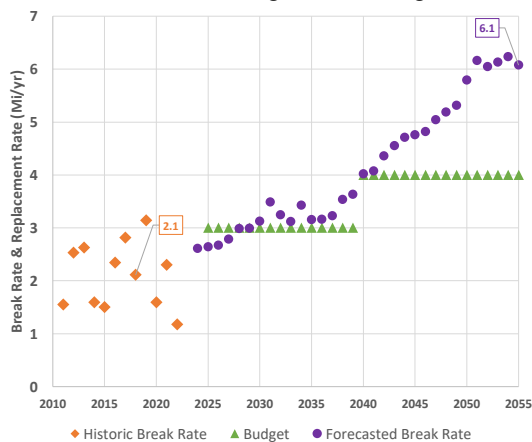


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## FORECAST SERVICE LEVELS

### Scenario 2 – Break rates Increase to Regional Average



Break rate is in breaks per 100 miles per year

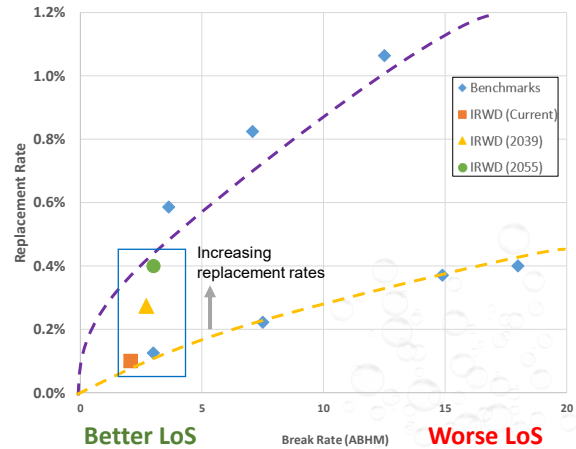
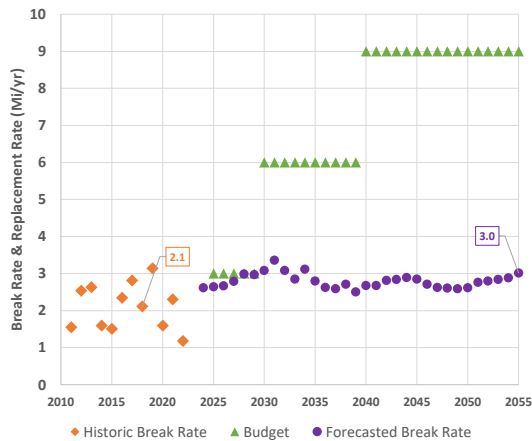


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## FORECAST SERVICE LEVELS

### Scenario 3 – Maintain Break Rates



## Condition Assessment Plan

## OVERVIEW

### Condition Assessment Benefits

- Maximize the life of aging pipes
- Minimize service disruptions
- Determine project extents where pipe replacements or rehabilitations are needed
- Increase confidence in asset management, rehabilitation, renewal decision making, and budget forecasts



## CURRENT CONDITION ASSESSMENT PRACTICES



Leak detection



Planned and opportunistic ACP coupon collection and testing



External visual inspection of exposed pipelines



Corrosion test station monitoring

## PROPOSED ENHANCEMENTS TO CONDITION ASSESSMENTS

### Planned Condition Assessments

- Highest CoF pipelines to be assessed over the next 5-10 years
- Pipes >18-in & older than 80% Remaining Useful Life

### Scheduled / Recurring Assessments

- Continue existing condition assessments activities
- Improve usage of corrosion test station data
- Explore emerging technologies for pipelines



23

23

## DETAILED CONDITION ASSESSMENT KEY PIPELINES

Pipeline Name	Diameter (in)	Age (years)	Length (feet)
DRWF Wellfield Pipeline Transmission Main	54	40	29,000
Irvine Lake Pipeline West	39 , 54	47-55	13,000
Irvine Lake Pipeline East	48	68	1,000
Santiago Aqueduct Commission (SAC) Pipeline	39 , 54	46-63	63,000
Michelson Water Recycling Plant to Rattlesnake Reservoir Pipeline	30, 36, 42	50	43,000
Sand Canyon Avenue Pipeline	48	42	9,000
Total			158,000



