

AGENDA
 IRVINE RANCH WATER DISTRICT
 ENGINEERING AND OPERATIONS COMMITTEE MEETING
 TUESDAY, FEBRUARY 18, 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 Cortez _____ Jacob Moeder _____
 Harry Cho _____ Alex Murphy _____ _____
 _____ _____ _____ _____ _____
 _____ _____ _____ _____ _____

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, February 18, 2025.

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 and determine which items may be approved without discussion.

INFORMATION

- | | |
|---|--|
| 4. <u>UPCOMING PROJECTS STATUS REPORT – AKIYOSHI / CORTEZ / MOEDER / BURTON</u> | |
| Recommendation: Receive and file. | |
| 5. <u>IRWD RESEARCH BUSINESS PLAN UPDATE – COLSTON / BURTON</u> | |
| Recommendation: Receive and file. | |
| 6. <u>GROUNDWATER WORKPLAN UPDATE – AKIYOSHI / ROBINSON / BURTON</u> | |
| Recommendation: Receive and file. | |

ACTION

- | | |
|---|--|
| 7. <u>LAKE FOREST WOODS SEWER IMPROVEMENTS CONSTRUCTION PHASE ENGINEERING SERVICES – MURPHY / CORTEZ / BURTON</u> | |
| Recommendation: That the Board authorize the General Manager to execute a Professional Services Agreement with Woodard & Curran in the amount of \$248,903 for construction phase engineering services for the Lake Forest Woods Sewer Improvements, Project 11123. | |

OTHER BUSINESS

- 8. Directors' Comments
- 9. Adjournment


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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February 18, 2025

Prepared by: E. Akiyoshi / M. Cortez /
J. Moeder

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	Planning	Design	Construction	Construction
				Final Acceptance
Park Plaza RW Pipeline Replacement	Completed	In-Process	Apr-25	Aug-25
HVAC System Replacement at Sand Canyon HQ and Operations Center	Completed	In-Process	Jun-25	-
Dyer Road Wellfield Facility Rehabilitation Group 1	Completed	In-Process	Oct-25	-
Operations Center Purchasing Warehouse	Completed	Completed	Feb-25	Jul-26
Rehabilitation of Irvine Desalter Wells 76, 110, 115R and Destruction of Wells 72, 106	Completed	Completed	In-Process	Apr-25
Silverado Bridge 174 DW Improvements	Completed	Completed	In-Process	Oct-26
Silverado Bridge 175 DW Improvements	Completed	In-Process	Jan-27	Jun-27
Silverado Bridge 177 DW Improvements	Completed	Completed	In-Process	Mar-26
Biosolids Centrate Tank Grating Replacement	Completed	Completed	In-Process	Apr-25
Recycled Water PRVs Decommissioning	Completed	In-Process	Jul-25	-
Technology Drive and Ada RW Pipeline Replacement	Completed	In-Process	Jul-25	-
Concordia/Rocky Knoll RW Pipeline Replacement	In-Process	-	-	-
Irvine Business Complex Appurtenance Relocations Phase 3	Completed	In-Process	Oct-24	-
MWRP Biosolids Lift Station and Sewer Improvement	Completed	In-Process	Apr-25	-
Radio Tower Improvements	Completed	In-Process	Apr-25	-
Manning Pump Station Replacement	Completed	Mar-25	-	-
Lake Forest Woods Sewer Improvements	Completed	Completed	Mar-25	Jun-26
Santiago Canyon Pump Station Improvements	Completed	Completed	In-Process	Aug-25
MWRP Solids Processing Improvements	In-Process	-	-	-
MWRP Compressed Natural Gas and Diesel/Gasoline Fueling Station	Completed	Completed	In-Process	Feb-25
MWRP Tertiary Filter Rehabilitation	Completed	Completed	In-Process	Nov-25
Santiago Creek Dam Improvements	Completed	In-Process	Aug-26	-
Sand Canyon Dam Instrumentation	Completed	In-Process	Jun-25	-
Syphon Reservoir Improvements	Completed	In-Process	Jun-25	-
Orange Heights SAC/Baker Pipeline Relocation	Completed	Completed	Sep-25	Apr-26
Coastal Z2 and Z4 Pump Stations Rehabilitation	Completed	Completed	Apr-25	Apr-27
Orange Heights Zn 5 to 6 and C+ to E Pump Stations	Completed	In-Process	-	-
SWD Interconnection Pipeline	Completed	In-Process	Nov-25	-
Howiler to Zone 5 Pump Station	In-Process	-	-	-
Well OPA-1 PFAS Treatment	Completed	Completed	In-Process	Apr-25
Well ET-1 PFAS Treatment	Completed	Completed	In-Process	May-25
SGU PFAS Treatment	Completed	Completed	In-Process	May-25
Zone A to Rattlesnake Reservoir BPS	Completed	Completed	In-Process	Jun-25
Rattlesnake Dam Risk Reduction Investigation	Completed	In-Process	-	-
Santiago Canyon Fleming Zone 8 Tank and Zone 8-9 BPS	Completed	Completed	In-Process	Oct-25
Orange Heights Zone 6 Reservoir	Completed	In-Process	Sep-25	-
Generator Fuel Storage Upgrades	Completed	Completed	In-Process	Dec-25

