AGENDA

18700 Ward St.
Fountain Valley, CA 92708
(714) 378-3200

WATER ISSUES COMMITTEE MEETING
WITH BOARD OF DIRECTORS *
ORANGE COUNTY WATER DISTRICT
Wednesday, December 11, 2024 12:00 p.m., Boardroom

*The OCWD Water Issues Committee meeting is noticed as a joint meeting with the Board of Directors for the purpose of strict compliance with the Brown Act and it provides an opportunity for all Directors to hear presentations and participate in discussions. Directors receive no additional compensation or stipend as a result of simultaneously convening this meeting. Items recommended for approval at this meeting will be placed on the **December 18** Board meeting Agenda for approval.

This meeting will be held in person. As a convenience for the public, the meeting may also be accessed by Zoom Webinar and will be available by either computer or telephone audio as indicated below. Because this is an in-person meeting and the Zoom component is not required, but rather is being offered as a convenience, if there are any technical issues during the meeting, this meeting will continue and will not be suspended.

Computer Audio: Join the Zoom Webinar by clicking on the following link:
https://ocwd.zoom.us/j/98592928069

Webinar ID: 985 9292 8069

Telephone Audio: (213) 338 8477

Teleconference Sites:
10382 Bonnie Drive, Garden Grove
1037 Sherwood Lane, Santa Ana
19 Cannery, Buena Park
1454 Madison Street, Tustin
* Members of the public may attend and participate at all locations.

PLEDGE OF ALLEGIANCE

ROLL CALL

ITEMS RECEIVED TOO LATE TO BE AGENDIZED

RECOMMENDATION: Adopt resolution determining need to take immediate action on item(s) and that the need for action came to the attention of the District subsequent to the posting of the Agenda (requires two-thirds vote of the Board members present, or, if less than two-thirds of the members are present, a unanimous vote of those members present.)

VISITOR PARTICIPATION

Time has been reserved at this point in the agenda for persons wishing to comment for up to three minutes to the Board of Directors on any item that is not listed on the agenda, but within the subject matter jurisdiction of the District. By law, the Board of Directors is prohibited from taking action on such public comments. As appropriate, matters raised in these public comments will be referred to District staff or placed on the agenda of an upcoming Board meeting.

At this time, members of the public may also offer public comment for up to three minutes on any item on the Consent Calendar. While members of the public may not remove an item from the Consent Calendar for separate discussion, a Director may do so at the request of a member of the public.

CONSENT CALENDAR (ITEMS NO. 1 – 7)

All matters on the Consent Calendar are to be approved by one motion, without separate discussion on these items, unless a Board member or District staff request that specific items be removed from the Consent Calendar for separate consideration.

1. MINUTES OF WATER ISSUES COMMITTEE MEETING HELD NOVEMBER 13, 2024

   RECOMMENDATION: Approve minutes as presented

2. ANNEX BUILDING ROOF REPLACEMENT PROJECT - PUBLICATION OF NOTICE INVITING BIDS

   RECOMMENDATION: Agendize for December 18 Board Meeting: Authorize publication of Notice Inviting Bids for Contract No. FV-2024-1: Annex Building Roof Replacement Project

3. GARDEN GROVE WELLS 22, 26, AND 27 PFAS TREATMENT SYSTEMS ENGINEER'S REPORT AND CATEGORICAL EXEMPTION

   RECOMMENDATION: Agendize for December 18 Board meeting:

   1. Approve the Engineer's Report for the City of Garden Grove Wells 22, 26, and 27 PFAS Water Treatment Plants Project and determine the project feasible, necessary and beneficial to the lands of the District;

   2. Authorize filing a Categorical Exemption for the Garden Grove Wells 22, 26, and 27 PFAS Water Plants Project in compliance with the California Environmental Quality Act (CEQA) guidelines

4. DEVELOPMENT OF 2025-2050 WATER DEMAND FORECAST FOR ORANGE COUNTY

   RECOMMENDATION: Agendize for December 18 Board meeting: Authorize payment of $106,526 to MWDOC for OCWD's portion of Orange County water demand forecast to be conducted by Hazen and Sawyer

5. AWARD CONTRACT NO. LAB-2024-1 LABORATORY WASHROOM REFURBISHMENT TO RBA BUILDERS LLC, AUTHORIZE INCREASE OF EXISTING PURCHASE ORDER TO IDS GROUP, INC., AND BUDGET INCREASE

   RECOMMENDATION: Agendize for December 18 Board meeting:

   1. Receive and file Affidavit of Publication of Notice Inviting Bids for Contract LAB-2024-1 Laboratory Washroom Refurbishment Project;

   2. Accept bid and award contract LAB-2024-1 to the lowest responsive bid and responsible bidder, RBA Builders LLC, in the amount of $959,927;

   3. Authorize increase of existing Purchase Order to IDS Group, Inc. in the amount of $35,046 for construction support services; and

   4. Increase project budget by $145,000 for a total project budget in the amount of $1,125,000

6. REQUEST TO INCREASE ON-CALL CONSULTANTS DESIGN BUDGET TO PREPARE PFAS TREATMENT SYSTEM DESIGNS

RECOMMENDATION: Agendize for December 18 Board meeting: Authorize increase of Round 1 PFAS project design/CM services budget by $5M for a total of $30M

7. APPROVAL OF FACILITY LICENSE AGREEMENT WITH DELHI CENTER FOR SOUTH BASIN GROUNDWATER PROTECTION PROJECT PUBLIC MEETINGS

RECOMMENDATION: Agendize for December 18 Board meeting: Authorize the General Manager to execute the Facility License Agreement with Delhi Center for the District's use to conduct public meetings for the South Basin Groundwater Protection Project

END OF CONSENT CALENDAR

MATTERS FOR CONSIDERATION

8. EVOQUA WATER TECHNOLOGIES LLC RESIN MEDIA AGREEMENT

RECOMMENDATION: Agendize for December 18 Board meeting: Authorize execution of a two-year Agreement with Evoqua Water Technologies, LLC for an amount not to exceed $13,000,000

9. DRAFT LOCAL AGENCY FORMATION COMMISSION OF ORANGE COUNTY FEASIBILITY STUDY ON THE CONSOLIDATION OF THE ORANGE COUNTY WATER DISTRICT AND THE MUNICIPAL WATER DISTRICT OF ORANGE COUNTY

RECOMMENDATION: Agendize for December 18 Board meeting: Transmit the attached comment letter to LAFCO

CHAIR DIRECTION AS TO ITEMS IF ANY TO BE AGENDIZED AS MATTERS FOR CONSIDERATION AT THE DECEMBER 18 BOARD MEETING

DIRECTORS' ANNOUNCEMENTS/REPORTS

GENERAL MANAGER'S ANNOUNCEMENTS/REPORTS

ADJOURNMENT

WATER ISSUES COMMITTEE MEMBERS

Committee Members
Bruce Whitaker - Chair
Dina Nguyen - Vice Chair
Roger Yoh
Van Tran
Erik Weigand

Alternates
Denis Bilodeau
Steve Sheldon
Natalie Meeks
Valerie Amezcua
Cathy Green

In accordance with the requirements of California Government Code Section 54954.2, this agenda has been posted at the guard shack entrance and in the main lobby of the Orange County Water District, 18700 Ward Street, Fountain Valley, CA and on the OCWD website not less than 72 hours prior to the meeting date and time above. All written materials relating to each agenda item are available for public inspection in the office of the District Secretary. Backup material for the Agenda is available at the District offices for public review and can be viewed online at the District's website: www.ocwd.com

Pursuant to the Americans with Disabilities Act, persons with a disability who require a disability-related modification or accommodation in order to participate in a meeting, including auxiliary aids or services, may request such modification or accommodation from the District Secretary at (714) 378-3234, by email at cfuller@ocwd.com by fax at (714) 378-3373. Notification 24 hours prior to the meeting will enable District staff to make reasonable arrangements to assure accessibility to the meeting.

As a general rule, agenda reports or other written documentation has been prepared or organized with respect to each item of business listed on the agenda and can be reviewed at www.ocwd.com. Copies of these materials and other disclosable public records distributed to all or a majority of the members of the Board of Directors in connection with an open session agenda item are also on file with and available for inspection at the Office of the District Secretary, 18700 Ward Street, Fountain Valley, California, during regular business hours, 8:00 am to 5:00 pm, Monday through Friday. If such writings are distributed to members of the Board of Directors on the day of a Board meeting, the writings will be available at the entrance to the Board of Directors meeting room at the Orange County Water District office.

MINUTES OF BOARD OF DIRECTORS MEETING
WATER ISSUES COMMITTEE
ORANGE COUNTY WATER DISTRICT
November 13, 2024, @ 12:00 p.m.

Director Whitaker called the Water Issues Committee meeting to order at 12:00 p.m. in the District Boardroom. Public access was also provided via Zoom webinar. The Secretary called the roll and reported a quorum as follows:

Committee Members		OCWD
Bruce Whitaker		John Kennedy – General Manager
Dina Nguyen		Chris Olsen – Executive Director of Engineering/Water
Roger Yoh	(arrived 12:04 p.m.)	Resources
Van Tran		Mehul Patel – Executive Director of Operations
Erik Weigand		Jason Dadakis – Executive Director of Water Quality & Technical Resources
Alternates		Megan Plumlee – Director of Research
Denis Bilodeau		Pat Versluis – Director of Water Quality
Steve Sheldon		Randy Fick – Treasurer/CFO
Natalie Meeks	(absent)	Prem Parmar – Laboratory Director
Valeria Amezcua		Roy Herndon – Chief of Hydrogeology
Cathy Green		Shawn Neville – Principal Planner
		Ben Lomeli – Environmental Health and Safety Specialist
		Jeremy Jungreis – General Counsel
		Leticia Villarreal – Assistant District Secretary

CONSENT CALENDAR

The Consent Calendar was approved upon motion by Director Nguyen, seconded by Director Whitaker and carried [5-0], as follows:
Ayes: *Whitaker, Nguyen, Tran, Bilodeau, Sheldon*

1. Minutes of Water Issues Committee Meeting

The Minutes of the Water Issues Committee meeting held October 9, 2024, were approved as presented.

2. Contract GBM – 2024-2 Installation of Three Shallow Aquifer Monitoring Wells Notice of Completion

Recommended for approval at November 20 Board meeting: Accept completion of the work and authorize filing a Notice of Completion for Contract GBM-2024-2, 2024 Shallow Aquifer Monitoring Wells.

3. Contract SG-2024-1 Construction of OCWD-BS29 Monitoring Well Cluster Notice of Completion and Authorize Amendment to Agreement with Wood Rogers for Inspection Services

Recommended for approval at November 20 Board meeting:

1. **Accept completion of work and authorize filing a Notice of Completion for Contract SG-2024-1 Construction of OCWD-BS29 Monitoring Well Cluster; and**

2. **Authorize issuance of Amendment No. 1 to Agreement No.1585 with Wood Rodgers in the amount of $37,065 for additional field inspection services**

4. Gap Process Building Exterior Stair Replacement – Publication of Notice Inviting Bids

Recommended for approval at November 20 Board meeting: Authorize publication of Notice Inviting Bids for Contract No. GA-2024-1: GAP Process Building Exterior Stair Replacement project.

5. Award Contract No. GG-2024-1 Garden Grove Well 19 PFAS Water Treatment Plant to R C Foster Corporation

Recommended for approval at November 20 Board meeting:

1. **Receive and file Affidavit of Publication of Notice Inviting Bids for Contract GG-2024-1 Garden Grove Well 19 PFAS Water Treatment Plant;**

2. **Ratify issuance of Addenda 1-4;**

3. **Reject the Bid of MMC, Inc. as non-responsive;**

4. **Accept bid and award contract GG-2024-1 to the lowest responsive bid and responsible bidder, R C Foster Incorporated, in the amount of $4,553,400; and**

5. **Establish the Garden Grove Well 19 PFAS Water Treatment Plant Project budget in the amount of $6,516,000**

6. Authorize Agreement with Evoqua for PFAS Treatment Pressure Vessel Systems

Recommended for approval at November 20 Board meeting: Authorize issuance of an Agreement with Evoqua for an amount not to exceed $1,595,050 for four additional PFAS Treatment Vessel Systems.

7. Installation of Shallow Aquifer Piezometers and Talbert Gap Monitoring Well Cluster

Recommended for approval at November 20 Board meeting:

1. **Authorize filing of a Categorical Exemption for the installation of two Shallow aquifer piezometers and one Talbert Gap monitoring well cluster in compliance with CEQA guidelines;**

2. **Authorize installation of piezometers FM-41 and OM-12 and monitoring wells OCWD-M29RA and OCWD-M29RB;**

3. **Authorize issuance of a Request for Proposals for inspection services during installation of Talbert Gap monitoring wells;**

4. **Establish a project budget of $256,000; and**

5. **Authorize Notice Inviting Bids for piezometer and monitoring well installation**

8. Contract No. TUS-2022-1: Amendment to Butier Engineering

Recommended for approval at November 20 Board meeting: Authorize issuance of an Amendment No. 1 to Agreement No. 1558 with Butier Engineering Inc. for construction management and inspection services in the amount of $460,830.

9. Emergency Repair Work Order Ratification

Recommended for approval at November 20 Board meeting:

1. **Ratify Work Order No. 8 of Agreement No. 1451 and payment to W.A. Rasic, Inc. for emergency repairs totaling $14,299;**

2. **Ratify Work Order Nos. 9/9A of Agreement No. 1452 and payment to T.E. Roberts, Inc. for emergency repairs totaling $55,650**

10. Authorize Amendment to MKN for Design Services for the Anaheim Lake Valve Vault Project

Recommended for approval at November 20 Board meeting: Authorize issuance of Agreement to MKN for an amount not to exceed $62,854 for design services for the Anaheim Lake Valve Vault Project.

11. Request for Quotes for Monitoring Well SC-4 Redevelopment and Purchase Order to Westbay Instruments

Recommended for approval at November 20 Board meeting:

1. **Authorize issuance of Request for Quotes for services to redevelop monitoring well SC-4; and**

2. **Authorize issuance of a Purchase Order to Westbay Instruments for an amount not to exceed $97,000 for replacement casing and packer components and tool rental.**

12. Authorize Work Order to Environmental Science Associates for Archeological Monitoring at SA-2023-1

Recommended for approval at November 20 Board meeting: Authorize Work Order 12 to Agreement 1135 with ESA, in the amount of $38,760, to conduct archeological monitoring for portions of the construction of City of Santa Ana PFAS Water Treatment Plant Well Nos. 27 & 28.

13. Microfiltration West Basement Acoustic Panel Project: Authorize Notice Inviting Bids

Recommended for approval at November 20 Board meeting:

1. **Create a new R&R project with an initial budget of $60,000 for the MF West Basement Acoustic Panel Project;**

2. **Authorize issuance of a Request for Proposals for the Microfiltration West Basement Acoustic Panel Project.**

14. Reverse Osmosis CIP Valve Relocation Project: Authorize Notice Inviting Bids

Recommended for approval at November 20 Board meeting: Authorize publication of Notice Inviting Bids for Contract No. GWRS-2024-1, Reverse Osmosis CIP Valve Relocation Project.

INFORMATIONAL ITEM

15. Groundwater Basin Water Quality Overview

Director of Water Quality Pat Versluis delivered a comprehensive overview of the water quality within the Orange County Groundwater Basin. His presentation highlighted the collaborative efforts of the Orange County Water District (OCWD) with agencies such as the State Division of Drinking Water (DDW) and the Regional Water Quality Control Board (SWRCB). He also discussed the District's extensive water quality programs, which are conducted throughout the basin and the upper watershed to monitor and assess water quality.

CHAIR DIRECTION AS TO ITEMS IF ANY TO BE AGENDIZED AS MATTERS FOR CONSIDERATION AT THE NOVEMBER 20 BOARD MEETING

Chair Whitaker requested all items be placed on the Consent Calendar for the November 20 Board meeting.

ADJOURNMENT

There being no further business, the meeting was adjourned at 12:46 p.m.

_____
Bruce Whitaker, Chair

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AGENDA ITEM SUBMITTAL

Meeting Date: December 11, 2024

To: Water Issues Committee
Board of Directors

From: John Kennedy

Staff Contact: R. Bouley/M. Patel/
F. Almario

Budgeted: Yes
Budgeted Amount: $170,000
Cost Estimate: $170,000
Funding Source: R&R
Program/Line Item No.: R24011
General Counsel Approval: N/A
Engineers Report: N/A
CEQA Compliance: N/A

Subject: ANNEX BUILDING ROOF REPLACEMENT PROJECT - PUBLICATION OF NOTICE INVITING BIDS

SUMMARY

Plans and technical specifications for Annex Building Roof Replacement Project (Project) have been prepared. The scope of the Project includes protecting the existing roof structure in place and applying a roof reinforcement coating manufactured by Weather Weld to the entire roof of the Annex Building, located on the Fountain Valley campus.

RECOMMENDATION

Agendize for December 18 Board meeting: Authorize publication of Notice Inviting Bids for Contract No. FV-2024-1: Annex Building Roof Replacement Project.

BACKGROUND/ANALYSIS

The Annex building was constructed in the early 1980's and is located on the Fountain Valley campus. Both the OCWD Research and Development department and National Water Research Institute (NWRI) occupy the Annex building. The existing roof system on the Annex building is typical of its era and consists of one layer of ½" plywood decking for structure with one layer of bitumen (tar) and reinforcing fabric to provide weather/water proofing. The current roofing system has reached the end of its usable life and has been patched many times due to numerous leaks since it was constructed about forty years ago.

The roof was inspected in February 2023 by Maintenance Staff and a representative from Weather Weld to explore possible repair or replacement options. Weather Weld manufactures a fiberglass reinforced ceramic asphalt that is sprayed over the existing roofing materials to provide a new seamless roof membrane surface that is water-tight, meets California energy requirements, and does not require the removal and disposal of the existing roof material. In September 2024, Weather Weld provided a demonstration of how their roof would be installed in a small area of the Annex roof that required a patch, and the roof was inspected again to verify conditions prior to preparing design documents. In general, the existing roof was rated from fair to poor with observations of ponding water. The inspection report noted that the roof field, field seams, and the roof

perimeter were all in poor condition. Additionally, the roof penetrations showed signs of deterioration that could be potential pathways for leaks. The inspector also performed a core test to determine the condition of the plywood decking and found the structure to be in fair condition.

The inspection report concluded that the existing roof materials could stay in place and would not require a complete removal. Weather Weld's recommendation includes installation of a reinforcement coating system directly over the existing roof making the entire roof seamless from the top of the parapet to the bottom of the drains. This system would be sprayed on and applied to a minimum thickness of 250 mil dry film thickness (¼-inch). This system will require no maintenance for the life of the 40-year warranty.

The plans and specifications are now complete, and the bid documents are currently being generated. Weather Weld does not install the roofing system themselves. Staff recommends authorizing publication of the Notice Inviting Bids for the Annex Building Roof Replacement Project. This will allow Contractors that are certified to install the Weather Weld system to bid on the project and give OCWD the most competitive price for the installation. Weather Weld will inspect the installation and assure that the product is installed within their requirements. Table 1 shows the proposed schedule for the project:

Table 1: Project Schedule

Description	Date
Complete Design	November 2024
Advertise for Construction	December 2025
Award Construction Contract	January 2025
Construction Complete	March 2025

PRIOR RELEVANT BOARD ACTION(S)

N/A

AGENDA ITEM SUBMITTAL

Meeting Date: December 11, 2024

To: Water Issues Committee
Board of Directors

From: John Kennedy

Staff Contact: R. Bouley

Budgeted: Yes
Proposed Budget: $0
Cost Estimate: $0
Funding Source: CIP
Program/Line Item No.: C24003
General Counsel Approval: Yes
Engineers Report: Completed
CEQA Compliance: Cat. Ex.

Subject: GARDEN GROVE WELLS 22, 26, AND 27 PFAS TREATMENT SYSTEMS ENGINEER'S REPORT AND CATEGORICAL EXEMPTION

SUMMARY

The plans and specifications for the City of Garden Grove Wells 22, 26, and 27 PFAS Treatment Systems Project are currently nearing 30% completion. This project is included in the State Water Resources Control Board Emerging Contaminant (EC) Intended Use Plan (IUP) and eligible to receive a Federal EC Principal Forgiveness Grant in the amount of $10 Million. Staff recommends approving the Engineer's report for the project and filing a Categorical Exemption in compliance with the California Environmental Quality Act guidelines.

Attachment: Engineer's Report for the City of Garden Grove Wells 22, 26, and 27 PFAS Treatment Systems Project.

RECOMMENDATION

Agendize for December 18 Board meeting:

1. Approve the Engineer's Report for the City of Garden Grove Wells 22, 26, and 27 PFAS Treatment Systems Project and determine the project feasible, necessary and beneficial to the lands of the District;

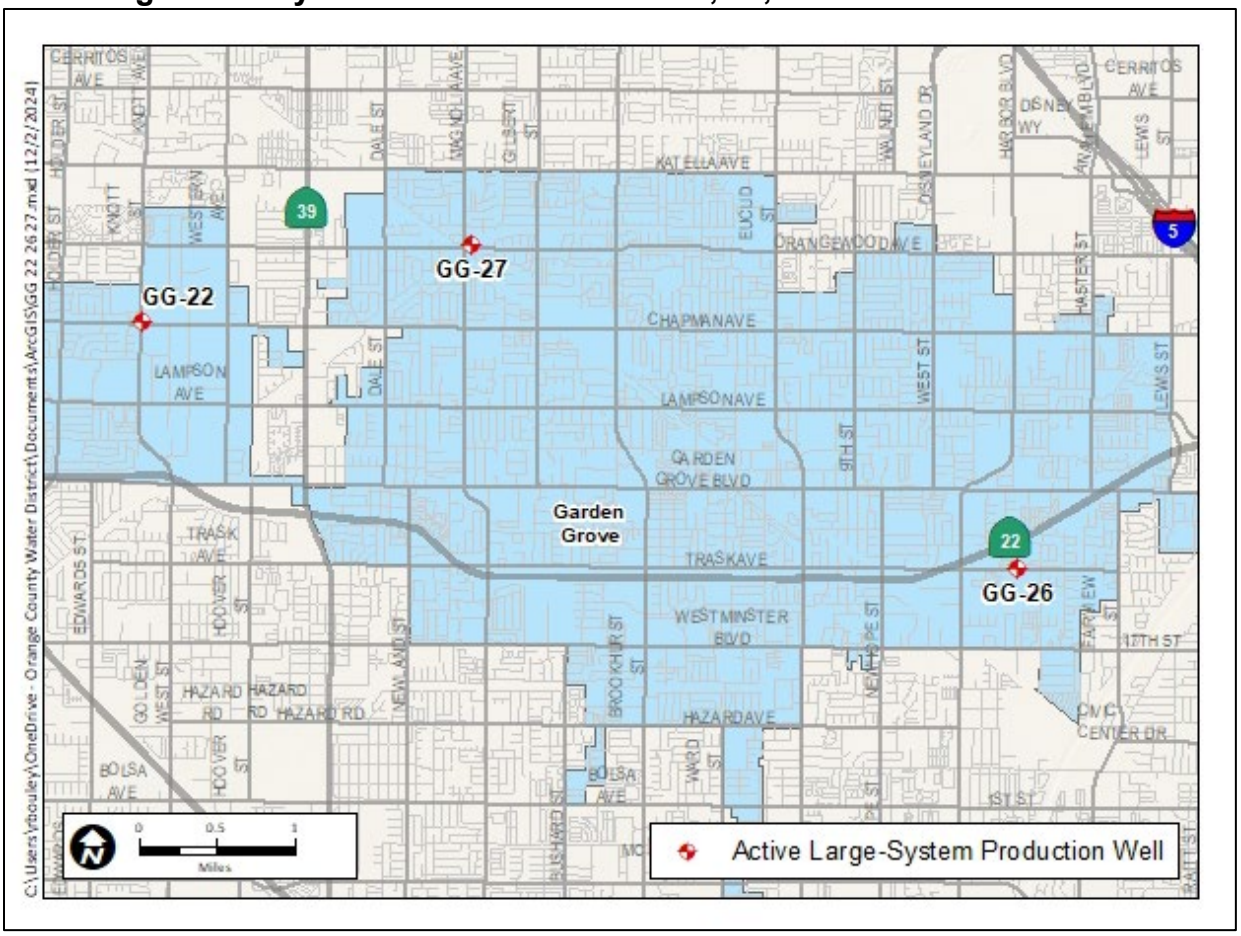
2. Authorize filing of a Categorical Exemption for the City of Garden Grove Wells 22, 26, and 27 PFAS Treatment Systems Project in compliance with the California Environmental Quality Act (CEQA) guidelines.

BACKGROUND/ANALYSIS

To restore the use of groundwater supplies impacted by PFAS contaminants with minimal delay, the firm of Hazen and Sawyer began design of the Garden Grove Wells 22, 26, and 27 PFAS Treatment Systems Project in September of 2024. Due to site constraints at the three sites, Ion Exchange (IX) treatment has been selected as the treatment method. The number of vessels and required support systems needed for IX allows for less area to be occupied by the treatment plant than would be required for Granular Activated Carbon (GAC), Nanofiltration (NF), or Reverse Osmosis (RO). Without additional land acquisition, IX quickly became the treatment choice for these sites. Hazen and Sawyer is nearly 30% complete with design of the PFAS treatment

systems for Wells 22, 26, and 27, and plans will be available for review by OCWD and the City of Garden Grove in January 2025. Figure 1 shows the location of the City of Garden Grove Wells:

Figure 1: City of Garden Grove Wells 22, 26, and 27 Treatment Sites



The City of Garden Grove Wells 22, 26, and 27 PFAS Treatment Systems Project will include installing IX vessel systems and all pre-filtration, site piping, well modifications, electrical upgrades, and other appurtenances. Staff has determined that the Wells 22, 26, and 27 PFAS Treatment Systems Project is consistent with a California Environmental Quality Act (CEQA) Categorical Exemption for New Construction or Conversion of Small Structures (Class 3) because it consists of the construction and operation of a limited number of new, small facilities or structures. The expected project schedule is shown in Table 1.

Table 1: Garden Grove Wells 22, 26, and 27 PFAS Treatment Schedule Summary

Description	Date
Garden Grove Wells 22, 26, and 27	
Design	Sep 2024 – Aug 2025
DDW Permitting	Aug 2025 – Aug 2027
Construction Contract	Nov 2025 – Aug 2027

Staff previously applied for a $10 Million EC PFAS PF Grant through the State Water Resources Control Board (SWRCB) Division of Financial Assistance in Spring 2024. The SWRCB approved the IUP for the fiscal year 2024-25 in August 2024 and this project was included the approved IUP. Therefore, the City of Garden Grove Wells 22, 26, and 27 PFAS Treatment Systems Project is eligible to receive an EC PF Grant for PFAS projects up to $10 Million. Staff is currently working with the SWRCB on the review and the approval of the District's Grant application.

However, prior to any construction costs being eligible for reimbursement, the SWRCB must process a Categorical Exemption in compliance with the National Environmental Policy Act (NEPA) – a process that can take up to one year to complete. This NEPA process is in addition to OCWD filing the CEQA Categorical Exemption and cannot proceed until after OCWD's filing is complete. Both the CEQA and NEPA environmental processes require the Engineer's Report to provide the basis for the project. The recommended action in this submittal only includes approving the Engineer's Report and authorizing CEQA filing. This action does not include authorizing bidding or construction of the project. Staff would return to the Board later next year to request authorization of a Notice Inviting Bids.

Staff recommends approving the Engineer's Report and authorizing the filing of a Categorical Exemption in compliance with CEQA guidelines for the City of Garden Grove Wells 22, 26, and 27 PFAS Treatment Systems Project.

PRIOR RELEVANT BOARD ACTION(S)

N/A

SINCE 1933

ENGINEER'S REPORT

FOR

GARDEN GROVE WELLS 22, 26, AND 27 PFAS WATER TREATMENT SYSTEMS PROJECT

Prepared By:

Ryan Bouley, P.E.

December 2024

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1.0 EXECUTIVE SUMMARY

The purpose of this Engineer's Report is for Orange County Water District (OCWD or District) and the City of Garden Grove (City) to evaluate the need, benefits, and cost of constructing a Per- and Polyfluoroalkyl Substances (PFAS) treatment system for the City's production wells 22, 26, and 27 (Garden Grove Wells).

In April of 2024, the United States Environmental Protection Agency (EPA) issued final National Primary Drinking Water Regulation for six PFAS. EPA established enforceable maximum contaminant level (MCL) and non-enforceable maximum contaminant level goal (MCLG) for the following PFAS.

Compound	**Final MCLG**	**Final MCL (enforceable levels)**
PFOA - perfluorooctanoic acid	Zero	4.0 parts per trillion (ppt)
PFOS - perfluorooctane sulfonate	Zero	4.0 ppt
PFHxS - perfluorohexanesulfonic acid	10 ppt	10 ppt
PFNA - perfluorononanoic acid	10 ppt	10 ppt
HFPO-DA - hexafluoropropylene oxide dimer acid (Commonly known as GenX Chemicals)	10 ppt	10 ppt
Mixtures containing two or more PFHxS, PFNA, HFPO-DA, and PFBS) [1]	1 Hazard Index[2]	1 Hazard Index[2]

[1] - Perfluorobutane sulfonic acid (PFBS)

[2] $Harad\ Index\ (unitless) = \frac{PFBS\ ppt}{2{,}000\ ppt} + \frac{PFHxs\ ppt}{10\ ppt} + \frac{PFNA\ ppt}{10\ ppt} + \frac{HFPO{-}DA\ ppt}{10\ ppt}$

In February 2020, the State Water Resources Control Board's Division of Drinking Water (DDW) issued revised drinking water response levels of 10 parts per trillion (ppt) for PFOA and 40 ppt for PFOS. In March 2021, DDW issued a drinking water response level of 5 parts per billion (5,000 ppt) for PFBS and in October 2022 DDW issued a response level of 20 ppt for PFHxS. DDW recommends that sources exceeding these limits be taken out of service, treated, or blended. Water produced from the City Wells has tested 3.4 – 15.2 ppt for PFOA, 6.1 – 21.5 ppt for PFOS, and non-detect – 6.5 ppt for PFBS. When groundwater sources are taken out of service, their production is commonly replaced with more expensive imported water from the Metropolitan Water District of Southern California (MWD).

In 2019, the District hired Carollo to conduct a PFAS Planning Study to evaluate options for the treatment of groundwater wells that are potentially impacted by PFAS, including the City of Garden Grove, and to develop preferred alternatives. The five alternatives evaluated in the Planning Study were shutting down the potentially impacted well and

replacing the source with imported water, blending well water with imported water, blending well water with other groundwater, packing part of the well to avoid zones with PFAS, and engineered treatment. It was determined that engineered treatment, specifically ion exchange, would be the preferred treatment for the Garden Grove Wells. The District also hired Jacobs in 2019 to perform pilot testing and life-cycle cost analysis of various treatment technologies. Results from the Jacobs study indicate that ion-exchange (IX) is an efficient technology to remove PFAS. OCWD has since installed several IX treatment systems at multiple well sites that have further shown that ion-exchange effectively removes PFAS.

This project will consist of installing a total of eight ion exchange vessel systems in lead-lag configuration (a total of 16 vessels) at the Wells 22, 26, and 27 sites, including the necessary piping, prefilters and related appurtenances.

Benefits of constructing a PFAS Treatment System at the Garden Grove Wells include:

- Allowing the City to continue to utilize its well and infrastructure investment.
- Allowing the City to maintain a diversified water supply portfolio with a substantial local supply component.
- Saving the OCWD service territory millions of dollars per year in water supply costs.
- Saving OCWD over $4.27 Million per year by paying for the treatment systems instead of losing RA revenue.
- Avoiding millions of dollars of imported water costs incurred by the City by utilizing groundwater instead of imported water.

In November 2019, the District adopted a PFAS policy to design and construct the lowest reasonable cost but efficient treatment system to remove PFOS and PFOA for Groundwater Producers, such as the City of Garden Grove. Additionally, the policy states that OCWD will provide a 50 percent subsidy for future operation and maintenance expenses up to $89.60 per acre-foot.

The current estimated capital cost of this project is $31,009,000. The current estimated Operation and Maintenance cost is $163 per acre-foot per year, to be split between OCWD and the City of Garden Grove. These costs will be adjusted as the engineering details are finalized and construction is completed.

2.0 BACKGROUND

In 2009, the United States Environmental Protection Agency (EPA) established a provisional health advisory of 400 ppt for PFOA and 200 ppt for PFOS to assess the potential risk for short-term exposure through drinking water. The EPA later released a non-regulatory health advisory level of 70 ppt for PFOA and PFOS (combined) in 2016.

In March 2019, the DDW issued mandatory PFAS testing orders to 12 public water systems (Groundwater Producers) in the District's service area, including the City of Garden Grove. Dozens of wells in the District's service area had water quality testing results exceeding the DDW Notification Levels. Affected Producers were required to provide governing body notifications for exceedances of the Notification Level. Later in 2019, DDW lowered the Notification Limits to 5.1 ppt for PFOA and to 6.5 ppt for PFOS. In February 2020 DDW lowered the Response Levels to 10 ppt for PFOA and 40 ppt for PFOS. In March 2021, DDW issued a drinking water response level of 5 parts per billion (5,000 ppt) for PFBS and in October 2022 DDW issued a response level of 20 ppt for PFHxS.

In April of 2024, the EPA issued final National Primary Drinking Water Regulation for six PFAS. EPA established enforceable MCLs and non-enforceable MCLGs for the following PFAS.

Compound	**Final MCLG**	**Final MCL (enforceable levels)**
PFOA - perfluorooctanoic acid	Zero	4.0 parts per trillion (ppt)
PFOS - perfluorooctane sulfonate	Zero	4.0 ppt
PFHxS - perfluorohexanesulfonic acid	10 ppt	10 ppt
PFNA - perfluorononanoic acid	10 ppt	10 ppt
HFPO-DA - hexafluoropropylene oxide dimer acid (Commonly known as GenX Chemicals)	10 ppt	10 ppt
Mixtures containing two or more PFHxS, PFNA, HFPO-DA, and PFBS) [1]	1 Hazard Index[2]	1 Hazard Index[2]

[1] - perfluorobutane sulfonic acid (PFBS)

[2] $Harad\ Index\ (unitless) = \frac{PFBS\ ppt}{2{,}000\ ppt} + \frac{PFHxs\ ppt}{10\ ppt} + \frac{PFNA\ ppt}{10\ ppt} + \frac{HFPO-DA\ ppt}{10\ ppt}$

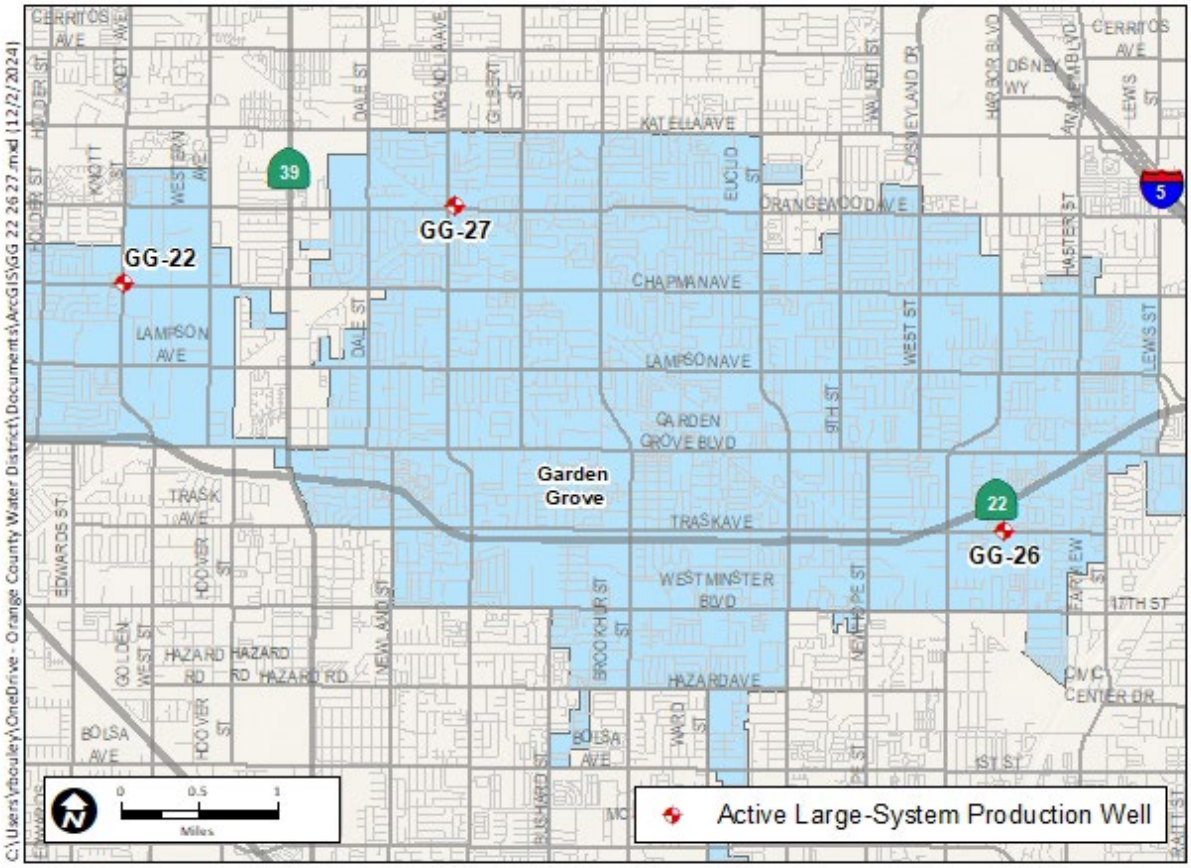
In preparation for the impacts of PFAS to groundwater supplies, the District adopted a PFAS policy in November 2019. Among other items, the policy states that OCWD will fund the lowest reasonable and efficient treatment system design and construction costs to remove PFAS compounds for Groundwater Producers. Additionally, the policy states that OCWD will provide a 50 percent subsidy for operation and maintenance

expenses up to $75 per acre-foot. The rate is adjusted annually each July 1 (beginning July 1, 2021) and the maximum subsidy for operation and maintenance has been updated to $89.60 per acre-foot for fiscal year 2023/2024.