24

24

## Conclusions and Recommendations

### CONCLUSIONS

- Delaying pipe replacements will result in acceleration of break rates in the future
- Replacing 3, 6, and 9 miles of pipelines annually for the next 5, 10, and 15 years maintains current break rates
- Performing detailed Condition Assessments on high CoF pipes reduces the likelihood of catastrophic breaks
- Implementing recurring condition assessment programs will improve the accuracy of the Risk model
- Centralizing pipeline repair information helps to optimize identification of hot spots and future pipe replacements

## RECOMMENDATIONS

- Implement Condition Assessment and Pipeline Replacement Plans
- Implement workshops with Operations to review upcoming pipeline replacement and condition assessment projects
- Enhance centralizing data for pipe breaks and all condition related information

August 19, 2025

Prepared by: J. Moeder

Submitted by: K. Burton

Approved by: Paul A. Cook *PAC*

## ENGINEERING AND OPERATIONS COMMITTEE

### IRWD SUPPORT FOR FIRE SERVICES AT IRVINE LAKE

#### SUMMARY:

Irvine Lake is used by Orange County Fire Authority (OCFA) and other fire service agencies for helicopter training and as a source of water during emergency events. Starting in 2026 and for an estimated five years after that, Irvine Lake will be drained to accommodate the construction of the Santiago Creek Dam Improvement project. To provide an alternative source of water for the fire services agencies to utilize while the lake is drained, IRWD will install temporary HeloPod units at Irvine Lake. IRWD and Orange County Fire Authority (OCFA) have collaborated on the installation of two HeloPod units at Irvine Lake and the use of an area adjacent to Irvine Lake ("The Flats") for fire response training. The key elements of this collaboration between IRWD and OCFA is described below.

#### BACKGROUND:

Irvine Lake is used by multiple fire service agencies for training and emergency response purposes. The agencies that use the lake for training and emergency responses include CalFire, California National Guard, City of Anaheim, Helistream, OCFA, and US Forest Service. The agencies primarily use "The Flats" for training and during emergency events to establish a helicopter base that provides aerial support to the region.

Over the past couple years, IRWD and OCFA coordinated on the joint use of The Flats in parallel to discussing the procurement and installation of the HeloPod units, described in more detail below. A location map showing the proposed HeloPod installation and the land areas to be used for fire services training is provided as Exhibit "A".

#### Helopod Installation:

Leading up to and then during the construction of the Santiago Creek Dam Improvement project, little to no water will be stored in Irvine Lake. With the loss of this source of water for these training and emergency response purposes, IRWD and OCFA collaborated to develop a plan to have temporary HeloPod units installed. Fire service agencies would be able use these HeloPods for training and to protect the project, IRWD's property, as well as neighboring properties in the event of an emergency.

IRWD and OCFA jointly developed a license agreement by which IRWD will furnish two HeloPod units that OCFA will maintain and operate while the units are in use at Irvine Lake. Once the Santiago Creek Dam Improvements are complete and the lake is storing water, the HeloPod units could be relocated elsewhere in the District's service area to provide as needed fire protection. Exhibit "B" includes photos of HeloPods, as an example.

The Flats:

IRWD's lead design engineering consultant for the Santiago Creek Dam Improvement project, AECOM, is developing the design for the Site Preparation project. The Site Preparation project includes constructing a nearly 3/4-mile-long temporary domestic water highline along the Blue Diamond Haul Road to The Flats. The temporary domestic water highline will have three primary uses while Irvine Lake is drained: 1) construction water for the contractor building the dam improvements, 2) water service to the current tenant, James Productions, and 3) water service to the temporary HeloPod units.

During construction of the dam improvements, the Contractor's primary staging area will occupy approximately half of The Flats. The remaining portion is available for emergency agencies to train and establish a helicopter base, as allowed for in the license agreement between IRWD and OCFA.

FISCAL IMPACTS:

The Santiago Creek Dam Improvements, Project 01813, is included in the Fiscal Year 2025-26 Capital Budget. The cost estimate for two HeloPod units is approximately \$135,000. Sufficient budget is available to fund the recommendations presented herein.

ENVIRONMENTAL COMPLIANCE:

This agreement pertains to the Santiago Creek Dam Improvement Project, which is subject to the California Environmental Quality Act (CEQA). A Notice of Completion for the Draft Environmental Impact Report was filed with the California State Clearinghouse on April 25, 2025. In conformance with the California Code of Regulations Title 14, Chapter 3, Section 15089, IRWD is preparing a Final Environmental Impact Report for the project.