IRWD UPCOMING PROJECTS STATUS REPORT

Project Name	Planning	Design	Construction	Construction
				Final Acceptance
San Joaquin Reservoir Filtration	Completed	Completed	In-Process	Aug-25
Sewer Siphon Improvements Phase II	Completed	Completed	In-Process	May-26
Syphon Reservoir Intersection Improvements and Access Road	Completed	Completed	In-Process	May-25
MWRP MPS-2 Pump Bases Replacement	Completed	Completed	In-Process	May-25
UCI Meter Vault Replacement	Completed	Completed	In-Process	Apr-25
Lake Forest Zone 4 Tank Rehabilitations	Completed	In-Process	Sep-25	-
San Joaquin Dam Drainage Improvements	Completed	In-Process	Apr-25	-
PA 1, Jeffrey Road Extension RW and DW (RA w/CDC)	Completed	Completed	Completed	Apr-25
PA 51, Serrano Creek Sewer Relocation	Completed	Completed	Completed	Apr-25
PA 51, District 5 South Chinon DW, RW (RA with Heritage Fields)	Completed	Completed	In-Process	Jun-25
PA 51, Marine Way Stage 2 from Skyhawk to Treble DW, RW (RA with Heritage Fields)	Completed	Completed	Completed	Apr-25
PA 51 Marine Way Stage 3 from County to Lynx	Completed	Completed	In-Process	Jun-25
PA 51 Marine Way Stage 4 from Lynx to OCTA Rail	Completed	In Process	Jun-25	Jun-26
PA 51, Treble from GP5 to Marine Way DW, RW (RA with Heritage Fields)	Completed	Completed	In-Process	Jun-25
PA 51 Lynx from Harrier to Marine Way DW, SS (RA with Heritage Fields)	Completed	Completed	In-Process	Jun-25
PA 1, Orchard Hills Neighborhood 4 DW (RA with TIC)	Completed	Completed	In-Process	Jun-25
PA 1, Orchard Hills Neighborhood 4 RW (RA with TIC)	Completed	Completed	In-Process	Jun-25
East Orange, Orange Heights Tract 16199 SS, RW	Completed	In-Process	Aug-25	Aug-26
East Orange, Orange Heights Tract 17995 DW, RW	Completed	In-Process	Aug-25	Aug-26
East Orange, Orange Heights Jamboree and Chapman DW SS, RW	Completed	In-Process	Aug-25	Aug-26
Discovery Apartments 12-inch Sewer Up-size	Completed	Apr-25	Jun-25	Dec-25
PA 40 Marine Way Capital Domestic	Completed	Completed	In-Process	Aug-25
I-5 Widening Sand Canyon 12 inch DW Relocation Seg1	Completed	In-Process	Aug-25	Dec-25
I-5 Widening Sand Culver 36 inch RW Relocation Seg2	Completed	In-Process	Aug-25	Dec-25
CIP Asset Management Phase II - Linear Asset Prioritization	In-Process	Apr-25	-	-
Santiago Canyon Steel Tank Rehabilitation Planning Analysis	Sep-24	-	-	-
Fiscal Year 2025-26 and 2026-27 Capital Budget	In-Process	May-25		

February 18, 2025
Prepared by: J. Colston
Submitted by: K. Burton
Approved by: Paul A. Cook *PAC*

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 changes since the previous quarterly report:

1. Biosolids Pellets Land Application Crop Study – The first manuscript from the research has been published, and additional research is ongoing. More results are not expected until at least the Summer of 2025.
2. UCI Microplastics Method Development Study – UCI professor Diego Rosso has requested that IRWD participate in an advisory capacity for a Water Research Foundation (WRF) research project regarding the development of methods for the characterization and sampling of microplastics (WRF #5287). IRWD Water Quality Laboratory Manager Scott Giatpaiboon has volunteered to serve as a member of the advisory panel with other experts from wastewater utilities including Los Angeles County Sanitation District, Central Contra Costa Sanitation District, South Orange County Water Authority and Clean Water Services. The Advisory Panel has not yet met on the study.
3. 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 tainted with Per- and Poly-fluoroalkyl substances (PFAS). Researchers have added a PFAS Child Immune Study to this research. Outreach on this additional component has been sent to residents in the areas covered by the Epidemiological Study, including Irvine. The team has also drafted "City Letters" to be sent to local officials explaining the results of the research and recommending any public health actions.

4. The State Water Resources Control Board Division of Drinking Water (DDW) Multi-Laboratory Validation (MLV) Study – The DDW has requested IRWD’s participation in a MLV Study for the validation of new analytical methods for the analysis of two emerging contaminants in drinking water: Benzotriazole and Trifluoroacetate (TFA). The MLV study will involve the Laboratory’s technical expertise in LC-MS/MS instrumentation and analysis of analytes at trace levels. Benzotriazole is a versatile compound widely used as a corrosion inhibitor, anti-fogging agent and analytical reagent. TFA is a phytotoxic PFAS compound and is linked to reproductive toxicity and is suspected of damaging fertility. The Water Quality Laboratory will report study data to the DDW that will be used to determine method performance criteria. The study is in the preliminary phase and IRWD will meet with DDW to finalize timelines and assignments for the MLV study in the coming weeks.

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	Jun-25
2	UCI Microplastics Method Development Study	Participate in an advisory capacity for a Water Research Foundation (WRF) research project regarding the development of methods for the characterization and sampling of microplastics (WRF #5287)	Giatpaiboon	UCI, WRF, other utilities	Method development	Project advisory role for WQ Manager	Oct-24	TBD
3	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	Jun-25
4	DDW Multi-Laboratory Validation (MLV) Study for Emerging Contaminants	DDW is conducting a multi-laboratory validation for new analytical methods for the analysis of two emerging contaminants in drinking water: Benzotriazole and Trifluoroacetate (TFA). Benzotriazole is a versatile compound widely used as a corrosion inhibitor, anti-fogging agent, and analytical reagent. TFA is a phytotoxic PFAS compound and is linked to reproductive toxicity and as suspected of damaging fertility. The Water Quality Laboratory will report study data to the DDW that will be used to determine method performance criteria.	Giatpaiboon	DDW, OCWD, CDFA, and other commercial laboratories	Method development and Validation	Staff time for sample preparation and analysis, data analysis and reporting, troubleshooting instrumentation (LC-MS/MS system); some consumables; standards will be provided by DDW.	Mar-25	TBD

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February 18, 2025
Prepared by: E. Akiyoshi / M. Robinson
Submitted by: K. Burton
Approved by: Paul A. Cook 

ENGINEERING AND OPERATIONS COMMITTEE

GROUNDWATER WORKPLAN UPDATE

SUMMARY:

Staff updated the IRWD Groundwater Workplan, which identifies future groundwater production requirements and recommendations for the next five years. The analysis confirms that existing groundwater supplies meet the needs for existing demands, known future development, and estimated Regional Housing Needs Assessment (RHNA) allocations. No new groundwater projects are recommended in the five-year horizon. Additionally, increased access to Irvine Lake and Howiler Water Treatment Plant offset the need for imported potable water. Staff will present the analysis and findings and receive input from the Committee.