The City of Garden Grove wells currently under consideration for PFAS treatment systems are shown in Figure 1. Five alternatives to address PFAS at these wells are currently being evaluated:

1) shutting down the potentially impacted well and replacing the source with imported water,
2) blending well water with imported water,
3) blending well water with other groundwater,
4) packing part of the well to avoid zones with PFAS, and
5) engineered treatment.

Figure 1: Garden Grove Wells Vicinity Map



Engineered treatment, specifically IX, was found to be the preferred and efficient treatment for the Garden Grove Wells due to site area limitations. The number of vessels and support systems required for IX allows for less area to be occupied by the treatment systems than would be required for Granular Activated Carbon (GAC), and IX would be more cost-effective than Nanofiltration (NF) or Reverse Osmosis (RO). RO is a treatment technology that ensures high reliability for PFAS removal but would

generate a liquid waste stream containing PFAS and would be more expensive than the other technologies. Additionally, a RO systems would likely require additional City staff with the appropriate water treatment certifications to operate. Although RO would be the most effective option for long-term removal of PFAS, the costs associated with RO make IX the most feasible treatment choice for the Garden Grove Wells at this time.

The Jacobs-OCWD joint pilot study of various treatment medias began testing of IX in December 2019. The study has shown that IX successfully removes PFAS.

3.0 PROJECT PURPOSE AND DESCRIPTION

3.1 Project Purpose

The purpose of this project is to design, permit, construct, and operate PFAS removal systems for the Garden Grove Wells in accordance with the District PFAS policy. The proposed IX treatment system is to remove PFOA and PFOS to less than 2 ppt (the current non-detect limit). Use of this PFAS removal treatment system will ensure the groundwater supplied by the Garden Grove Wells can be served to the City in compliance with PFAS regulations.

3.2 Site Locations

The locations of the Garden Grove Wells and proposed treatment systems are shown in Table 1, below:

Table 1: Garden Grove Wells Addresses

Well/Facility Name	Address
Well 22	7001 Chapman Ave.
Well 26	12351 Trask Ave.
Well 27	11472 Magnolia St

The land at all the sites is owned by the City of Garden Grove and currently houses the Garden Grove Wells and discharge piping, communication equipment, electrical equipment, and storm drainage piping. The Well 22 and Well 27 sites also house reservoirs for water distribution. The sites are generally surrounded by residential, industrial, or parks and open space land uses.

3.3 Project Components

The PFAS treatment systems will be sized to treat the maximum well discharge flow rates for each site. Trains (or systems) of two IX vessels will be used in lead-lag configuration. See Table 2 for the number of proposed systems and treatment capacity at each site, and see Figure 2 for typical system layout. The IX vessels are expected to be provided by Evoqua and measure approximately 16-feet tall by 12-feet wide. The influent and effluent supply pipelines can be operated in a way to switch which vessel is the lead and lag position by controlling valves. The lead-lag arrangement is beneficial because once the PFAS constituents reach a predetermined threshold the lead vessel's

effluent, then the lead vessel can be switched to the lag. The new lead vessel houses fresh IX resin. Replacement of the IX media is performed after the spent resin is placed into lag service. Sample ports are located at several positions in the vessel so that resin performance can be monitored.

Table 2: Garden Grove Wells IX Systems

Well/Facility Name	Treatment Capacity	Total Systems
Well 22	4,400 GPM	3
Well 26	3,600 GPM	3
Well 27	3,600 GPM	2

Figure 2: Typical Four-Vessel Treatment System Rendering

Prior to the water entering the IX vessels, it first passes through a pre-filtration system. Since IX media should not be backwashed, its lifespan would be greatly reduced if solids loading were to occur. It is proposed to use 5-micron cartridge-filters prior to the IX vessels to catch solids that may be discharged by the well.

The existing disinfection systems used at all the Garden Grove Wells must be reconfigured to facilitate the operation and replacement activities. Disinfection systems piping is proposed to be relocated downstream of the IX vessel effluent pipelines.

Electrical and telemetry systems will be integrated into the treatment systems to convey information into the City's existing SCADA system. Flow rates, pressure differential, and flood alarms are included in the list of proposed instrumentation.

3.4 Permits and Regulatory Issues

The City of Garden Grove's drinking water system operates under a DDW permit that would need to be amended for the proposed Garden Grove Wells PFAS treatment

systems. Submittals for the amendment have been sent to DDW for review, including the 90% completed design. The permit amendment is not officially granted until after the system is constructed and proven to meet the required water quality criteria.

Several permits will be required from the City of Garden Grove:

- A right of entry permit will be required to grant the District and its consultants control of the site during construction.
- Encroachment, public works, building, and grading permits will be required to construct the treatment system and appurtenances.

In accordance with the California Environmental Quality Act (CEQA) guidelines, it is proposed to file a Categorical Exemption for the project. The project is consistent with the Categorical Exemption for New Construction or Conversion of Small Structures (Class 3) because it consists of the construction and operation of a limited numbers of new, small facilities or structures.

4.0 FINANCIAL ANALYSIS

4.1 Construction Cost Estimates

The estimated construction cost for IX is $23,691,000, as detailed in Table 3.

Table 3 – IX Construction Cost Estimate

Description	Quantity	Units	Unit Cost ($/unit)	Cost ($)
Mobilization	1	LS	$ 200,000	$ 200,000
General Conditions	1	LS	$ 400,000	$ 400,000
Pre-Filtration System	1	LS	$1,740,000	$1,740,000
Pre-Purchased Vessel Systems	1	LS	$4,368,000	$4,368,000
IX Systems (appurtenances, install)	1	LS	$2,376,000	$2,376,000
IX Resin (6,800 cubic feet)	1	LS	$ 390	$ 390
Booster Pumps	1	LS	$1,980,000	$1,980,000
Yard Piping	1	LS	$3,090,000	$3,090,000
Site Work	1	LS	$ 645,000	$ 645,000
Electrical and Communication	1	LS	$2,140,000	$2,140,000
			Total =	**$23,691,000**

A construction cost estimate for a Reverse Osmosis system is detailed in Table 4.

Table 4 – RO Construction Cost Estimate

Description	Quantity	Units	Unit Cost ($/unit)	Cost ($)
Mobilization	1	LS	$1,485,400	$1,485,400
General Conditions	1	LS	$4,456,300	$4,456,300
Pre-Filtration System	1	LS	$2,970,900	$2,970,900
RO Treatment Systems & Pumps	1	LS	$15,894,200	$15,894,200
RO Membranes	1	LS	$3,713,600	$3,713,600
Chemical Storage	1	LS	$742,700	$742,700
Sewer Connection & Fees	1	LS	$1,188,400	$1,188,400
Yard Piping & Mechanical	1	LS	$7,427,200	$7,427,200
Building	1	LS	$4,456,300	$4,456,300
Site Work	1	LS	$2,228,200	$2,228,200
Electrical and Communication	1	LS	$14,854,300	$14,854,300
			Total =	**$59,417,500**

4.2 Capital Cost Estimate

The estimated total capital cost for the IX project is $31,009,000, as shown in Table 5. The estimated total capital cost for a RO treatment system is $77,241,000 as shown in the same table. The table includes the cost of constructing the site improvements for the PFAS treatment system, engineering services for design and construction phases, construction management and the cost associated with meeting regulatory requirements.

Table 5 – Capital Cost Estimate

Item	IX Cost	RO Cost
Engineering, Permitting, & CEQA	$ 2,568,000	$ 5,940,000
Construction	$23,691,000	$59,417,500
Contingency (~20%)	$ 4,750,000	$11,883,500
Total =	**$31,009,000**	**$77,241,000**

4.3 Annual Operation and Maintenance Cost Estimate

The estimated annual Operation and Maintenance (O&M) cost for the IX project is $1,632,400 per year, as detailed in Table 6. It conservatively assumes that visual inspection will be performed daily, and analytical testing will be performed by an outside entity instead of OCWD.

Table 6 – IX Annual O&M Cost Estimate

Description	Quantity	Units	Unit Cost ($/unit)	Cost ($)
Power	12	Month	$ 20,000	$ 240,000
Labor	1	Year	$200,000	$ 200,000
Maintenance	1	Year	$100,000	$ 100,000
Analytical Testing	12	Month	$ 10,000	$ 120,000
Media Replacement	1	Year	$972,400	$ 972,400
			Total =	**$1,632,400**

The five-year average of annual production from the Garden Grove Wells is approximately 10,000 acre-feet. Using this value results in a unit O&M cost of $163 per acre-foot. Per the District's PFAS policy, the O&M costs will be split between OCWD and the City of Garden Grove, resulting in $81.50 per acre-foot for OCWD and $81.50 for Garden Grove.

Table 7 shows an itemized breakdown of O&M cost for a RO treatment system. Using an annual volume of 10,000 acre-feet, the RO O&M unit cost is estimated to be $450 per acre-foot.

Table 7 - RO Annual O&M Cost Estimate

Description	Quantity	Units	Unit Cost ($/unit)	Cost ($)
Power	12	Month	$ 175,400	$2,104,800
Chemicals	12	Month	$ 7,400	$ 88,800
Labor	1	Year	$ 594,200	$ 594,200
Maintenance	1	Year	$ 750,100	$ 750,100
Analytical Testing	12	Month	$ 11,900	$ 142,800
Membrane Replacement	1	Year	$ 742,400	$ 742,400
			Total =	**$4,504,500**

4.4 Ion-Exchange Cost Comparisons

Three methods to evaluate the economic effectiveness of the IX project are presented below. All three methods indicate that there is a financial benefit to move forward with this project.

1) OCWD Service Territory Perspective - The total project cost of providing water to the OCWD service territory via treated groundwater versus purchasing MWD imported water.
2) OCWD Perspective - The OCWD lost revenue due to no Garden Grove groundwater production versus the OCWD cost to construct and operate the treatment systems.
3) City of Garden Grove Perspective – The cost of providing treated groundwater versus purchasing MWD imported water.

Method 1: OCWD Service Territory Perspective

The unit cost for the City to acquire treated imported water through MWD will be $1,460 per acre-foot ($1,395 Full Service Treated + $65 readiness to serve) on January 1, 2025. An annual volume of 10,000 acre-feet would cost $14,600,000.

If the capital cost is amortized over 30 years at a 4% interest rate, the annual payment for the PFAS treatment systems would be $1,793,100, or $179 per acre-foot for 10,000 acre-feet. The well power cost to pump groundwater averages $61 per acre-foot. The PFAS treatment system's O&M expense is estimated to be $163 per acre-foot. As shown in Table 8, the total unit cost of the treated groundwater would be $403 per acre-foot, or $4,034,000 per year for 10,000 acre-feet. Note that the Replenishment Assessment (RA) is not considered in this calculation because it would be both paid and received by agencies within the OCWD Service Territory.

Implementation of the PFAS treatment system at the Garden Grove wells is estimated to save the OCWD service territory $10,566,000 per year in water supply costs.

Table 8 – OCWD Service Territory Perspective

Groundwater			MWD Import		
Description	**Annual Cost**	**Unit Cost**	**Description**	**Annual Cost**	**Unit Cost**
Project Capital	$ 1,793,100	$ 179	Tier 1 Full Service	$ 13,950,000	$ 1,395
Project O&M	$ 1,632,400	$ 163	Readiness to Serve	$ 650,000	$ 65
Well Power	$ 608,500	$ 61			
Total	$ 4,034,000	$ 403	Total	$ 14,600,000	$ 1,460

Method 2: OCWD Perspective

Taking the Garden Grove Wells out of service would reduce the RA payments made by the City of Garden Grove to OCWD. This assumes that other City of Garden Grove wells are not available to pump the volume, which is currently the case. At an annual volume of 10,000 acre-feet and the current RA of $688 per acre-foot, OCWD would lose a revenue of $4,271,900.

The District's expenses to construct the PFAS treatment systems at the Garden Grove wells include the capital expense and half of the O&M. As previously discussed, the amortized unit capital expense is $179 per acre-foot and OCWD's portion of the estimated O&M expense is $81.62 per acre-foot. The resulting unit cost of constructing and operating the PFAS systems at the Garden Grove wells would be $261 per acre foot, or $2,609,300 per year using 10,000 acre-feet per year.

Table 9 – OCWD Perspective

Project Cost			Lost Revenue		
Description	**Annual Cost**	**Unit Cost**	**Description**	**Annual Cost**	**Unit Cost**
Project Capital	$ 1,793,100	$ 179	Replenishment Assessment	$ 6,880,000	$ 688
Project O&M	$ 816,200	$ 82			
Total	$ 2,609,300	$ 261	Total	$ 6,880,000	$ 688

Implementation of the PFAS treatment system at the Garden Grove wells is estimated to save OCWD $4.27 Million per year by utilizing the treatment systems instead of losing RA revenue.

Method 3: City of Garden Grove Perspective

Given the need for the City of Garden Grove to acquire water supplies to meet the demands of its customers, it is faced with a situation to utilize the PFAS treatment system or to purchase MWD imported water. As previously discussed, the cost to the City to purchase 10,000 acre-feet of MWD water would be $14,600,000 per year, or $1,460 per acre-foot.

The costs for the City of Garden Grove to produce groundwater from the Garden Grove wells and operate the PFAS treatment systems include payment of the RA ($688 per acre-foot), half of the O&M expenses ($81.62 per acre-foot), and well power costs ($61 per acre-foot). The total unit cost would be $831 per acre-foot, or $8,306,200 per year for 10,000 acre-feet.

Table 10 – City of Garden Grove Perspective

Groundwater			MWD Import		
Description	**Annual Cost**	**Unit Cost**	**Description**	**Annual Cost**	**Unit Cost**
Replenishment Assessment	$ 6,880,000	$ 688	Tier 1 Full Service	$ 13,950,000	$ 1,395
Project O&M	$ 816,200	$ 82	Readiness to Serve	$ 650,000	$ 65
Well Power	$ 610,000	$ 61			
Total	$ 8,306,200	$ 831	Total	$ 14,600,000	$ 1,460

Implementation of the PFAS treatment system at the Garden Grove wells is estimated to save the City of Garden Grove $6.3 Million per year by utilizing groundwater instead of MWD imported water.

4.5 Reverse Osmosis versus Ion Exchange Unit Cost

RO would provide a more robust, comprehensive, and reliable treatment for long-term removal of PFAS. However, the capital and operating cost of the treatment system are more expensive. If the estimated RO capital cost of $59.4 million is amortized over 30 years at a 4% interest rate, the annual payment for the RO PFAS treatment systems would be $3,435,000, or $344 per acre-foot for 10,000 acre-feet. The RO PFAS treatment system's O&M expense is estimated to be $450 per acre-foot for 10,000 acre-feet. As shown in Table 11, the total unit cost of the RO treated groundwater would be $794 per acre-foot, or $7,935,000 per year for 10,000 acre-feet. The IX project costs are also summarized in the same table.

Table 11 – Reverse Osmosis versus Ion Exchange Unit Cost

IX			RO		
Description	**Annual Cost**	**Unit Cost**	**Description**	**Annual Cost**	**Unit Cost**
Project Capital	$1,793,100	$ 179	Project Capital	$ 3,435,000	$ 344
Project O&M	$1,632,400	$ 163	Project O&M	$ 4,500,000	$ 450
Total	$2,609,300	$ 261	Total	$ 7,935,000	$ 794

5.0 CONCLUSIONS AND RECOMMENDATIONS

Constructing the proposed IX PFAS Treatment System at Garden Grove's Garden Grove Wells will:

- Allow the City to continue to utilize its well and infrastructure investment.
- Allow the City to maintain a diversified water supply portfolio with a substantial local supply component.
- Save the OCWD service territory approximately $10,566,000 per year in water supply costs.
- Save OCWD approximately $4,270,700 per year by paying for the treatment systems instead of losing RA revenue.
- Save the City of Garden Grove approximately $6,293,800 per year by utilizing groundwater instead of imported water.

Given the financial benefits to the OCWD service territory, OCWD, and the City of Garden Grove to utilize a less expensive treated groundwater supply instead of MWD water, it is recommended that OCWD proceed with PFAS Treatment System Project for the Garden Grove Wells. Additionally, the City would be able to continue using their well investment and maintain their local water component of their supply portfolio.

6.0 PROPOSED IMPLEMENTATION SCHEDULE (TENTATIVE)

Date	Activity
December 18, 2024	Board Approves Engineer's Report and Adopts CEQA
Summer 2025	Board Authorizes NIB/Advertise for construction bids
Fall 2025	Board awards construction contract
Fall 2027	Completion of construction

7.0 REFERENCES

Carollo, *PFAS Treatment Systems Planning Study – City of Garden Grove*, 2020

AGENDA ITEM SUBMITTAL

Meeting Date: December 11, 2024

To: Water Issues Committee
Board of Directors

From: John Kennedy

Staff Contact: L. Haney/A. Hutchinson

Budgeted: Partial
Budgeted Amount: $25,000
Cost Estimate: $106,526
Funding Source: General Reserves
Program/Line Item No. 1044.51112
General Counsel Approval: N/A
Engineers/Feasibility Report: N/A
CEQA Compliance: N/A

Subject: DEVELOPMENT OF 2025-2050 WATER DEMAND FORECAST FOR ORANGE COUNTY

SUMMARY

Staff recommends the Board authorize payment of $106,526 to MWDOC for OCWD's portion of developing an Orange County water demand forecast to be conducted by Hazen and Sawyer. These forecasts will be used in various planning efforts by OCWD, including OCWD's Resilience Plan, and by MWDOC and the Groundwater Producers.

Attachment: Proposal from Hazen and Sawyer

RECOMMENDATION

Agendize for December 18 Board meeting: Authorize payment of $106,526 to MWDOC for OCWD's portion of Orange County water demand forecast to be conducted by Hazen and Sawyer.

BACKGROUND/ANALYSIS

Water retailers and wholesalers are required to develop updates to their Urban Water Management Plans (UWMPs) and submit to the California Department of Water Resources every five years in accordance with the California Water Code. As part of these updates, new water demands forecast are necessary to prove that a retailer or wholesaler can meet future water demands. OCWD also uses these forecasts in its Resilience Plan to project how groundwater supplies can meet future demands.

Every five years since 2010, leading up to each UWMP preparation, MWDOC in collaboration with member agencies, OCWD, and the cities of Anaheim, Fullerton, and Santa Ana (each a Metropolitan Water District member agency) coordinate to develop updated water demand forecasts that are regionally consistent. MWDOC and OCWD take a bottoms-up approach where forecasts are developed for individual member agencies and the sum of member agencies' demands roll up to the wholesale demand. The development of individual member agency demand is part of MWDOC's core services. OCWD has been a co-funding project partner as 16 of its 19 basin producers are also MWDOC member agencies. The remaining three basin producers are the cities of Anaheim, Fullerton, and Santa Ana who are each Metropolitan member agencies. For consistency in demand

projections across MWDOC and OCWD, the demand forecasting effort is inclusive of the three cities as well.

Factors influencing water demand (i.e., water use drivers) are evolving as the impacts of recent regulatory requirements AB 1668 / SB 606, also known as “Making Conservation a California Way of Life” demographic changes (both population and housing), and weather variability trends continue to shape current and likely future demands. With these demand impacts, the 2025 UWMP cycle represents an appropriate time to revisit demand forecasting methodology. Regionally, by developing these water demands with MWDOC, all Orange County water agencies will have one set of water demand forecast to work thereby avoiding conflict and confusion.

MWDOC with input from OCWD prepared and issued a Request for Proposals (RFP) on October 7, 2024, for qualified consultants to assist in the development of Orange County water demand forecasts with a 25-year planning horizon (2025 to 2050) designed to provide regional consistency for Orange County. MWDOC and OCWD worked with eight qualified consulting firms to provide an opportunity for these firms to put forward their expertise and approaches through a competitive procurement process. In response to the RFP, proposals were received from four well-qualified consultant teams. A review panel was formed consisting of representatives from MWDOC, OCWD, and retail agencies. Three consultant teams were shortlisted for interviews based on their experience, qualifications, and proposed project approach.

The review panel reached a consensus that Hazen and Sawyer presented a more robust, rigorous, and defensible demand forecasting approach with long-term applicability suitable for Orange County water agencies. Overall costs for the work are higher than prior studies due to a more comprehensive modeling approach and deliverables that can be used by each agency to update their own demand projections and lay the groundwork for more detailed analysis (e.g. infrastructure analysis), if needed. MWDOC staff is recommending that Hazen and Sawyer be awarded the contract for this project at its December 11th Administration and Finance Committee meeting. A copy of Hazen and Sawyer’s proposal is attached.

The total project budget is $318,940. As with prior studies, MWDOC has agreed to pay for the South County and North County agencies outside of OCWD boundaries while both agencies will split the cost 50/50 for the shared service area. This cost-share results in an overall 2/3 to 1/3 split. With this split, OCWD’s share is $106,526. If the project comes in under budget, OCWD would receive a refund at the same cost-share split.

The work is scheduled to begin in January 2025 with the final demand projections provided by September 2025.

PRIOR RELEVANT BOARD ACTION(S)

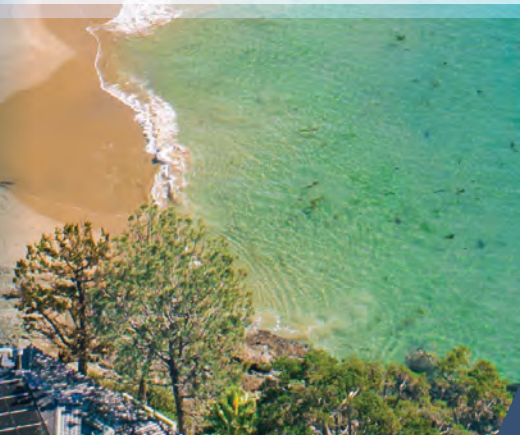
10-21-2020, M20-109. Authorize payment of $18,497 to MWDOC for Orange County water demand projections provided by CDM Smith

Hazen

Proposal for

Development of Demand Forecasts for Orange County Water Agencies

November 11, 2024



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APPENDIX

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A Cover Letter

Hazen and Sawyer
7700 Irvine Center Drive, Suite 200
Irvine, CA 92618 • 949.557.8549

November 11, 2024

Municipal Water District of Orange County
Sarina Sriboonlue
Principal Engineer
18700 Ward Street, P.O. Box 20895
Fountain Valley, CA 92708

Re: Development of Demand Forecasts for Orange County Water Agencies (RFP ENG. 2024-01)

Dear Ms. Sriboonlue:

Hazen understands that the Municipal Water District of Orange County (MWDOC) and its member agencies, as well as the Orange County Water District's (OCWD) basin producers require a demand forecast in order to comply with the 2025 Urban Water Management Plan (UWMP) requirements. The forecast is also crucial for estimating future groundwater replenishment supplies and reassessing regional reliance on the Metropolitan Water District of Southern California (MWD).

We have assembled a team of technical experts who are committed to collaborating with MWDOC, OCWD, and your member agencies and basin producers to develop a range of demand projections that reflect the low regional rebound from drought conditions and limit the industry-wide tendency to overestimate future water demands. We believe that Hazen can provide the following advantages to MWDOC and OCWD:

Unmatched Technical Expertise: The Hazen team has extensive experience in developing water demand forecasts using econometric models tailored for agencies across the country. Our water demand lead, Jack Kiefer, is a nationally recognized authority in water demand and conservation. Recently, he received the Dr. Pankaj Parekh Research Innovation Award from the Water Research Foundation for his contributions to advancing water demand planning and management. Jack has successfully managed numerous demand studies nationwide. Together with technical advisor Luke Wang, Jack has developed similar demand models for organizations such as the San Diego County Water Authority, Santa Clara Valley Water, and East Bay Municipal Utility District.

A Rigorous and Adaptive Approach: We propose an implementation plan that balances technical sophistication with flexibility to accommodate data and other practical constraints. We do not subscribe to "black box" or proprietary models. Instead, Jack Kiefer and our project engineer, Andrea Zimmer, will create transparent and well-documented econometric models that allow you and your stakeholders to conduct scenario analyses, sensitivity testing, and future refinements independently.

Our Project Manager Understands the Collaboration Needed

Hazen's Project Manager, Kirsten Plonka, has collaborated closely with MWDOC on the Water Use Efficiency Standards Economic Analysis and compliance with the Lead and Copper Rule Revisions. Throughout these initiatives, she engaged in weekly or more frequent calls with MWDOC and member agency project managers, clarified expectations, worked with data presented in various formats, and produced deliverables within tight deadlines. These projects equipped Kirsten with the understanding and experience to effectively collaborate with all agencies included in this project.

Hazen

Commitment to Collaborative Partnership: Collaboration is one of the cornerstones of Hazen. It is our culture to work side-by-side with our clients on most every project; we have found this approach results in better ideas, less surprises, and better client preparation for applying project outcomes. Our Project Manager, Kirsten Plonka, maintained constant communication with MWDOC and member agencies during the Lead and Copper Rule Revisions, a successful shared services project. She is dedicated to providing the same level of support to both MWDOC and OCWD.

We begin the following proposal by highlighting our team's experience and qualifications. Our key personnel and support staff have worked together on many demand models and understand the tight timeline for this project's delivery. Our record of performance demonstrates our familiarity with econometric forecasting for large water agencies.

Our work plan describes the Hazen team's planned coordination with member agencies and basin producers through the data acquisition process, which lays the groundwork for our rigorous and flexible econometric forecast. Data analysis will allow us to identify a baseline interval for calibration that allows the demand model to correctly simulate the rebound and/or relative permanence of changes in consumption that stem from periodic acute events such as water supply shortage restrictions, macro-economic conditions, employment and economic changes attributed to the COVID-19 pandemic, and Senate Bills that advocate conservation or housing infill.

We will develop forecasts for four major demand sectors extending to 2050 in five-year increments. The forecasts tailored to individual agencies or supply service areas, including the Orange County Groundwater Basin, will be based on the specific sector composition of each agency.

In each task outlined in our proposal, we highlight the assumptions we've made and the expected involvement needed from both MWDOC and OCWD to keep the project on track regarding budget and schedule. We recognize that individual member agencies or producers may choose to pursue additional forecasts and conservation efforts alongside the baseline demand projections generated in this project, and we have provided clarity on optional tasks and their estimated budgets.

The project and fee schedules are designed to allocate time and resources for producing a technically rigorous demand model while facilitating coordination with member agencies and accommodating potential delays in data collection. Additionally, we have included our resumes to provide a more comprehensive understanding of our team members.

By selecting Hazen, you will partner with a team that is deeply committed to your success. Since our initial engagement with MWDOC in 2018, we have diligently worked to earn the trust of both MWDOC and OCWD by meeting your water resources planning needs and delivering exceptional client service. We are a team you know and trust, and if given the opportunity, we will deliver outstanding results for you once again.

The Hazen team acknowledges receipt of all RFP addenda and confirms our understanding of the terms and conditions outlined in this Request for Proposal. We have attached comments to the terms and conditions in Appendix 2.

Sincerely,

Kirsten Plonka, PE
Project Manager

Cindy Miller, PE
Principal-in-Charge

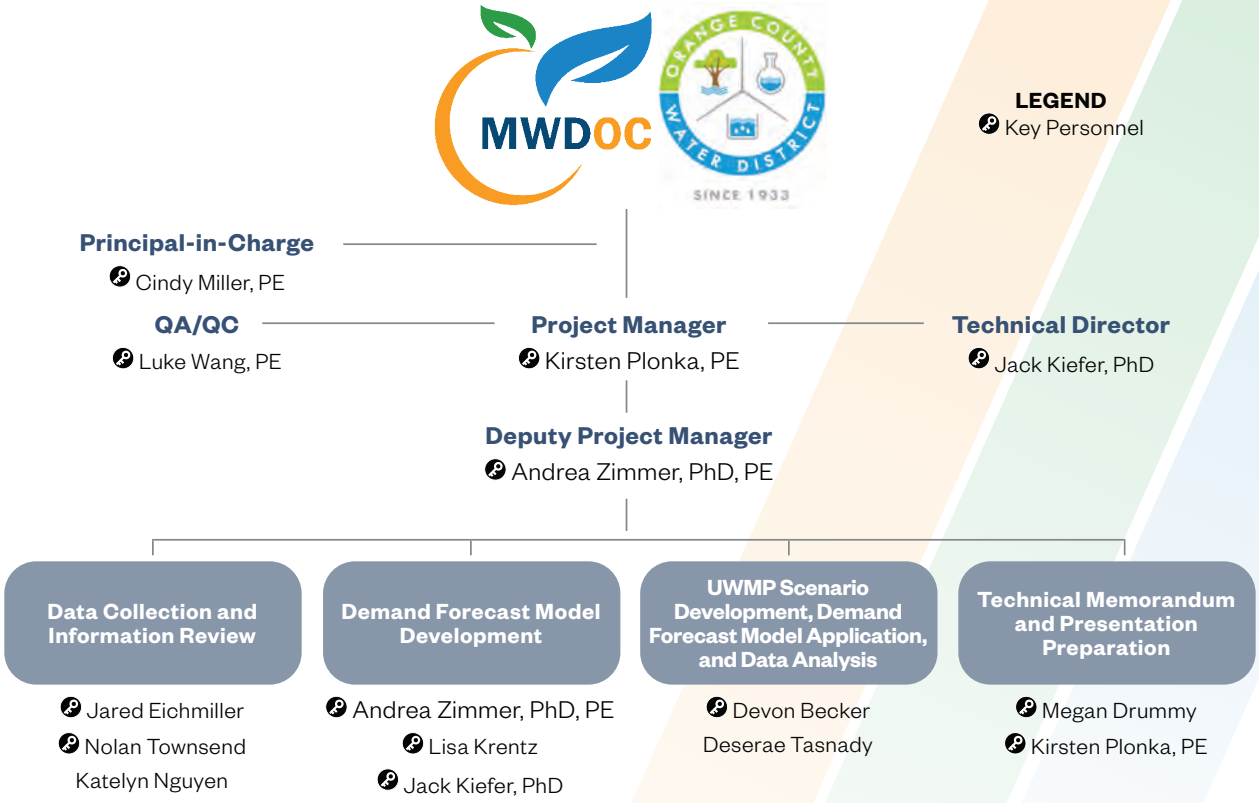
B

Experience and Qualifications

Section B

Experience and Qualifications

Our Team includes some of the top technical experts in demand modeling who are available and committed to MWDOC and OCWD. Their technical experience will result in a comprehensive and accurate forecast within the required project timeline.



Kirsten Plonka, PE

Project Manager | Technical Memorandum and Presentation Preparation

Kirsten brings over 20 years of experience in the planning, design, and management of water, wastewater, and recycled water systems. She specializes in infrastructure and water resource planning studies, feasibility studies, drought planning, stakeholder outreach, and master planning, including Capital Improvement Plans and budgeting. She is well versed in funding alternatives, regulatory compliance, and public policy development. Kirsten's experience includes demand management projects for multiple agencies throughout California. She also has experience managing public engineering departments, as well as directing wastewater collection systems. Her extensive experience in the public sector allows her to approach projects from an owner's perspective and strategically integrate stakeholder involvement and input.

Andrea Zimmer, PhD, PE

Deputy Project Manager | Demand Forecast Model Development

Andrea has spent the last 10 years developing software models that simulate long-term water supply for urban agencies in the southwest U.S. These models quantify various demand futures as well as regulatory and climate changes to large scale imported supplies (such as the California Bay Delta and the Colorado River), local groundwater, surface water, and recycled water. Andrea built and updated the Stockholm Environment Institute WEAP model to identify supply gaps for the 2016, 2018, and 2023 Orange County Reliability Studies. She has recently adapted demands for multiple CMIP3 climate change futures for the City of Santa Fe, New Mexico long-range water resources plan.

Cindy Miller, PE

Principal-in-Charge

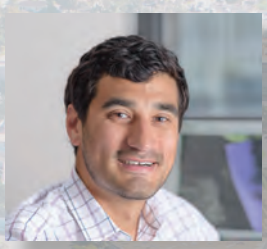
Cindy serves as Hazen and Sawyer's Orange County Operations Manager,with over 30 years of experience working for numerous water and wastewater agencies throughout Orange County and the Inland Empire. Her extensive experience includes planning, design and construction oversight of water supply, treatment, storage and conveyance facilities. Her planning experience includes the preparation of master plans, sub-area master plans, urban water management plans, water supply assessments, and water quality management plans. Her design and project management experience includes providing Program Management services for a $150 million groundwater supply project, which includes wells, pipelines, pump stations, and an advanced treatment system for R.O. concentrate reduction; Program Manager for a $30 million TCE groundwater cleanup project; Project Manager for preliminary and final design of a 28 MGD microfiltration treatment facility, and Project Manager for a 10 MGD R.O./Ion Exchange groundwater treatment plant. Ms. Miller has also led numerous water storage and conveyance infrastructure projects, including design of over 100 miles of pipeline (Ductile Iron, CML&C steel, PVC, and HDPE pipeline), design of steel, pre-stressed concrete, and cast-in-place concrete storage reservoirs, up to 10 million gallons, and numerous pump station facilities. She has led feasibility/planning studies, developed treatment process evaluations and life-cycle cost evaluations, participated in value engineering studies and operations evaluations. She has developed detailed designs of many systems and provided construction and startup services. She has experience with different project delivery methods including: design-bid-build, design-build and design-build-operate-finance.

Jack Kiefer, PhD

Technical Director | Demand Forecast Model Development

Jack has over 30 years of experience in water demand analysis and forecasting, integrated water resources planning, risk and uncertainty analysis, applied economics, and econometrics. Jack is a nationally recognized expert in issues related to water demand management and planning, particularly in the areas of water demand modeling, forecasting and conservation program evaluation. He has led numerous analyses of water demand, culminating in long-term water demand forecasts and/or water conservation plans for some of the largest water utilities in the United States, including the Metropolitan Water District of Southern California, San Diego County Water Authority, Tampa Bay Water,

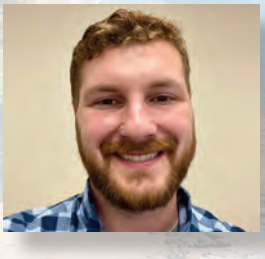
City of Phoenix, East Bay Municipal Utility District, and New York City. Jack has been involved in nine water demand-related studies for the Water Research Foundation (WaterRF), seven for which he served as Principal Investigator (PI). These published studies addressed climate change, the role of the economy, residential and commercial end uses, and information needs and procedures for forecasting water use for the purposes of long-term infrastructure and water resources planning. He was recently awarded WaterRF's 2022 Research Innovation Award for his contributions. Jack currently serves as a senior leader and subject matter expert for Hazen's Water Resources Planning and Economic and Financial Services groups.



Luke Wang, PE

QA/QC

Luke is Hazen and Sawyer's Water Resource Practice Lead for California, and has more than 15 years of experience across a range of projects, including water resources reliability, demand projection, reservoir operations, drought response, climate change adaptation, and infrastructure planning. Luke possesses a deep knowledge of imported water reliability, and has worked with several State Water Project, Central Valley Project, and Colorado River contractors to assess and address long-range water demands and supply vulnerabilities. He works closely with clients to identify needs, establish a path forward, and deliver results.



Jared Eichmiller

Data Collection and Information Review

Jared serves as a lead GIS Analyst in Hazen and Sawyer's Irvine Office. He has over 4 years of experience in helping local governments and organizations achieve their infrastructure and assessment goals through using GIS tools. He is experienced in cartography along with developing web applications, dashboards, and story maps. Mr. Eichmiller was the GIS Lead for the Lead and Copper Rule Revisions project for 13 MWDOC member agencies, utilizing complex data sets to achieve compliance.

Nolan Townsend

Data Collection and Information Review

Nolan has more than 8 years of experience and specializes in the analysis of water resources uncertainty under climate change, and development of dynamic dashboards for water resources and asset management using the Power BI Platform. His project experience at Hazen includes automating workflows for unimpaired flows, analyzing water resources and supply options, working with large hydroclimate datasets and climate-specific data formats, managing/analyzing large datasets, and developing dynamic Power BI dashboards with Power Apps and Power Automate integration. Nolan is proficient in Python (packages include: Pandas, numpy, Matplotlib, Seaborn, and Xarray), ArcGIS Pro, and Microsoft Suite. He also has experience with SQL, Power BI, Power Apps, Power Automate, WEAP, and RiverWare.

Lisa Krentz

Demand Forecast Model Development

Lisa has more than 20 years of experience in water demand planning and management, focusing on geospatial data processes, water conservation and drought planning. She specializes in information system management including the development of integrated geospatial and data visualization tools. With unique experience providing innovative and dynamic, big data digital solutions, she has helped clients solve complex data problems and establish monitoring protocols for maintaining information systems. Lisa has integrated demand forecasting procedures within relational databases, such as MS SQL Server and MS Access, and business intelligence tools, such as Power BI for several demand forecasting projects. Ms. Krentz was a co-author and principal analyst for the most recent update to the San Diego County Water Authority's water demand models and forecasting database. She has also assisted in development of water demand databases and forecasts for Tampa Bay Water, East Bay Municipal Utility District, City of Durham (NC), and New York City.