RECOMMENDATION:

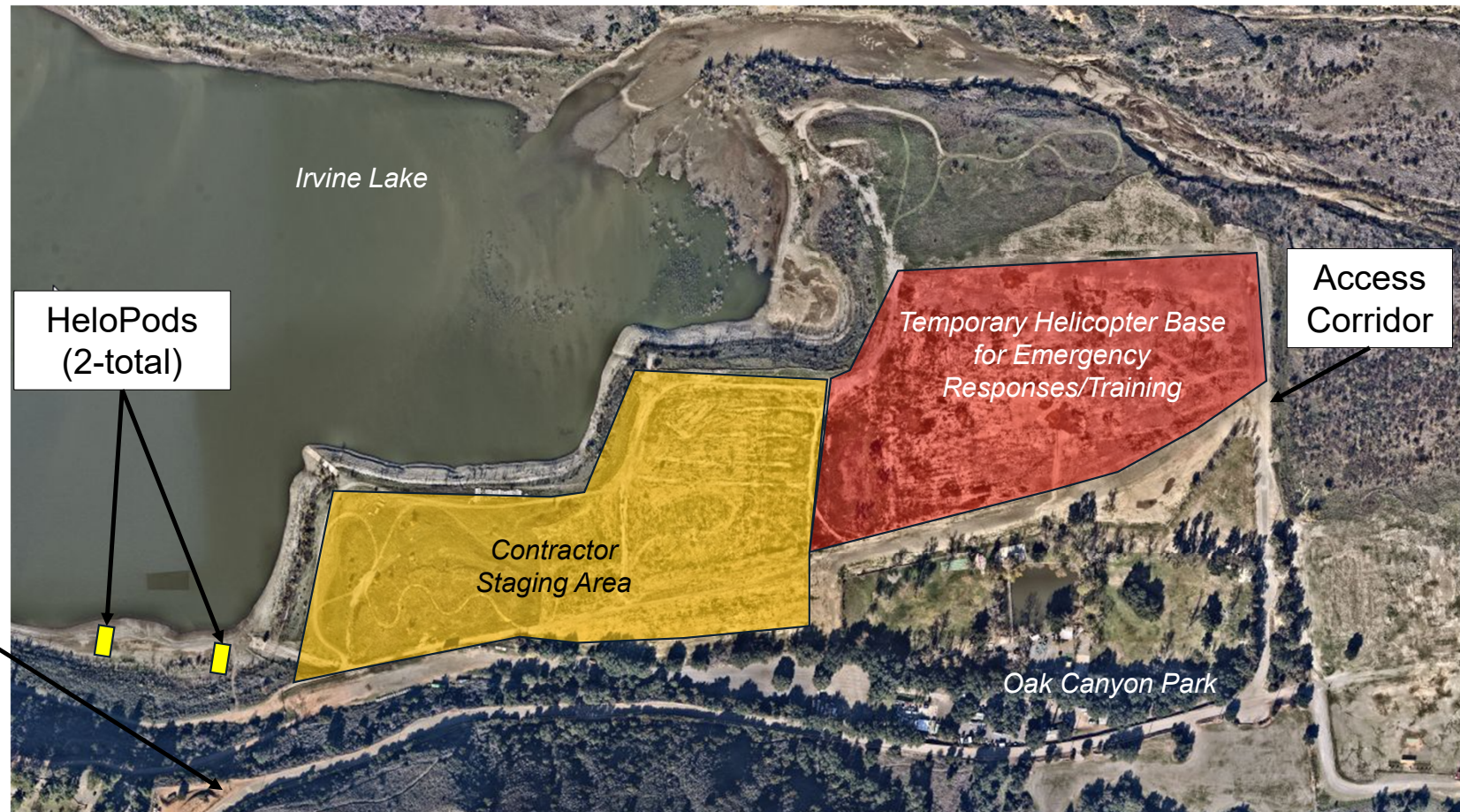
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LIST OF EXHIBITS:

Exhibit "A" – Use of "The Flats" During Santiago Creek Dam Improvement Project  
Exhibit "B" – Photo of HeloPods



# USES OF "THE FLATS" DURING SANTIAGO CREEK DAM IMPROVEMENT PROJECT



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Exhibit "B"



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