BACKGROUND:

The most recent Groundwater Workplan was updated in November 2021 and introduced the OPA Well expansion project, pumping groundwater to 100% of the production limitation, and that the recycled water penalty continues. In this Groundwater Workplan Update, staff incorporated the increased impacts of more stringent water use efficiency programs on potable water consumption and updated potable demand projections. This approach lowered buildout demands and reduced the need for future groundwater supplies. Following the demand update, a sensitivity analysis was conducted to account for additional potable demands from the RHNA allocations and potential dry years. Lastly, the analysis considers the beneficial impact of expanded capacity at Irvine Lake and the Howiler Water Treatment Plant, which will offset imported potable water needs by approximately 1,000 acre-feet per year (AFY).

This five-year approach evaluates near-term groundwater opportunities and optimizes capital expenditures. With the expanded production capacity at OPA Well 1 from 900 to 3,200 AFY, projected groundwater production needs are satisfied, eliminating the near-term need for groundwater wells.

Based on this information included in this update, staff recommends not initiating the design of any future groundwater supply projects (e.g. Well 51/52 Blending). Staff will continue to monitor and regularly update the Groundwater Workplan to ensure it aligns with IRWD's evolving needs. Staff will present the details of the analysis at the Committee meeting.

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:

Receive and File.

LIST OF EXHIBITS:

Exhibit "A" – Groundwater Workplan Update Presentation

2025 GROUNDWATER WORKPLAN UPDATE AND INCREASED IRVINE LAKE CAPACITY

Engineering and Operations Committee
February 18, 2025



1

WORKSHOP GOALS

1. Make 5-year recommendations for future groundwater supply projects
2. Show positive impacts of increased Irvine Lake capacity and Howiler Water Treatment Plant (Howiler WTP)



2

WORKSHOP OVERVIEW

1. Changed conditions since the 2021 Groundwater Workplan Update
2. Groundwater supply concepts
3. Historical water use
4. Considerations for future water needs
5. Future groundwater scenarios
6. Conclusions and recommendations



3

CHANGED CONDITIONS AND WATER SUPPLY CONSIDERATIONS

BPP Cap of 70% Removed: Current BPP = 85%

Regional Housing Needs Assessment (RHNA)

Recycled Water (RW) Penalty is permanent

Irvine Lake Capacity / Howiler WTP / Interconnect

OPA Well Capacity Increased from 900 to 3,200 AFY

Surcharge on pumped GW over 100% BPP remains

Water Use Efficiency



4

GROUNDWATER SUPPLY CONCEPTS



5

GROUNDWATER CONCEPTS REVIEW

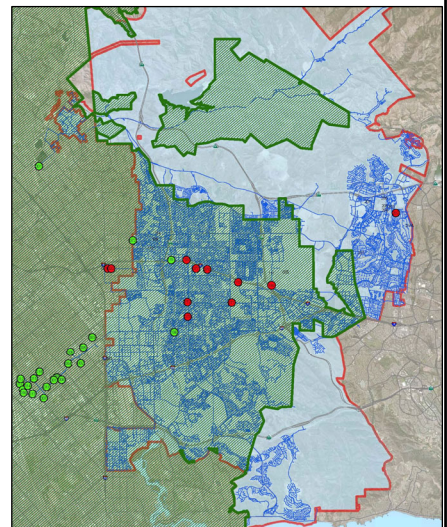
BPP = the percent of total water usage an agency can pump from the GW basin without incurring extra fees.

BPP Basic Calculation

$$\begin{array}{|c|} \hline \text{Total water} \\ \text{use inside} \\ \text{OCWD} \\ \hline \end{array} \times \begin{array}{|c|} \hline \text{BPP} \\ \hline \end{array} = \begin{array}{|c|} \hline \text{Groundwater} \\ \text{Production} \\ \text{Limit w/o} \\ \text{extra fees} \\ \hline \end{array}$$

If Agency Produces Title 22 Recycled Water

$$\begin{array}{|c|} \hline \text{Adjusted Water Use =} \\ \text{(Total Water Use - Title 22 Recycled} \\ \text{Water Use)} \\ \hline \end{array} \times \begin{array}{|c|} \hline \text{BPP} \\ \hline \end{array} = \begin{array}{|c|} \hline \text{Groundwater} \\ \text{Production} \\ \text{Limit w/o} \\ \text{extra fees} \\ \hline \end{array}$$



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BASIN EQUITY ASSESSMENT CALCULATION

- The Basin Equity Assessment (BEA) is meant to bring the cost of groundwater up to the cost of imported treated MWD water.
- If an agency pumps above the BPP, they pay the BEA:
FY 2024-25 ≈ \$432/AF



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EXEMPT AND NON-EXEMPT WELLS

- **Exempt** groundwater sources are constructed to clean the groundwater basin. These wells are still subject to the BEA but instead of paying cash, O&M and Capital credits are used.
- Exempt Sources
 - Wells 21/22 (Non-exempt in 2034)
 - Irvine Desalter Plant (Capital credits drawn down in 2022)
 - Principal Aquifer Plant (Non-potable)
 - Shallow Groundwater Unit (Non-potable)
- Non-Exempt Sources
 - Dyer Road Well Field
 - Well 115
 - OPA Well
 - ~~Wells 106 & 72 (Non-potable)~~ Abandoned in 2025
 - Deep Aquifer Treatment System (DATS, moved to non-exempt in 2014)