Devon Becker

UWMP Scenario Development, Demand Forecast Model Application, and Data Analysis

Devon has 8 years of experience in the California water industry and has spent 6 years working as a Water Resources Engineer for the Alameda County Water District. His areas of expertise include water supply planning and modeling, optimization analyses, and regulatory compliance. As part of his previous role at the Alameda County Water District, he managed water deliveries under various water supply and banking contracts, developed water supply budgets, and coordinated water transfer agreements with external partners and regulatory agencies. He is well-versed in the intricacies of the State Water Project, the Semitropic Water Storage District Groundwater Banking Program, and the San Francisco Public Utilities Commission's Regional Water System, and has served as an agency representative on the State Water Project's (SWP) Audit Finance Committee, the Semitropic Monitoring Committee, and the Bay Area Water Supply and Conservation Agency (BAWSCA) Water Management Representatives meetings, including the recent Tier 2 negotiations. He has also participated in a wide range of regional water supply reliability efforts including the Bay Area Regional Reliability (BARR) partnership, the Los Vaqueros Reservoir Joint Powers Authority meetings, the California-Nevada AWWA Water Loss Regulation Subcommittee, the California Urban Water Agencies' (CUWA) water loss workgroup, the California Water Data Consortium's Urban Water Data Reporting workgroup, and the San Francisco Bay Area Integrated Regional Water Management (IRWM) Plan Coordinating Committee.

Megan Drummy

Technical Memorandum and Presentation Preparation

Megan is a Communications Manager in Hazen and Sawyer's San Diego office. She has 12 years of experience developing and implementing public outreach programs and leading community outreach activities for water, wastewater, and water reuse projects. She has worked with agencies and cities of all sizes throughout California and across the U.S. to develop tailored outreach strategies that meet the needs of the community and foster public awareness and support for infrastructure projects. An accomplished communications lead and Project Manager, she is adept at providing strategic counsel and advice to clients, as well as conducting on-the-ground outreach in impacted communities. She has worked extensively on the development of strategic communication plans, written and edited all kinds of informational materials, and planned and managed events, meetings, and open houses. She excels in translating complicated, technical information into accessible content for a variety of audiences. Prior to joining Hazen, she worked at Katz & Associates, a San Diego-based communications firm that focuses primarily on developing outreach programs for government and agency clients.

Percentage of Time Each Team Member will Contribute to the Project

Team Member	Percentage of Time Commitment
Kirsten Plonka, PE *Project Manager | Technical Memorandum and Presentation Preparation*	30%
Andrea Zimmer, PhD, PE *Deputy Project Manager | Demand Forecast Model Development*	30%
Cindy Miller, PE *Principal-in-Charge*	20%
Jack Kiefer, PhD *Technical Director | Demand Forecast Model Development*	15%
Luke Wang, PE *QA/QC*	10%
Jared Eichmiller *Data Collection and Information Reviewi*	30%
Nolan Townsend *Data Collection and Information Review*	10%
Katelyn Nguyen *Data Collection and Information Review*	30%
Lisa Krentz *Demand Forecast Model Development*	20%
Devon Becker *UWMP Scenario Development, Demand Forecast Model Application, and Data Analysis*	15%
Deserae Tasnady *UWMP Scenario Development, Demand Forecast Model Application, and Data Analysis*	30%
Megan Drummy *Technical Memorandum and Presentation Preparation*	15%

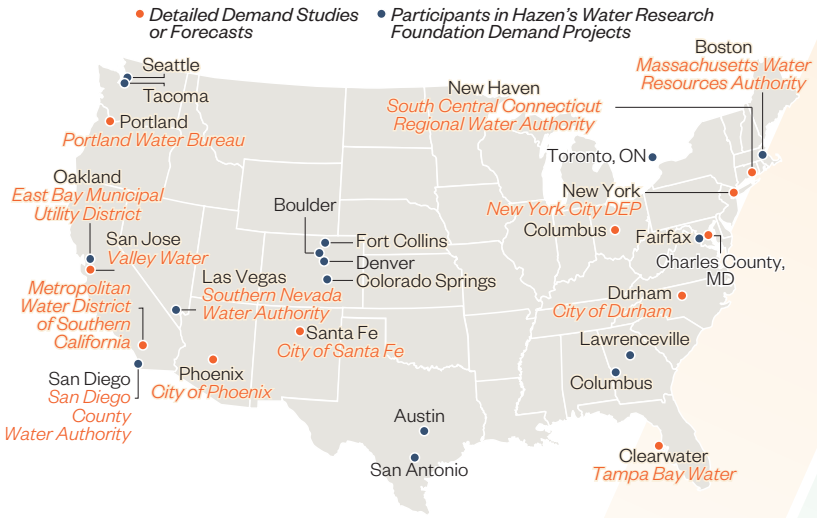
C Record of Past Performance

Section C

Record of Past Performance

Hazen's experience in water demand forecasting, combined with our history with MWDOC and your member agencies and OCWD basin producers, make us an ideal consultant for this important project.

Hazen is a leader in state-of-the-art water demand modeling and forecasting techniques, helping water supply agencies evaluate sectoral, spatial and temporal water use, savings potential, and uncertainties surrounding future water demands. Hazen's planning and management strategies provide our clients with information, tools, and resources to understand current and future water use trends and conservation strategies that lead to effective water management and "right sizing" future investments in water supply sources and infrastructure. Our experience in the subject matter – nationally and in California – reflects many water demand forecast elements that are of interest to MWDOC and OCWD, including understanding and representing the effects of drought rebound and COVID-19, the effects of regional demand restrictions and conservation, and the ability to efficiently and transparently conduct scenario analyses.



Since 2017

25+
Water Demand Studies

60M
Total Population Served

100's
Sources of Water Supply

9M AF/Y
In Water Demand

Hazen has significant national experience successfully delivering water demand and conservation forecasts.

In California, our team recently delivered demand forecasts for large water agencies including San Diego County Water Authority (SDCWA), East Bay Municipal Utility District (EBMUD), Santa Clara Valley Water District (Valley Water), and the City of Beverly Hills. In the following pages, we will further elaborate on these specific projects and their key relevancies to MWDOC and OCWD.

Within the past 12 years, Hazen has made significant contributions to the field of water demand forecasting and management. We have led and supported 8 studies with the Water Research Foundation focusing on some of the most important questions water suppliers face related to water demands.

Portfolio of Water Demand Focus Area and Demand-Related Projects , Led and Supported by Hazen
Water Research Foundation

- **Long Term Water Demand Forecasting Practices for Water Resources and Infrastructure Planning (2022).** A principal goal of the project was to develop recommendations that will help improve the role and effectiveness of demand forecasting practices, including strategies for more effective communication for planning and decision making.
- **Water Use in the Multi Family Housing Sector (2018).** This study evaluates and recommends strategies for estimating multifamily water use for the purpose of general utility planning and long term demand forecasting. The report demonstrates how utilities can categorize, estimate, and model water use for prominent multifamily water use categories.
- **Residential End Uses of Water 2016 (2016).** As a subcontractor to *Aquacraft* Inc., this project updated the premier 1999 study of water use in the residential sector. This study estimates and models water used by major water end use or purpose in single family homes and includes an assessment of the potential impact of high efficiency devices on future residential use.
- **Uncertainty in Long Term Water Demand Forecasting (2016).** The study identifies and describes the range of demographic, socioeconomic, climatic, and efficiency uncertainties utilities face in long term water demand forecasting and presents a primer on concepts, techniques, and management strategies.
- **Water Demand Forecasting in Uncertain Times: Isolating the Effects of the Great Recession (2016).** The goal of this project was to use the Great Recession as context to assess the economic channels through which economic factors can affect water demand so that utilities may be better able to anticipate, adapt to, and minimize impacts of future economic cycles on water demand planning.
- **Evaluation of Customer Information and Data Processing Needs for Water Demand Planning and Management (2016).** The objective of this tailored collaboration study was to identify the data collection and information management needs of water utilities as defined by short and long-term analysis requirements of internal water utility managers and planners, external local, regional, State, and Federal agencies, and management consultants.
- **Methodology for Evaluating Water Use in the Commercial, Institutional, and Industrial Sectors (2015).** The objective of this study was to provide water utilities with better and consistent means of understanding the amount of water used by their CII customers by category and by end use or purpose.
- **Analysis of Changes in Water Use under Regional Climate Change Scenarios (2013).** This groundbreaking research project developed procedures by which utilities can explore the impacts of climate change impacted weather on water demand. Included case study utilities across the nation and Canada spanning a range of climate conditions.

Representative Demand Modeling and Forecasting Experience

Project	Client	Type of Agency	Population Served	Purpose of Forecast	Methodology	Project Cost	Staff Role(s)	Client Contact
Integrated Water Resources Master Plan	City of Beverly Hills	Retail	33,000	Long-range water resources planning	• Developed demand forecast to support their Integrated Water Resources Master plan • Scenario analysis around demand projections	$1.4M	Cindy Miller, Principal in Charge Jack Kiefer, QA/QC Luke Wang, Technical Advisor Arthur Moncrieffe, Assistant Engineer	Vince Damasse (310) 285-2491 vdamasse@beverlyhills.org
Demand Model Forecast and Model Development	Santa Clara Valley Water District	Wholesale	2,000,000	Long-range water resources planning	• Data collection from Valley Water Member Agencies • Estimation of pooled time-series cross-sectional econometric models for principal sectors • Processing of ABAG and CA Dept of Finance data in support of projections • Assessment of drought rebound patterns and scenarios • Use of gridded climatic data	$390K	Luke Wang, Project Manager Jack Kiefer, Forecast Lead Lisa Krentz, QAQC John Clayton, QAQC	Jing Wu, PhD, PE Senior Water Resources Specialist Water Supply Planning and Conservation Unit jwu@valleywater.org (408) 630-2330
Demand Study 2050	East Bay Municipal Utility District	Retail	1,400,000	Long-range water resources planning	• Development of econometric sectoral water use models for single-family class, three multifamily classes, and 4 CII classes • Meetings with local land use planning agencies • Processing of Association of Bay Area Governments (ABAG) demographic projections • Derivation of projection scenarios, including climate change • Coordination with Demand Projections Committee • Preparation of long-range forecast by demand modeling region and pressure zones	$1.05M	Jack Kiefer, Project Manager Luke Wang, Deputy Project Manager Lisa Krentz, Information Management John Clayton, Projections Analyst	Bill Maggiore (510) 287-1021 bill.maggiore@ebmud.com
Long-Term Demand Model and Forecast Update	San Diego County Water Authority	Wholesale	3,300,000	Long-range water resources planning	• Econometric model development for principal sectors • Processing of San Diego Association of Governments (DANDAG) demographic projections • Forecasts for 20 retail member agencies • Climate change and consecutive hot/dry weather scenarios	$690K	Jack Kiefer, Project Manager Kirsten Plonka, Member Agency Coordination Lisa Krentz, Information Management Athur Moncrieffe, Analyst	Seevani Bista, PE Senior Water Resources Specialist Office: (858)522.6768 sbista@sdcwa.org
Demand Forecasting Model for Conservation Planning (ongoing, sub-contractor to INTERA, Inc)	Fort Collins Utilities	Retail	160,000	Long-range water resources planning	• Development of integrated econometric, end use, projection models for residential classes • Econometric models for CII classes • Development of fixture stock models	$95K	Jack Kiefer, Lead Modeler	Alice Conovitz Water Conservation Specialist Fort Collins Utilities City of Fort Collins 303-819-2346 mobile aconovitz@fcgov.com
Demand Study 2050 Mid-Cycle Update (on-going)	East Bay Municipal Utility District	Retail	1,400,000	Long-range water resources planning	• Processing of Association of Bay Area Governments (ABAG) and CA Dept of Finance demographic projections • Update of future development assumptions and demand model drivers • Calibration of 2050 Demand Study sectoral demand models	$268K	Luke Wang, Project Manager Jack Kiefer, Technical Advisor Katelyn Nguyen, Analyst Aurthur Moncrieffe, Analyst	Bill Maggiore (510) 287-1021 bill.maggiore@ebmud.com
Water 2100 (on-going)	City of Santa Fe	Retail	88,000	Long-range water resources planning	• Tailored econometric system demand model • Assessment of indoor per capita use floors • Climate change scenarios	$263K	Greg Gates, Project Manager Jack Kiefer, Demand Forecast Lead	Steven Schultz (505) 629-3283 smshultz@santafenm.gov
Demand Model Review and Update (on-going)	Portland Water Bureau	Wholesale	1,000,000	Long-range water resources planning	• Analytical review of existing PWB demand model • Review of peer agency forecasting approaches • Econometric analysis	$318K	Greg Gates, Project Manager Jack Kiefer, Demand Forecast Lead Lisa Krentz, Information Management Luke Wang, Modeling Support	Kavita Heyn (503) 396-0317 kavita.Heyn@portlandoregon.gov

Representative Demand Modeling and Forecasting Experience

Project	Client	Type of Agency	Population Served	Purpose of Forecast	Methodology	Project Cost	Staff Role(s)	Client Contact
Integrated Water Management Plan (on-going)	New York City Department of Environmental Protection	Wholesale	8,500,000	Long-range water resources planning	• Development of econometric demand models for 4 residential and 4 nonresidential classes • Integrated modeling and forecasting database design • Baseline and illustrative weather and price forecast scenarios • Derivation of statistical confidence intervals	$7.13M	Jack Kiefer, Demand Forecast Lead Lisa Krentz, Information Management Greg Gates, Expert Advisor	Alan Cohn (718) 595-4536 alanc@dep.nyc.gov
Long Range Water Supply Plan (on-going)	City of Durham	Retail	310,000	Long-range water resources planning	• Econometric demand model development for primary sectors • Development of hot/dry scenarios • Development of alternative pricing scenarios • Integration of regional CommunityViz demographic and land use data • Assessment of water efficiency programs and operational/deferral benefits	$1.7M (water demand forecast = $370K	Lisa Krentz, Manager, Forecast and Conservation Elements Jack Kiefer, Technical Advisor and Modeler	Sydney Paul Miller (919) 560-4381 Sydney.Miller@durhamnc.gov
Drought Response Plan (on-going)	Santa Clara Valley Water District	Wholesale	2,000,000	Drough Response Plan	• Use of demand forecast as basis for prospective drought response actions	$295K	Luke Wang, Project Manager Jack Kiefer, Technical Advisor Kirsten Plonka, Deputy Project Manager	Michael Martin (408) 630-3095 michaelmartin@valleywater.org
Long Term Water Demand Forecasting Practices for Water Resources and Infrastructure Planning (WRF Project 4667)	Water Research Foundation	Research	N/A	Review of industry forecasting practices	• Review of industry forecasting practices • Development of long-range demand forecasting typology • Web-based survey design and execution • Personal interviews of forecasting practitioners • Synthesis of lessons learned and recommendations for improved forecasting	$248K	Jack Kiefer, Principal Investigator	Maureen Hodgins (303) 734-3465 mhodgins@waterrf.org
Annual Forecast Review and Update	Tampa Bay Water	Wholesale	2,600,000	Update of forecast model	• Annual application of adaptive forecast monitoring process • Update of historical and projected driver and model variable inputs • Review of predictive demand model performance • Update of long-term forecast	$94K	Jack Kiefer, Project Manager	Dr. Tirusew Asefa (727) 791-2375 tasefa@tampabaywater.org
Cost of Water Shortage Model Update	Santa Clara Valley Water District	Wholesale	2,000,000	Evaluation of cost of water shortage	• Use of demand forecast price elasticties for estimating avoided costs of water shortage • Development of seasonally-varying price elasticities	$50K	Luke Wang, Project Manager Jack Kiefer, Technical Advisor	Jing Wu, PhD, PE Senior Water Resources Specialist Water Supply Planning and Conservation Unit jwu@valleywater.org (408) 630-2330
Demand Management Plan Update	Tampa Bay Water	Wholesale	2,600,000	Long-range water resources planning	• Development of geo-reference premise-level database • MS SQL server application with stored procedures • Integration of tax appraiser, Census, and Traffic Analysis Zone data • Sectoral and spatial demand profiling • Formulation of candidate demand measures and benefit-cost analysis	$279K	Lisa Krentz, Project Manager Jack Kiefer, Technical Advisor	Dr. Tirusew Asefa (727) 791-2375 tasefa@tampabaywater.org
Water Demand Management Plan	New York City Department of Environmental Protection	Wholesale	8,500,000	Water shortage management plan	• Evaluation, revisions, and estimation of savings of water shortage management plan actions • Identification and cost-effectiveness analysis of water use reduction options at WWTP's and City properties • Use of AMR/AMI data to evaluate spatial, sectoral, and seasonal water use patterns • Development of algorithm for identifying consistent large water users	-	Jack Kiefer, Project Manager Lisa Krentz, Lead Analyst	Vlada Kenniff (Now with NYC Housing Authority) Vlada.Kenniff@nycha.nyc.gov

Representative Demand Modeling and Forecasting Experience

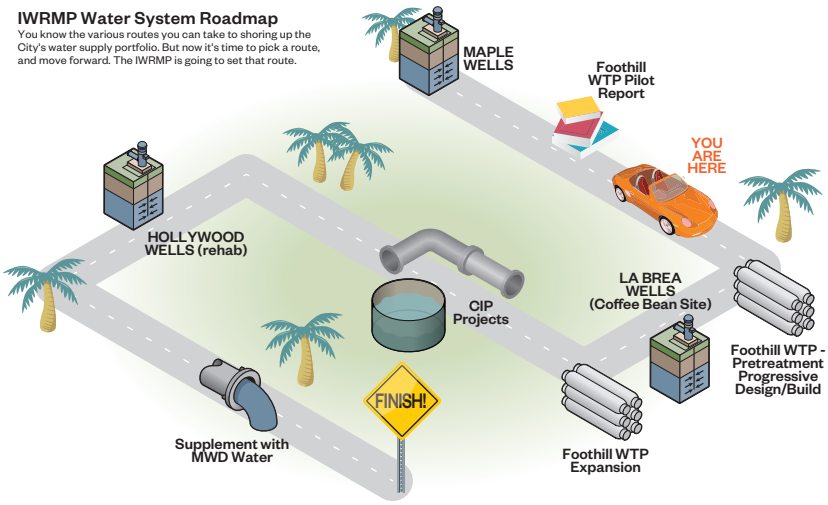
Project	Client	Type of Agency	Population Served	Purpose of Forecast	Methodology	Project Cost	Staff Role(s)	Client Contact
Demand Model Update and Point Demand Forecasts	Tampa Bay Water	Wholesale	2,600,000	Point demand forecasts	• Estimation of panel econometric models for primary sectors including seasonal, demographic, pricing, and socioeconomic variables • Integration of Census and Moody's economic data • Development of water efficiency indices • Point demand forecasts by Water Demand Planning Area and associated TAZ	$1.29M	Jack Kiefer, Project Manager John Clayton, Lead Analyst Lisa Krentz, Information Management	Dr. Tirusew Asefa (727) 791-2375 tasefa@tampabaywater.org
Future Needs Study	Tampa Bay Water	Wholesale	2,600,000	Long-range water resources planning	• Calibration of sectoral demand models • Development of stochactic stream flows • Derivation of forecast uncertainty assumptions • Coupling of demand and surface-supply models • Development of probabilistic reliability (demand-supply) forecast	$219K	Jack Kiefer, Project Manager John Clayton, Lead Analyst Lisa Krentz, Information Management	Dr. Tirusew Asefa (727) 791-2375 tasefa@tampabaywater.org
Water Demand Forecast and Model Update 2020	San Diego County Water Authority	Wholesale	3,300,000	Long-range water resources planning	• Utility survey and database development • Development of sectoral demand models • Development of hot/dry indices • Preparation of forecast scenarios • Climate change scenarios • Water Authority Board presentations • Coordination with retail Member Agencies on data requests	$530K	Jack Kiefer, Project Manager Lisa Krentz, Information Management John Clayton, Climate Projections	Tim Bombardier (858) 522-6740 tbombardier@sdcwa.org
Comprehensive Water Master Plan (subcontractor to Arcadis)	City of Columbus (OH)	Retail	1,250,000	Long-range water resources planning	• Processing of TAZ-level socioeconomic data • Development of water efficiency indices • Development of econometric sectoral demand models • Baseline and extreme weather forecast scenarios	$267K	Jack Kiefer, Forecast Lead Lisa Krentz, Information Management	Matt Steele (614) 645-7020 MKSteele@Columbus.gov
Water Use in the Multi-Family Housing Sector (WRF Project 4554)	Water Research Foundation	Research	N/A	Demand Sector Criteria Definition	• Review of criteria for defining multifamily properties • Assessment of differences between multi-family and single-family consumptions patterns • Analysis of effects of housing density on water use	$300K	Jack Kiefer, Principal Investigator Lisa Krentz, Analyst	Maureen Hodgins (303) 734-3465 mhodgins@waterrf.org
Demand Model and Forecast Development	South Central Connecticut Regional Water Authority	Retail	430,000	Long-range water resources planning	• Development of new hybrid forecasting framework • Analysis of sectoral water use by Town-served • End use modeling • Econometric modeling	$144K	Jack Kiefer, Forecast Lead John Clayton, Analyst	John Hudak (203) 401-2733 jhudak@rwater.com
Residential End Uses of Water 2016 Version 2 (WRF Project 4309) (subcontractor to Aquacraft)	Water Research Foundation	Research	N/A	Develop indoor consumption benchmarks	• Estimation of econometric models by residential end use • Development of indoor consumption benchmarks	$44K	Jack Kiefer, Lead Modeler	Maureen Hodgins (303) 734-3465 mhodgins@waterrf.org
Uncertainty in Long Term Water Demand Forecasting (WRF Project 4558)	Water Research Foundation	Research	N/A	Explain risk and uncertainty concepts	• Developed primer on risk and uncertainty concepts in context of demand forecasting • Annotated case examples of uncertainty analysis • Workshop design and execution	$100K	Jack Kiefer, Principal Investigator	Maureen Hodgins (303) 734-3465 mhodgins@waterrf.org
Water Demand Forecasting in Uncertain Times: Isolating the Effects of the Great Recession (WRF Project 4458)	Water Research Foundation	Research	N/A	Evaluate effect of great recession on water use	• Development of White Paper on economic linkages to water demand • Development of web-based utility survey • Statistical estimation of recession impacts on demand • Identification of economic data sources and methods to assist utilities	$360K	Jack Kiefer, Principal Investigator	Maureen Hodgins (303) 734-3465 mhodgins@waterrf.org

Representative Demand Modeling and Forecasting Experience

Project	Client	Type of Agency	Population Served	Purpose of Forecast	Methodology	Project Cost	Staff Role(s)	Client Contact
Incremental Enhancements to Water Demand Forecast Model	New York City Department of Environmental Protection	Wholesale	8,500,000	Long-range water resources planning	• Improvements to per capita forecast model • Development of passive water efficiency factor • Incorporation of climatic variables • Incorporation of residual variance factor	-	Jack Kiefer, Project Manager John Clayton, Lead Analyst	Vlada Kenniff (Now with NYC Housing Authority) Vlada.Kenniff@nycha.nyc.gov
Evaluation of Customer Information and Data Processing Needs for Water Demand Planning and Management (WRF Project 4527)	Water Research Foundation	Research	N/A	Assess customer classification schemes	• Assessment of customer classification schemes • Review of common demand data needs • Survey of water management agencies	$183K	Jack Kiefer, Principal Investigator Lisa Krentz, Analyst	Maureen Hodgins (303) 734-3465 mhodgins@waterrf.org
M&I and Agricultural Baseline Demand	El Dorado County Water Agency (CA)	Wholesale	130,000	Long-range water resources planning	• Development of econometric models • Development of M&I and AG forecast model calculators • Multi-period model calibration • PRISM climatic data processing • GIS mapping of acreages, elevations, crops	$80K	Jack Kiefer, Project Manager Lisa Krentz, Information Management John Clayton, Tool Development	Kenneth V. Payne (530) 621-5403 ken.payne@edcgov.us
Methodology for Evaluating Water Use in Commercial, Institutional, and Industrial Sectors (WRF Project 4375)	Water Research Foundation	Research	N/A	Establish methodology to calulate CII use	• Development of CII customer classification schemes • Analysis of variance in alternative metrics of CII water user • Design of stepwise methodology for addressing drivers of CII water use	$255K	Jack Kiefer, Principal Investigator Lisa Krentz, Analyst	Maureen Hodgins (303) 734-3465 mhodgins@waterrf.org
Water Demand Forecast and Model Update 2015	San Diego County Water Authority	Wholesale	3,300,000	Long-range water resources planning	• Utility survey and database development • Development of sectoral demand models • Development of hot/dry indices • Preparation of forecast scenarios • Climate change scenarios • Water Authority Board presentations • Coordination with retail Member Agencies on data requests	$460K	Jack Kiefer, Project Manager Lisa Krentz, Information Management John Clayton, Climate Projections	Tim Bombardier (858) 522-6740 tbombardier@sdcwa.org
Value of Water Supply in the Commercial, Industrial, and Institutional (CII) Sector (subcontractor to Stratus Consulting)	Water Reuse Research Foundation	Research	N/A	Evaluate value of water supply	• Examined measures of output relative to water consumption patterns • Processed CII customer demand data for various subclasses related to business function	$85K	Jack Kiefer, Co-Principal Investigator	Julie Minton (571) 699-0023 jminton@waterrf.org
Analysis of Changes in Water Use under Regional Climate Change Scenarios (WRF Project 4263)	Water Research Foundation	Research	N/A	Climate change evaluation	• Development of framework for reconnaissance level national study of vulnerabilities • Development of framework for case study climate assessments • Estimation of demand impacts and adaptation opportunities • Demand/Weather model development for a climatically and geographically diverse set of case study utilities (including the Water Authority) • Characterization of local, downscaled climate change scenarios from public third-party sources • Preparation of raw scenario data for demand model input • Application of multiple scenarios to demand models, characterizing ranges of possible climate change impacts on demand • Assessing seasonal and short-term variation in demand impacts for individual scenarios	$360K	Jack Kiefer, Principal Investigator John Clayton, Analyst	Maureen Hodgins (303) 734-3465 mhodgins@waterrf.org

Representative Demand Modeling and Forecasting Experience

Project	Client	Type of Agency	Population Served	Purpose of Forecast	Methodology	Project Cost	Staff Role(s)	Client Contact
Water Demand Forecast and Model Update 2010	San Diego County Water Authority	Wholesale	3,300,000	Long-range water resources planning	• Utility survey and database development • Development of sectoral demand models • Preparation of forecast scenarios	$459K	Jack Kiefer, Project Manager Lisa Krentz, Analyst	Tim Bombardier (858) 522-6740 tbombardier@sdcwa.org
Analytical Support for Water Demand Management Plan	City of Phoenix	Retail	1,500,000	Water demand management plan	• Demand database development employing fuzzy logic routines • Modeling of water use patterns among multiple type user classes • Random sampling and surveys of nonresidential type users • Derivation of water demand profiles and analysis of variance • Estimation of price elasticities for different customer cohorts	$600K	Jack Kiefer, Principal Investigator John Clayton, Analyst	Adam Miller (now with Phoenix Planning Department) adam.miller@phoenix.gov
Seasonal Source Water Allocation Decision Support Tool	Tampa Bay Water	Wholesale	2,600,00	Long-range water resources planning	• Developed a water supply model and decision support tool for allocating water from each of Tampa Bay Water's supply sources (surface, ground, desalinated) • Incorporated demand projections into the modeling platform	$50K	Luke Wang, Project Engineer John Clayton, Project Manager	Dr. Tirusew Asefa (727) 791-2375 tasefa@tampabaywater.org



Beverly Hills Integrated Water Resources Master Plan

City of Beverly Hills, CA

The City of Beverly Hills took a unique approach to analyze their water resources. Rather than conduct separate master plans for water, sewer, stormwater, SCADA, and local water supply systems, the City integrated this analysis into one comprehensive Integrated Water Resources Master Plan (IWRMP). Long-range demand forecasting was a key component of the IWRMP.

Project Relevance

- Long-range demand forecasting
- Collaborative stakeholder workshops
- Water, sewer, and stormwater model calibration
- Specialized Study / Report

Reference

Vince Damasse
Water Resources Manager
North Rexford Dr.
Beverly Hills, CA 90210
(310) 285-2491
vdamasse@beverlyhills.org

Project Team

Cindy Miller
Luke Wang
Jack Kiefer

With historic demands indicating a rebounding upward trend between years 2016 and 2019, and the anticipation of future developments in the service area, Hazen provided a series of future projected demand scenarios using different water demand projection methodologies. The projection methodologies used included:

- **Population Based Projection:** This methodology uses future population estimates from California Department of Finance, Census data, and Southern California Association of Governments. Historical consumption factors were calculated (gallons per capita per day) and applied to future population projections to calculate a future water demand projection.
- **Historical Based Projection (HBP):** Derived by calculating the mathematical trendline from demands in year 2019 and a previous target year. Different trendlines were established based on the previous target year chosen. The most appropriate (and most conservative) historical trend was established from 2016 through 2019 since this represented a positive trend from the low levels reached by the end of 2015.
- **Future Developments Based Projection:** Through review of "will-serve" applications from developers, the largest future developments over the previous three (3) years were identified, with the water demands estimated by the developer on their will-serve application. This projection used the will-serve application water demands and assumed the developments were complete by 2025.

The IWRMP utilizes the most conservative projections for planning system improvements, which is appropriate for master planning-level analyses. However, Hazen recommended that the City continue to track the status of each development, and closely monitor actual water usage for comparison to the "will-serve" application projected water usage.

Water Demand Model and Forecast

Santa Clara Valley Water District (Valley Water), San Jose, CA

Water demand forecasts are a foundational element in the water supply and infrastructure planning activities of Valley Water. Hazen recently developed a new water demand model for Valley Water and applied the model to forecast county-wide demand through 2045.

Prior to selecting a modeling approach, Hazen conducted a benchmark analysis of regional demand projection models. The analysis defined a typology for demand forecasting and reviewed several demand forecasting approaches applied by peer agencies to Valley Water, including BAWSCA. Based on the benchmark analysis and a detailed review of available historical data, a statistical / econometric approach for the new demand model was selected in collaboration with Valley Water. The new demand model is organized based on water provider type (i.e., retail agency or non-retail groundwater pumper) and further segmented by geography, sector/billing classification, and time. The demand model permits Valley Water to produce demand forecasts for each water use sector and water provider type.

The demand model was developed using a historical database of water consumption against and several explanatory variables known to influence water demand (e.g., weather, water rates, economic conditions, housing density, and water shortage management activities). The demand model showed strong performance in explaining historical patterns of consumption over the last 20 years (including two major droughts and the Great Recession) and was determined to be suitable for forecasting.

Prior to forecasting, the demand model was calibrated to correct for any systematic biases in the average of model predictions for fiscal years 2009 to 2018. Forecasts were prepared out to 2045 for each sector for each of Valley Water's water providers. Conservation forecasts were deducted from the forecasts to represent passive and active efficiency measures. The econometric model and segmented forecasting approach permits a wide range of demand forecast scenarios in addition to conservation, including scenarios revolving around climate and differential rates of growth across sectors and retail agencies.

Hazen has since supported Valley Water with several water supply planning projects directly adjacent to the 2045 water demand projections, including a cost of water shortage analysis and development of a drought response plan.

Project Relevance

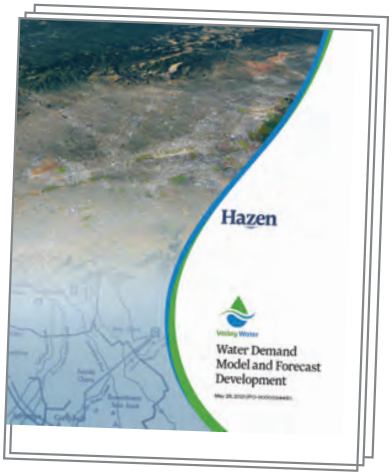
- Long range water demand forecast for water supply wholesaler
- Econometric model framework
- Coordination, including BAWSCA member agencies
- Scenario analysis using climate change projections
- Model training for staff

Reference

Jing Wu, PhD, PE
Senior Water Resources Specialist
Water Supply Planning and Conservation Unit
jwu@valleywater.org
(408) 630-2330

Project Team

Jack Kiefer
Luke Wang
Lisa Krentz



2050 Water Demand Study

East Bay Municipal Utility District , Oakland, CA

Hazen developed a new demand model for the East Bay Municipal Utility District (EBMUD) and developed their 2050 forecast in preparation for the agency's 2020 Urban Water Management Plan. The modeling approach for EBMUD consisted of a blended econometric / land use-driven method, with model parameters that included socioeconomic trends, urban densification, and climate impacts. Modeled sectors included single-family residential, three multifamily classes, commercial general, commercial services, institutional, and industrial land use designations.

Input from multiple land use planning agencies within EBMUD's service area was obtained in the formulation of future land use and development assumptions. Geographic segmentation at the Census tract level included 21 Demand Modeling regions spanning diverse climate zones and socioeconomic characteristics.

The model parameters were custom fitted for EBMUD using EViews and SAS modeling platforms and the modeling tool was developed in Microsoft Power BI. Hazen is currently performing a "mid-cycle" update of the long-term forecast reflecting new growth and land use forecasts from the Association of Bay Area Governments.

Project Relevance

- Long range forecast in support of UWMP
- Econometric modeling by sector and land use type
- Demand forecast tool development
- Integration of Association of Governments projections
- Involvement of Demand Projection Committee stakeholders
- External stakeholder engagement with 22 local land use agencies to seek input on major development trends

Reference

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(510) 287-1021
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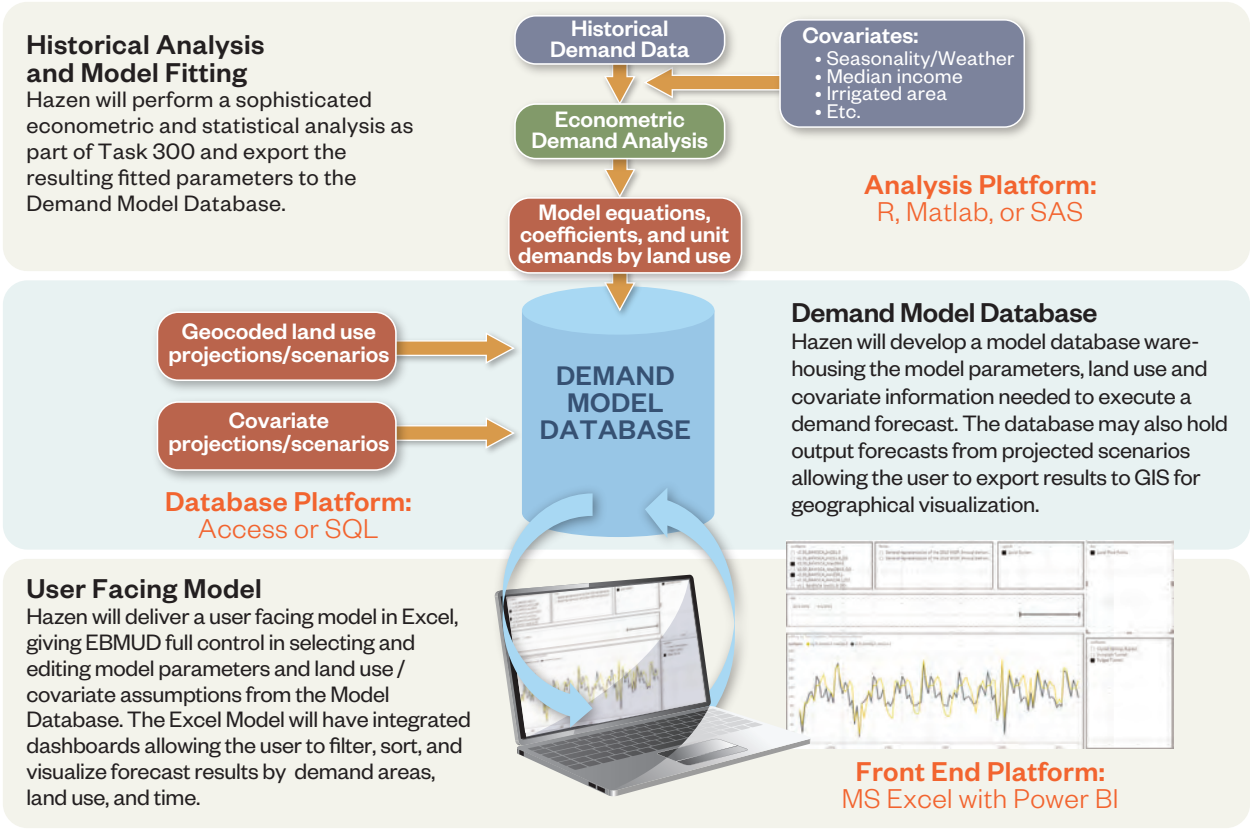
Project Team

Jack Kiefer
Luke Wang
Lisa Krentz



Hazen has implemented a comprehensive modeling and forecast tool development process for EBMUD.

D Project Work Plan

Section D

Project Work Plan

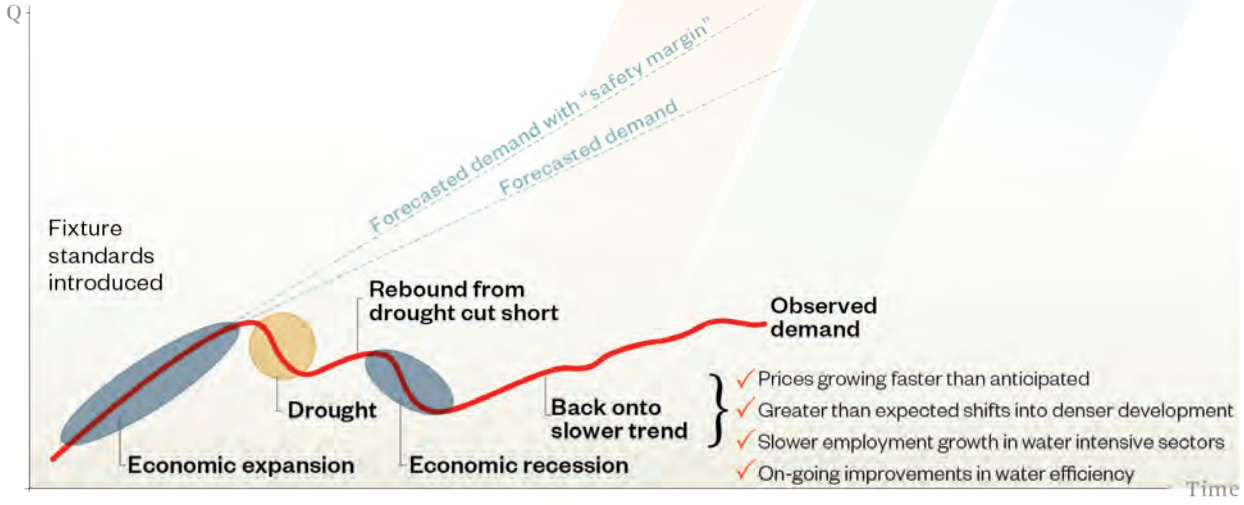
Hazen is proposing an implementation plan that aligns with the technical requirements necessary to meet MWDOC's and OCWD's objectives and is consistent with our team's experience and skill for similar projects. We recognize the project's schedule constraints and are committed to efficiently delivering forecast results, final reporting materials, and any optional tasks selected by specific agencies.

Scope of Work

Previous demand forecasts for MWDOC consistently overestimated observed demands on the District. MWDOC member agencies have met the 2023 indoor water use efficiency target of 55 gallons per capita per day (GPCD) although future outdoor use remains uncertain. Achievement of the indoor target should result in a tighter range of, and overall lower, demand projections than previously estimated for MWDOC.

The Hazen team also recognizes the importance of the baseline time interval selected to calibrate the demand forecast. Our **nationally recognized technical experts** will select an historical calibration period that proves our demand model can correctly simulate the rebound and/or relative permanence of changes in consumption that stem from periodic acute events such as water supply shortage restrictions, macro-economic conditions, and employment and economic changes attributed to the COVID-19 pandemic.

Hazen is a leader in state-of-the-art water demand modeling and forecasting techniques, helping water supply agencies evaluate sectoral, spatial and temporal water use, savings potential, and uncertainties surrounding future water demands. Hazen's **rigorous and flexible econometric approach** to demand forecasting provides our clients with information, tools, and resources to understand current and future water use trends and conservation strategies that lead to effective water management. We will provide a reliable forecast for MWDOC and OCWD that can be embellished, as desired, by your member agencies and basin producers.

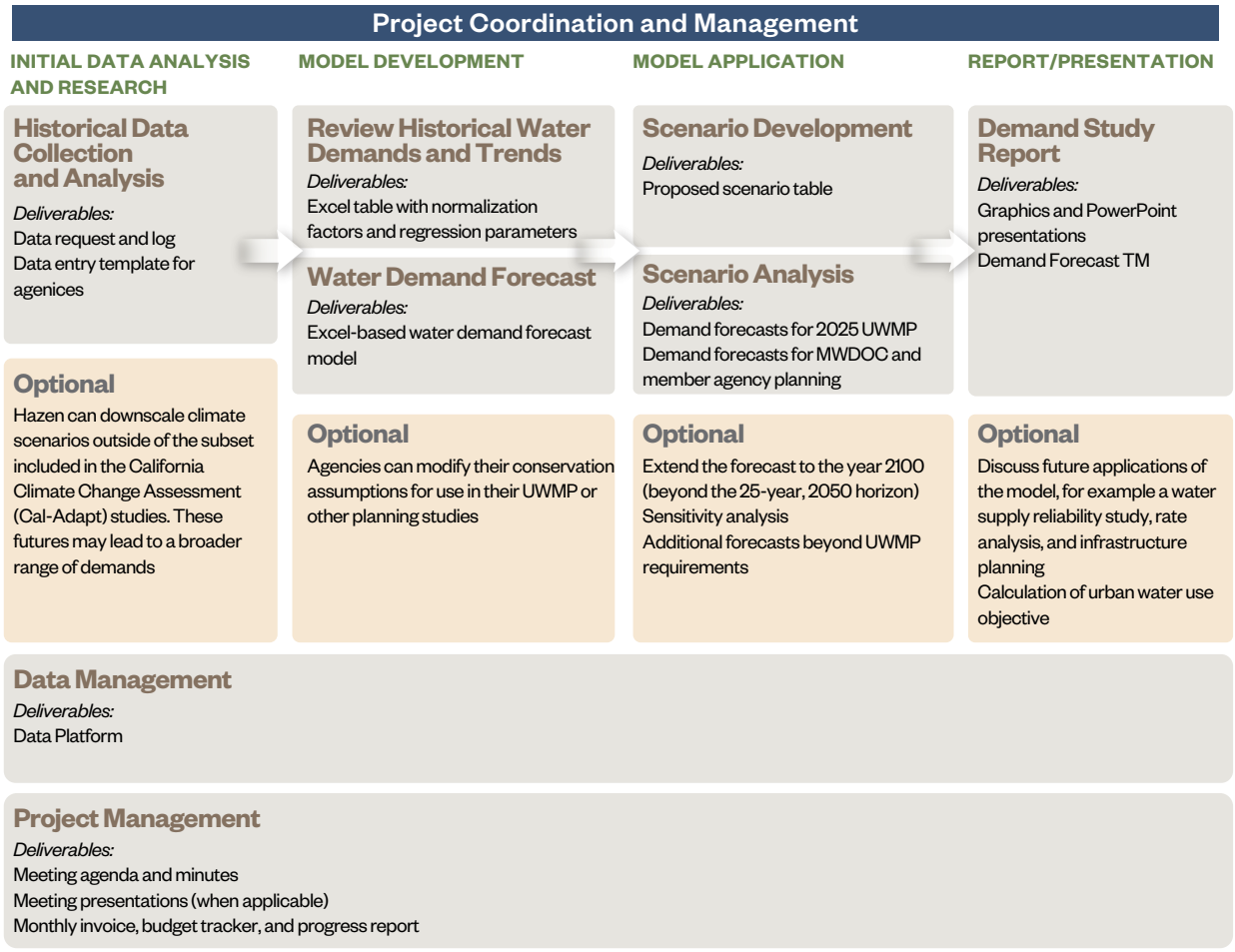


Hazen understands why observed demands may fall below forecast

The following scope of work details the approach we will take to data organization, demand model development, scenario identification pursuant to Urban Water Management Plan requirements and MWDOC and OCWD concerns, as well as coordination with member agencies and basin producers. We will work **collaboratively with your staff** through all deliverables.

Work Plan

The workflow below outlines the technical tasks our team will complete to deliver the final demand forecast. The figure includes the optional deliverables affiliated with each task that may be pursued by MWDOC or OCWD directly or member agencies and basin producers.



TASK 1 Project Management

Hazen understands the time sensitivity of this demand forecast and is dedicated to starting the project strongly right out of the gate. We are led by a project management team including nationally recognized demand forecasting experience from our Technical Director, Jack Kiefer, and Luke Wang. Andrea Zimmer brings familiarity with your supply and demands having done the modeling for your 2016, 2018, and 2023 Water Reliability Studies.

Our Project Manager, Kirsten Plonka, brings exceptional coordination skills to our team. With years of experience working in Orange County, Kirsten has collaborated with many of the water agencies that will benefit from this project. In her recent role as Deputy Project Manager for the LCRR, she demonstrated a proven track record of working closely with these agencies through a detailed and transparent process.

The Hazen Team has completed dozens of demand studies, and **our technical experience and local leadership** will allow us to efficiently initiate the project, deliver a quality product, and **provide the necessary collaboration to keep MWDOC and OCWD's teams involved and informed** throughout the process.

We are prepared to efficiently allocate staff resources and budget to ensure that work is quality and delivered in a timely manner. To that end, Kirsten Plonka will conduct regular project status calls, maintain the schedule and budget, submit detailed monthly progress reports and invoices, and ensure the day-to-day execution of each task is well coordinated between Hazen's local supporting resources and our experts.

Collaboration is the Key to Success

Kirsten Plonka will be your primary point of contact, overseeing the Hazen team's performance and ensuring that project goals remain central to all discussions and deliverables. She'll work closely with MWDOC and OCWD from project kickoff to completion, providing continuity, resolving issues as they arise, and dedicating resources to meet project demands. Drawing from our previous work together, Kirsten is committed to partnering with your team to deliver on expectations and build an actionable plan.

Assumptions

- Biweekly Progress and Check-in Meetings with MWDOC and OCWD staff
- The budget and scope for all hands meetings and one-on one meetings with member agencies are incorporated into the technical tasks

Project Control and Schedule

We understand that this forecast must be completed by September 2025. Hazen will collaborate with MWDOC and OCWD to adjust the overall schedule to accommodate input from key staff and stakeholders. While the demand forecasts for the Urban Water Management Plan are due by September, Hazen has outlined optional tasks that can extend beyond this deadline, offering additional forecast scenarios, deeper insights into forecast applications, and further presentations to Boards and/or stakeholders. A detailed project schedule is shown and discussed in Section E.

Our project manager will work within the Hazen Deltek database to track budget.

Hazen's Deltek Vision accounting system provides real-time monitoring of work hour usage and costs to track total expenditures for tasks.

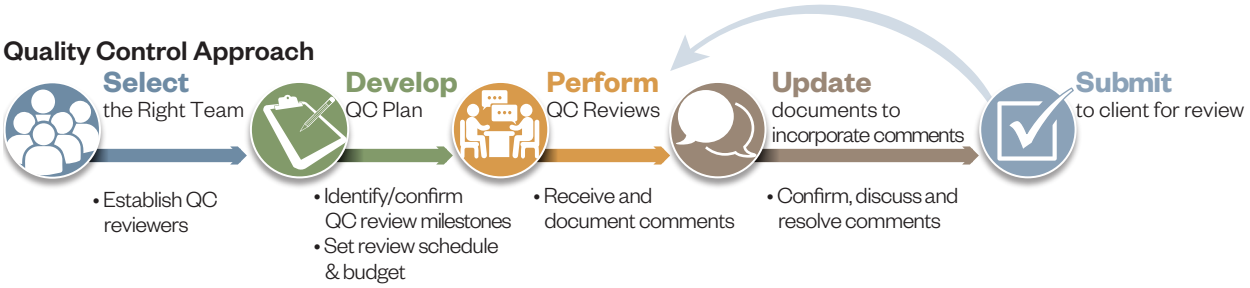
Hazen will use the following tools and strategies to deliver this project on schedule and within budget:

- **MS Project:** Establish critical path and communicate progress
- **Deltek Vision:** Track project costs in real time for clarity on budget performance
- **Risk Register:** Develop and update risk register regularly to mitigate project risks
- **Decision Log:** Track project decisions to provide clarity on path forward
- **Regular Project Manager Check-Ins:** Track hot scope items
- **Bi-weekly Team Progress Meetings:** Frequent communication to keep project moving and discuss critical needs

Quality Assurance and Quality Control

Quality is an integral part of our project execution. It is an attitude within each of our staff who believe in providing the highest quality work for our clients while remaining within our budgetary constraints. Hazen has developed a QA Policy Manual to provide guidance to staff during the execution of projects undertaken by the firm. Hazen's QA Policy Manual requires that QC reviewers be independent of the design process, so that reviews have a broad perspective.

At Hazen, our commitment to quality is not just inherent in our culture and the services we deliver, it is continuous. Hazen has a comprehensive, mandatory, firm-wide Project Quality Control Program that is implemented from the start and applied throughout all stages of project execution. Quality is part of our culture. For every project, we implement a quality control program. To support this commitment, Hazen has developed a Quality Assurance Policy Manual to provide guidance to staff during the execution of all projects.



Our technical expert, Jack Kiefer, will work closely with Andrea Zimmer on each task prior to its execution and afterward to review the results. Our QA/QC expert, Luke Wang, will provide detailed reviews of calculations and model runs, as well as every deliverable.

QAQC will be especially important during Tasks 3, 4, and 5, including:

- Selection of four service area sectors to model and link to water purchases to validate historical patterns over total service area
- Development of service-area wide regression coefficients for the sector-specific explanatory variables that influence demand
- Calibration of the forecast model at the MWDOC member agency and OCWD basin producer scales
- Confirmation that demand projections correspond to land use and economic forecasts

Member Agency Coordination

Coordination with MWDOC member agencies and OCWD producers is crucial for Hazen to successfully complete the data collection and review task. Our team will work closely with agencies to facilitate discussion and understanding of the econometric demand model.

Data acquisition, as well as the all-agency meetings are described in Tasks 2 and 3 adjacent to the appropriate technical material. **Hazen will work collaboratively with MWDOC and OCWD staff** to identify and invite member agency staff for meeting participation. Member agencies may use time during the all-agency meetings to ask questions about their specific forecast. We will explicitly state the efficient budget and timeline assumptions in the first kickoff meeting, and **any agency who would like a more focused approach may discuss offline in collaborative meetings with Hazen, MWDOC, and OCWD staff.**

Anticipated Challenges

Anticipated challenges to developing this demand forecast could include technical and managerial setbacks. The table below presents possible challenges and how our team will deal with them.

Anticipated Challenge	Resolution
Delays with data acquisition	Proceed with what is available after demand request and follow up has gone out, make industry standard assumptions about data we don't have or eliminate components from the model
Delays with demand model due to calibration	Built in 4 extra weeks in schedule
Member agencies reluctant to contribute funding for specific forecasts	Be clear about expectations up front, allow MWDOC and OCWD staff to be present at all meetings

Our Principal in Charge and Project Manager are both local and can easily travel to the headquarters to meet in-person if needed.

TASK 2 Data Collection and Information Review

Task 2 includes data collection, in which the Hazen team will review existing MWDOC and OCWD publications and research online data (for example climate change futures and housing projections) and develop a request to MWDOC and OCWD for the remaining needs. This task includes finalizing Excel templates to facilitate data acquisition from member agencies and data sharing platform setup.

Our project manager and delivery team will provide one all-agency meeting to introduce project goals and data needs during which we will present a timeline for data acquisition and follow-up.

Task 2.1 Data Request

The Hazen team will produce models for four demand sectors. Per the RFP, MWDOC will provide historical monthly demand data for all member agencies by supply source, and our team will adjust the source-specific uses to member-agency billing data by class. Hazen will then associate each agency class with a specific demand sector to define historical trends and explanatory variables.

Our team will work collaboratively with MWDOC and OCWD staff to identify and collect historical and projections of socioeconomic and demographic data by member agency and basin producer from relevant sources, including the California Department of Finance, the US Census Bureau, Southern California Association of Governments, California State University Fullerton's Center for Demographic Research (CDR) and County property appraisers. We will integrate demographic and housing data with water consumption data for demand modeling.

Assumptions

- One all-agency Kickoff Meeting to include all member agencies to present methodology and explain data needs and data collection process
- MWDOC and OCWD will provide Hazen with the future conservation volumes to be used in the forecast based on member agency data
- Hazen will provide the Data Request, including a draft email to send member agencies
- Hazen will provide template(s) for member agency data collection (billing data, water use, etc.)
- Hazen will provide data platform for information sharing with each member agency

Anticipated MWDOC and OCWD Staff Involvement

- Assistance and participation in all-agency meeting
- Review of data request and what specific items should be forwarded to member agencies
- Initial and follow-up emails to member agencies

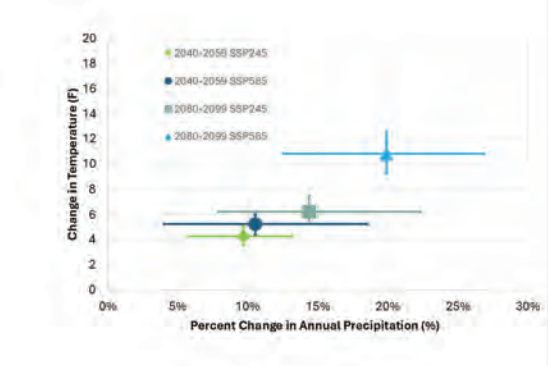
Our team will formulate a data request to MWDOC and OCWD for information including:

- Member agency and basin producer billing information by billing class, including number of accounts billed each period
- Historical water and wastewater rate schedules
- Planning data (other than the Census Bureau and RHNA) concerning estimates of local housing, employment, and characteristics of customer base
- Service area descriptions including available GIS data
- Description of active water conservation programs and tracking data where available
- Metropolitan Water District's (MWD) master meter information including from past allocation years
- Timing and severity of agency-specific supply shortage restrictions and demand management measures (such as reduced OCWD Basin Pumping Percentage, BPP) implemented over the historical consumption period

Hazen will discuss the data elements contained in the request with MWDOC and OCWD staff to determine whether and which data MWDOC and OCWD may already have and maintain to expedite the data collection process and avoid duplication of past or on-going data collection efforts.

Climate Change Incorporation

Our team's **unparalleled expertise** will allow us to acquire additional data that can be found online. Hazen has tracked the Global Circulation Models (GCMs) identified by the California Climate Change Assessment (Cal-Adapt) to best represent California climate at the global, statewide, and regional scale for water planning studies. The Cal-Adapt dataset includes runs from the sixth phase of the World Climate Research Program Coupled Model Intercomparison Project (CMIP6). Our team has worked directly with downscaled, bias corrected CMIP6 GCM data for demand studies across the country. We will acquire downscaled monthly precipitation and temperature forecasts for multiple locations throughout the MWDOC and OCWD service areas.



Hazen will use CMIP6 output to identify climate change impacts on demand

Task 2.2 Data Platform Setup

Hazen will open a SharePoint site with a directory that each MWDOC member agency and OCWD basin producer can use to transfer data. Our team will also develop a list of data needs from each agency and include data entry templates where necessary. The table below outlines example requests and the format in which we will require the data to be uploaded.

Example Data Need	Format
Historical water use by type	Example Excel file with all supply types and volume as columns (agencies may leave some columns blank) and months as rows
Historical billing information	Example Excel file with all billing classes (agencies to add as appropriate) as columns and months as rows
Water pricing information	Excel table of monthly water rates as rows and source as columns
Shortage restrictions	Email to agencies to specify exact months of agency-specific restriction, water reduction (in % from average monthly) requested each month, and water use reduction (in % from average monthly) observed
Conservation Programs	Description of agency-specific conservation programs and any tracking information available (no format requested)

Our team will draft all emails for MWDOC and OCWD agencies to facilitate coordination efforts.

TASK 3 Demand Forecast Model Development

This task involves determining the variables to be used in the econometric analysis, calibrating the demand model, and generating the baseline forecasts.

Task 3.1 Establish Demand Profile

Our team will establish the relationship between water use and up to four (4) standard socioeconomic and land use classes, or sectors across the MWDOC and OCWD service area. This relationship will be used **within our technically rigorous approach** to forecast demand changes related to projected sector growth and other variables that impact demand. It is anticipated that the sectors will be classified as single-family, multifamily, and one or two CII classes. Characteristics used for profiling historical demands including, but are not limited to:

- Rates of water use per unit (e.g., per household, per square foot of area, per account)
- Lot sizes and/or irrigable area
- Household income
- Household size
- Prevailing age of housing stock or distribution of housing stock by year built
- Types of CII users across a set of standardized categories
- Mean monthly, nonseasonal, and seasonal usage patterns

We will standardize member agency and basin producer data to define the modeling classes that differentiate relatively homogeneous customer groupings based on land use and property function. Our team will geo-process the sector data as necessary to estimate values corresponding to agency boundaries and **will work collaboratively** with MWDOC and OCWD staff to make any preferred sector adjustments. The figure below demonstrates how this sector identification fits into the modeling framework.

Assumptions

- Two all-agency progress meetings
- One-on-one meetings with individual agencies to understand data needs and review draft projections (one 1-hour, or two 30-minute meetings per agency)
- Disaggregation of user types into no more than 4 sector classes/user types across the entire MWDOC and OCWD service area; same user classes for all agencies
- Hazen to develop no more than 4 sector models
- A single forecast for the MWDOC and OCWD service area, and each member agency will have their own tab in the Excel model with a forecast based on their specific sector composition
- MWDOC and OCWD will provide Hazen with the future conservation volumes to be used in the forecast

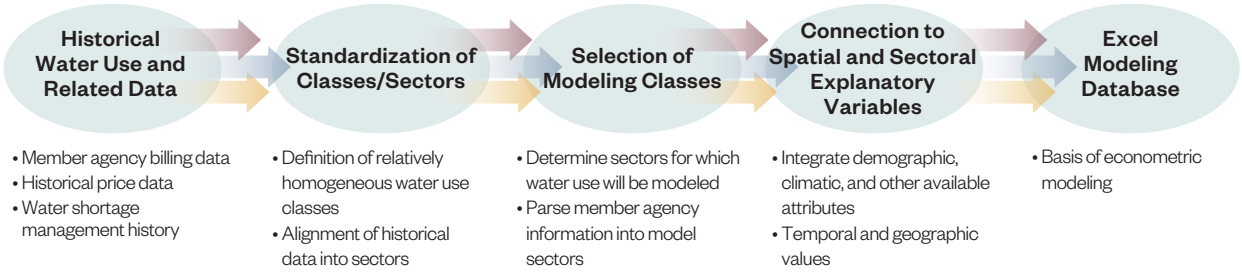
Anticipated MWDOC and OCWD Staff Involvement

- Attendance at all-agency meetings
- Review of initial and final model results
- High level of involvement to scope baseline forecast conditions

Once we identify sectors, the Hazen team will estimate the historical demand observed for each of the four sectors by standardizing account data for the billing classes defined by member agencies and basin producers. Standard data smoothing procedures will be employed where necessary to align and estimate consumption by calendar month to account for different billing cycles and to improve the measurements of seasonal demand variability related to indoor and outdoor uses.

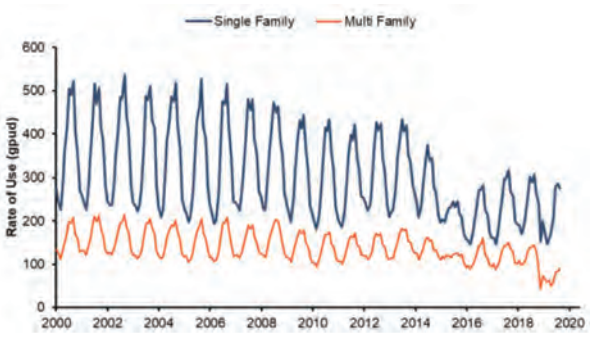
Excel workbooks will contain raw data along with the standardized and smoothed consumption data.

Hazen's modeling database development process



Task 3.2 Estimate Statistical Parameters

Next, **our technical experts will identify drivers for water use in different sectors**, such as number of housing units for residential sectors and employment or building square footage for nonresidential sectors. The effects of drivers on water use can be modeled based on rate of use per driver unit factors, which, for a given sector (i), vary over time (t) and geographic area (j). The general framework to calculate water use is represented in the equation below, in which the water use per driver unit is defined through econometric analysis. For example, the econometric models will calculate water use per housing unit, per employee, or per square foot, respectively:



We will collect and standardize member agency consumption data into defined sectors, such as single- and multi-family. Our analysis will help identify outliers and suspicious observations to improve the accuracy of our modeling.

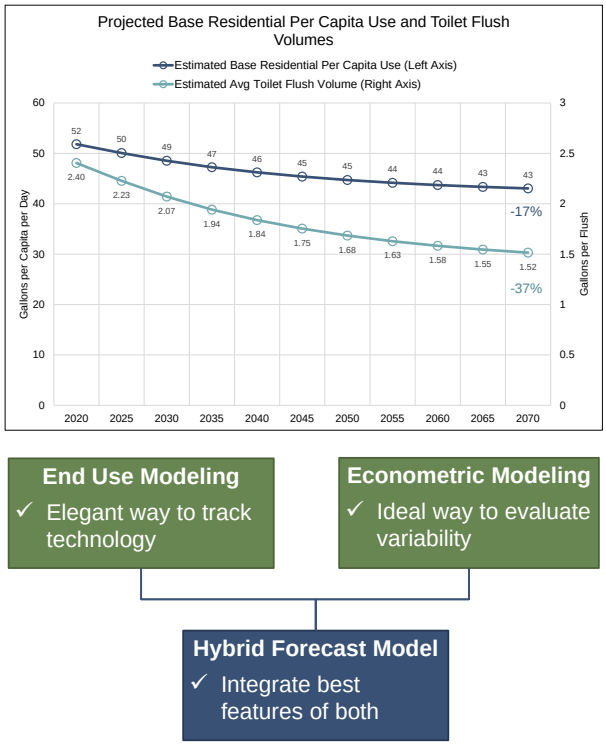
$$(Quantity\ Demanded)_{s,j,t} = (Driver\ Units)_{s,j,t} * (Water\ Use\ per\ Driver\ Unit)_{s,j,t}$$

The rate of water use per driver is a function of a set of explanatory variables. The drivers and explanatory variables within each sector are influenced by factors including:

- Regional Housing Needs Assessment
- Making Conservation as a California Way of Life (SB 606 / AB 1668)
- Demand hardening
- Weather variability and climate change
- Seasonal variability
- Socio-economic trends
- Historical water use trends
- The California HOME Act (SB 9) impacts
- Impacts of MWD shortages and allocations

An important part of this task that will be revisited during scenario development is to distinguish the factors that affect the explanatory drivers (e.g., rate of intensification, population growth), the rate of water use (e.g., water pricing, household incomes, water conservation), or both.

For example, SB 9 leads to intensification and more housing units while past water use restrictions may result in a lower use per unit. Our team will perform multiple regression analyses within our **technically rigorous approach** to estimate how each factor leads to changes in water usage rates. Our team assumes that this analysis will be applied to the four sectors over the entire MWDOC and OCWD service area.



Hazen has designed methods to integrate end-use and econometric models in order to capture efficiency trends and to add proxies for water efficiency into an econometric framework.

Our team will present the four demand sectors, draft drivers, and draft explanatory variables during the second all-agency meeting. The budget also allows for one 1-hour, or two 30-minute virtual meetings and/or phone interviews to be conducted with each member agency to expedite data collection and facilitate formulation and understanding of baseline models.

Task 3.3 Calibrate Water Use Models

Calibration serves to correct any systematic biases in the model predictions. Based on the profile of historical demands, Hazen will recommend and justify a base period to which to calibrate the water demand forecast and to define a normalized anchor point for the forecasts. Hazen will work with MWDOC and OCWD to define the conditions to which to normalize predictions, which may consider the effects of weather and other and other confounding factors such as COVID-19 and drought restrictions.

Task 3.4 Generate Baseline Forecast

Hazen will generate a baseline forecast scenario for the MWDOC service area in five-year increments over the planning horizon. The forecast will be based on assumed future values of model drivers, including population, housing, employment, and explanatory variables that translate projections of such drivers into projections of water use as found in Task 3.2.

The Hazen Team will work collaboratively with MWDOC and OCWD staff to define a "UWMP baseline" consisting of characteristics that may include, for example: specific land use, a certain amount of (or no) additional passive conservation, a specific rebound pattern from drought and COVID-19, and certain demographic and socioeconomic assumptions. The baseline forecast will be based on the historical normal hydrologic record (rainfall and temperature.) The UWMP baseline can then be manipulated as necessary to define dry/hot, consecutive dry-year, climate change, and other scenarios as dictated by the needs of the UWMP.

The baseline models, model inputs, and model outputs will be housed in an Excel format for ease of use. Member agency and supply-area specific demand projections will each have a tab in Excel and be based on the MWDOC forecast prorated to the specific sector-weighted area.

The final all-agency meeting will occur once all baseline analysis is done. The Hazen team will present the baseline demand forecasts and discuss the scenarios to run and provide to each agency.

TASK 4 UWMP Scenario Development, Demand Forecast Model Application, and Data Analysis

Hazen will adapt the baseline forecast for the required UWMP scenarios and work collaboratively with MWDOC and OCWD to define alternative forecasts that vary from the baseline.

4.1 Scenario Development

Hazen will develop demand projections for a the scenarios required by the 2025 Urban Water Management Plan, including normal year, dry year, and multiple dry year scenarios. Our team will develop these scenarios based both on the baseline forecast hydrology, demographic drivers, and explanatory variables.

Assumptions

- Hazen will provide demands for all scenarios required in the UWMP
- Hazen will provide two forecasts in addition to the baseline

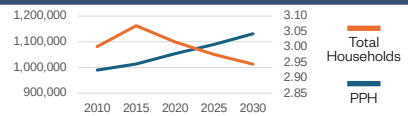
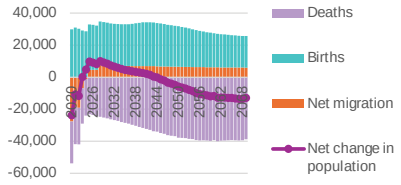
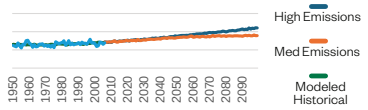
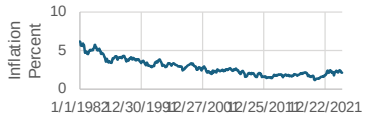
Hazen will work closely with MWDOC and OCWD staff, and member agencies to develop two alternative forecasts alongside the baseline. These forecasts may incorporate factors such as increased conservation aligned with Making Conservation a California Way of Life (SB 606 / AB 1668), different climate change variations, and adjusted population growth assumptions.

Anticipated MWDOC and OCWD Staff Involvement

- High level of involvement to identify additional forecasts

As identified in Task 3, our team will also assess State and regional water management policy scenarios, which may serve as a mitigating factor for demands, independently of MWDOC's active water conservation and water recycling strategies.

The Hazen Team will substitute future values of drivers and explanatory variables for each forecast into the water demand forecasting model. The figure below illustrates example drivers and variables that could potentially be used in the forecasts.

SCENARIO			RECOMMENDED BASELINE	HIGH	LOW
Example Drivers	Housing Units		As predicted without legislative changes	Increased due to SB-9	As predicted without legislative changes
	Population		Department of Finance forecast	Department of Finance Forecast with increased migration	Department of Finance Forecast
Example Explanatory Variables	Maximum Annual Temperature		Historical normal	High relative to historical normal	Low relative to historical normal
	Price of Water		Constant in real terms	Doesn't keep up with inflation	Outpaces inflation expectation

4.2 Scenario Analysis

The Hazen Team will prepare talking points for each forecast in collaboration with MWDOC and OCWD staff to support internal and external communications and evaluation.

TASK 5 Technical Memorandum and Presentation Preparation

The Hazen Team will prepare a report and presentation based on content, organizational, and format instructions provided by and discussed with MWDOC and OCWD. Chapter content will include a summary of member agency demand profiles (Task 2) the demand model development (Task 3) and scenario application (Task 4).

A sequence of draft reports will be developed to refine and fully incorporate comments from MWDOC and OCWD staff and member agencies. The task will culminate in a final Demand Study Report. **Hazen will work collaboratively with MWDOC and OCWD staff** to develop a presentation to member agencies. Dry-runs of the presentation will be performed with MWDOC and OCWD staff in order to refine content, messaging, and length.

TASK 6 Optional Tasks

These reflect optional tasks per MWDOC, OCWD, member agency or basin producer request.

6.1 Board Presentation

MWDOC and OCWD (or other agencies) may choose to have Hazen present project findings to its elected officials. Hazen will ensure that our technical team members are available to present and answer questions, similar to the all-agency meetings.

6.2 Member Agency Support

MWDOC member agencies or OCWD producers may desire additional support from Hazen related to but not directly funded within the immediate scope of services. It is possible that a member agency may request such support by agreeing to reimburse MWDOC for associated costs under the stipulations of the contract with Hazen. For example, agencies could elect to tailor the forecast for their specific planning objectives, or modify their conservation assumptions for use in their UWMP or other planning studies.

6.3 Scenarios Beyond UWMP Requirements

The Hazen team can work with MWDOC, OCWD, and member agencies to define forecast scenarios beyond the UWMP requirements and two additional provided within the baseline project budget. These scenarios could depict different climate change, regulatory environment, or local adjustments. Our team will run the scenarios and deliver the resulting demands, and a brief description, to the interested agencies.

6.4 Discussion of Future Application

The Hazen team will write and deliver a technical memo that discusses future applications of the demand model and forecasts. The memo could include:

1. A description of how the demand model can be adapted to the shorter time steps (for example, daily or hourly) and higher resolution spatial scale needed to estimate pump and pipeline capacities;
2. The applicability of the model for a future Orange County Reliability Study, including how different regions of the forecast would be paired with supply types, and how the assumptions incorporated in separate demand forecasts would correspond to supply scenarios; and
3. A discussion of the potential use of the model for a water rate analysis.

6.5 Sensitivity Analysis

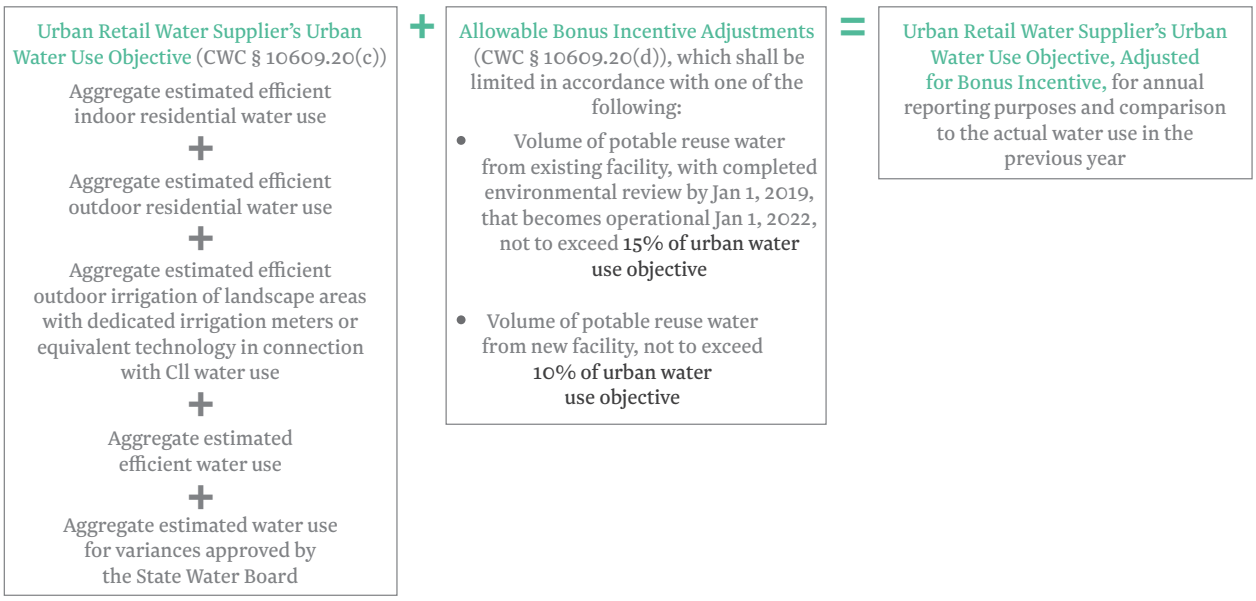
Many variables utilized in the demand forecast may influence future demand projections. Hazen will work with MWDOC and OCWD to establish 5-7 variables that have statistically significant impacts on Orange County water demands and would be most relevant in the demand projection model. Hazen will then work with staff and member agencies to define up to 7 projection scenarios. These forecasts may be defined by model components independently, such as hot/dry, high/low growth, and higher/lower uptake of selected conservation measures, or represent thematic combinations of multiple variables, such as “hot climate/hot economy,” “high price/slow growth/no rebound,” and other conceivable future storylines. Given the expected robust nature of model components, it is possible to develop forecasts that integrate potential responses by member agencies (such as additional pricing and conservation strategies) that mitigate undesirable outcomes related to variables generally outside of the influence of the water providers (such as climate change and economic development trends). Given

the potentially wide and diverse range of scenario combinations, it will be necessary to concentrate on model variables that have the greatest impact and/or statistical significance. From an econometric perspective, the assessment will focus on the size and magnitude of estimated parameters, as well as observed historical variance. From the perspective of water conservation analysis, key areas of uncertainty in the specification and coverage of conservation measures will identify and highlight additional forecasts.

Within the sensitivity analysis, Hazen will focus on the key drivers of each forecasts and identify how, for example, one demand variable might have a much greater impact than another demand variable in a given projection. All scenarios will need to be formulated and translated into the units of measure used for model variables.

6.6 Calculate Urban Water Use Objective

MWDOC and OCWD may want to support member agency and basin producer compliance with statutes related to "Making Water Conservation a California Way of Life," to ensure that the forecast model of Task 3 provides the necessary information to calculate the Urban Water Use Objective (UWUO). The primary components of the methodology are generally known to include water use targets and related calculations for residential indoor use, residential outdoor use, and outdoor commercial, industrial, and institutional (CII) use associated with dedicated irrigation meters. The sum of these components and real water losses represents the UWUO, which is expressed in terms of annual average gallons per capita per day. Although compliance with the UWUO is judged based on the sum of the components versus observed use, the ability to break out the components individually will highlight trade-offs and areas where additional conservation efforts may be needed to reach the individual and collective water efficiency targets.



It will be necessary to process water demand forecast data to fit the individual elements of the UWUO. Thus, the ability to classify demands within Task 2 and Task 3 will require classes for residential use and use associated with CII dedicated irrigation meters, where the latter is generally associated with irrigation-only accounts. Further segmentation of residential use into indoor and outdoor components will require assessment of seasonal demand patterns and a reasonable approach that recognizes the possibility of year-round irrigation. It is anticipated that some variant of the "minimum-month" or "base-seasonal" approach to estimating indoor and outdoor use will be utilized to forecast results, which will be supported by the monthly time step of the Task 3 models.