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SOURCES OF SUPPLY

Sources of Supply	Exempt or Non-Exempt	System	Annual Production Capacity (AFY)
Irvine Desalter Plant	Exempt	Potable	4,200
Irvine Desalter Plant	Exempt	Non-Potable	3,400
Shallow Groundwater Unit	Exempt	Non-Potable	600
Wells 21/22	Exempt	Potable	2,400
Dyer Road Well Field	Non-exempt	Potable	28,000
Well 115	Non-exempt	Potable	1,500
OPA Well	Non-exempt	Potable	3,200
Deep Aquifer Treatment System	Non-exempt	Potable	8,400
Total			51,700



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HISTORICAL TOTAL WATER USE

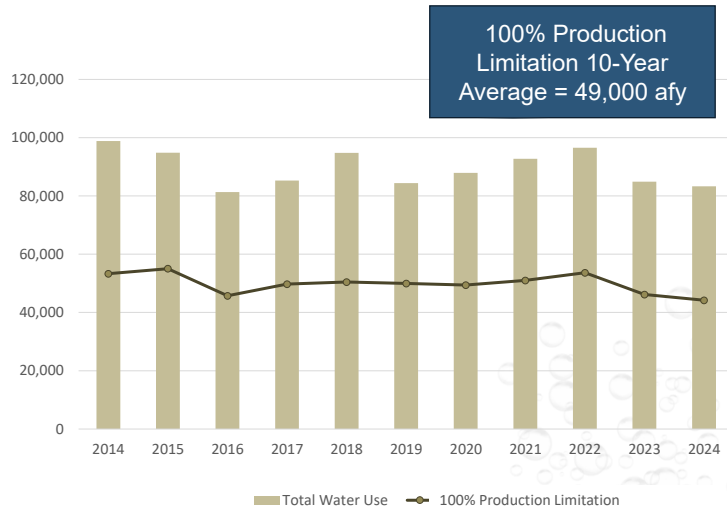


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HISTORICAL TOTAL WATER USE

Water use met by a portfolio of supplies:

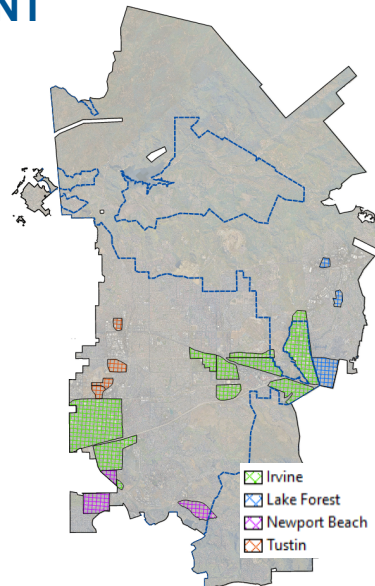
- Potable and Non-Potable Groundwater
- MWRP / LAWRP (Title 22)
- MWD Treated / Untreated
- Native water
- Baker Water Treatment Plant
- Howiler Water Treatment Plant (Future)



CONSIDERATIONS FOR FUTURE WATER NEEDS

REGIONAL HOUSING NEEDS ASSESSMENT

Area	Dwelling Units	Estimated Demand (AFY)	Inside or Outside OCWD Boundary
Newport Beach	6,300	880	Inside
Tustin	900	120	Inside
Lake Forest	2,100	300	Outside
Irvine	57,700	8,000	Inside
Totals	67,000	9,300	



IMPACTS OF SYPHON RESERVOIR AND HOWILER WTP

- As previously modeled, with the Syphon Reservoir Expansion, MWD untreated water supplement to the recycled water system will be replaced with recycled water. This reduces available groundwater production by 2,500 AFY.
- Howiler WTP and increased access to native water in Irvine Lake will not impact groundwater needs, and will offset MWD treated water purchases

FUTURE GROUNDWATER NEEDS

GENERAL PRINCIPLES FOR GROUNDWATER PRODUCTION

- ✓ Do not exceed 100% of groundwater use inside OCWD boundary
- ✓ Maximize both non-exempt and exempt groundwater production
- ✓ Pay BEA for groundwater produced over BPP limit
- ✓ Maximize cost effective GW production outside OCWD
- ✓ Consider other factors as required: regulatory, water quality, operations, reliability, and others

FIVE-YEAR GROUNDWATER SCENARIOS

Baseline Scenario

- Existing: Average 10-year water use history
- Future: Sub-Area Master Plan (SAMP) Projections

RHNA Intensification

- Existing: Average 10-year water use history
- Future: SAMP Projections + RHNA intensification

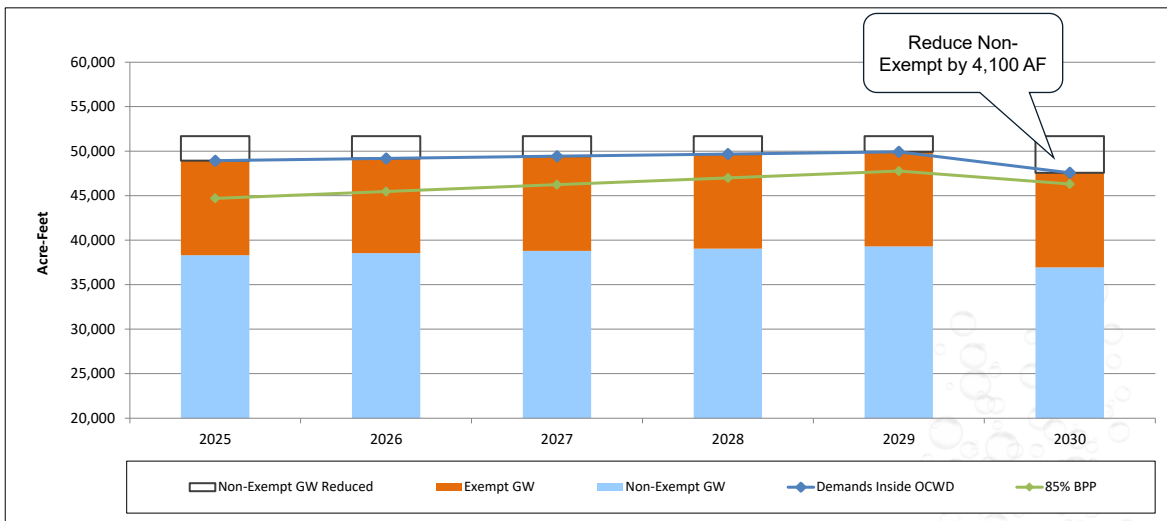
RHNA Intensification + 10%

- Existing: Average 10-year water use history + 10%
- Future: SAMP Projections + RHNA intensification