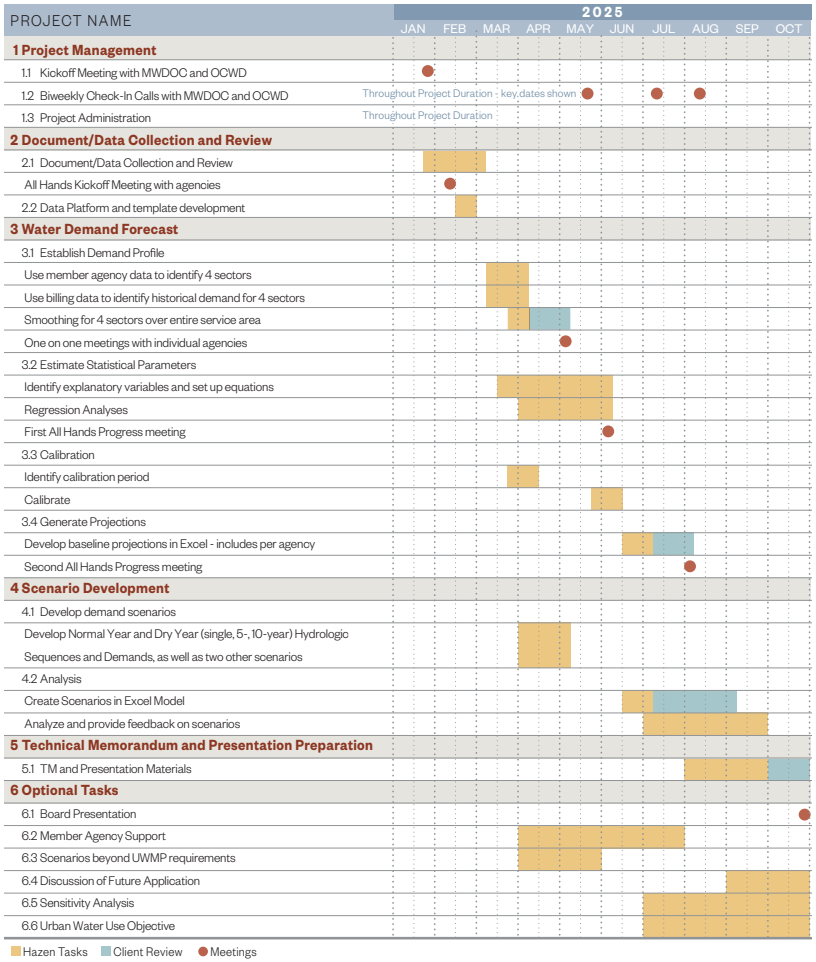
The UWUO methodology and results of the calculations for each agency will be documented.

E Project Schedule

Section E

Project Schedule

Hazen has developed a proposed schedule that aligns with our experience in delivering similar work. Our schedule meets the RFP requirements for final demand projections by September 2025. Our team is flexible with specific meeting dates, but must adhere to the overall schedule in order to provide the demand forecasts for the 2025 Urban Water Management Plan. If selected, Hazen is willing to work with MWDOC and OCWD to adjust data collection and review timelines, based on discussion at the Kick Off Meeting.



Task	Completion Date	Notes and Assumptions
Task 1: Project Management	Throughout project duration	• The kickoff meeting with Hazen, MWDOC, and OCWD staff is estimated to occur near the last week in January after notice to proceed/agreement signed • Biweekly check-in calls are not all shown, but key dates are. A meeting will take place during the second to last week of May to talk about what to present in the first all hands progress meeting. Draft demand predictions will be discussed during the second week of July, with two weeks to revise before they are officially due and the agency all-agency meeting takes place. Another key meeting will occur near the second week of August to synthesize thoughts from the last all-agency meeting.
Task 2: Data Collection	Draft: March 14, 2025 Final: April 4, 2025	• The all-agency kickoff meeting with agencies can occur two weeks after the internal kickoff to process notes and objectives • Data collection and review will occur from the notice to proceed into March • Downscaled climate data and template development will occur at the end of February, after the all-agency kickoff meeting
Task 3: Water Demand Forecast	Demand Sectors Draft: March 28, 2025 Final: April 18, 2025 Baseline Projections Draft: June 20, 2025 Final: August 22, 2025	• The second all-agency progress meeting will take place the first week of June, after the four demand sectors, draft drivers, and draft explanatory variables have been identified • The third (and final) all-agency progress meeting can occur the first week in August, after draft demand projections are due • Individual calls with agencies will occur after agency data is sent to Hazen and our team has identified demand sectors, approximately the first week of May. If a second call is required, it could occur after the second all-agency meeting to answer more detailed questions • The Hazen team will work to provide MWDOC and OCWD draft sectors after agencies have a chance to send data; the last few weeks of March, leaving a month for review • This task has extra time built in for estimating statistical parameters and regression analysis and to compensate for any delays in data acquisition • The calibration period will be defined as late as early April to discuss at the first all hands progress meeting. Actual model calibration will occur in early June, giving the Hazen team a month to run the scenarios • Draft baseline projections will be completed at the end of June
Task 4: Scenario Development	Draft: July 11, 2025 Final: September 26, 2025	• The scenarios will be identified by the Hazen team starting in April, and ready to run the last few weeks of June • Key analysis will occur prior to the second all-agency meeting, but will continue with member agencies and staff until the end of September when the final projections are due
Task 5: Technical Memo and Presentation Materials	Draft: September 30, 2025 Final: October 31, 2025	• The technical memo will be formally written in August and September to send MWDOC and OCWD a draft right when the final forecasts are due, but it is expected that individual tasks will be written up before then • Development of presentation materials will take place as appropriate through the project
Task 6: Optional Tasks	As needed	• The board presentation could be the last week of October or early November • Member agency support can start as early as we get data from them, and last until the first draft of the demand forecast at the end of July • Additional scenarios beyond the two non-UWMP forecasts and UWMP scenarios can occur while the team is identifying the scoped scenarios, in April and May • Discussion of future applications can occur in the tech memo and after, September and October • Optional sensitivity analysis and Urban Water Use Objective can be completed either in July, as we are working on the first draft, or when the project is complete to give the Hazen team more time to develop the forecasts

F

Project Fee Schedule

Section F

Project Fee Schedule

Our budget was developed based on the scope presented in the RFP, our discussions with MWDOC and OCWD staff, and our experience on similar assignments.

MWDOC and OCWD	Development of Demand Forecasts for Orange County Water Agencies	Project Director	Project Manager	Project Engineer	Technical Director	QAQC	Outreach	Scenario Development	Data Collection PE	Support AE	Total Hours	H&S Labor Cost	Subs	Subcontrator Fee (0%)	Other Direct Costs (ODCs)	Total Fee
		Cindy Miller	Kirsten Plonka	Andrea Zimmer	Jack Kiefer	Luke Wang	Megan Drummy	Devon Becker	Jared Eichmiller	Nolan Townsend						
	Billing Rate	$400	$330	$270	$375	$330	$215	$310	$200	$180						
1	Project Management	2	66	26	10	0	0	4	0	0	108	$ 34,590	$ -	$ -	$ -	$ 34,590
1.1	Kickoff Meeting with MWDOC	2	2	2	2						8	$ 2,750				
1.2	Biweekly Check-In Calls with MWDOC		16	16	8			4			44	$ 13,840				
1.3	Project Administration		48	8							56	$ 18,000				
2	Document/Data Collection and Review	2	8	28	20	0	0	0	36	96	190	$ 42,980	$ -	$ -	$ -	$ 42,980
2.1	Document/Data Collection and Review	2	4	24	16	0	0	0	20	80	146	$ 33,000				
	Data Collection and Review			16	8				20	40	84	$ 18,520				
	Downscale Climate Data			4	4					40	48	$ 9,780				
	All Hands Kickoff Meeting with agencies	2	4	4	4						14	$ 4,700				
2.2	Data Platform and template development		4	4	4				16	16	44	$ 9,980				
3	Water Demand Forecast	4	38	158	75	24	0	7	112	240	658	$ 160,615	$ -	$ -	$ -	$ 160,615
3.1	Establish Demand Profile	0	28	50	18	4	0	0	24	24	148	$ 39,930				
	Use member agency data to identify 4 sectors			8	6				8	8	30	$ 7,450				
	Use billing data to identify historical demand for 4 sectors			8	6				8	8	30	$ 7,450				
	Smoothing for 4 sectors over entire service area		2	8	6	4			8	8	36	$ 9,430				
	One on one meeting(s) with individual agencies (one 1 hour or two 30 min)		26	26							52	$ 15,600				
3.2	Estimate Statistical Parameters	2	4	72	36	8	0	1	88	88	299	$ 71,450				
	Identify explanatory variables and set up equations			24	16				40	40	120	$ 27,680				
	Regression Analyses		2	24	16	8			40	40	130	$ 30,980				
	First All Hands Progress meeting	2	2	24	4			1	8	8	49	$ 12,790				
3.3	Calibration	0	2	8	14	8	0	0	0	56	88	$ 20,790				
	Identify calibration period			4	6					16	26	$ 6,210				
	Calibrate		2	4	8	8				40	62	$ 14,580				
3.4	Generate Projections	2	4	28	7	4	0	6	0	72	123	$ 28,445				
	Develop baseline projections in Excel - includes per agency		2	4	4	4				60	74	$ 15,360				
	Second All Hands Progress meeting	2	2	24	3			6		12	49	$ 13,085				
4	Scenario Development	0	6	8	8	0	0	32	16	24	94	$ 24,580				$ 24,580
4.1	Develop demand scenarios	0	2	4	4	0	0	8	16	0	34	$ 8,920				
	Develop Normal Year and Dry Year (single, 5-, 10-year) Hydrologic Sequences and Demands		2	4	4			8	16							
4.2	Analysis	0	4	4	4	0	0	24	0	24	60	$ 15,660				
	Create Scenarios in Excel Model									24						
	Analyze and provide feedback on scenarios		4	4	4			24								
5	Technical Memorandum and Presentation Preparation	0	12	24	12	4	0	12	0	40	104	$ 27,180				$ 27,180
5.1	TM and Presentation Materials		12	24	12	4		12		40	104	$ 27,180				
6	Optional Tasks	0	14	124	84	32	0	24	0	248	526	$ 132,240	$ -	$ -		$ 132,240
6.1	Board Presentation		4	24	8	4				32	72	$ 17,880				
6.2	Member Agency Support			24	24	8				40	96	$ 25,320				
6.3	Scenarios beyond UWMP requirements			4	4			24		32	64	$ 15,780				
6.4	Discussion of Future Application			32	16	16					64	$ 19,920				
6.5	Sensitivity Analysis		8	24	16	2				40	90	$ 22,980				
6.6	Urban Water Use Objective		2	16	16	2				104	140	$ 30,360				
	TOTAL (with Optional)	8	144	368	209	60	0	79	164	648	1,680	$ 422,185	$ -	$ -	$ -	$ 422,185
	TOTAL (without Optional)	8	130	244	125	28	0	55	164	400	1,154	$ 289,945	$ -	$ -	$ -	$ 289,945

TOTAL COST (without Optional)	**$ 289,945**
TOTAL COST (with Optional)	**$ 422,185**

1 Resumes

Kirsten Plonka, PE

Project Manager

Kirsten brings over 20 years of experience in the planning, design, and management of water, wastewater, and recycled water systems.

Kirsten's experience includes extensive project management in water resources planning and operations. Her expertise spans reservoir operations, source water allocation planning, demand projection, and infrastructure capacity planning. She is proficient in developing integrated water resources plans and master plans, conducting supply and demand analyses, and hydraulic modeling. Additionally, Ms. Plonka has managed public engineering departments, led wastewater collection operations, and has significant regulatory compliance experience, including securing funding opportunities.

Education

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

MS, Management, Colorado State University, Global Campus (in-process)

Certification/License

Professional Engineer

Utility Risk & Resilience Certified by AWWA

Advanced Water & Wastewater Modeling Certified by Autodesk

Areas of Expertise

- Water Supply Planning and Modeling
- Water Resource Planning
- Water and Collection System Master Planning
- Risk, Resiliency, and
- Emergency Response Planning
- Feasibility Studies
- Funding

Professional Affiliations

American Society of Engineers

American Public Works Association

Engineers Without Borders

(former Southern California State Representative)

Potable Reuse Advisory Committee, San Diego

Lead and Copper Rule Revisions, Municipal Water District of Orange County, Fountain Valley, CA

Deputy Project Manager. As the Deputy Project Manager for MWDOC's Lead and Copper Rule Revisions (LCRR) project, played a critical role in ensuring compliance for thirteen member agencies with updated federal regulations aimed at reducing lead and copper in drinking water systems. As the project was focused on identifying lead service lines, she was responsible for leading a team reviewing historical codes, utilizing GIS technology to compile a comprehensive list of lead service lines, and employing additional verification methods like geo-spatial statistical analysis. Kirsten managed a field contractor and coordinated QA/QC. She also corresponded with the Division of Drinking Water (DDW), providing regulatory advice and developing educational materials for the community. Additionally, she played a crucial role in evaluating project costs, ensuring accurate budgeting, and maintaining transparency and accountability throughout the project to safeguard public health.

2020 UMWPs, Various Clients, CA

Project Manager. Managed the development of the 2020 Urban Water Management Plans (UWMPs) for San Antonio Water Company, City of Escondido, Valley Center Municipal Water District, Big Bear Community Services District, Scotts Valley Water District, and San Lorenzo Valley Water District. Key responsibilities included ensuring the accuracy and quality of each plan to meet California Department of Water Resources (DWR) requirements. A primary focus was on developing detailed demand projections through 2045, assessing future water needs, and evaluating supply options for each agency. The plans also integrated energy efficiency measures and climate action strategies, addressing the link between water management, energy use, and climate resilience to promote long-term sustainability.

Hazen

Comprehensive System Master Plan and Asset Management Program and UWMP, San Antonio Water Company, Upland, CA

Project Manager. Collaborated with SAWCo on the development of a comprehensive Water Master Plan and Asset Management Program, including their UWMP, designed to guide the company's annual planning and rate structure over the next decade. The plan's key focus areas included demand forecasting, evaluating the current water supply portfolio under various risk scenarios, providing recommendations to strengthen existing supplies and explore alternative sources, and delivering a new calibrated hydraulic model integrated with GIS datasets to enhance system operations and Capital Improvement Program (CIP) development.

Sweetwater Authority, Water Resources Master Plan, Chula Vista, CA

Deputy Project Manager. Collaborated closely with Sweetwater Authority (the Authority) on updating its Water Resources Master Plan. This plan provided in-depth demand analysis for multiple planning scenarios, assessed the reliability of the Authority's water supply over a 25-year planning horizon, evaluated options for developing new local water sources and expanding existing ones, and provided recommendations for cost effective project alternatives to reduce dependence on expensive imported water. Additionally, the plan identified potential funding opportunities to support these initiatives.

East Valley Water District Drought Contingency Plan, Highland, CA

Project Manager. Led the development of a Bureau of Reclamation (BOR) funded Drought Response Plan for the East Valley Water District, aimed at enhancing the district's ability to proactively address drought conditions by integrating new hydrologic indicators and identifying specific response triggers. The project focused on forecasting demands under multiple drought scenarios, improving water supply management and fostering alignment between East Valley and its regional partners in drought response efforts. Key elements included the creation of a project framework, in-depth stakeholder engagement, and coordination with the BOR to ensure compliance with federal guidelines. Through technical analysis and collaborative outreach, the plan provided a comprehensive strategy to safeguard water resources and enhance the district's resilience in future drought scenarios.

Santa Clara Valley Water Drought Contingency Plan, Santa Clara, CA

Deputy Project Manager. Oversaw the creation of a Bureau of Reclamation (BOR) funded Drought Response Plan for Santa Clara Valley Water, emphasizing demand forecasting to enhance the agency's proactive approach to drought management. The plan introduced advanced hydrologic indicators and specific response triggers to better prepare for drought impacts. Key efforts included developing a comprehensive demand forecast model, facilitating extensive stakeholder engagement, and closely coordinating with BOR to meet federal compliance standards. Through technical analysis and strategic collaboration, the plan delivered a structured approach to protect water resources and reinforce Santa Clara Valley Water's resilience against future droughts.

Water Master Plan and Condition Assessment, Big Bear City Community Services District, Big Bear City, CA

Project Manager. Led the development of a Water Master Plan and Condition Assessment for Big Bear City Community Services District, integrating comprehensive demand forecasting, Urban Water Management Plan development, and supply analysis. Conducted in-depth site visits and collaborated with operators to thoroughly document the maintenance and replacement needs of the water system. The project involved detailed assessments of the district's infrastructure, including age, condition, and projected lifespan of assets. The final master plan will feature a Capital Improvement Plan designed to support annual budgeting, rate-setting, improvement prioritization, and long-term planning to meet future water demands.

Andrea Zimmer, PhD, PE

Deputy Project Manager
Demand Forecast Model Development

Andrea has spent the last 10 years developing software models that simulate long-term water supply for urban agencies in the southwest U.S. These models quantify regulatory and climate changes to large scale imported supplies (such as the California Bay Delta and the Colorado River) as well as local groundwater, surface water, and recycled water.'

Education

Ph.D., Civil/Environmental Engineering, University of Illinois, Urbana, IL

M.S., Civil/Environmental Engineering, Rice University, Houston, TX

B.S., Civil/Environmental Engineering, Rice University, Houston, TX

Certification/License

Professional Engineer

Areas of Expertise

- Integrated Planning
- Water Supply Modeling
- Stormwater Management

Orange County Water Reliability Study, Municipal Water District of Orange County, Fountain Valley, CA

Project Engineer. Synthesized environmental regulations and historic hydrology on the California State Water Project and Colorado River to identify water supply contributions; developed a mass balance model for Orange County Groundwater District to establish a basin production percentage. Collaborated with colleagues at the National Center for Atmospheric Research to quantify the impacts of Coupled Model Intercomparison Project 5 (CMIP5) climate change using the hybrid delta method, programmed systems hydrologic models to run both historic and climate change projections in an index sequential format within the Stockholm Environment Institute WEAP model. Defined future supply and demand scenarios and evaluated the impacts of potential water supply projects on water demand, and framed results for presentations to agency board.

Sweetwater Authority Water Resources Master Plan, Sweetwater Authority, Chula Vista, CA

Project Engineer. Prepared an estimate of imported water costs from San Diego County Water Authority out to 2050 to predict the cost efficiency of new local projects. Based cost predictions on variable treated and untreated rates, transportation rates, and commodity based fixed charges. Incorporated future Metropolitan Water District of Southern California (MWD) project investment costs to simulate higher costs corresponding to higher water supply reliability. Approximated MWD charges from population projections from the MWD 2020 Integrated Resources Plan as well as MWD's Biennial Budget for Fiscal Years 2020/21 and 2021/22, and projected SDCWA costs from the CY 2021 and CY 2023 Cost of Service studies. Results showed that most of the cost increase to Sweetwater Authority due to new MWD projects is in the MWD pass-through Readiness to Serve Charge.

Hazen

Water Supply Reliability Study, Cal Water Delta Region Districts, Stockton, CA
Project Engineer. Used CalSim 3 (CA DWR and U.S. Bureau of Reclamation) to simulate deliveries to the Stockton District through Stockton East Water District's (SEWD) New Melones and New Hogan Reservoirs. Calculated a multiplicative change factor (delta) between the 2021 Delivery Capability Report (DCR) Existing flows and the 2019 DCR 2070 Drier Extreme Warming scenario to develop an extreme climate change condition. Assumed two separate implementations of the 2006 Bay Delta Plan: through voluntary agreements (VAs) and based on State Water Board Resolution No. 2018-0059 which recommended minimum unimpaired flows. Determined water supply gaps for the Stockton District by running CalSim 3 through 94 hydrologic traces using an Index Sequential Methodology (ISM) approach. Recommended adaptive management practices for the Stockton and Livermore Districts to determine level of investment in new supplies.

Water 2100, City of Santa Fe, Santa Fe, NM
Project Engineer. Supported the development of a long-range water resources plan. Adapted demand forecast to incorporate downscaled CMIP3climate change data, and advanced a GoldSim software model to quantify City water supplies into the future (also under climate change impacts). Depicted local Santa Fe River inflows to the City's Canyon Road Treatment Plant (CRWTP), groundwater pumping from three wellfields, and imported flows from the Colorado River through the San Juan Chama Project and the Buckman Direct Diversion on the Rio Grande. Incorporated Modflow-computed response functions to simulate groundwater elevations and affiliated well capacity over time.

Proof of Concept Alternative Integrated Resources Planning Model, Alameda County Water District, Fremont, CA
Project Engineer. Developed Proof of Concept (PoC) model in RiverWare to include ACWD supply sources (State Water Project and local surface water through two treatment plants, a groundwater desalination facility, a blending facility for groundwater and San Francisco Public Utilities Commission SFPUC supplies, and direct SFPUC supplies) and storage (San Luis, Semitropic, groundwater, Los Vaqueros Reservoir and Lake Del Valle) prioritization. Simulated Table A inflows, storage limits, and spill rules for San Luis Reservoir as well as limiting Semitropic operations. Depicted Lake Del Valle releases to treatment plant and all groundwater basin flows. Designed methodology to limit the amount of water model could take from desalination and blending to the appropriate TDS ratios, setting the minimum and maximum bounds in the model. Assigned weights to each of four sources based on the expense of treating water and the water needed through each source at the daily time step. Pursued model validation and QA/QC exercises on output of supply system model with existing Excel IRPM results.

2020 Agricultural Water Management Plan; Byron Bethany Irrigation District, Byron, CA
Project Engineer. Performed QAQC for the 2020 AWMP by researching state requirements, including the Water Conservation Act of 2009 (Senate Bill X7-7), SB 1330, and Executive Order B-37-16 (2016). Checked future production and demand numbers for consistency across report.

Cindy Miller, PE

Principal-in-Charge

Cindy is an experienced water resources expert with a long resume of leading the most challenging water and wastewater projects to successful completion. Her experience extends from planning, design, construction, and owner's agent services.

Education

B.S., Civil Engineering, University of California, Irvine

Certification/License

Professional Engineer

Areas of Expertise

- Pump Station Planning and Design
- Reservoir Storage Planning and Design
- Well Equipping Planning and Design
- Groundwater Supply
- Pipeline Planning and Design
- Project Management
- Program Management
- Project Delivery
- Drinking Water

Professional Activities

AWWA, ASCE, AMTA

CA-NV AWWA

CA Water Reuse Association

Cindy serves as Hazen's Orange County Operations Manager,with over 30 years of experience working for numerous water and wastewater agencies throughout Orange County and the Inland Empire. Her extensive experience includes planning, design and construction oversight of water supply, treatment, storage and conveyance facilities. Her planning experience includes the preparation of master plans, sub-area master plans, urban water management plans, water supply assessments, and water quality management plans. Her design and project management experience includes providing Program Management services for a $150 million groundwater supply project, which includes wells, pipelines, pump stations, and an advanced treatment system for R.O. concentrate reduction; Program Manager for a $30 million TCE groundwater cleanup project; Project Manager for preliminary and final design of a 28 MGD microfiltration treatment facility, and Project Manager for a 10 MGD R.O./Ion Exchange groundwater treatment plant. Ms. Miller has also led numerous water storage and conveyance infrastructure projects, including design of over 100 miles of pipeline (Ductile Iron, CML&C steel, PVC, and HDPE pipeline), design of steel, pre-stressed concrete, and cast-in-place concrete storage reservoirs, up to 10 million gallons, and numerous pump station facilities. She has led feasibility/planning studies, developed treatment process evaluations and life-cycle cost evaluations, participated in value engineering studies and operations evaluations. She has developed detailed designs of many systems and provided construction and startup services. She has experience with different project delivery methods including: design-bid-build, design-build and design-build-operate-finance.

Water Quality Evaluation Study, Jurupa Community Services District, Jurupa Valley, CA

Project Manager. Cindy was Project Manager for an analysis to evaluate design alternatives to address a range of water quality constituents, including TDS, nitrate, PFAS, VOCs, 1,2,3-TCP, 1,1-DCE, and perchlorate. This study included the development of short-term options to mitigate service risks resulting from out of service wells, as well as long-term design alternatives to address regulated contaminants, while allowing flexibility to comply with potential future regulations.

Hazen

Beverly Hills Integrated Water Resources Master Plan (Water, Sewer, Storm, Recycled, and SCADA), City of Beverly Hills, CA

Principal in Charge. This is a comprehensive $1.5 M master plan of the potable water, recycled water, sanitary sewer, stormwater, and SCADA system. The IWRMP – Part 1 addresses the City's major water resources strategy which includes imported water, groundwater, and other potential supply sources. Part 1 also addresses other topics including emergency storage for the water system, and stormwater compliance. The IWRMP – Part 2 is a master plan of the water, sewer, and storm drain systems. For each system, the document addresses the existing system and service area, evaluation and design criteria, system analysis, and capital improvements. The theme of the IWRMP is to focus on near-term practical solutions with an eye towards what could be done in the future. The near-term represents a focus on projects that should be implemented within the next five years – 2021 through 2025. An eye towards the future includes taking the necessary steps now to position for long-term resiliency and reliability of the City's water, sewer, and storm drain systems. The IWRMP achieved several important goals for the City, including hydraulic model updates and calibration, long-range demand forecasting, and independent analysis of each of the systems.

Sunset Gap Seawater Intrusion Barrier Feasibility Study, Orange County Water District, Fountain Valley, CA

Project Manager. OCWD has established that seawater intrusion is occurring in the Sunset Gap area of the Orange County Groundwater Basin, and threatens groundwater resources in the cities of Huntington Beach, Seal Beach, and Westminster. To address this issue Hazen is evaluating potential alternatives to prevent the inland migration of seawater. The alternatives include construction of up to 34 injection wells with an annual average demand of 13 MGD, and 3 extraction wells that would pump 3 MGD. Alternative water supply sources to supply the injection wells are being evaluated and include GWRS purified recycled water; purified recycled water from MWD future expanded Carson plant; groundwater extracted from the Deep aquifer; and purified recycled water from WRD. OCWD is currently studying whether to change the injection barrier to an extraction barrier and if OCWD determines this to be a viable alternative, Hazen will be performing an engineering evaluation of this alternative as well.

Regional Brackish Water Reclamation Program- Phase 1 Pilot Testing and Water Quality Characterization, Water Replenishment District of Southern California, Lakewood, CA

Program Management/Delivery. Cindy managed the pilot program and design for the Regional Brackish Water Reclamation Program. The Phase 1 Project develops a well drilling and water quality characterization program to define where the trapped seawater plume is within the aquifer and to determine the best location for production wells to pump the plume to a 10,000 AF (9 mgd) Reverse Osmosis System. The project includes drilling a nested pilot well to supply water to a treatment pilot. The project includes developing preliminary designs of the wells, pipelines, pretreatment, reverse osmosis and post treatment pumping and brine disposal lines. The project will remediate the aquifer and reclaim water that will be supplied to multiple local stakeholders.

Chino I Desalter VOC Treatment, Chino Basin Desalter Authority, CA

Project Manager. The project includes preliminary and final design of two (2) GAC treatment facilities (1.7 mgd and 3.4 mgd) at the Chino I Desalter Plant for the removal of TCE and 1,2,3-TCP, and evaluation of treatment requirements for 1,4-dioxanr, cis-1,2-DCE, 1,2-CDA, PFOA, and PFOS. The goal of this project is to provide groundwater treatment for all CDA bypass wells (CDA Wells I-1 through I-4), and several treated wells (CDA I-16 through 18), plus 10 new wells that will be installed by the County of San Bernardino as part of a Cleanup and Abatement Order issued by the Santa Ana Regional Water Quality Control Board (SARWQCB).

Jack C. Kiefer, PhD

Technical Director
Demand Forecast Model Development

Jack is an economist and geographer specializing in multiple consulting areas of water resource economics and planning, econometrics, and integrated water demand and supply planning and management.

Education

PhD, Geography, Southern Illinois University

MA, Monetary and Development Economics, Southern Illinois University

BA, Economics, Southern Illinois University

Areas of Expertise

- Econometric Analysis and Forecasting
- Water Supply Reliability Planning
- Impact and Process Evaluation
- Risk and Uncertainty Analysis
- Water Resources Planning
- Economic Analysis

Professional Activities

American Water Works Association

American Water Resources Association

Technical Publications and Presentations

Water Demand Forecasting for Water Resources and Infrastructure Planning. 2022. J. Kiefer, C. Jones, and B. Dziegielewski. Water Research Foundation, Denver.

"Information Needs for Water Demand Planning and Management." J. Kiefer and L. Krentz. 2018. Journal of the American Water Works Association, 110:3.

Long-term Water Demand Forecasts, San Diego County Water Authority, San Diego, CA

Project Manager. Development of six consecutive water demand forecasts and forecast updates for the San Diego County Water Authority, in support of the Agency's periodic development of its Urban Water Management Plan. Original efforts involved the development of econometric models of M&I water demands, which were followed by development of predictive models for agricultural demands. More recent support to the Authority has included the analysis of climate change impacts on waterdemand and the development and application of risk-based simulation procedures to support long-term supply reliability and capital improvement planning.

East Bay Municipal Utility District Water Demand Study 2050, CA

Technical Director/Project Manager. Directed the development of econometric model for forecasting water demands in EBMUD service area out to the year 2050. The econometric model explicitly accounts for weather/climate conditions, anticipated land use changes, development trends, and socioeconomic factors (e.g., water rates, jobs, population growth, income) which have been shown to impact water use. The forecasted demands deduct savings from passive and active conservation and are allocated into demand planning regions pressure zones.

Cost of Water Shortage Model Update, Valley Water, CA

Technical Advisor. As part of this model update, new water demand forecasts, prices and price elasticities, and water production costs were integrated into the model, along with updated water shortage simulation obtained from the Water Evaluation and Planning System (WEAP). The model structure was also modified to operate on monthly time step. Output from the cost of shortage model can be used to estimate the regional economic benefits associated with proposed water supply infrastructure investments and/or alternate management strategies (i.e., project portfolios).

Hazen

Water Use in the Multifamily Housing Sector. J. Kiefer and L. Krentz. 2018. Denver, Colo.: Water Research Foundation.

"Urban Water Demand Forecasting: Demand Trends, Drivers, and Uncertainties". Presented at Water Research Foundation Symposium hosted by Metro Vancouver Water, Vancouver, BC, November 29, 2017.

"Developing a Spatially and Sectorally Disaggregate Water Demand Forecasting Tool for Tampa Bay Water" J. Kiefer. Presented at American Water Works Association 2017 Annual Conference and Exposition, Philadelphia, PA, June 11-14, 2017

Water Demand Forecasting in Uncertain Times: Isolating the Effects of the Great Recession. Kiefer, J., Johns, G., Snaith, S., and B. Dziegielewski. 2016. Denver, Colo.: Water Research Foundation.

Evaluation of Customer Information and Data Processing Needs for Water Demand Analysis, Planning, and Management. J. Kiefer and L. Krentz. 2016. Denver, Colo.: Water Research Foundation.

"Identifying and Adapting to Water Demand Uncertainties." 2016. J. Kiefer. Presented at American Water Works Association 2016 Annual Conference and Exposition, Chicago, IL, June 19-22, 2016.

Uncertainty in Long-Term Water Demand Forecasts: A Primer on Concepts and Review of Water Industry Practices. Kiefer, J., Yoe, C., Clayton, J. and J. Leonard. 2016. Denver, Colo.: Water Research Foundation.

"Research Considerations for Evaluating Water Use among CII Sectors." J. Kiefer. 2016. Presented at American Water Works Association 2016 Sustainable Water Management Conference, Providence, RI, March 2016

Analysis of Changes in Water Use under Regional Climate Change Scenarios. 2013. J. Kiefer, J. Clayton, B. Dziegielewski, and J. Henderson. Water Research Foundation, Denver.

Long-Term Probabilistic Water Demand and Supply Reliability Forecast for Tampa Bay Water, FL

Project Manager. Led risk-based water demand and supply study for Tampa Bay Water, where he focused on the development of econometric models of water demand and applied a risk-based framework for assessing long-term supply reliability.

Portland Water Bureau, Demand Model Update, OR

Technical Lead. Updating PWB's demand forecasting model in support of long-term adaptive planning, including a critical review of existing econometric model and internal stakeholder input on important model design features.

New York City Demand Projection Model, NY

Technical Director. Designed and implemented econometric models for projecting water demands and sanitary wastewater flows using AMI data and integrated spatial database. Projection models were designed for 8 customer class/land use designations based on intersection of parcel and water use information.

Confidential Client, CO

Expert Advisor/Technical Lead. As part of a team led by INTERA providing expert guidance on water demand model development and forecasting for litigation support and planning efforts. Demand forecasting models integrate end use accounting and econometric methods to capture and distinguish between indoor and outdoor demand trends .

Water Demand Study 2050, East Bay Municipal Utilities District, CA

Technical Director/Project Manager. Developed an econometric model for forecasting water demands for the EBMUD service area out to the year 2050. The econometric model explicitly accounts for weather/climate conditions, anticipated land use changes, development trends, and socioeconomic factors (e.g. water rates, jobs, population growth, income) which have been shown to impact water use.

Comprehensive Water Master Supply Plan, City of Columbus, OH

Lead Forecaster. As part of demand forecast model development, this effort included a significant change in the methods used to forecast, with a new focus on statistical modeling and spatial data disaggregation. The forecasting model differs fundamentally from previous models used by the City in that it (a) does not rely on population solely as the primary driver of water use and (b) uses a statistical model to incorporate the influence of socioeconomic, water conservation, and climatic factors used to allocate demands into parcels within traffic analysis zones.

Luke C. Wang, PE

QA/QC

Luke specializes in water resources planning and operations. He has extensive experience in water demand forecasting, water supply planning, reservoir operations, and econometric analyses. Luke is the Water Resources Practice Leader for Hazen's Western Region.

Education

MS, Earth and Environmental Engineering, Columbia University

BS, Earth and Environmental Engineering, Columbia University

Certification/License

Professional Engineer

Areas of Expertise

- Water supply operations management and modeling
- Big data management and visualization
- Statistical analysis and modeling
- Hydrology
- Climate variability and change

Professional Activities

American Water Works Association

American Geophysical Union

American Water Resources Association

Publications

James Porter, Gerald Day, John C Shaake, and Lucien Wang. "New York City's Operations Support Tool: Utilizing Hydrologic Forecasts for Water Supply Management",Handbook of Hydrometeorological Ensemble Forecasting (2018)

Gong, Gavin, Lucien Wang, Laura Condon, Alastair Shearman, and Upmanu Lall. "A Simple Framework for Incorporating Seasonal Streamflow Forecasts Into Existing Water Resource Management Practices." Journal of the American Water Resources Association 46.3 (2010): 574-585.

Bay Area Water Supply & Conservation Agency Regional Water Supply Reliability Model Development and Analysis Services, San Mateo, CA

Project Manager and Lead Systems Modeler. Designed a water supply system model for the Bay Area incorporating regional supply sources (e.g. San Francisco Regional Water System) with locally utilized supplies and detailed estimations of municipal demands. BAWSCA is using the model for long-term water reliability planning and alternatives analysis.

Santa Clara Valley Water District (Valley Water) Water Demand Model, San Jose, CA

Project Manager. Developing Valley Water's new water demand model. Valley Water is in the process of developing a new water demand model for the purpose of developing long-term water demand projections. The model will be used to support several water supply planning and analysis efforts. As Project Manager, Mr. Wang is responsible for guiding the overall technical direction of the project, as well as maintaining the project budget and schedule.

East Bay Municipal Utility District (EBMUD) 2050 Demand Study, Oakland, CA

Deputy Project Manager. EBMUD is in the process of developing an econometric model for forecasting water demands in their service area out to the year 2050. The econometric model will explicitly account weather/climate conditions, anticipated land use changes, development trends, and socioeconomic factors (e.g. water rates, jobs, population growth, income) which have been shown to impact water use. The forecasted demands will be a critical component of EBMUD's 2020 Urban Water Management Plan.

Hazen

Zone 7 Water Agency (Zone 7) Conjunctive Use Study and Water Supply Evaluation Update, Livermore, CA
Project Manager. With declining yields to the SWP and increasing water demands, Zone 7 is conducting a conjunctive use study in parallel with an update to their Water Supply Evaluation (WSE) to evaluate new water supply sources and strategies to meet their future demands. As a part of the WSE, Mr. Wang led a peer review and update of Zone 7's existing water supply risk model in coordination with revisions to the Agency's water supply portfolio alternatives. The peer review recommended migrating the existing risk model to a RiverWare implementation utilizing an Index Sequential Method (ISM) to address hydrologic variability.

Santa Clara Valley Water District (Valley Water) Drought Response Plan, San Jose, CA
Project Manager. Currently developing a Bureau of Reclamation funded Drought Response Plan for Valley Water. The goals of the project are to enable Valley Water to be more proactive in responding to drought by considering new hydrologic indicators of drought, triggers for implementing response actions, and promoting alignment in drought response actions between Valley Water and its retail agencies.

Sweetwater Authority, Water Resources Master Plan, Chula Vista, CA
Project Manager. Currently working closely with Sweetwater Authority (Authority) an update to its Water Resources Master Plan. The intent of the Water Resources Master Plan is to examine the reliability of the Authority's water supplies to meet demands over a twenty-five-year planning period, to evaluate development of new local water supplies and/or expansion of existing local water supplies, and provide recommendations for reliable and cost-effective project alternatives to reduce dependence on more costly imported water supplies.

Demand Management Study, Upper Colorado River Commission, Salt Lake City, UT
Lead Modeler. Led development of updates the Colorado River Simulation System (CRSS) RiverWare model to support evaluation of the Demand Management Storage Agreement (DMSA). The modeling strategy included new RiverWare Policy Language (RPL) code to calculate conserved consumptive use (CCU) for water users in the Upper Basin, shepherding of the CCU to the Colorado River Storage Project Act (CRSP) Initial Units, and development of an "off-stream" reservoir account to model the accrual, evaporation, releases, and spills of CCU from Lake Powell. Oversaw batch execution of the model for 27 simulated scenarios varying hydrology, CCU contribution methods, and CCU accrual periods.

Cost of Water Shortage Model Update, Valley Water, CA
Project Manager. As part of this model update, new water demand forecasts, prices and price elasticities, and water production costs were integrated into the model, along with updated water shortage simulation obtained from the Water Evaluation and Planning System (WEAP). The model structure was also modifed to operate on monthly time step. Output from the cost of shortage model can be used to estimate the regional economic benefts associated with proposed water supply infrastructure investments and/or alternate management strategies (i.e., project portfolios).

Design Services for the Development of New York City's Operation Support Tool, NYCDEP, New York, NY
The Operations Support Tool (OST) is a state-of-the-art decision support system to provide computational and predictive operations and planning support for New York City's 1+ bgd water supply system. OST is an integrated model consisting of a water supply operations model, mechanistic reservoir water quality models, hydrologic forecasts, and a database containing near-real-time system data. Mr. Wang developed hydrologic forecasts, demand forecasts, dynamic reservoir operating rules, and customized dashboards for visualizing model output.

Jared Eichmiller

Data Collection and Information Review

Jared serves as Hazen's GIS Analyst in the Irvine Office. He has over 2 years of experience in helping local governments and organizations achieve their infrastructure and assessment goals through using GIS tools. He is experienced in cartography for print along with developing web applications, dashboards, and story maps. Jared is also skilled in developing field collection tools through Survey123 to conduct field assessments.

Education

BA, Geography, Indiana University

Areas of Expertise

- Geographic Information Systems
- Asset Management

San Bernardino Municipal Water District Condition Assessment, San Bernardino, CA

GIS Analyst. Jared is supporting the Asset Management team by developing Survey123 field collection forms. Surveys will be customized to meet the needs of collection type along with levying task assignments through an Operations Dashboard. These advancements will reduce data collection time.

Trabuco Canyon Water District Master Plan and Condition Assessment, Trabuco Canyon, CA

GIS Analyst. Jared developed deliverables for this project which involves field and desktop condition assessment data for several lift stations, pump stations, water and wastewater treatment plants.

NapaSan Master Plan, Napa CA

GIS Analyst. Jared is utilizing StoryMaps to create a visual, electronic submittal of Napa Sanitation's Capital Improvement Plan. as part of the Master Plan Project. The District selected Hazen to develop the Soscol Water Recycling Facility (SWRF) to provide NapaSan with strategic planning guidance and in-depth analysis of key focus areas. NapaSan intends to produce an actionable and strategic master plan that supports decision making over the next five-to-ten years while maintaining a 20-year planning horizon. the master Plan included key areas such as condition assessment, nutrients, biosolids, recycled water, capacity analysis.The Master Plan also includes an evaluation of vulnerabilities as well as susceptibility to climate change factors such as flood, wildfire risk and public safety power shutoffs.

Hazen

Lead and Copper Rule Revisions, Los Angeles Department of Water and Power, Los Angeles, CA
GIS Analyst. Jared is the GIS Analyst for LADWP's evaluation of historical lead service line use and code reviews, development of an LSL inventory in GIS, use of alternative verification methods (predictive modeling and geospatial statistical analysis), funding assistance, and communications with DDW.

Napa Sanitation Capital Improvement Plan, Napa Sanitation District, Napa, CA
GIS Analyst. Jared is utilizing StoryMaps to create a visual, electronic submittal of Napa Sanitation's Capital Improvement Plan.

District-Wide Asset Management Plan, El Toro Water District, Lake Forest, CA
GIS Analyst. Hazen was selected through a competitive procurement to develop an asset management plan for the El Toro Water District's Pumping Division, which is responsible for the District's potable water pump stations, wastewater lift stations, storage tanks, and pressure-reducing valves. The effort included the development of the District's first ever asset management plan. Key elements of the asset management plan included adopting formal strategies around risk analysis, assigning likelihood and consequence of failure values, and performing staff consultation and field condition assessment to capture key asset condition and performance information. This information was used to identify and prioritize the District's capital improvement program. Deliverables of the work included an update asset register, written asset management plan, and data visualization dashboard.

Condition Assessment, San Bernardino Municipal Water District, San Bernardino, CA
GIS Analyst. Jared is supporting the Asset Management team by developing Survey123 field collection forms. Surveys will be customized to meet the needs of collection type along with levying task assignments through an Operations Dashboard. These advancements will reduce data collection time.

Nolan Townsend

Data Collection and Information Review

Mr. Townsend specializes in water resources analysis, unimpaired flow methodology and generation, and data analysis/visualization. His project experience at Hazen includes automating computations and procedures for unimpaired flows, analyzing water resources and supply options, working with large climate datasets and climate-specific data formats, and managing and analyzing large datasets.

Education

MS, Earth and Planetary Sciences, University of New Mexico, Albuquerque, NM

BS, Geology, University of Texas, Austin, TX

Areas of Expertise

- Water resources
- Water supply evaluation and modelling
- Developing unimpaired flows as model inputs
- Climate model analysis
- Data management, analysis, and visualization
- GIS with hydrology applications

Professional Activities

American Water Resources Association

American Geophysical Union

Water Supply Modeling, Southwest Connecticut Regional Water Authority (RWA), CT
Technical Support and Data Management. Currently, the model is being used to conduct a climate change resiliency study, where Hazen is developing stochastic climate-adjusted ensemble stream flows and demands to stress-test the reservoir system against potential future climate outcomes.

Climate Change Impacts on NYCDEP Water Supply, New York City Department of Environmental Protection, New York, NY
Python Developer, Water Resources/Climate Analyst. Co-lead the identification, analysis, and processing of downscaled CMIP6 datasets to support water supply modeling for NYC watersheds and reservoirs. Developed a robust data pipeline for two datasets, NASA and LOCA, including geospatial transformations to align gridded, polygon, and point data. Performed quality control testing to identify and correct issues in CMIP6 datasets.

Drought Plan Development and Water Supply Planning, Aquarion Water Company (AWC), CT
Technical Support and Data Management/Analysis. Supports the integrated model of AWC's surface water supply systems in Greenwich, Stamford, and Bridgeport in Southwestern Connecticut. Continue to support AWC with drought forecasts and alternatives planning studies with data updates and technical support.

Water Resource Dashboard, City of Santa Fe, NM
BI Development and Data Modelling Support. Assisted with ETL updates and facilitated updates to the data model. The updates to the Power BI dashboard allow the City of Santa Fe to view production data, streamflow, and other water resources data in near-real time, with key data being streamed in daily.

Hazen

Demand Dashboard, City of Santa Fe, NM
BI Development Support, Data Management and GIS Support. Supported dashboard development to help the City of Santa Fe to track and analyze water usage by housing units, by meter, indoor vs. outdoor use, by neighborhood, and other metrics relevant for water supply planning and conservation. Constructed tabular, time series, and map-based data visualizations of metered water usage to inform city stakeholders. Created a script that used fuzzy matching to make the connection from meter data to the parcel data and then updated the data model and visuals in Power BI to allow users to see demand by parcel type. Performed data quality control for multi-year dataset and maintained data over time.

Water Supply Planning and Operations Modeling - Salt River Project, Phoenix, AZ
Python Developer and Data Management. Supporting development of a watershed forecast and reservoir operations support tool with a USBR WaterSMART Applied Science grant. Hazen is building a custom framework for processing input/output data and automating runs between multiple models. The tool will be utilized to inform short-term operations of the reservoir system, and eventually be leveraged to inform long-term and seasonal drought projections.

Surface Water Availability Resource Assessment Phase III: Apalachicola-Chattahoochee-Flint Basin, Georgia Environmental Protection Division, GA
Water Resources Assistant Engineer. Member of the unimpaired flows development team for the Apalachicola-Chattahoochee-Flint Basin. Mr. Townsend's primary task involved collecting and managing data, automating/streamlining unimpaired flow procedures, and hindcasting impairment data. The tasks involved the use of Excel, Python, and ArcGIS Pro.

Surface Water Availability Resource Assessment Phase II: Savannah-Ogeechee Basin, Georgia Environmental Protection Division, GA
Assistant Engineer. Member of the unimpaired flows development team for the Savannah-Ogeechee Basin. Mr. Townsend's primary task involved collecting and managing data, automating/streamlining unimpaired flow procedures, and hindcasting impairment data. The tasks involved the use of Excel, Python, and ArcGIS Pro.

Surface Water Availability Resource Assessment: Oconee-Ocmulgee-Altamaha Basin, Georgia Environmental Protection Division, GA
Water Resources Assistant Engineer. Development of the pilot basin environmental assessment model (BEAM) in OASIS for the Oconee-Ocmulgee-Altamaha Basin. Tasks include automating unimpaired streamflow methods in Python, develop impairment hindcast methodology using population and GDP data for municipal and industrial impairments, data collection and management, and analyzing and refining unimpaired flow procedures results. The tasks involved the use of Excel, Python, and ArcGIS Pro.

Demand Management Study, Upper Colorado River Commission, CO
Water Resources Assistant Engineer. Helped automate model outputs and supported BI development to help visualize and analyze model results to support the Demand Management Study.

Water Supply Evaluation, City of Fort Dodge, IA
Water Resources Assistant Engineer. Helped assess the safe yield of surface water supplies and investigate how surface water could augment the City of Fort Dodge's current groundwater reliance. Helped to evaluate historical streamflow statistics and visualizing streamflow data. Developed initial conceptual surface water model to assess the amount of surface water storage would be required assuming historical demand patterns and instream flow requirements. A simple spreadsheet model was incorporated into GoldSim, which looks at both surface and groundwater needs based on demand patterns and historical streamflow.

Katelyn Nguyen

Data Collection and Information Review

Katelyn serves as an Assistant Engineer in the San Diego office. Her experience includes pipeline design, water reclamation, drinking water treatment, master planning, asset management, and sewer system design and analyses.

Education

B.S., Civil and Environmental Engineering, California State University Fullerton, Fullerton, CA

Certification/License

Engineer in Training

Professional Affiliations

American Society of Civil Engineers (ASCE)

Clean Water SoCal

Water Resources Master Plan, Sweetwater Authority, San Diego, CA
This is a comprehensive master plan of Sweetwater Authority's water resources, including local surface water, groundwater, and imported water. The plan includes an overview of the existing supply system, hydrologic planning scenarios, projected demands in those scenarios, an evaluation on the reliability of the existing supply system, and the development and evaluation of potential local water alternatives. Ms. Nguyen assisted in an overview of the existing supply system which included local surface water from the Sweetwater and Loveland Reservoirs treated at the Perdue Water Treatment Plant, fresh groundwater from the National City wellfield, brackish groundwater from the San Diego Formation (SDF) wellfield treated at the Reynolds Desalination Facility and imported water from the San Diego County Water Authority. She also assisted in developing seven local supply alternatives including a potable water sales agreement with the Otay Water District, a recycled water purchase from the Otay Water District, two Indirect Potable Reuse (IPR) alternatives, two brackish groundwater desalination alternatives, and potential yield improvements from increased brine concentration. For each alternative, Ms. Nguyen assisted in developing conceptual designs and performing calculations and analysis to determine how each potential supply could offset imported water purchases and reliance for Sweetwater Authority. Additionally, she helped evaluate potential areas of impact and using those criteria, created an evaluation matrix to rank the potential local supply alternatives.

2050 Demand Study Mid-Cycle Update, East Bay Municipal Utility District (EBMUD), Oakland, CA
EBMUD is in the process of updating the econometric model for forecasting water demands in their service area out to the year 2050. The econometric model will explicitly account weather/climate conditions, anticipated land use changes, development trends, and socioeconomic factors (e.g. water rates, jobs, population growth, income) which have been shown to impact water use. The forecasted demands will be a critical component

of EBMUD's 2020 Urban Water Management Plan. Ms. Nguyen assisted in analyzing data from the Employment Development Department (EDD) as well as Major New Service Activity Reports (MNSARs) to compare to the forecasted residential and commercial, industrial, and institutional projections from the initial 2050 Demand Study. Based upon this analysis, recommendations were made to adjust the forecasted demands from the initial 2050 Demand Study.

Lower Santa Margarita Water Supply Reliability Study, United States Marine Corp Base Camp Pendleton and Fallbrook Public Utility District, San Diego, CA

Using data from the pilot plant, a full-scale feasibility report was prepared to establish the regulatory and technical feasibility and construction and operation considerations of 2.3 mgd full-scale IPR facilities. The two alternative process designs, Carbon Based Advance Treatment (CBAT) and Reverse Osmosis Based Advance Treatment (RBAT) were developed considering the regulatory pathway and difficulty in permitting, conceptual design criteria, conceptual layouts for the treatment plant, the alignment of major piping between new and existing facilities, and the capacity of the existing infrastructure. The feasibility analysis also developed concept level capital and operating costs taking into consideration the pilot and tracer data, a more complete roadmap of project implementation, and identified any further studies and data gaps that must be filled for the clients to move these projects forward. Ms. Nguyen assisted in all aspects of the feasibility report.

Regional Brackish Water Reclamation Program Phase 1, Water Replenishment District of Southern California, Lakewood, CA

The Water Replenishment District intends to implement a 10,000 AF/yr (8.9 mgd) brackish water treatment facility to reclaim the West Coast Basin water for potable use and to ultimately provide aquifer storage space for potential Indirect Potable Water from planned regional recycled water projects. This project includes four program elements including the program development, well siting and drilling, pilot testing of treatment processes, and the development of preliminary design of the major project elements including the wells, pipelines, reverse osmosis treatment facility, and the brine pipeline. Ms. Nguyen assisted in the analysis of water quality data from the pilot testing stage and groundwater quality in preparation for well siting and drilling. She also participated in the conceptual layout of the new treatment facility and the preliminary design report.

Preliminary and Final Design of David C. McCollom Water Treatment Plant Centrifuge Project, Olivenhain Municipal Water District, Encinitas, CA

This project entailed providing planning, preliminary design, final design, plans, specifications, contract documents, construction cost estimates, and construction phase support services for the Stage 4 Centrifuge Addition project. The purpose of this project was to add a second centrifuge unit to enhance reliability, redundancy, and operations. As a part of this endeavor, Hazen evaluated options for the new centrifuge unit, a new centrifuge feed pump, a new dewatering polymer feed pump, and all associated equipment and support systems. Ms. Nguyen assisted in contacting vendors regarding the associated equipment for polymer use and the selection of the equipment. She also assisted in preparing the technical specifications package for this project.

POW-5 Turnout and Flow Control Facility Project, San Diego County Water Authority and City of Poway, San Diego, CA

The purpose of this project is to provide an alternate source of potable water for the City of Poway, as a supplement to or in lieu of the existing Berglund Water Treatment Plant. As a part of the design, a Basis of Design Report (BODR) and mid-point design submittal package were prepared. Ms. Nguyen assisted in writing the BODR and designing the fittings to lower the pipeline on Espola Road in accordance with the American Water Works Association (AWWA) M11 steel pipe design guide. She also assisted in completing permitting and regulatory documents, such as the City of Poway's Right of Way Permit, State Water Resources Control Board Stormwater Quality Management Plan, and easement documents.

Lisa Krentz

Demand Forecast Model Development

Lisa has more than 20 years of experience in water demand planning and management. Her experience includes a variety of projects related to water demand forecasting, water use profiling, water efficiency, drought planning, database development, and GIS.

Education

BS, University of Washington, Biology: Ecology, Evolution & Conservation Biology

Areas of Expertise

- Water Demand Planning and Management
- Geospatial Data Management and Processing
- Water Efficiency Planning, Cost-Benefit Analysis
- Water Demand Forecasting
- Water Use Profiling
- Water Resources Policy

Professional Activities

American Water Works Association (AWWA), Water Conservation Division, Trustee

AWWA, Water Use Efficiency & Technology Committee, Chair

Florida Section AWWA, Water Use Efficiency Division, Chair; Florida 2030, Conservation Task Force

Advisory Committee, Tampa Bay Water Regional Demand Management

Advisory Committee, Florida Department of Environmental Protection, Conserve Florida Statewide Water Conservation Program for Public Supply

Water Demand Forecasts, San Diego County Water Authority, CA
Lisa has completed three consecutive water demand forecasts for the Authority. In support of the Agency's periodic development of its Urban Water Management Plan, efforts have involved the development of econometric models of water demand for 4 major sectors, which account for socioeconomic and land use factors, and which contain unique climatic terms for 22-member retail agencies. The models have been used for climate scenario analysis, as well as assessment of alternative socioeconomic futures. In addition to various analytical components of the project, she managed the development of a water use database which relates water billing, pricing, meteorological and socioeconomic data for single-family, multi-family, non-residential, and agricultural water sectors. The database supports the analysis of climate change impacts on water demand and the development and application of risk-based simulation procedures to support long-term supply reliability and capital improvement planning for use in the development of sector models.

2050 Demand Study, East Bay Municipal Utility District, CA
Technical Lead. Lisa served as Technical Lead for information management and various analytical aspects of the project which consisted of updating the agency's demand model for forecasting water demands to the year 2050 in support of its 2020 Urban Water Management Plan (UWMP). The forecasted demands are a critical component of EBMUD's 2020 Urban Water Management Plan and supports multiple other planning and operational efforts of the agency.

Long Range Water Resources Plan, Durham, NC
Project Manager. Lisa was responsible for the development of a water demand forecast and demand management plan, as part of overall water resources management plan. She was responsible for oversight of econometric water demand forecast models and water conservation plan which seek to explain variability in water demand based on association to socioeconomic explanatory variables and the alignment with regional CommunityViz planning models and land use development plans.

Hazen

Technical Publications

Quantifying CII Water Use Efficiency and Market Potential. WaterSmart Innovations Conference, Las Vegas, NV, 2014.

Implications of Deficit / Surplus Irrigation for Targeting Conservation Program. AWWA Annual Con-vention and Exposition, Boston, MA, 2014.

Regulatory and Market-Based Efficiency Impacts on Water Supply Planning: What's In Your Future? WaterSmart Innovations Conference, Las Vegas, NV, 2013.

Understanding Passive Demand Reductions Related to an Increasing Market for HE Products. AWWA Annual Convention and Exposition, Denver, CO, 2013.

Developing Geographical and Sectoral Water Use Profiles of New York City Water Demand. AWWA Annual Convention and Exposition, Denver, CO, 2013.

Implications of Deficit / Surplus Irrigation for Targeting Conservation Program. WaterSmart Innova-tions Conference, Las Vegas, NV, 2012.

Increasing the Informational Value of Demand Side Planning Analyses, WaterSmart Innovations Con-ference, Las Vegas, NV, 2011.

Estimating the Impact of Outdoor Efficiency Measures on Outdoor Water Use. Water Use Efficiency Workshop, FS/AWWA Annual Conference and Exhibition, Orlando, FL, 2011.

Turning Billing Data into Information. Water Use Efficiency Workshop, Florida Section AWWA Annu-al Conference, Orlando, FL, 2010.

Managing Regional Water Shortages in the Tampa Bay Area. Water Smart Innovations Conference, Las Vegas, NV, 2009.

Utilizing GIS to Enhance Water Conservation Impact Analyses. AWWA Water Conservation Work-shop, Portland, OR, 2009.

Planning for Conservation Before it's Time. Water Use Efficiency Workshop, Florida Section AWWA Annual Conference, Orlando, FL, 2008.

NYC Department of Environmental Protection, Integrated Water Management Planning and Assessment, NY

Key Analyst. Lisa was a key analyst for development of water and wastewater demand projection models and forecasts for New York City In addition to various analytical components of the project, she was responsible for overseeing the development of the project information system which links the agencies 3+ billion daily water use records to various external data sources including property appraiser and various other demographic and socio-economic data that support forecast development efforts.

Regional Water Demand Management Plan, Tampa Bay Water, FL

The focus of this project is to identify achieved water savings from both natural plumbing replacement and active utility-sponsored programs and to estimate the potential and net economic benefits from additional future investments in water conservation as an alternative source of water supply. Lisa served as project manager, responsible for geospatial database development and overseeing technical analyses, including multiple regression and cost-benefit analyses, related to profiling water use, establishment of water-use benchmarks, generating estimates and projections of water fixtures and technologies market saturation by age and efficiency levels, analyzing seasonal water use patterns and assessing conservation potential in new homes, existing homes, and CII establishments. She was also responsible for assessing the impact of future water efficiency on the agencies long-term water demand forecast and developing goals and strategies to assist in monitoring and response to expected and observed changes in demand.

Water Conservation Planning Support, New York City Department of Environmental Protection, NY

The objective of this project is to assist in the development of NYC DEP's Water Demand Management Plan through a series of investigations involving pilot efficiency projects, water reuse at specific facilities, spatial demand profiling, assessment of large users, drought management, and water pricing strategies. Lisa was responsible for managing the development a geospatial database linking daily AMR utility water consumption data to tax appraiser and other data relating to water use and conservation. She was also responsible for analysis of sectoral and geographic urban water demand trends and identification of potential conservations strategies for the City's largest users.

Water Use in the Multifamily Housing Sector, Water Research Foundation Project # 4558

Co-Author and Analyst. Lisa served as co-author and analyst for investigated the underlying factors influencing multifamily water use patterns influencing water demand forecasting, water efficiency program development, and planning for future water supply needs. She was responsible for overseeing database development and evaluation of alternative classifications and metrics.

Devon Becker, PE

UWMP Scenario Development, Demand Forecast Model Application, and Data Analysis

Devon works as an Associate at Hazen's San Francisco Office. He has 8 years of experience in the California water industry and has spent the last 6 years working as a Water Resources Engineer for the Alameda County Water District. His areas of expertise include water supply planning and modeling, optimization analyses, and regulatory compliance.

As part of his previous role at the Alameda County Water District, he managed water deliveries under various water supply and banking contracts, developed water supply budgets, and coordinated water transfer agreements with external partners and regulatory agencies. He is well-versed in the intricacies of the State Water Project, the Semitropic Water Storage District Groundwater Banking Program, and the San Francisco Public Utilities Commission's Regional Water System, and has served as an agency representative on the State Water Project's (SWP) Audit Finance Committee, the Semitropic Monitoring Committee, and the Bay Area Water Supply and Conservation Agency (BAWSCA) Water Management Representatives meetings, including the recent Tier 2 negotiations.

He has also participated in a wide range of regional water supply reliability efforts including the Bay Area Regional Reliability (BARR) partnership, the Los Vaqueros Reservoir Joint Powers Authority meetings, the California-Nevada AWWA Water Loss Regulation Subcommittee, the California Urban Water Agencies' (CUWA) water loss workgroup, the California Water Data Consortium's Urban Water Data Reporting workgroup, and the San Francisco Bay Area Integrated Regional Water Management (IRWM) Plan Coordinating Committee.

Proof-of-Concept Alternative Integrated Resources Planning Model, Alameda County Water District (ACWD), Fremont, CA
Technical Lead. Devon served as Technical Lead responsible for the review and QA/QC of model output from Hazen's newly-developed water supply model created in RiverWare. Model validation efforts incorporated a mass-balance approach and involved comparing reservoir and groundwater storage levels, production facility output, water supply shortages, and 'spilled' losses to existing output from the underlying, Excel-based water supply planning model.

Education

M.S., Civil Engineering, University of Washington, Seattle, WA

B.S., Civil Engineering, University of Washington, Seattle, WA

B.A., Archaeology, Columbia University, New York, NY

Certification/License

Professional Engineer

Certified Water Distribution System Operator Grade D2

California Water Audit Validator

Areas of Expertise

- Integrated Resources Planning
- Water Supply Modeling and Analysis
- Production Optimization
- Regulatory Compliance
- Project Management

Technical Publications & Presentations

Presenter at the 2020 California Water and Environmental Modeling Forum (CWEMF) Conference: "Turning the Tide: ACWD's Integrated Resources Management—Restoring a Coastal Aquifer and Preparing for Climate Change."

Korotkova, N., Hoff, J. S., Becker, D. M., Quinn, J. K. H., Icenogle, L. M. and Moseley, S. L. (2012), SpyA is a membrane-bound ADP-ribosyltransferase of Streptococcus pyogenes which modifies a streptococcal peptide, SpyB. Molecular Microbiology, 83: 936–952.

Hazen

2020 Urban Water Management Plan (UWMP), Alameda County Water District (ACWD), Fremont, CA
Project Lead. Devon was Project Lead for ACWD's 2020 UWMP and was responsible for carrying out water supply and demand modeling and analysis, as well as drafting and reviewing the UWMP itself, including new sections on Drought Risk Assessment, Water Shortage Contingency Plan, and Reduced Reliance on the Delta.

Annual Water Supply and Demand Assessment (WSDA), Alameda County Water District (ACWD), Fremont, CA
Project Lead. For two consecutive years, Devon served as Project Lead for ACWD's annual WSDA, a new state requirement for urban water suppliers beginning July 1, 2022. For both the 2022 and 2023 WSDA submissions to the California Department of Water Resources, Devon performed water supply and demand analysis for the current year as well as one, subsequent dry year, and outlined the agency's water shortage contingency response actions in case of a supply shortfall.

Forecast Informed Reservoir Operations (FIRO) Feasibility Study for Del Valle Reservoir, Fremont, CA
Project Manager. Devon served as Project Manager on behalf of several local Bay Area water agencies to coordinate the work of David Ford Consulting Engineers. The project evaluated the potential benefits of FIRO implementation at Del Valle Reservoir and provided technical analysis of the risks and benefits of incremental reallocations of flood control pool space into the water supply pool.

Project Screening Committee for the San Francisco Bay Area Integrated Regional Water Management (IRWM) Program
Committe Chair. Devon served as Committee Chair for the 16-member Project Screening Committee that selected San Francisco Bay Area regional projects for a total of $32,214,479 in funding under the Department of Water Resources' Integrated Regional Water Management Round 2 Implementation Grant Program in 2022.

Desarae Tasnady, EIT

UWMP Scenario Development, Demand Forecast Model Application, and Data Analysis

Desarae has over 2 years of experience in applied research, green building design, water reuse, drinking water, and wastewater projects. Her most recent projects involve sidestream deammonification, evaluation studies, water reclamation, and advanced water purification projects. .

Education

B.S. Civil/Environmental Engineering, California Polytechnic University, Pomona

Certification/License

Engineer in Training

LEED Green Associate

Areas of Expertise

- Wastewater Process Engineering
- Water Reuse
- Applied Research
- Stream Restoration Design
- Watershed Management
- Wetland Preservation
- Stormwater
- Groundwater
- Hydraulic and Hydrologic Modeling
- Green Building Design
- CAD/BIM

Outfall Initial Dilution Model, Orange County Sanitation District, Fountain Valley, CA

Technical writing, sampling procurement, and team coordination. The Outfall Initial Dilution Model includes developing a comprehensive workplan, providing inputs and assessments for initial dilution and plume dispersion modeling, and conducting whole effluent toxicity (WET). The project will evaluate the effects of reduced total effluent flow at Plant 2 and increased reverse osmosis concentrate from the Groundwater Replenishment System (GWRS).

Sidestream Treatment at Warren Facility, Los Angeles County Sanitation District, Carson, CA

Aided in team coordination, technical support, data analysis, and vendor procurement. The Warren Facility is LACSD's largest wastewater resource facility with an average flow of 240 MGD serving a population of 4.8 million people. LACSD is implementing sidestream treatment in order to comply with nutrient reduction permit requirements. The goal of the sidestream treatment is to remove nitrogen loads with cost-effective means.

Outfall Initial Dilution Model, Orange County Sanitation District, Fountain Valley, CA

Technical writing, sampling procurement, and team coordination. The Outfall Initial Dilution Model includes developing a comprehensive workplan, providing inputs and assessments for initial dilution and plume dispersion modeling, and conducting whole effluent toxicity (WET). The project will evaluate the effects of reduced total effluent flow at Plant 2 and increased reverse osmosis concentrate from the Groundwater Replenishment System (GWRS).

Advanced Water Purification Project, VenturaWaterPure, Ventura, CA
As an Assistant Engineer I, Ms. Tasnady supported the design team through aiding in team coordination, technical support, data analysis, and vendor procurement. VenturaWaterPure's advanced water purification project (AWPP) highlights Ventura's dedication to sustainability commitments and to providing their growing community with sufficient water resources. The AWPF will intake 3.2 MGD for indirect potable reuse with the ability to adapt to direct potable reuse in the future.

PS21-10 Integrated Nitrogen Removal, Orange County Sanitation District; Huntington Beach, CA
In partnership with Hazen, Orange County Sanitation District (OCSAN) process engineers gathered data and assisted in conducting a batch test to explain increasing cBOD values in the non-reclaimable effluent at Plant 2. As a Student Intern in the process engineering division, Ms. Tasnady gathered samples from the HPOAS facility, assisted in data collection and aided in identifying possible point sources.

J-120 Process Control Systems Upgrade, Orange County Sanitation District; Fountain Valley, CA
The process engineering division utilized the TPOD report as a fiscal year summary of Plant 1 and 2 operational data at Orange County Sanitation District (OCSAN). Since TPOD's inception there have been process configuration changes and removal of major equipment that has required an evaluation of TPOD's extensive data report (over 23,000 data points). As a student intern in the process engineering division, Ms. Tasnady identified relevant parameters and verified background calculations for all constituents.

Enhancing Organic Contaminant Removal from Wool Scouring Wastewater with Chemically Enhanced Biochar, Cal Poly Pomona Foundation; Pomona, CA
As an undergraduate research assistant Ms. Tasnady was involved in the initial conception to the final publication for this USDA funded research. The goal of the publication was to demonstrate biochar's ability to act as a sufficient adsorbent medium for fats, oils, and greases (OFGs) in recycled wool scouring wastewater. Removing OFGs from recycled streams can assist in reducing process upsets in recycled wastewater. The biochar was subjected to three different types of chemical treatments to create maximum surface area and retention. Testing included FTIR spectroscopy and COD testing of the resulting wastewater effluent to evaluate the treatment's effectiveness. KOH-treated biochar demonstrated the highest effectiveness in removing OFGs from the recycled effluent stream. Implementation of chemically modified biochar can help the wool textile industry become more sustainable in their water usage and treatment. Ms. Tasnady assisted in developing/executing procedures, performing tests, data analysis, and academic writing support.

Megan Drummy

Technical Memorandum and Presentation Preparation

Megan is a Communications Manager in Hazen's San Diego office. She has 12 years of experience developing and implementing public outreach programs and leading community outreach activities for water, wastewater, and water reuse projects.

Education

B.A., Literary Journalism, University of California, Irvine, Irvine, CA

Areas of Expertise

- Community outreach and public engagement
- Development and implementation of outreach programs for water infrastructure projects
- Writing and editing
- Stakeholder research
- Stakeholder outreach (tours, presentations, etc.)
- Event planning and execution (in person and virtual)
- Construction relations
- Materials development (communication plans, fact sheets, press releases, etc.)
- Website content and social media writing
- Youth program development

She has worked with agencies and cities of all sizes throughout California and across the U.S. to develop tailored outreach strategies that meet the needs of the community and foster public awareness and support for infrastructure projects. An accomplished communications lead/PM, she is adept at providing strategic counsel and advice to clients, as well as conducting on-the-ground outreach in impacted communities. She has worked extensively on the development of strategic communication plans, written and edited all kinds of informational materials, and planned and managed events, meetings, and open houses. She excels in translating complicated, technical information into accessible content for a variety of audiences. Prior to joining Hazen, she worked at Katz & Associates, a San Diego-based communications firm that focuses primarily on developing outreach programs for government and agency clients.

Regional Recycled Water Program, Metropolitan Water District of Southern California; Los Angeles, CA

Megan advised communications staff about the design of their water purification demonstration facility, including developing the facility tour pathway and general public tour experience. She also developed messages, worked on community network mapping and developed an outreach plan for the launch of their community education program. Following this initial work, she worked with the client team to develop an action plan for outreach to the disadvantaged communities that would be impacted by pipeline construction for a full-scale program, and to create a more inclusive public involvement plan that addressed environmental justice concerns.

Southeast Wastewater Capacity Evaluation; City of Franklin, TN

Megan has worked closely with the Franklin Water Management Department to help launch the outreach program for their water purification demonstration facility and future water reuse program. She developed a communications framework; wrote materials including facility signage, a tour brochure, and a virtual tour script; and developed website content. She continues to implement outreach initiatives and provide day-to-day strategic counsel.

Hazen

Plant City Water/One Water Demonstration Facility; City of Plant City, FL
Megan assisted the City's Utilities Operations Division in launching their water purification demonstration facility. She developed the content for facility signage and a tour brochure, supported the planning for the facility ribbon cutting, and assisted with the development of a new logo, branding, and a style guide for Plant City Water.

Drought Response Planning; Santa Clara Valley Water District
Megan has supported Valley Water in their stakeholder engagement process that is part of their drought response planning. She has developed agendas and materials for stakeholder meetings and facilitated virtual meetings and breakout sessions for groups including a community task force.

Department of Environmental Protection; New York City, NY
Megan supports the NYC DEP by overseeing materials development and graphic design and providing copy editing for various manuals and community plans.

Wastewater Treatment Plant Facility Plan; City of Sioux City, IA
Megan provides communications support for the City of Sioux City, including developing media materials, a project fact sheet, and website content.

Water Division; City of Santa Fe, NM
Megan provides the City of Santa Fe with as-needed communications support, and has developed website content, infographics, and presentations.

Alvarado 2nd Pipeline Extension Project, City of San Diego, CA
Megan led the outreach program during the design of this project, which will extend and replace aging water pipelines for San Diego's coastal communities and impact a major thoroughfare in the center of the city. She provided day-to-day strategic counsel; wrote a public outreach plan and key project messages; developed a community presentation and coordinated presentations for planning groups throughout the city; identified key stakeholders and participated in stakeholder meetings; and created materials including a project fact sheet, stakeholder mailers, and a dedicated project webpage. She also served as the project Public Information Officer, managing and responding to questions received via the project email address and hotline number.

Groundwater Reliability Plus, Eastern Municipal Water District, Perris, CA
Megan worked with Eastern Municipal Water District for nearly five years on the launch and implementation of the education and outreach program for Groundwater Reliability Plus (GRP), their series of programs to improve the quality and quantity of water in their groundwater basins. She served as the day-to-day project manager for outreach, developing meeting agendas and action item schedules; and led a variety of program initiatives, including writing communication and implementation plans; writing and coordinating the design of collateral materials including fact sheets, web content, animations and display boards; conducting stakeholder interviews with community leaders in EWMD's service area; writing opinion editorials; and developing social media content. She planned and executed EMWD's partnership with a public relations class at Mount San Jacinto College to inform the students about GRP and have the students develop short videos about the program.

Mary's Creek Water Reclamation Facility, City of Fort Worth, TX
Megan developed a communication plan, fact sheets, FAQs and other materials for the permitting phase for Fort Worth's new water reclamation facility. She also coordinated logistics, prepared materials for, and staffed a community open house.

2

Proposed Revisions to the MWDOC Standard Professional Services Agreement

Appendix 2

Proposed Revisions to the MWDOC Standard Professional Services Agreement

Hazen and Sawyer would like to the following edits to the sample agreement provided with RFP ENG. 2024-01 to be considered.

1. Under Termination Article V, request to delete #5.

TERMINATION

DISTRICT may terminate this **AGREEMENT** at any time upon thirty (30) days written notice to CONSULTANT, except as provided otherwise in **Exhibit "B."** In the event of termination: (1) all work product prepared by or in custody of **CONSULTANT** shall be promptly delivered to **DISTRICT;** (2) **DISTRICT** shall pay **CONSULTANT** all payments for services performed and due under this **AGREEMENT** on the effective date of termination; (3) **CONSULTANT** shall promptly submit a final invoice to the **DISTRICT**, which shall include any and all non-cancelable obligations owed by **CONSULTANT** at the time of termination, (4) neither **PARTY** waives any claim of any nature whatsoever against the other for any breach of this **AGREEMENT;** and; ~~(5) **DISTRICT** may withhold 125 percent of the estimated value of any disputed amount pending resolution of the dispute, consistent with the provisions of section III D above, and;~~ (6) **DISTRICT** and **CONSULTANT** agree to exert their best efforts to expeditiously resolve any dispute between the **PARTIES.**

2. Under Indemnification Article VII, request to use language from previous agreement.

VII INDEMNIFICATION

To the fullest extent permitted by applicable law, **CONSULTANT** shall indemnify, defend and hold harmless **DISTRICT**, its Directors, officers, agents, employees, ~~attorneys, consultants~~ and authorized volunteers, the **PARTICIPATING AGENCIES**, and each of them from and against all third party actions, proceedings, damages, costs, expenses, penalties or liabilities, in law or equity, of every kind or nature whatsoever, including reasonable legal fees and costs, arising out of, resulting from, or on account of **CONSULTANT's** or its officials, officers, employees, subcontractors, consultants, or agents' negligent performance of **SERVICES** under this agreement, including but not limited to:

a. ~~Any and all actions, proceedings, damages, costs, expenses, penalties or liabilities, in law or equity, of every kind or nature whatsoever, arising out of, resulting from, or on account of the violation of any governmental law or regulation, compliance with which is the responsibility of CONSULTANT.~~

CONSULTANT shall indemnify, defend and hold harmless **DISTRICT**, the **PARTICIPATING AGENCIES**, and its elected officials, officers and employees, and each of them from and against all third party actions, proceedings, damages, costs, expenses, penalties or liabilities, in law or equity, of every kind or nature whatsoever, including reasonable legal fees and costs, arising out of, resulting from, or on account of **CONSULTANT's** negligent acts or willful misconduct in the performance of the work under this agreement, provided, however, that **CONSULTANT's** liability under this indemnity shall not apply to the extent of the contributory negligence of the **DISTRICT**, the ~~PARTICIPATING AGENCIES~~, its employees and contractors.