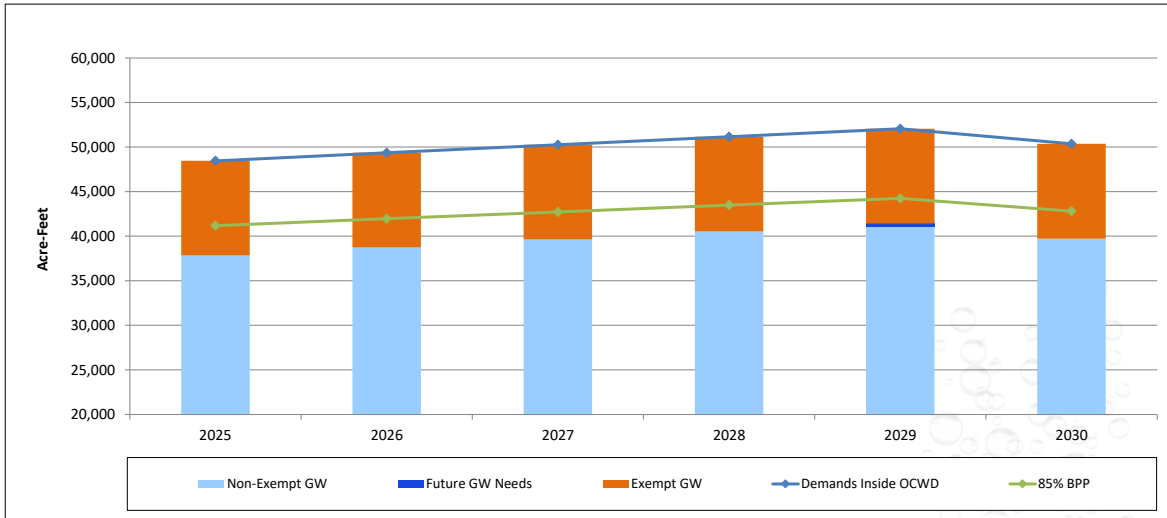
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FUTURE GROUNDWATER: BASELINE

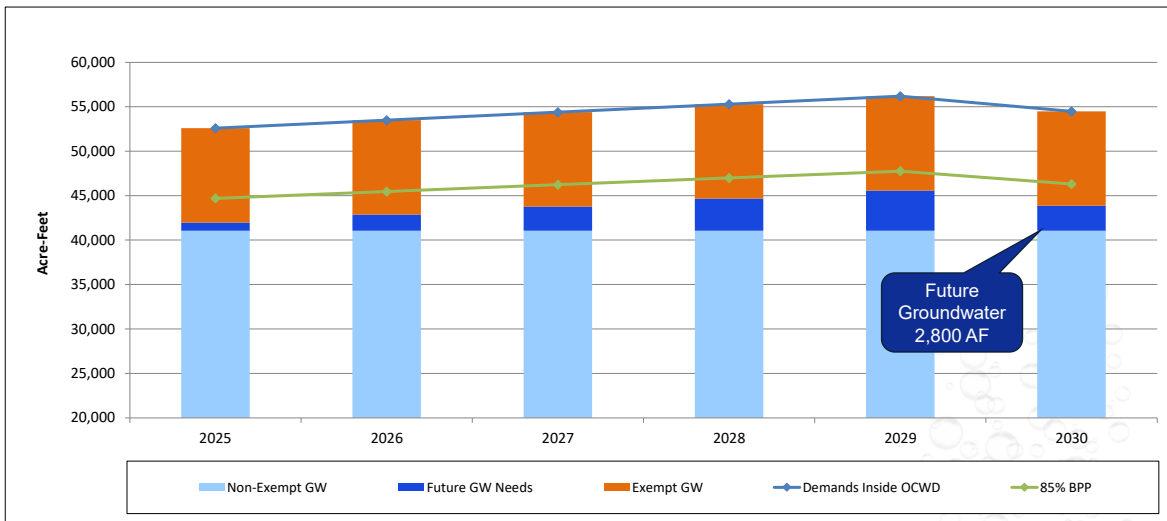


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FUTURE GROUNDWATER: BASELINE + RHNA



FUTURE GROUNDWATER: BASELINE + RHNA + 10%



WATER PORTFOLIO OPPORTUNITIES

- Wells 51 and 52 Blending = 1,500 to 3,000 afy
 - Needs pipeline and verification of capacities and WQ
 - Capital cost ≈\$19.9M
- Future Tustin Legacy Wells = 3,000 afy
 - Needs pipeline and verification of capacities and WQ
 - Capital cost ≈\$18.6M



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GROUNDWATER SUPPLY NEEDS SUMMARY

Scenarios	Current GW	2030 GW
Baseline	2,800 AFY standby capacity	4,100 AFY standby capacity
Baseline + RHNA	0 AFY	0 AFY
Baseline + RHNA + 10%	900 AFY additional groundwater needed	2,800 AFY additional groundwater needed



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GROUNDWATER SUPPLY NEEDS SUMMARY

Scenarios	Current GW	2030 GW	Build Out
Baseline	2,800 AFY standby capacity	4,100 AFY standby capacity	0 AFY
Baseline + RHNA	0 AFY	0 AFY	2,000 AFY
Baseline + RHNA + 10%	900 AFY additional groundwater needed	2,800 AFY additional groundwater needed	6,200 AFY additional groundwater needed

CONCLUSIONS

- Expanded OPA Well pumping helps satisfy future groundwater needs
- With Expanded OPA Well online, groundwater sources may need to be reduced to not exceed demands inside the OCWD boundary
- Over the next five years, during high demand periods (particularly with RHNA growth), additional GW may be needed
- Next five years will provide more data regarding water use growth, state mandates, and regional imported water supplies
- Additional capacity increases IRWD's reliability