CONSULTANT's obligation to indemnify shall survive the termination or completion of this agreement for the full period of time allowed by law and shall not be restricted to insurance proceeds, if any, received by **DISTRICT**, the **PARTICIPATING AGENCIES**, or its directors, officers, employees, or authorized volunteers.

Or use CA Statue Language that applies to Hazen and Sawyer

To the fullest extent permitted by law (including without limitation California Civil Code Section 2782.8, **CONSULTANT** agrees to defend, indemnify, and hold harmless the **DISTRICT**, its Directors, officers, agents, employees, and authorized volunteers from and against any and all penalties or liabilities, in law or equity, of every kind or nature whatsoever, including reasonable legal fees and costs to the extent arising out of, pertaining to, or relating to **CONSULTANT's** negligence, recklessness or willful misconduct in the performance of the work under this Agreement.

b. ~~Any and all losses, expenses, damages (including damages to the work itself), attorney's fees incurred by counsel of the **DISTRICT's** choice and other costs, including all costs of defense, which any of them may incur with respect to the failure, neglect, or refusal of **CONSULTANT** to faithfully perform the work and all of the **CONSULTANT's** obligations under the agreement. Such costs, expenses, and damages shall include all costs, including attorneys' fees, incurred by counsel of the **DISTRICT's** choice, incurred by the indemnified parties in any lawsuit to which they are a party.~~

~~When the law establishes a professional standard of care for the **CONSULTANT's** services,~~ all claims and demands of all persons that arise out of, pertain to, or relate to the **CONSULTANT's** negligence, recklessness or willful misconduct in the performance (or actual or alleged non-performance) of the work under this agreement, ~~**CONSULTANT** shall defend itself against any and all liabilities, claims, losses, damages, and costs arising out of or alleged to arise out of **CONSULTANT's** performance or non-performance of the **SERVICES** hereunder, and shall not tender such claims to **DISTRICT**, its Directors, officers, employees, attorneys, consultants or authorized volunteers, nor to any **PARTICIPATING AGENCY** in contract with **DISTRICT** for **CONSULTANT's SERVICES**, for defense or indemnity.~~

~~**CONSULTANT** shall immediately defend, at **CONSULTANT's** own cost, expense and risk, any and all such aforesaid suits, actions, or other legal proceedings of every kind that may be brought or instituted against DISTRICT or its Directors, officers, employees, attorneys, consultants, or authorized volunteers with legal counsel reasonably acceptable to **DISTRICT**, and shall not tender such claims to **DISTRICT** nor its directors, officers, employees, or authorized volunteers.~~

~~**CONSULTANT** shall immediately pay and satisfy any judgment, award or decree that may be rendered against **DISTRICT** or its Directors, officers, employees, attorneys, consultants, or authorized volunteers, in any and all such suits, actions, or other legal proceedings.~~

~~**CONSULTANT** shall immediately reimburse **DISTRICT** or its Directors, officers, employees, attorneys, consultants, or authorized volunteers, for any and all legal expenses and costs incurred by each of them in connection therewith or in enforcing indemnity herein provided.~~

CONSULTANT's obligation to indemnify shall survive the termination or completion of this agreement for the full period of time allowed by law and shall not be restricted to insurance proceeds, if any, received by **DISTRICT**, the **PARTICIPATING AGENCIES**, or its Directors, officers, employees, attorneys, consultants, or authorized volunteers.

Notwithstanding anything to the contrary in this Agreement, **CONSULTANT** is not obligated to indemnify, hold harmless, or defend **DISTRICT** or a **PARTICIPATING AGENCY** against any claim (whether direct or indirect) if such claim or corresponding loss arises out of or result from, **DISTRICT's:** (1) sole or active negligence or more culpable act or omission (including recklessness or willful misconduct); (2) bad faith failure to comply with any of its obligations set forth in this Agreement; or (3) use of the deliverables in any manner that does not materially conform with the usage instructions, or guidelines, or specifications.

MWDOC

ORANGE COUNTY WATER DISTRICT

SINCE 1933

Hazen

Hazen and Sawyer
7700 Irvine Center Drive • Suite 200 • Irvine, CA 92618

AGENDA ITEM SUBMITTAL

Meeting Date: December 11, 2024

To: Water Issues Committee
Board of Directors

From: John Kennedy

Staff Contact: P. Parmar/L. Esguerra

Budgeted: Partial
Budgeted Amount: $980,000
Cost Estimate: $1,125,000
Funding Source: R&R
Program/ Line Item No. R21002
General Counsel Approval: N/A
Engineers/Feasibility Report: N/A
CEQA Compliance: N/A

Subject: AWARD CONTRACT NO. LAB-2024-1 LABORATORY WASHROOM REFURBISHMENT TO RBA BUILDERS LLC, AUTHORIZE INCREASE OF EXISTING PURCHASE ORDER TO IDS GROUP, INC., AND BUDGET INCREASE

SUMMARY

One construction bid was received on November 13, 2024 for the Laboratory Washroom Refurbishment Project, Contract No. LAB-2024-1. Based on a review of the bid, staff recommends awarding a contract to RBA Builders LLC in the amount of $959,927. Staff additionally recommends increasing the existing purchase order to IDS Group, Inc. in the amount of $35,046 for construction support services and increasing the overall project budget by $145,000.

Attachment: Affidavit of Publication for Notice Inviting Bids for Contract LAB-2024-1

RECOMMENDATION

Agendize for December 18 Board Meeting:

1. Receive and file Affidavit of Publication of Notice Inviting Bids for Contract LAB-2024-1 Laboratory Washroom Refurbishment Project;

2. Accept bid and award contract LAB-2024-1 to the lowest responsive bid and responsible bidder, RBA Builders LLC, in the amount of $959,927;

3. Authorize increase of existing Purchase Order to IDS Group, Inc. in the amount of $35,046 for construction support services; and

4. Increase project budget by $145,000 for a total project budget in the amount of $1,125,000.

BACKGROUND/ANALYSIS

The District's Philip L. Anthony Water Quality Laboratory building opened for operations in October 2009. During the 15 years of operations, the laboratory washroom, located on the second floor of the building, has incurred a significant amount of damage and deterioration to unprotected stainless-steel fixtures that are exclusive to this room (see photos 1-4 at end of

submittal). Additional fume hoods are also required to safely support the laboratory's current volume of glassware and other daily equipment cleaning and washing activities.

The District issued a Purchase Order to IDS Group, Inc. in June 2022 to evaluate the lab washroom and generate design plans to replace and upgrade washroom fixtures and cabinets with chemically resistant materials, install a permanent safety eyewash/shower, install additional fume hoods and subsequent duct work, and replace the washroom epoxy flooring. IDS completed the final design and the project was advertised for public bid.

One construction bid was received on November 13, 2024 for contract LAB-2024-1. The bid advertisement period commenced September 30, 2024 and spanned 45 calendar days. Addendum No. 1 was issued October 22, 2024 to provide a revised Bid Schedule, revised Contractor License Specification and a revised Bid Opening date. Addendum No. 2 was issued November 6, 2024 to provide responses to potential bidder's questions.

A Non-Mandatory Pre-Bid Conference was held on October 14, 2024 and was attended by one material supplier. Following the conference, staff issued an addendum to revise the contactor license requirements to include both Class A and B licenses and increase the bid advertisement period from 31 to 45 calendar days to garner bids from potential bidders.

The work to be completed for this project is considered specialty work as described above. Staff reached out to several contractors including those recommended by IDS Group and yet only received one bid. In this current bidding environment, it can be difficult to get bids for smaller contract values. Delaying and bidding at a later date could result in no bids received or a higher cost. Staff has reviewed the bid from RBA Builders LLC, checked references, confirmed that its contractor's license is current, active, and in good standing with the State of California and determined this is a reputable contractor for this type of work. Staff recommends awarding the construction contract to RBA Builders LLC as the lowest responsive bidder in the amount of $959,927.

The original purchase order with IDS Group, Inc. included scope for evaluation of the existing washroom, design of new benchtops, storage and equipment and construction support services. The District met with the consultant at the completion of their initial evaluation and agreed to include additional scope for the replacement of the existing epoxy flooring and the installation of two additional fume hoods to final design. IDS Group, Inc. performed good work and completed the additional services within the existing budget. Therefore, Staff recommends increasing the existing purchase order to IDS Group, Inc. in the amount of $35,046 to provide construction support services for the Laboratory Washroom Refurbishment Project.

Additionally, Staff recommends increasing the Laboratory Washroom Refurbishment Project budget as summarized in Table 1.

Table 1: Laboratory Washroom Refurbishment
Budget Summary

Description	Current Budget	Recommended Budget
Design, Construction Management. Permitting		
Design (IDS)	$ 70,000	$ 60,300
Construction Support (IDS)	$ -	$ 35,046
Permitting	$ 80,000	$ 19,654
Design, Construction Support & Permitting Sub-Total	$ 150,000	$ 115,000
Construction		
Contract	$ 750,000	$ 959,927
Construction Sub-Total	$ 750,000	$ 959,927
Project Contingency	$ 80,000	$ 50,073
Total Project Budget:	**$ 980,000**	**$ 1,125,000**

The expected project schedule is shown below in Table 2.

Table 2: Laboratory Washroom Refurbishment
Schedule Summary

Description	Date
Design	Jun 2022 – Nov 2024
Construction Contract LAB-2024-1	Dec 2024 – Aug 2025

Photo 1: Rusting of fixtures and corrosion damage to faucets at one of three washing sinks

Photo 2: Rusting of fixtures and corrosion damage to faucets at second of three washing sinks

Photo 3: Rusting and corrosion of fume hood internal and external fixtures

Photo 4: Rusting of cabinetry at center island utilized for storage and drying of cleaned glassware

PRIOR RELEVANT BOARD ACTION(S)

6/15/2022, R22-6-77 – Approving Purchase Order to IDS Group, Inc. for the Evaluation and Design of the Laboratory Washroom in the amount of $60,300.

6/19/2024, M24-55 – Authorizing Publication of Notice of Inviting Bids for Laboratory Washroom Refurbishment Project.

THE ORANGE COUNTY
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(714) 796-7000
legals@inlandnewspapers.com

Orange County Water District
18700 Ward Street
Fountain Valley, California 92708

Account Number:	5179533
Ad Order Number:	0011694795
Customer's Reference/PO Number:	
Publication:	The Orange County Register
Publication Dates:	09/30/2024
Total Amount:	$1235.64
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Invoice Text:	

THE ORANGE COUNTY
REGISTER
The Orange County Register
1920 Main Street, Suite 209
Irvine, California 92614
(714) 796-7000

0011694795

Orange County Water District
18700 Ward Street
Fountain Valley, California 92708

PROOF OF PUBLICATION
(2015.5 C.C.P.)

STATE OF CALIFORNIA
County of Orange

I am a citizen of the United States and a resident of the County aforesaid; I am over the age of eighteen years, and not party to or interested in the above-entitled matter. I am the principal clerk of the printer of The Orange County Register, a newspaper of general circulation, printed and published in the City of Irvine*, County of Orange, and which newspaper has been adjudged a newspaper of general circulation by the Superior Court of County of Orange, State of California, under the date of November 19, 1905, Case No.A-21046. The notice, of which the annexed is a printed copy (set in type not smaller than nonpareil), has been published in each regular and entire issue of said newspaper and not in any supplement thereof on the following dates, to wit:

09/30/2024

I certify (or declare) under the penalty of perjury that the foregoing is true and correct.

Dated at Irvine, California

On this 30th day of September, 2024.

Sandra Campos
Signature

NOTICE INVITING BIDS

Laboratory Washroom Refurbishment,
CONTRACT NO. LAB-2024-1

PLEASE TAKE NOTICE that sealed bids will be received at the office of the Contracts Administrator of the Orange County Water District ("District"), 18700 Ward Street, Fountain Valley, CA 92708 (mailing address: P.O. Box 8300, Fountain Valley, CA 92728-8300), until 2:00 p.m. local time on Wednesday, October 30, 2024, at which time the bids will be publicly opened and read aloud for performing all work and furnishing all labor, materials and equipment for:

The Laboratory Washroom Refurbishment project generally consists of furnishing all materials and labor to repair or replace damaged furniture, fixtures, and flooring within the District's Philip L. Anthony Water Quality Laboratory building. The project will include furnishing and installing new laboratory furniture, fume hoods, emergency eye wash and shower, electrical receptacles, HVAC modifications and integration, and replacement of the existing floor coating. Startup is included in the project scope.

The Work is to be done in accordance with the plans, specifications and contract documents on file in the District office, 18700 Ward Street, Fountain Valley, California, which plans and specifications are designated as above, and which documents are by this reference incorporated herein.

NON-MANDATORY PREBID CONFERENCE: A pre-bid conference will be held at the District Office, 18700 Ward Street, Fountain Valley, CA on Monday, October 14, 2024 at 10:00 A.M. All potential bidders, contractors, and other interested parties are encouraged to attend this conference conducted by the District and Engineer. Any potential bidder that does not attend the pre-bid conference will be charged with knowledge of all information that was available at the pre-bid conference.

OBTAINING CONTRACT DOCUMENTS: Plans and specifications and all contract documents must be purchased through HB Digital at www.ocwdplanroom.com . Payment will not be refunded and the plans and specifications and contract documents are not required to be returned.

PROJECT ADMINISTRATION: All questions relative to this project prior to the opening of bids shall be directed, in writing, to the Engineer for the project.

ORANGE COUNTY WATER DISTRICT
18700 Ward Street
Fountain Valley, CA 92708

Mailing Address:
P.O. Box 8300
Fountain Valley, CA 92728-8300

Attention: Laurence Esguerra, P.E.
Email: lesguerra@ocwd.com
Phone Number: 714-378-3330

DISTRICT'S RIGHTS RESERVED: The Orange County Water District reserves the right to reject any or all bids, and to waive any information in any bid.

Dated: September 30, 2024

ORANGE COUNTY WATER DISTRICT

John C. Kennedy, General Manager

The Orange County Register
Published: 9/30/24

AGENDA ITEM SUBMITTAL

Meeting Date: December 11, 2024

To: Water Issues Committee
Board of Directors

From: John Kennedy

Staff Contact: R. Bouley

Budgeted: Yes
Budgeted Amount: $25M
Cost Estimate: $30M
Funding Source: PAYGO
Program/ Line Item No. varies
General Counsel Approval: N/A
Engineers/Feasibility Report: N/A
CEQA Compliance: N/A

Subject: REQUEST TO INCREASE ON-CALL CONSULTANTS DESIGN BUDGET TO PREPARE PFAS TREATMENT SYSTEM DESIGNS

SUMMARY

The Board authorized agreements with up to six consultants for design of PFAS treatment system projects for the first round of Producers' wells that were impacted by PFAS in 2020. Round 1 design and construction management (CM) services budget was increased to $25M for Producers PFAS treatment systems with the latest Board authorization in June 2023. Four of the six on-call consultants continue to prepare PFAS treatment system designs and perform CM services for the original Round 1 projects. Staff recommends increasing the design/CM services budget by an additional $5M to continue and finish these projects.

RECOMMENDATION

Agendize for December 18 Board meeting: Authorize increase of Round 1 PFAS project design/CM services budget by $5M for a total of $30M.

BACKGROUND/ANALYSIS

In January 2020, the Board authorized issuance of a Request for Proposals for on-call consultants to prepare PFAS Treatment System designs; authorized staff to enter into Round 1 PFAS treatment system professional services agreements with the on-call consultants; and established a project design budget of $10M. In February 2020, the Board authorized execution of the PFAS Treatment Facilities and Program Agreement to construct PFAS treatment projects at any Producer's Well(s) that contained PFOA at 8 parts per trillion (ppt) or higher (Round 1 projects). Since that time, there have been several budget increases for the on-call design and construction management (CM) services resulting in the current total budget of $25M. To date, six consultants have provided design and CM services on these Round 1 projects, and four of the six currently continue to provide these services for the remaining projects.

The current costs for the Round 1 PFAS Treatment Designs and CM Services are shown on Table 1 below. These costs include three additional wells which qualified for the Round 1 PFAS Program after the initial authorization in 2020 (Fullerton Well Kim 2 and Orange Wells 26 and 28).

Table 1: Round 1 PFAS Treatment Designs and Cost

Producer	SWD	Fullerton	YLWD	Garden Grove	EOCWD	GSWC
# of wells	2	4	10	6	3	3
Consultant	Tetra Tech	Tetra Tech	Tetra Tech	CDM Smith	CDM Smith	Jacobs
contract amount	$824,151	$4,178,785	$2,818,353	$3,467,152	$1,103,747	$850,459
CM included	yes	yes	yes	yes	yes	yes

Producer	Orange	Santa Ana	Tustin	IRWD	Orange 28	Total
# of wells	10	4	4	1	1	**48**
Consultant	Kennedy Jenks	Stantec	Jacobs	AECOM/CDM	Tetra Tech	
contract amount	$3,237,300	$4,514,658	$2,272,041	$1,365,755	$197,000	**$24,820,401**
CM included	yes	yes	yes	yes		

Although not spent yet, we are currently at $24.8M of the authorized budget of $25M for the Round 1 projects. With Fullerton Well Kim 2 and Orange Wells 26 and 28 and longer construction durations mostly due to material/equipment delays, more CM time is needed to provide oversight for the remaining projects. The Board also authorized on-call consulting agreements with the original six consultants and three new consultants in December of 2023 for Producers' wells that have PFAS levels above the Federal MCL (Round 2 projects). The requested action in this submittal does not affect any of the Round 2 projects and only increases the budget for work associated with the Round 1 projects.

Staff requests authorizing a $5M increase of the Round 1 project design/CM budget for a total budget of $30M.

Prior Relevant Board Actions

12/6/23: Authorize issuance of a Request for Quotes for on-call consultants to prepare PFAS Treatment System designs and provide construction management services; authorize staff to enter into PFAS treatment system professional services agreements; and establish project design budget of $20M.

6/14/23: Authorize increase of project design/CM services budget by $5M for a total of $25M.

6/8/22: Authorize increase of project design/CM services budget by $2M for a total of $20M.

2/2/22: Authorize increase of project design/CM services budget by $2M for a total of $18M

6/16/21: Authorize increase of project design budget by $2M for a total of $16M.

12/16/20: Authorize increase of project design budget by $4M for a total of $14M.

1/22/20: Authorize issuance of Request for Quotes to pre-purchase up to 150 PFAS treatment vessels; authorize issuance of a Request for Proposals for on-call consultants to

prepare PFAS Treatment System designs; authorize staff to enter into PFAS treatment system professional services agreements; and establish project design budget of $10M.

AGENDA ITEM SUBMITTAL

Meeting Date: December 11, 2024

To: Water Issues Committee
Board of Directors

From: John Kennedy

Staff Contact: R. Herndon/B. Leever

Budgeted: Yes
Budgeted Amount: $400
Cost Estimate: $400
Funding Source: CIP
Program/Line-Item No.: C08007
General Counsel Approval: Yes
Engineers/Feasibility Report: N/A
CEQA Compliance: N/A

Subject: APPROVAL OF FACILITY LICENSE AGREEMENT WITH DELHI CENTER FOR SOUTH BASIN GROUNDWATER PROTECTION PROJECT PUBLIC MEETINGS

SUMMARY

The District will conduct two public meetings at the Delhi Center in Santa Ana, California to inform the public of the South Basin Groundwater Protection Project Draft Program Environmental Impact Report (PEIR) and the Draft Interim Remedial Action Plan (IRAP), and to receive questions. The Delhi Center requires the attached license agreement to be executed for OCWD to use the Delhi Center. Staff requests Board authorization for the General Manager to execute the Facility License Agreement with Delhi Center.

Attachment: Delhi Center Facility License Agreement

RECOMMENDATION

Agendize for the December 18 Board meeting: Authorize the General Manager to execute the Facility License Agreement with Delhi Center for the District's use to conduct public meetings for the South Basin Groundwater Protection Project.

BACKGROUND/ANALYSIS

In accordance with Board directives, the District performed a National Contingency Plan (NCP)-compliant remedial investigation and feasibility study (RI/FS) to investigate and evaluate remedial alternatives to address groundwater contamination in the South Basin area. In February 2023, the Board selected Alternative 3 from the FS, Groundwater Extraction and Treatment with discharge to the sewer and GWRS, as the tentatively identified preferred remedial alternative for the South Basin Groundwater Protection Project and authorized issuance of an RFP for programmatic CEQA compliance documentation of Alternative 3.

The District has prepared a Draft PEIR and Draft IRAP, both of which require public review prior to Board certification and approval, respectively. As part of the CEQA and NCP processes for certification and approval of the Draft PEIR and Draft IRAP, respectively, the public is provided the opportunity to review and comment on the Draft PEIR and Draft IRAP. The District will hold public meetings to inform the public of the availability of these documents for their review, to provide a summary of the documents, and to receive questions and comments on the documents. The Delhi Center is a community center within the South Basin area that is most central to the residents in proximity to the South Basin remedial activities

proposed in the Draft IRAP and evaluated in the Draft PEIR. As such, the Delhi Center will provide an easily accessible venue for the public to attend the meetings.

PRIOR RELEVANT BOARD ACTIONS

2/15/23 R23-2-23 Select Alternative 3 (Groundwater Extraction and Treatment with Discharge to Sewer and GWRS) described in the South Basin Groundwater Protection Project feasibility study report as the tentatively identified preferred remedial alternative to be developed into the proposed interim remedial action plan, subject to completion of environmental documentation, and authorize issuance of a request for proposals to the district's on-call environmental consultants to prepare programmatic CEQA compliance documentation.

3/17/21 R21-3-48 Authorize issuance of Amendment to Agreement No. 1428 to Engineering Analytics, Inc., increasing the contract amount by $140,682 for South Basin RI/FS consulting services.

6/17/20 R20-6-76 Authorize issuance of Professional Services Agreement to Engineering Analytics for an amount not to exceed $507,969 to provide NCP consulting services for the South Basin project.

4/15/20 M20-39 Authorize issuance of an RFP to Engineering Analytics, Inc. to provide National Contingency Plan consulting services to address groundwater contamination in the South Basin area.

5/22/19 R19-5-69 Authorize issuance of Amendment No. 4 to Agreement No. 1051 to Hargis + Associates, increasing the contract amount by $194,816 and extending the termination date to September 30, 2020, for South Basin RI/FS consulting services.

10/18/17 R17-10-132 Authorize Amendment No. 3 to Agreement No. 1051 to Hargis + Associates in the amount of $89,000 to develop a groundwater flow model as part of the South Basin RI/FS.

5/24/17 R17-5-74 Adopt resolutions authorizing General Manager to enter into Proposition 1 grant funding agreements for the North Basin RI/FS, North Basin Well EW-1, and South Basin RI/FS projects.

10/19/16 R16-10-139 Adopt South Basin Additional Groundwater Monitoring Program Recirculated Mitigated Negative Declaration to account for revised well locations; and approve revised project.

10/19/16 R16-10-140 Authorize agreement for $374,040 with Avocet Environmental for well construction inspection and testing services in support of the South Basin remedial investigation.

6/15/16 R16-6-89 Authorize General Manager to finalize and execute agreement with the Department of Toxic Substances Control for reimbursement of DTSC's costs in an amount not to exceed $75,000 to review documents submitted by the District as part of the South Basin remedial investigation/feasibility study program; and authorize execution of agreement with the Regional Water Quality Control Board for reimbursement of RWQCB's costs in an amount not to exceed $120,000 to review documents submitted by the District as part of the South Basin remedial investigation/feasibility study program.

5/18/16 R16-5-62 Adopt South Basin Additional Groundwater Monitoring Program Mitigated Negative Declaration; authorize construction of 24 monitoring wells; establish project budget of $1,309,560; and authorize issuance of RFP for well construction inspection and testing services.

10/21/15 R15-10-149 Authorize Amendment No. 1 to Agreement No. 1051 with Hargis + Associates in the amount of $41,048 to prepare a pilot study work plan for the South Basin Groundwater Protection Project.

1/21/15 R15-1-10 Authorize issuance of a Professional Services Agreement to Hargis + Associates for an amount not to exceed $657,852 to provide NCP consulting services in the South Basin area. Authorize Amendment No. 1 of Professional Services Agreement No. 0827 with Aquilogic, Inc. in the amount of $78,375 for services to update and maintain the database, provide access to the database and records to Hargis + Associates, and coordinate with Hargis + Associates through April 2016.

8/6/14 R14-8-109 Approve developing remedial strategies for the South Basin groundwater contamination in a manner that is consistent with the NCP; and authorize issuance of RFP to retain NCP consulting services to assist staff in completing the remedial investigation and conducting an evaluation of remedial alternatives in the South Basin area consistent with NCP protocol.

8/6/14 R14-8-108 Adopt the updated Groundwater Quality Protection Policy, which supersedes the following prior District policies: Policies regarding Pre-Litigation Mediation Procedure and Segregation and Use of Groundwater Contamination Litigation Proceeds for Future Cleanup Projects, adopted May 22, 2013 (Resolution No. 13-5-58); Groundwater Quality Protection Policy, adopted May 6, 1987 (Resolution No. 87-5-59); and Sanitary Landfill Management, adopted June 20, 1984 (Resolution No. 84-6-57).

10/19/11 R11-10-00 Authorize issuance of separate requests for proposals for professional services to conduct an Interim Remedial Action Feasibility Study and to conduct a Phase 2 cone penetration test investigation of groundwater contamination at up to 200 locations in the South Basin area.

6/18/08 CS-08-6-3 Find that it is necessary to expend available funds to investigate, clean up, abate and perform remedial work to address VOC and perchlorate contamination in the South Basin area of the District and that such expenditures are required by the magnitude of the endeavor and the urgency of prompt action needed to prevent, abate, or contain the threatened and existing VOC and perchlorate contamination in the South Basin area; initiate litigation against potentially responsible parties for cost recovery measures for the South Basin Groundwater Protection Project; and authorize general manager, with concurrence from General Counsel, to execute Amendment No. 1 to legal services agreement between OCWD and Miller, Axline & Sawyer.

5/21/08 R08-5-78 Authorize filing of a Notice of Exemption for drilling three CPT borings and constructing six monitoring wells; receive and file Geologist’s Report – South Basin Groundwater Protection Project Hydrogeologic Investigation; authorize the installation of three CPT borings and six monitoring wells to investigate the extent of groundwater contamination in the vicinity of well IRWD-3; and establish a project budget of $625,000, and find that construction of such borings and wells is feasible, necessary to answer critical basin management questions, and of general benefit to the lands of the District.

5/17/06 R06-5-60 Authorize professional services agreement with Todd Engineers to review regulatory agency files and identify potential sources of contaminants detected in well IRWD-3 and that threaten this and other wells.

Event Application

We are delighted that you have considered Delhi Center for your event.
In order to best serve you we ask that you complete and submit this application form.

Event Information

Contact Person: _____
First Name Last Name

Address: _____
Number Street Apt. # City State Zip Code

E-mail: _____

Work Phone(____)_____-_____ Cell Phone: (____)_____-_____

Company Name: _____

Brief Company Description: _____

Company Partners or Associations if any: _____

Type of Applicant:

Non-Profit Organization
- ____ Community Organization
- ____ School
- ____ Religious

For-Profit
- ____ Corporate

Government Agency
- ____ School/District
- ____ College/University
- ____ Healthcare
- ____ County
- ____ State
- ____ City

Type of Event:

___Meeting ___ Training ___Employee Event ___Workshop
___Recognition Event ___ Fundraiser ___Community Event ___Conference
___Other: _____

Event Name: _____

Brief Event Description: _____

_____

Event Setup Needed: _____

_____

***Please confirm setup 72 hours in advance, any last-minute changes may affect availability of the tables and chairs.**

Room being requested:

___Full Ballroom ___Classroom 103 ___Dance Room
___Front Ballroom ___Classroom 102 ___Exercise Room
___Back Ballroom ___Courtyard

Date(s) of Event: _____ Setup Time: _____ to _____

Event Start:_____& End Time:_____ Clean Up Time: _____ to _____

Number of Guests:_____ Will there be children?___Yes ___No

Will alcohol be served?___Yes ___No Dance Floor Space Needed?___Yes ___No

Will you be serving food?___Yes ___No Will kitchen be used to warm food?___Yes___No

Is there a fee for your event & if so, how much?_____Open to Public:___Yes___No

How did you hear about us?☐Referral ☐Internet Search ☐Attended an Event ☐Other_____

I,_____, the rental applicant, certify that all the above information is true. If the information in this application is found to be untrue, the Operations Manager has the right to cancel the contract between the applicant and Delhi Community Center. This questionnaire in itself is not a contract for rental.

_____ _____

Signature **Date**

Facilities License Agreement

This Facilities License Agreement, dated as of_____("Agreement"), is entered into by and between Delhi Center, a California Nonprofit Public Benefit Corporation ("Owner") and _____, a_____("Licensee").

1. **License.** In consideration of Licensee's promise to pay the fees set forth in the Fee Schedule attached to this Agreement as Schedule A, Owner agrees to make available for the benefit of Licensee on _____("Event Date") from_____until_____("Event Time"), the area(s) as stated on the Fee Schedule, identified as_____("Authorized Area") comprising a portion of the Owner's facilities located at 505 East Central Avenue, Santa Ana, California 92707 (the "Center") for the temporary, non-exclusive use of Licensee to use the Authorized Area during the above time periods and does not constitute a lease or grant of any possessory, leasehold or ownership interest in the Center.
   The capacity for this event shall be:_____.

2. **License Fees and Deposits.** Upon execution of this agreement, Licensee agrees to pay Owner the License Fees, including the Rental Fee, Reservation Deposit, and Security Deposit as set forth below for the Authorized Area, Event Date, and Event Time ("Event").
   a. The Rental Fee for the Event shall be: $_____, which shall be due and payable in full no later than thirty (30) days prior to the Event Date.
   b. The Reservation Deposit shall be used to hold the reservation of the Event for Licensee. Upon payment of the Reservation Deposit, Owner shall refrain from holding out the Authorized Area as available for rent during the Event Date and Event Time. The Reservation Deposit shall be: $_____and is due and payable at the time the Facilities License Agreement is executed.
   c. The Reservation Deposit shall be converted to a Security Deposit at the start of the Event and shall be held by the Owner and be applied by the Owner for Owner's damages or losses arising from Licensee's violation or breach of this agreement and any damage to the Center or the Owner's Property caused by the Licensee or its Vendors (as defined below), guests or invitees. The remaining portion of the Security Deposit, if any, following such application will be refunded by Owner to Licensee within thirty (30) days following the Event Date.
   d. Security Company must be paid and submit proof 30 days prior to the event date, if the Security Company is not paid in full the security deposit will be held until proof of payment has been provided to the owner.
   e. All fees, deposits and payments shall be made by credit card, cashier check, money order,or check payable to the order of "Delhi Center". We do not accept cash.
   f. If you pay by check, you expressly authorize Delhi Center or its agents to electronically debit your account for the amount of the check, plus a $25.00 processing fee, only if the check is dishonored or returned for whatever reason.

3. **Cancellation.** Licensee may cancel this Agreement by providing written notice to Owner at least ninety (90) days prior to the Event Date, in which case the Owner will issue to Licensee a refund of all monies paid. In the event that Licensee cancels this Agreement less than ninety (90) days prior to the Event Date, the Owner may terminate this Agreement and retain the full Reservation Deposit. Provided that Owner is able to secure a substitute licensee for the Event Date and Event Time, Licensee will be refunded the Reservation Deposit within thirty (30) days after the substitute event has taken place. If your event is within or less than ninety (90) days in order to hold the date the deposit will need to be paid and cleared by the bank if paying by check, until then we can't reserve the room. In the event that the rental agreement was executed less than ninety (90) days prior to the event, a refund of the

Reservation Deposit will only be made if Owner is able to secure a substitute licensee for the Event Date and Event Time. A change of date may be treated the same as a cancellation.

4. **Licensee's Responsibilities; Indemnification.** Licensee shall use the Center solely for the purposes of conducting the Event as described above and in Licensee's Event Application submitted to Owner. Licensee agrees to comply with, and enforce its Vendors, guests and invitees to comply with all of the Center Rules and Regulations ("Rules and Regulations") attached hereto as Schedule B.

   Licensee represents and warrants that all of the information contained in the Event Application submitted to the Owner is accurate in all respects. Licensee assumes full responsibility for the actions or activities of any person attending the function as Licensee's Vendor, guest or invitee. Licensee shall have the sole responsibility to hire and supervise all vendors providing services at the Event, including security guards, caterers, and bartenders ("Vendor") and shall have sole responsibility for service of food and /or alcoholic beverages to its guests or invitees during the Event.

   Licensee hereby agrees to indemnify, defend and hold harmless Owner and its officers, directors, members, employees, agents and representatives ("Indemnitees") from any and all losses, damages, claims, accidents, actions, suits, judgments, liabilities, obligations, costs and expenses (including, without limitation, reasonable attorneys fees) (collectively, "Losses") incurred or suffered by any of the Indemnitees by reason of, arising out of, or relating to Licensee's breach or violation of its representations, warranties or covenants under this Agreement or the schedules hereto, the actions or omissions by Licensee or its Vendors, guests or invitees, or the use of the Center by Licensee or Licensee's Vendors, guests or invitees except to the extent such Losses are caused by the gross negligence or willful misconduct of Owner.

5. **Insurance and Licenses.** At least fifteen (15) days prior to the Event Date, Licensee must furnish to Owner (a) certificate(s) of insurance or other evidence of insurance satisfactory to Owner that all Vendors, including Security Companies providing services to Licensee at the Event have general liability insurance of at least One Million Dollars ($1,000,000.00) per occurrence and One Million Dollars ($1,000,000.00) aggregate coverage, and (b) evidence satisfactory to Owner that Licensee and Licensee's Vendors have all required licenses and permits to render their services at the Event.

   In the event that Licensee comprises a business, nonprofit or governmental entity or organization, Licensee shall also furnish to Owner certificate (s) of insurance or other evidence of insurance satisfactory to Owner that Licensee has general liability insurance of at least One Million Dollars ($1,0000,000.00) per occurrence and One Million Dollars ($1,000,000.00) aggregate coverage. Owner may require that Licensee cause all such policies to list Owner as an additional insured or loss payee on such policies and/or contain the insurer's waiver of subrogation rights against the Owner. All such insurance of Licensee or Vendors shall be primary insurance and shall not be contributory with any insurance maintained by Owner.

6. **Owner Reservation of Rights; Force Majeure.**

   a. Owner reserves the right to control, use and posses the Center as it sees fit, including holding other events or functions in areas of the Center other than the Authorized Area at the same times as the Event. Owner may elect to relocate the Event from the Authorized Area indicated above (other than the Ballroom) to other locations at the Center as may be required by scheduling requirements for the Center; provided that Owner shall endeavor to provide to

Licensee prompt notice of such relocation and to select space suitable for the purposes of Licensee's Event.

b. Owner reserves the right to terminate the Event and the Licensee's license hereunder in the event that the activities by Licensee or its Vendor, guests or invitees at the Event constitute or result in a public disturbance or nuisance, threat to public safety or health, criminal activity or violation of law, are inconsistent with the description of the Event in the Event Application and this Agreement, or are in violation of the Rules and Regulations. In the event of any such termination, Owner shall be entitled to retain all fees and deposits paid by Licensee.

c. In the event of any fire, flood, natural disaster, inclement weather, utility or transportation disruption or other event beyond the reasonable control of Owner or Licensee which, in the opinion of Owner, would interfere with the holding of the Event, the Event shall be cancelled or rescheduled as provided in this section.

   i. In the event that Owner determines that the Center is available for Licensee's use to hold the Event on alternative day(s) within sixty (60) days following the original Event Date, Owner shall promptly notify Licensee of the same.

   ii. In the event that Licensee selects any such date by written notice to Owner delivered within seven (7) days of Owner's notification of the availability of the alternate date(s), the Event will be rescheduled to such date, which date shall be deemed the Event Date for the purposes of this Agreement and this License Agreement will continue in full force and effect.

   iii. If Owner does not offer to Licensee at least three (3) such alternative dates within such sixty (60) day period and the parties do not otherwise agree on a New Event Date, then the Event will be deemed cancelled and Owner shall refund to Licensee all monies paid by the Licensee, and the parties shall be deemed discharged from their respective obligations under this Agreement.

   iv. In the event that Owner does make at least three (3) alternative dates available within such sixty (60) period, but Licensee does not select one of the dates within the applicable seven (7) day notice period, then the Event will be deemed cancelled, the Owner shall refund to Licensee all monies paid by Licensee, less a cancellation fee of twenty-five percent (25%) of the total Licensee Fees due for such Event and the parties shall be deemed discharged of their respective obligations under this Agreement.