RECOMMENDATIONS


- Continue revisiting groundwater needs every 2-3 years
- Continue pumping 100% of water use inside OCWD boundary
- Complete capital projects to convey Howiler WTP supply to IRWD
- Hold on initiating Wells 51/52 design and construction
- Reallocate a portion of Long-Term Water Supply Planning Funds to Howiler WTP projects

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February 18, 2025

Prepared by: A. Murphy / M. Cortez

Submitted by: K. Burton

Approved by: Paul A. Cook 

ENGINEERING AND OPERATIONS COMMITTEE

LAKE FOREST WOODS SEWER IMPROVEMENTS CONSTRUCTION PHASE ENGINEERING SERVICES

SUMMARY:

Due to significant erosion of pipe cover, the Lake Forest Woods Sewer Improvements project will replace and relocate sewer pipeline segments located within the upper reach of the San Diego Creek in the Lake Forest Woods community that are at risk of damage resulting from rainstorm events and further creek bottom and bank erosion. Staff recommends the Board authorize the General Manager to execute a Professional Services Agreement with Woodard & Curran in the amount of \$248,903 for construction phase engineering services for the Lake Forest Woods Sewer Improvements.

BACKGROUND:

This project is located within the Lake Forest neighborhood known as “The Woods,” which is bounded by Lake Forest Drive, Toledo Way, Ridge Route, and Jeronimo Road as shown in Exhibit “A”. This project will replace and relocate portions of the Lake Forest Woods sewer system located within the San Diego and Glenwood Creeks to reduce the risk of pipe failure from erosion. The existing sewer system in the Lake Forest Woods neighborhood was constructed in 1971 by the Los Alisos Water District when it was common practice to construct gravity sewers parallel to creeks. Since the initial construction, significant erosion has taken place in the creek, reducing the amount of cover over the existing sewer pipes in the creek to less than one foot in some locations.

IRWD retained Woodard & Curran for the project design in 2022. The design was completed in September 2023 and includes replacement of the existing sewer segments and manholes with a high risk of failure and least remaining cover with new sewer segments that will be located outside of the scour envelope of the creek. The design eliminates creek crossings and will also install check dams along the San Diego and Glenwood Creek channels to slow runoff flow velocities and thus reduce erosion to protect both the new and existing sewer facilities and access roads upstream of the check dams. In 2023, staff obtained a temporary construction easement from the Lake Forest Woods homeowners associations and an agreement for new pipeline easements for the relocated sewer segments and a permanent blanket access easement. Since 2023, staff has been working to obtain the permits required for the project and anticipates receipt of the permits this month and advertising the project for construction bidding. The estimated construction cost is \$4,761,000.

Consultant Selection:

For project continuity, staff requested a proposal for engineering services during construction from Woodard & Curran. The proposal includes scope for answering requests for information,

performing submittal reviews, attending construction meetings, preparing record drawings, and the additional effort to modify the final design over the past year while awaiting permits. Staff reviewed Woodard & Curran's proposal in the amount of \$248,903 and found it to be reasonable and adequate for the project. Staff recommends executing a Professional Services Agreement with Woodard & Curran, provided as Exhibit "B". Staff will bring the awards of the professional services agreement and the construction contract to the March 24, 2025, meeting of the Board.

FISCAL IMPACTS:

Project 11123 is included in the FY 2024-25 Capital Budget. A budget adjustment will be brought to the Board on March 24, 2025.

ENVIRONMENTAL COMPLIANCE:

This project is subject to California Environmental Quality Act (CEQA) and in conformance with California Code of Regulations Title 14, Chapter 3, Article 6. A Notice of Intent (NOI) to adopt a Mitigated Negative Declaration was filed with the County of Orange and the State Clearinghouse on January 12, 2024. Pursuant to State Guideline §15073, the Initial Study/Mitigated Negative Declaration (IS/MND) was made available for public review ending on March 18, 2024. IRWD did not receive any comments during the extended review period.

This month, staff anticipates receiving the Clean Water Act Section 401 Water Quality Certification from the Santa Ana Regional Water Quality Control Board and the Letter of Permission for the Clean Water Act Section 404 Water Quality Certification from the Army Corps of Engineers. In November, the District received approval for the Lake and Streambed Alteration from the California Department of Fish and Wildlife

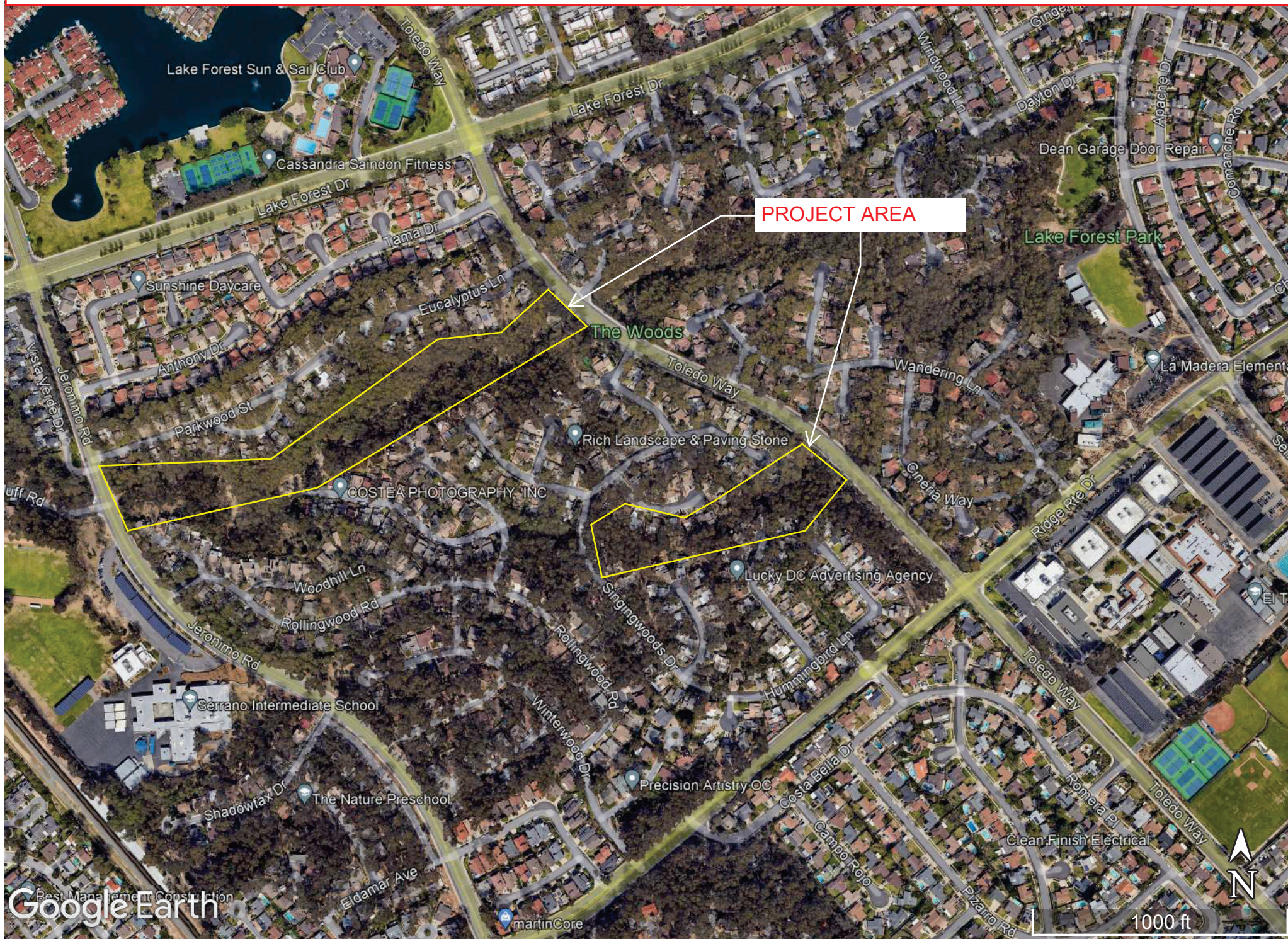
RECOMMENDATION:

That the Board authorize the General Manager to execute a Professional Services Agreement with Woodard & Curran in the amount of \$248,903 for construction phase engineering services for the Lake Forest Woods Sewer Improvements, Project 11123.

LIST OF EXHIBITS:

- Exhibit "A" – Location Map
- Exhibit "B" – Woodard & Curran' Proposal

Exhibit A
LAKE FOREST WOODS SEWER IMPROVEMENTS LOCATION MAP



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November 22, 2024

Irvine Ranch Water District
Attn: Alex Murphy
Senior Engineer
2512 Michelson Drive
Irvine, CA 92619

**Re: Proposal for Engineering Services
Lake Forest Woods Sewer Improvements**

Dear Mr. Murphy:

Attached is Woodard & Curran's proposal to support additional activities associated with the ongoing Lake Forest Woods Sewer Improvements project . The scope of work in this proposal includes engineering services during construction, bid phase support and design services after 1-year of inactivity.

We greatly appreciate this opportunity to offer our engineering services, and as always, we are open to discussing our scope and fee in order to meet Irvine Ranch Water District's needs. Please feel free to call the undersigned at (949) 420-5313 if you have any questions regarding this proposal or require any further information.

Sincerely,

A handwritten signature in blue ink, appearing to read "K-E-S", written over a light blue horizontal line.

Kraig Erickson, P.E.
Project Manager

A handwritten signature in blue ink, appearing to read "Inken Mello", written over a light blue horizontal line.

Inken Mello
Client Service Manager



SCOPE OF SERVICES FOR VARIANCE

The additional scope of work in this variance request is to complete the following items.

TASK 1 – DESIGN PHASE EXTENSION

A schedule extension of an additional 12-months from October 2023 through October 2024 to complete the final bid documents while permitting was ongoing. Work included miscellaneous correspondence, client communications, permitting support and final updates to bid documents.

TASK 2 – ENGINEERING SERVICES DURING CONSTRUCTION

Bid Phase Support

Woodard & Curran shall attend prebid meeting with contractors and support bid phase with addenda.

Pre-Construction Meeting

Woodard & Curran's Project Manager and Project Engineer will coordinate, prepare for, and attend one (1) pre-construction meeting (assumed to be 2 hours long) at IRWD's offices with the contractor and District staff. Assumes IRWD will conduct the meeting and prepare the meeting agenda and minutes that will be prepared and distributed to all attendees. Assumes Woodard & Curran will review the minutes.

Construction Meetings / Site Visits

Woodard & Curran will attend construction meetings and/or site visits as requested. Assumes a total of fifteen (15) to be attended by either the Project Manager or Project Engineer. Assume each meeting requires 4-hours of staff time on average for preparation, travel, attendance, and/or follow-up action items. Scope allows for a 15-month construction period.

Requests for Information

Woodard & Curran will review and respond to requests for information (RFIs) from the contractor to clarify the contract documents and the design intent. Assumes 10 RFIs with an average of 4 hours each.

Submittals and Resubmittals

Woodard & Curran will review and prepare written engineer's review comments for construction submittals and resubmittals. Assumes 50 submittals with an average of 4 hours each and 25 resubmittals with an average of 2 hours each.

Plan Revisions

Woodard & Curran will prepare contract document modifications based on change orders reviewed and approved by IRWD. Assumes a total of two (2) contract document modifications with an average of 16 hours each.



Record Drawings and Consolidated Construction Files

Woodard & Curran will prepare and issue record drawings electronically only based on one set of legible markups provided by the Contractor, and incorporating the changes to the construction drawings issued via addendum during the bid phase. Together with the record drawings, we will submit a consolidated electronic record of the construction documentation (consisting of RFIs and responses, submittals, contract document clarifications, and any field orders).

Permitting Support

Woodard & Curran has allocated a total of 36-hours to support District and Contractor with securing permits with the City of Lake Forest, Orange County Public Works and SWPPP.

Project Management

Woodard & Curran shall provide monthly client reports for the project duration of 15 months.

Team Coordination

Woodard & Curran shall provide weekly team coordination meetings on construction activities for the project duration of 15 months.

Assumptions and Exclusions

- Construction management is excluded from our scope. It is assumed that the District and/or a third-party construction manager will provide contractor oversight, field supervision and direction, review of contractor pay applications and baseline schedule updates, and final punch list preparation and closeout.
- Specialty inspections are excluded from our scope. It is assumed that the District and/or contractor will provide third-party inspection services as required.
- Attendance at shop visits is excluded from our scope. It is assumed that District staff will attend any shop visits as appropriate.
- Hydraulic model updates are excluded from our scope. It is assumed that the District will update its hydraulic model with the project improvements as appropriate.
- Contractor change order request review is excluded from our scope. It is assumed that the District will review change order requests as required.
- Preparation of conformed documents is excluded from our scope. Any changes to the contract documents during the bid phase will be issued via addendum, and those affecting the construction plans will subsequently be incorporated into the record drawing set.



SCHEDULE

The anticipated construction schedule is attached, which shows an overall duration of approximately 15 months. Note that this is contingent on the schedule to be submitted by IRWD's selected Contractor. We are prepared to start work upon receipt of Notice to Proceed (NTP).

FEE

A fully itemized level of estimated effort and budget for each task is attached.

Woodard & Curran															
Tasks	Labor										ODCs		Total		
			Kraig Erickson	Mirko Maher	Justin Kraetsch	CADD	Kevin Kopp	Shawn Kenney	Engineer	Project Assistant	Total Hours	Total Labor Costs (1)	ODCs	Total ODCs	Total Fee
			Project Manager	Technical Lead	Project Engineer	Des-2	Access Roads	Stormwater Support	PE-1	Admin					
			\$350	\$350	\$315	\$180	\$315	\$315	\$280	\$113					
Variance Request	Description														
1	Design Phase Extension														
1.1	Design/PM	updates after 1-year inactivity	4	4	16	24	16	16	24	4	108	\$29,412		\$0	\$29,412
2	Engineering Serviced During Construction														
2.1	Bid Phase Support		2	4	8	12	4	4	12	2	48	\$12,886		\$0	\$12,886
2.2	Preconstruction Meeting		4	4	4						12	\$4,060	\$150	\$165	\$4,225
2.3	Construction Meetings	assumes 15 mtgs	15	10	30		8	8			71	\$23,240	\$1,200	\$1,320	\$24,560
2.4	RFIs	Respond to Requests for Information (10)	4	4	20		6	6			40	\$12,880		\$0	\$12,880
2.5	Submittals	Review Submittals (50) and Resubmittals (25)	25	25	80		20	20	80		250	\$77,700		\$0	\$77,700
2.6	Plan Revisions	2 total revisions			8	16	4	4			32	\$7,920		\$0	\$7,920
2.7	Record Drawings	Prepare Record Drawings & Consolidated Construction Files	2	4	24	48	6	6			90	\$22,080		\$0	\$22,080
2.8	Permitting Support	support City, OC, SWPPP	4		8			8	16		36	\$10,920		\$0	\$10,920
2.9	Project Management	monthly client reporting	15		15					15	45	\$11,670		\$0	\$11,670
2.10	Team Coordination	weekly check-ins	30	15	30		15	15			105	\$34,650		\$0	\$34,650
Subtotal:		Subtotal:	105	70	243	100	79	87	132	21	837	\$247,418	\$1,350	\$1,485	\$248,903
		TOTAL	105	70	243	100	79	87	132	21	837	\$247,418	\$1,350	\$1,485	\$248,903

1. The individual hourly rates include salary, overhead and profit.

IRVINE RANCH WATER DISTRICT PROFESSIONAL SERVICES VARIANCE

Project Title: Lake Forest Woods Sewer Improvements

Project No.: _____ Date: 11/22/2024

Purchase Order No.: 630053 Variance No.: 003

Originator: IRWD ENGINEER/CONSULTANT Other (Explain) _____

Description of Variance (attach any back-up material):
Engineering services during construction.

Engineering & Management Cost Impact:

Classification	Manhours	Billing Rate	Labor \$	Direct Costs	Subcon. \$	Total \$
Project Manager/Tech Lead	175	350	61,250	1,485	0	62,735
Project Engineer/Lead Engr.	409	315	128,835	0	0	128,385
CAD Designer	100	180	18,000	0	0	18,000
Junior Engineer	132	280	36,960	0	0	36,960
Project Admin	21	113	2,373	0	0	2,373
Total \$ =						248,903

Schedule Impact:

Task No.	Task Description	Original Schedule	Schedule Variance	New Schedule
1	Bid Documents	9/26/2023	12 months	11/1/2024
2	ESDC	not contracted	15 months	6/01/2026

Required Approval Determination:

Total Original Contract \$ <u>428,075</u>	<input type="checkbox"/> Director: Cumulative total of Variances less than or equal to \$75,000. <input type="checkbox"/> Executive Director: Cumulative total of Variances less than or equal to \$125,000. <input type="checkbox"/> General Manager: Cumulative total of Variances less than or equal to \$200,000. <input type="checkbox"/> Board: Cumulative total of Variances greater than \$200,000.
Previous Variances \$ <u>197,464</u>	
This Variance \$ <u>248,903</u>	
Total Sum of Variances \$ <u>446,367</u>	
New Contract Amount \$ <u>847,442</u>	
Percentage of Total Variances to Original Contract <u>104</u> %	

ENGINEER/CONSULTANT: Woodard & Curran
Company Name

IRVINE RANCH WATER DISTRICT

Project Engineer/Manager 11/22/2024
Date

Department Director _____ Date

Engineer's/Consultant's Management 11/22/2024
Date

General Manager/Board _____ Date