7. <u>Miscellaneous.</u>

a. This Agreement, the rights and liabilities of the parties hereto, and any questions or disputes relating hereto shall be governed by the laws of the State of California. This Agreement constitutes the entire agreement between the parties with respect to the subject matter hereof and supersedes all prior and contemporaneous agreements or understandings of the parties. Any amendment to this Agreement shall not be valid or binding unless in writing executed by an authorized representative of Licensee and Owner. In the event that any suit or proceeding is threatened or brought regarding any dispute arising out of or relating to this Agreement or the subject matter hereof, the prevailing party in such litigation or proceeding shall be entitled to recover attorney's fees and costs associated with defending or prosecuting any actual or threatened suit.

b. All notices, requests or other communications hereunder shall be in writing and shall be delivered by facsimile (with written confirmation of receipt), emailed, or mailed first class, postage prepaid, by certified mail, return receipt requested, addressed to the parties as indicated below.

c. In the event the Licensee constitutes a corporation, governmental body or other entity, the person executing this Agreement on behalf of such Licensee individually represents and

warrants that he or she has the authority to enter into and bind the "Licensee's Representative" who is responsible for attending the Event and rendering all decisions to be made by Licensee. In the event that there are two or more Licensees to this Agreement, the obligations and covenants of each such Licensee are joint and several. Further, in the event that Owner is obligated to return or pay any monies to Licensee, Owner's delivery of such monies to any such Licensee shall discharge Owner's obligations hereunder, and Owner shall not be responsible as to the application of any such monies by any Licensee to which Owner has returned such monies.

By executing this Agreement below, Licensee acknowledges its understanding and agreement with the provisions of this Agreement. This Agreement shall not be binding against the Owner until an authorized representative of Owner has received all Deposits to be delivered to Owner pursuant to this Agreement.

LICENSEE

Name of Licensee:_____ Title: _____

Mailing Address: _____
Number Street Apt. # City State Zip Code

Phone Number:_____ Fax Number: _____

Email Address: _____

_____ _____
Signature of Licensee Date

OWNER
Adriana Evaristo
Rental Coordinator
Delhi Center
505 E. Central Ave.
Santa Ana, CA 92707
714-481-9600 Office
714-481-9628 Direct line
adriana@delhicenter.org

_____ _____
Signature of Owner Date

FEE SCHEDULE

SCHEDULE A

Delhi Center has several options for events, such as meetings, employee events, workshops, trainings, conferences, banquets, etc. We require proof of nonprofit status in order to receive the nonprofit rates. All rentals are charged an hourly rate and must include your setup and teardown time. Rentals during non-business hours require a 4-hour minimum.

Nonprofit Events

ROOM	Business Hours (8 Am – 8 Pm)		Non-Business Hours (Monday - Thursday after 8 Pm, Fridays after 5 Pm & Saturday and Sunday all day)	
	First Hour	Each Additional Hour	First Hour	Each Additional Hour
FULL BALLROOM	$252	$104	$362	$213
HALF BALLROOM	$174	$75	$277	$187
CLASSROOM 103	$119	$45	$154	$79
CLASSROOM 102	$85	$35	$114	$65
DANCE ROOM	$104	$55	$139	$89
EXERCISE ROOM	$104	$55	$139	$89
COURTYARD	$158	$59	$185	$86

Business Events

ROOM	Business Hours (8 Am – 8 Pm)		Non-Business Hours (Monday - Thursday after 8 Pm, Fridays after 5 Pm & Saturday and Sunday all day)	
	First Hour	Each Additional Hour	First Hour	Each Additional Hour
FULL BALLROOM	$280	$116	$402	$237
HALF BALLROOM	$193	$83	$308	$208
CLASSROOM 103	$132	$50	$171	$88
CLASSROOM 102	$94	$39	$127	$72
DANCE ROOM	$116	$61	$154	$99
EXERCISE ROOM	$116	$61	$154	$99
COURTYARD	$176	$66	$205	$95

All rentals include tables and chairs as needed, set-up of tables and chairs, staff support during the event & clean-up after the event. The Ballroom is the only room that comes equipped with a stage, ceiling-mounted projector, two wireless microphones & one wired microphone for your audio-visual presentations.

RULES AND REGULATIONS
SCHEDULE B

GENERAL RULES

All Licensees and their Vendors, guests and invitees shall comply with all applicable laws and government rules and regulations. Any use of the Center to the contrary or in violation thereof shall be grounds for the Owner to cancel the Event and Licensee's use of the Center and to remove Licensee and its guests and invitees from the Center and to bar Licensee and such persons from further use thereof.

No live animals, with the exception of service animals, are to be brought onto the Center without the

prior written authorization of Owner.

Licensee and its guests and invitees shall not initiate false fire alarms.

No congregating or loitering in the Center's facility is permitted.

Jumpers, mechanical apparatus, climbing walls, etc. are not allowed in the center or in the parking lot.

The Center is a non-smoking facility. No smoking, including vaping, is permitted inside the facility or in its courtyard at any time. Designated smoking areas are located outside at least 100 feet away from the front door of the Center. Owner may assess a $200 fine against Licensee for each occurrence that Licensee or its Vendors, guests or invitees violate this regulation.

Drugs are not permitted in or on the Center's property, including parking areas. In the event of use of drugs or illegal substances by Licensee or its Vendors, guests or invitees, Owner shall be entitled to notify the proper law enforcement authorities and to terminate the Event and remove Licensee and its Vendors, guests, and invitees from the Center.

RESTRICTION TO AUTHORIZED AREA

Licensee and its Vendors, guests and invitees will have access to the Authorized Area (as identified in the Agreement) in the Center **only** and in no other areas of the Center. Children in attendance at the Event must be monitored by Licensee and are to stay in the Authorized Area for the Event. Licensee must ensure that children do not enter other areas of the Center.

SUPERVISION DURING EVENT

Licensee (or if Licensee is a business or government entity, Licensee's Representative as identified in the Agreement) must be present at the Center for the entire duration of the Event. Licensee must provide (2) two appointed persons in charge to be present on site for the duration of the Event to assist with the coordination and supervision of the Event.

EVENT SPECIFICATIONS

At least thirty (30) days prior to the Event, Licensee must provide Owner with final and complete information as to set-up specifications, schedules of activities, equipment/and or services required for the Event. Licensee must submit this information in writing and Licensee or Licensee's Representative shall participate in a review of the Event in a scheduled "walk-through" with Center operations staff both before and immediately following the Event. Licensee must deliver to Owner a copy of Licensee's event agenda or program prior to the Event.

EVENT EQUIPMENT AND SUPPLIES

Licensee shall provide its own equipment for audio-visual presentations. The Ballroom comes equipped with audio and visual cables to connect Licensee's laptops for presentation. It is highly recommended that Licensee test their equipment with the Ballroom's system to ensure compatibility as some laptops are not compatible. In the event that the equipment is not compatible, Licensee will not be entitled to a refund of any fees.

The property of Licensee, and its caterers, decorators, florists, entertainers or other Vendors may not be stored overnight, either prior to or following the Event. In addition, deliveries will not be accepted prior to scheduled start time specified in the Agreement unless prior written approval is granted by Owner's management.

TIME TO VACATE

Licensee and its Vendors, guests and invitees must completely vacate the Center at the scheduled conclusion of the Event or Licensee shall be responsible for additional fees charged at the Owner's existing hourly fee schedule for each hour or portion thereof exceeded.

CAPACITY

Licensee shall not allow the number of guests or attendees in the Authorized Area to exceed the maximum number allowed for such Area as set forth under Section 1 "License" in the Facilities License Agreement above and in the Fee Schedule (Schedule A). Such maximum number may be less than the number permitted under government regulations.

DECORATIONS

Nails, staples, hooks, tacks, straight pins, two-sided tape, screws or other surface adhesives may not be used on any surface or furnishing in the Authorized Area, including the floor. No tape or other material may be applied to walls, tables or any surface. Licensee will be responsible for all repair and replacement costs and expenses for any damage or defacement of the Center or Owner's property.

No bunting, tissue paper, crepe paper or any other combustible material may be used without the prior written approval of Owner's management.

The use of any flammable device or substance (e.g., candles) is strictly prohibited without the prior written approval or Owner's management.

No rice, glitter, bird seed, rose petals or confetti may be used at the Center.

All decorations must be removed by Licensee at the end of the Event.

Helium balloons must be attached to a stationary object. Balloons may not hang freely from the ceiling. Mylar balloons are prohibited.

No decoration of windows, light fixtures, art work or painted surface is permitted.

Pictures, banners, signs, etc. may not be displayed on the interior, exterior or in any part of the Center without prior written approval from Owner's management.

Owner's property (e.g., tables, chairs) are not to be placed along the perimeter of the hall or rooms nor removed from the Center's facility or placed outside of the Center's building.

PARKING
Parking is only allowed in designated areas. The Center driveway is to be used for loading and unloading only.

FOOD AND BEVERAGES/ KITCHEN/TRASH CANS
Food/beverages, table linens, place settings, decorations, music, etc. are not included in the rental of Delhi Center facilities. Licensee is responsible for making its own arrangements with caterers or other Vendors. Vendors may not arrive early for set-up or outside of the time allocated. Licensee will be charged additional fees at the Owner's existing hourly rate for each hour or portion thereof of additional time needed for caterer or other vendor deliveries and/or set up. The caterer used by Licensee may be subject to Owner's approval.

The kitchen is only used for Ballroom rentals and can only be used for warming up food only; no cooking is allowed. **Kitchen must be cleared up by 11:00 pm.** Vendors must bring their own trash bags. Delhi Center trash bins must not be used for any purpose other than to place trash. Licensee, vendors, and guests must not place ice or any other items inside Delhi Center trash cans.

ALCOHOL
The service of alcohol is permitted only under the following conditions: Alcohol service must be arranged by Licensee with the caterer or another licensed Vendor for the Event. If alcohol is served, Licensee is responsible for ensuring that the caterer/Vendor obtains the appropriate permit from the State of California Alcohol Beverage Control Department and submits same to Owner at least fifteen (15) days prior to the Event.

Alcohol may not be served to minors. Alcohol and other beverages must be served in plastic cups only, no glass containers are permitted. Alcohol usage is restricted to the Authorized Area **only.** **Alcohol service must conclude at least one hour prior to the time the Event is scheduled to end.**

MAINTENACE
Licensee shall remove all property of Licensee and its vendors, guests and invitees at the end time of the Event. Licensee will not be required to pay for additional cleaning services, provided that the amount of required cleaning does not exceed the amount of cleaning ordinarily involved following events at the Center, and the Center has not otherwise been damaged.

Owner's building custodian will be available to review the facilities with the Licensee or Licensee's Representative prior to and at the completion of the Event and will determine whether any damage has occurred, additional cleaning beyond ordinary cleaning is needed or if Licensee has exceeded the time of use of the Event from the times specified in the Agreement. Licensee will be responsible to pay to Owner additional charges at the rate of Thirty Dollars ($30.00) per hour for damage repair or clean-up (beyond ordinary clean-up) performed by Owner. In the event repair or clean-up is performed by outside vendors, Licensee also shall be responsible to pay the actual amount charged by such vendors, a Fifty Dollar ($50.00) processing fee plus the additional charges and fees listed below. The fee for these services may be deducted from the Security Deposit and, in the event the Deposit is insufficient to pay for such fees and charges, Licensee shall pay the deficiency upon demand by Owner.

If for any reason the Licensee or Licensee Representative is not present at the scheduled Event opening and closing times, the decision by Delhi's staff as to the condition of the Center's and fees and charges for which Licensee is responsible shall be conclusive and binding on the parties.

The Center will have tables, chairs and other equipment in place at the Event as identified in the room schematic approved by Owner prior to the start time of the Event. **Licensee must complete its set-up before Licensee's guests are permitted to enter into the Authorized Area.**

SECURITY

Licensee is solely responsible for arranging security for the Event and for payment of all costs therefore directly to the security guard company selected. Security staff must be present throughout all weekend night events, including parties, receptions, dances or other social functions in which alcohol is served and/or the number of expected guests exceeds One Hundred (100). **Owner reserves the right, exercisable in its sole judgment, to require Licensee to increase the number of security personnel present at any Event, regardless of the purpose, size or nature of the Event.**

a. Security Company must be paid and submit proof 30 days prior to the event date, if the Security Company is not paid in full the security deposit will be held until proof of payment has been provided to the owner.

Any security firm utilized by Licensee is subject to approval by Owner. Owner will provide to Licensee a list of security firms Owner has approved for use. At least fifteen (15) days prior to the Event, Owner must receive from the Security Company a faxed or emailed copy of the signed contract between Licensee and such Security Company, together with a Certificate of Insurance or other evidence that such Vendor has the insurance required under Paragraph 5 of the Agreement.

The purpose of security personnel at the Event is to ensure the safety of the Event attendees and Owner's staff and of the Center and owner's property. Licensee shall not use or permit such security personnel to assist the Licensee in monitoring the Event for other purposes. The failure of the requisite security personnel to be present at the Event is grounds for Owner to cancel the Event, in which event Owner may retain all deposits and other sums paid by Licensee as a cancellation fee.

ADDITIONAL CHARGES AND FEES

Licensee agrees to pay the fees and charges set forth in the Agreement and in these Rules and Regulations. In addition to such fees and charges, Licensee shall pay additional fines for infractions of the Rules and Regulations in accordance with the following schedule:

False Fire Alarm	**$200.00 per occurrence**
Items Left Behind, Following Event Conclusion	**$50.00 per day**
Smoking Inside Facility	**$200.00 per occurrence**
Confetti/Glitter/Rice etc. Used	**$100.00**
Wall/Floor Stains or holes	**$100.00**
Balloons Hanging or Loose in the Center	**$75.00 per occurrence**

The foregoing fines are intended to compensate Owner for its administrative costs and expenses arising from any such infractions and are not intended to constitute liquidated damages. Such fines are in addition to Licensee's obligations to pay other fees and charges which Owner may impose under the Agreement and these Rules and Regulations (including, without limitation, additional charges for time of Owner's staff, and payment for all outside contractors used to repair or restore the Premises) and are in addition to Licensee's obligations to indemnify Owner for all losses or damages Owner suffers arising from Licensee's use of the Center. Additionally, the right of Owner to impose such fines is cumulative with, and shall not restrict the exercise of, Owner's other rights and remedies under the agreement and the Rules and Regulations, including, without limitation, Owner's right to terminate the Event and retain all deposits and monies paid by Licensee in the Event of Licensee's violation of the Agreement or these Rules and Regulations.

PERSONS IN CHARGE: The following persons have been authorized by Licensee as the persons in charge and shall remain onsite and accessible by phone for the duration of the event.

Name	Cell Phone Number
Name	Cell Phone Number

I,_____(Licensee) have read the Facilities License Agreement, the Fee Schedule (Schedule A), and the Rules and Regulations (Schedule B) and agree to abide by and to ensure that all my Vendors, invitees, and guests abide by all rules, regulations, requirements, and restrictions, included herein.

Signature of Licensee	Date

DELHI TIPS:

- Delhi is a Non-Profit Private Community Center and we are not owned by the City of Santa Ana.
- The parking lot is a public parking lot that is owned by the city of Santa Ana so we are not allowed to block it off or prevent people from entering the parking lot.
- You must include any setup time and tear-down time as that is charged at the hourly rate.
- Please submit or email a room set up a week in advance to make sure the setup is possible.
- We have a limited number of tables so make sure you coordinate to make sure we have enough tables available for your event.
- Delhi does not provide any linens, utensils or any items for catering for any rentals.
- If your event has more than 200+ guests, you can park in the parking lot along with street parking but it's also best to call the Delhi Church and ask for additional parking just in case.
- If your event is on a Thursday there is street sweeping between 8 Am – 11 Am, if you have a big event it may be best to choose another date or adjusting time frame of event and if not try to carpool if possible or even ask the church for additional parking
- The Ballroom is the only room that has A/V, so all other rooms do not have any A/V and for the Ballroom make sure you bring your own laptop, we only provide access to 2 Wireless Mics, 1 Wired Mic, Projector and Cables for sound and video.
- It is best to test out your presentation ahead of time to make sure everything works with our system.
- Ballroom & Classrooms have access to Wifi and Exercise & Dance Room have limited Wifi.

AGENDA ITEM SUBMITTAL

Meeting Date: December 11, 2024

To: Water Issues Committee
Board of Directors

From: John Kennedy

Staff Contact: R. Bouley

Budgeted: Yes
Proposed Budget: $13M (over 2 years)
Cost Estimate: $13M
Funding Source: CIP/PFAS O&M
Program/Line Item No.: varies
General Counsel Approval: Yes
Engineers Report: N/A
CEQA Compliance: N/A

Subject: EVOQUA WATER TECHNOLOGIES LLC RESIN MEDIA AGREEMENT

SUMMARY

The Board of Directors authorized an agreement with Evoqua Water Technologies, LLC (Evoqua) for the purchase of PSR2-PLUS ion exchange resin media in 2022, and after a 1-year extension, this agreement will expire at the end of December 2024. Since several PFAS water treatment systems are beginning operation this year, initial first fills of resin will be needed along with replacement media fills for PFAS systems already operating. Based on an evaluation of new pricing compared to current agreement pricing, previous pilot performance and life cycle cost, staff recommends executing a resin purchase agreement with Evoqua Water Technologies, LLC.

RECOMMENDATION

Agendize for December 18 Board meeting: Authorize execution of a two-year Agreement with Evoqua Water Technologies, LLC for an amount not to exceed $13,000,000.

BACKGROUND/ANALYSIS

The Board authorized an agreement with its Producers to construct treatment plants to remove PFAS (Per- and Polyfluoroalkyl Substances), more specifically perfluorooctanoic acid (PFOA) and perfluorooctane sulfonate (PFOS), from drinking water supplied via groundwater wells. OCWD has performed pilot testing of select Ion Exchange (IX) resin products for PFOA and PFOS removal and has determined that the Amberlite PSR2-PLUS resin performed best for the water chemistry representative of OCWD's service area. OCWD has already purchased resin for the Producer treatment plants that have been constructed, including replacement media for some of the earliest treatment plants and found that the PSR2-PLUS is surpassing initial lifespan projections.

In 2022, the Board authorized an agreement with Evoqua for the purchase of IX resin for the treatment plants under construction. Evoqua is the only vendor able to competitively supply, process, install, and dispose of the PSR2-PLUS resin in the quantities that OCWD requires for all the impacted Producers. This agreement set pricing for 2022-2023 and included furnishing the PSR2-PLUS resin; preconditioning and rinsing the resin at their facility to meet Department of Drinking Water requirements prior to delivery; and delivery and installation of the resin in specially equipped trucks.

Evoqua also included the most competitive price for disposal, including all the additional labor, freight, and other costs to dispose of the used media at an approved facility – the closest facilities are located in Utah and Nebraska.

The established IX resin prices for 2022 and 2023 were extended through 2024 without an increase in the 2023 price. Staff desires to set up a new two-year agreement with Evoqua to provide resin to our Producers for either upcoming new construction fills or replacement fills with the ability to call upon and pay for those fills as needed. The term would start January 1, 2025, and expire on December 31, 2026. Having a two-year agreement with established resin prices will provide cost savings and ensure delivery/availability of resin to benefit all the Producers using IX treatment. The Producers are responsible for 50% of the replacement cost under the PFAS Treatment and Facilities Program Agreement, so they will benefit from volume pricing, as well.

Staff forecasted resin demands of treatment system new fills and replacement fills over the next two years. New fills for 2025 will be approximately 7,600 cubic feet (cf) and replacement fills will be approximately 5,400 cf. For 2026, new fills and replacement fills will be approximately 7,600 cf and 10,500 cf, respectively. The forecasting is based on projected construction dates and the resin lifespan that Producers are currently experiencing with the first few resin replacements, and the number of existing systems needing media replacement is expected to increase in year two.

However, these projections may vary based on individual Producer water quality and flow rates of water through the treatment systems. Evoqua provided a proposal to furnish PSR2-PLUS for new and replacement fills based on these projected quantities per year. Their proposal includes tiered pricing for a lower cost as the volume of media purchased increases. Evoqua's quote reflects an approximate 5% annual increase, and a summary of the quote is shown below in Table 1. The "Replacement Fill" prices per cubic foot include the same price for media as the "New Fill," along with the additional labor, freight, and other costs associated with disposing of the used resin at an approved facility. The current price from the existing agreement is included as a reference.

Table 1: New Fill and Total Refill Pricing

Evoqua PSR2-PLUS	Volume	2023 Pricing	2025 Pricing	2026 Pricing
New Fill (per cubic foot)	8,000-14,999 cf 15,000 – 24,999 cf	$323.16	$355.53 $347.30	$373.29 $364.66
Replacement Fill (per cubic foot, includes new resin and disposal of used resin)	8,000-14,999 cf 15,000 – 24,999 cf	$392.35	$454.70 $446.47	$477.43 $468.80

The proposal from Evoqua requires a minimum purchase of 8,000 cf per year, and Evoqua has agreed to honor their prices up to a total of 25,000 cf of media each year, giving OCWD the flexibility to purchase additional resin at these prices if needed. If for any reason OCWD cannot purchase the minimum 8,000 cf in any year, Evoqua will

store up to 1,836 cf for use in the next year. Based on OCWD's projections and the pricing in Evoqua's proposal, the total approximate cost would be $5.15 Million for 2025, and $7.85 Million for 2026. Staff recommends authorizing execution of a two-year agreement with Evoqua Water Technologies, LLC for an amount not to exceed $13,000,000.

PRIOR RELEVANT BOARD ACTION(S)

5/1/24, M24-43: Authorize time extension of the two-year Agreement No. 1489 with Evoqua Water Technologies, LLC to October 31, 2024.

1/5/22, R22-1-4: Authorize execution of a two-year Agreement with Evoqua Water Technologies, LLC for an amount not to exceed $15,000,000 and reject the "protest" of Calgon Carbon received by OCWD on the evening of January 4, 2022.

11/17/21, M21-123: Authorize publication of a Request for Quotes to Procure and Install Ion Exchange Resin Media for various Producer's PFAS Water Treatment Plants.

AGENDA ITEM SUBMITTAL

Meeting Date: December 11, 2024

To: Water Issues Committee
Board of Directors

From: John Kennedy

Staff Contact: C. Olsen

Budgeted: N/A
Budgeted Amount: NA
Cost Estimate: N/A
Funding Source: N/A
Program/Line Item No.: NA
General Counsel Approval: N/A
Engineers/Feasibility Report: NA
CEQA Compliance: NA

Subject: DRAFT LOCAL AGENCY FORMATION COMMISSION OF ORANGE COUNTY FEASIBILITY STUDY ON THE CONSOLIDATION OF THE ORANGE COUNTY WATER DISTRICT AND THE MUNICIPAL WATER DISTRICT OF ORANGE COUNTY

SUMMARY

As discussed with the Board of Directors on November 20, 2024, the Local Agency Formation Commission of Orange County (LAFCO) released a draft feasibility study on the consolidation of the District with the Municipal Water District of Orange County (MWDOC). LAFCO has requested comments by December 30, 2024. Staff has provided a draft comment letter for review.

Attachments:

Draft OCWD comment letter to LAFCO
Draft LAFCO Feasibility Report
Presentation

RECOMMENDATION

Agendize for December 18 Board Meeting: Transmit the attached comment letter to LAFCO.

DISCUSSION

In June 2022, the Orange County Grand Jury released a report recommending the District and MWDOC consolidate into one wholesale agency to best meet the needs of the Orange County water community. The report states that “all sources of water are interconnected and would be best administered by one governmental entity”. The Grand Jury came to this conclusion after reviewing the operations of the District and MWDOC and meeting with numerous Orange County water officials.

Consolidation has been periodically discussed due to several advantages which include: better coordination in providing imported water and local groundwater, greater accountability and less public confusion with two wholesale water agencies, cost savings, avoidance of conflicts, improved lobbying efforts with state and local officials, and speaking with one voice for Orange County water issues.

Because there are different opinions in the water community on the extent of the advantages of consolidation, the amount of cost savings, and the ease at which it could occur, the District requested LAFCO to provide a detailed study on the subject. LAFCO is an independent and neutral third party that can provide an objective analysis to both boards.

The draft report was released for comments on November 15, 2024. Staff believes the report did not uncover any fatal flaws or insurmountable issues that a willing OCWD and MWDOC could not manage and resolve. Staff has prepared a formal response to the LAFCO report for Board review which is attached.

Staff has also developed key OCWD consolidation principles to avoid any misinformation in the water community which might exist. The principles include:

- Preserving the Groundwater Producers sole access to the groundwater basin.
- Maintaining the seven directors Orange County has at the Metropolitan Water District of Southern California (MWD).
- Ensuring all services currently being provided by MWDOC and OCWD would be provided by the new organization.
- Initially combining the two staffs and boards and reducing staffing and board levels via attrition and retirements at a level to be determined.
- Existing OCWD debt would be repaid by the Groundwater Producers and not shared with the South Orange County agencies.

PREVIOUS BOARD ACTIONS

4/5/23, M23-40 - Recommended the LAFCO Commission move forward with hiring a consultant to prepare the consolidation feasibility study and for OCWD to transfer $300,000 to LAFCO to fund the study

3/11/23, M23-28 - Invited MWDOC to participate in the LAFCO study

1/4/23, M23-3 - Directed staff to schedule a Board study session and to request a joint Board meeting with MWDOC and deferred action on the Deal Points

12/21/22, M22-137 - Deferred action on Deal Points for an agreement with MWDOC in lieu of consolidating to the January 4, 2023 Board meeting.

8/17/22, M22-83 – Directed staff to submit a formal response to the Grand Jury report and to report back in 60 to 90 days.

7/6/22, M22-67 – Directed staff to prepare a response to the Grand Jury and to reach out to stakeholders to get their input

DRAFT RESPONSE

December 19, 2024

Carolyn Emery
Local Agency Formation Commission of Orange County
2677 N. Main Street, Suite 1050
Santa Ana, CA 92705

SUBJECT: Orange County Water District Comments on the Draft Municipal Service Review, Sphere of Influence Update and Consolidation Study

Dear Ms. Emery,

Orange County Water District (OCWD or District) thanks the Local Agency Formation Commission of Orange County (LAFCO) for studying the feasibility of consolidating the District with the Municipal Water District of Orange County (MWDOC). This request followed the Orange County Grand Jury's June 2022 report recommending the consolidation of our two agencies.

OCWD believes that a single agency can more efficiently provide the services currently offered by OCWD and MWDOC. The draft LAFCO report confirms that no "fatal flaws" or "insurmountable issues" prevent the consolidation of the two agencies. OCWD believes if we were starting from scratch, we would establish one agency to oversee the county's wholesale water needs.

Consolidation of our two agencies has been periodically discussed and debated within the Orange County water community. These discussions arise because consolidation offers numerous benefits, including better coordination in providing imported water and local groundwater, greater accountability and less public confusion, cost savings, avoidance of conflicts, improved lobbying efforts with state and local officials, and a unified voice for Orange County water issues.

Unfortunately, past consolidation discussions have faltered for various reasons including misinformation, varying opinions on the benefits, lack of understanding of the mechanics of consolidation, and varying estimates of cost savings. OCWD specifically requested that LAFCO study this issue, so that your agency can provide an objective and neutral analysis to bring clarity to these matters, ultimately benefiting the water community.

Other options to enhance coordination and efficiency between OCWD and MWDOC have been proposed, including alternatives previously suggested by MWDOC for LAFCO to study. However, these alternatives do not deliver the full range of benefits and cost savings that a complete consolidation of OCWD and MWDOC could achieve.

Specific OCWD comments on the draft LAFCO study are listed below:

- Page 7 – The phrase at the bottom of the second paragraph "and to calculate the fee that each groundwater producer pays for each AF pumped (Replenishment Assessment)" should be deleted.
- Page 7 -The assertion that the "OCWD Act limits the District from providing water outside of the Basin unless it is for the purpose of managing the Basin (OCWD Act, Section 2)," is not fully accurate and should be deleted. OCWD is specifically authorized by Section 2.6.g of the OCWD Act to "buy and sell water at such rates as shall be determined by the board of directors." While such sales must be for the "common benefit of the district," section 2 of the OCWD Act does not limit such sales to circumstances where sales are solely for the purpose of "managing the Basin." The corresponding assertion on page 143 of the study should also be deleted for the same reasons.
- Page 7- The assertion that "the Basin is not adjudicated so there is no court judgment that stipulates how water rights are allocated and how management should occur," is not completely accurate. There are cases that touch upon the water rights of OCWD and Producers within the Basin as well as the District's authority to manage the Basin.[1] To be more accurate, this assertion should be revised to read: "The Basin has not been comprehensively adjudicated by a court. However, the OCWD Act has long served as a form of "legislative physical solution" that authorizes OCWD to manage groundwater production based upon desired Basin conditions. Producers are generally able to pump up to their total water demand within OCWD, but pumping in excess of the Basin Production Percentage can trigger an additional assessment or surcharge."
- Page 52 - Charts 6 and 7 – Including total basin pumping in the pie charts seems unusual to OCWD.

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[1] OCWD notes that numerous appellate courts have ruled upon water rights issues, and how management should occur, within the Basin, as recently as this October, *see Irvine Ranch Water Dist. v. Orange Cty. Water Dist.*, No. B329089, 2024 Cal. App. Unpub. LEXIS 6333 (Oct. 7, 2024) ("IRWD v. OCWD"). *IRWD v. OCWD* does touch upon water rights, *see id.* at *14-15, of two Producers within the Basin—IRWD and Golden State Water Company—though the decision does not adjudicate any specific water rights. On the other hand, the *IRWD v. OCWD* decision definitely addresses how OCWD manages the Basin and its authority to do so per the OCWD Act. (*See id.* at *3-*6; *see also Orange Cty. Water Dist. v. Riverside, 173 Cal. App. 2d 137 (1959)* [OCWD can assert water rights claims on behalf of itself and on behalf of Producers within Orange County];*Orange Cty. Water Dist. v. Farnsworth, 138 Cal. App. 2d 518 (1956)* [approving imposition by OCWD of replenishment assessments per OCWD Act].)

- Page 68 – The paragraph about OCWD and MWDOC sharing the same office property is generally correct, however, to avoid potential confusion, the term "Shared" should be removed from the term "Shared Office Facilities". The Agreement between OCWD and MWDOC refers specifically to "Office Facilities." Additionally, the Consolidation Study should be consistent in describing the ownership of the Office Facilities.
- Table 13 - We suggest the addition of a row at the bottom of table 13 summarizing MWDOC's expenses without "Water Expenses" (items 87-90). MWDOC acts as a middleman for the purchase of imported water by the cities and water districts in its service territory. Including "Water Expenses" greatly inflates and misrepresents the size of MWDOC's operations.
- Table 14 - Average Annual Salary for Administrative Assistant should be updated to $61,144.
- Finding Number 12 states that a consolidation "may" offer opportunities for unified representation of Orange County water suppliers at the local, state, and federal levels. By definition, a consolidation of OCWD and MWDOC would result in unified representation, as there would be only one Orange County water supplier, as highlighted in the 2022 Grand Jury report. Additionally, while OCWD concurs with the comment that collaboration between the agencies could potentially eliminate redundancies and improve efficiencies for the benefit of ratepayers, it should be noted that such collaboration would not achieve the comprehensive benefits and savings provided by a full consolidation.
- Page 140 – MWDOC as Successor Entity. This section of the study appears to suggest that state legislation is not necessary if MWDOC was the successor agency of a consolidation, and that OC LAFCO could approve consolidation under the Municipal Water District Act. OCWD disagrees with this assessment and requests LAFCO's special counsel to further explain the legal basis for this suggestion in the next draft of the study. Specifically, how do MWDOC's existing statutory powers include all of OCWD's powers to manage the groundwater basin per the OCWD Act? Further explanation is needed because it has long been OCWD's position and legal opinion—as reflected in former General Counsel Joel Kuperberg's persuasive 2013 legal memorandum, which is cited on page 138 and footnote 32 of the study—that the Municipal Water District Act does not contain sufficient existing legal authority to permit exercise of all existing powers of OCWD by a successor agency post-consolidation.[2] OCWD exercises unique

[2] Mr. Kuperberg opined in his memorandum of September 11, 2013, in pertinent part, on page 4: "*By contrast* [to the OCWD Act]*, the Muni District Act provides authority for some, but not all, of the services currently provided by OCWD; for example, the Muni District Act does not authorize the levy of replenishment assessments (except in the case of court-ordered water make-up programs, per Water Code Section 71682, et seq.) or either the establishment of an annual basin production percentage or the levy of basin equity assessments. In other words, the Muni District Act does not provide authority for a consolidated agency to collect OCWD's current principal source of revenue, or provide the legal basis for managing the*

authorities under the OCWD Act with regard to management of the Basin utilizing economic incentives, disincentives and penalties granted to the District per the OCWD Act to control the amount of water pumped each year. None of these authorities, which are core to the finance and function of OCWD, can be found in the Municipal Water District Act—no matter how "municipal" in character it might be.[3] OCWD is not aware of any other special district, whether organized as a 1911 Act District or otherwise, that exercises all of the authorities that OCWD uses to manage the Basin within OCWD, and indeed the Sustainable Groundwater Management Act (SGMA) was passed in 2014 in part because of lingering questions about the existing legal authority of special districts, such as 1911 Act Districts (which do not have police power), to manage groundwater outside of specific state legislative authorizations. Moreover, the study should explain how the three appointed members of the OCWD Board from the Cities of Anaheim, Santa Ana and Fullerton, whose ***appointment*** to the OCWD Board of Directors is specifically directed by the OCWD Act, could operate under the Municipal Water District Act which requires that all of its directors be elected, and that the Board, as defined in the OCWD Act, is the entity responsible for all exercise of OCWD's powers. See OCWD Act § 3.

- Page 108 – The report states that the 2013 Grand Jury report recommended keeping OCWD and MWDOC separate. OCWD questions whether this is entirely accurate. Thee 2013 report was initiated "to inform the public about the sustainability of their water supply and what needs to be done in the future to keep the tap running." While the Grand Jury recommended that OCWD and

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Orange County groundwater basin and its resource. And, because the Muni District Act requires that all members of the governing board be directly elected from divisions (see Water Code Section 71500, et seq.), it is questionable whether the Muni District Act could serve as the principal act for a consolidated agency where three members are appointed by MET member agency cities."

3. The Citations to powers under the Municipal Water District Act in the study are seemingly inapposite, and the cases cited therein do not address the "implied" power of a municipal water district to manage groundwater, much less to do so using the unique tools that were granted by the Legislature to OCWD, such as the BPP, replenishment assessments, basin equity assessments, and production limitations/surcharges. The cases cited simply stand for the proposition that municipal water districts exercise some quasi-municipal powers granted by the Legislature, much as OCWD does. However, those powers are limited to the powers actually granted by the Legislature. *(See People ex rel. City of Downey v. Downey County Water Dist.* (1962) 202 Cal.App.2d 786, 795 ["The powers of special districts are special purpose powers limited solely to those conferred by the legislature in the line of the object of their creation."].) Accordingly, "districts, being public agencies created by statute, can exercise only those powers 'which are conferred on them by the act under which they are incorporated, or such as are necessarily incidental to the exercise of their corporate rights, the performance of their corporate duties, and the accomplishment of the purposes for which they are created.'" *(Palmer v. West Kern County Water Dist.* (1961) 193 Cal.App.2d 41, 45 [quoting *Biggart v. Lewis* (1920) 183 Cal. 660, 666].)

MWDOC continue their separate roles, it did not specifically examine the merits of consolidation.

- Page 126, Table 17 – OCWD requests clarification on whether the discount rates shown in the table have been reversed.
- Page 118 – OCWD does not necessarily concur with the immediate establishment of a ten-member Board of Directors for the successor agency. OCWD believes other options are available to initially combine both boards, with a possible gradual reduction to an appropriate number over time.

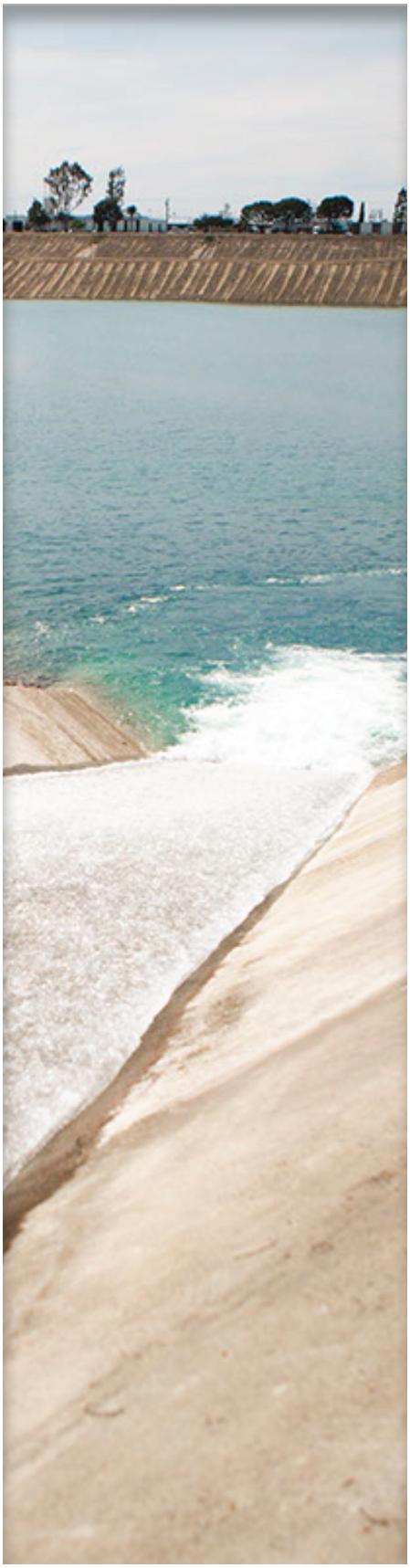
With this letter OCWD has also developed key consolidation principles to counter and clarify any misinformation in the water community which might exist. The principles include:

- Preserving the Groundwater Producers sole access to the Orange County Groundwater Basin within OCWD.
- Maintaining the seven directors Orange County has at the Metropolitan Water District of Southern California (MWD).
- Ensuring all services currently provided by MWDOC and OCWD would be provided by the new organization.
- Initially combining the two staffs and boards and reducing staffing and board levels via attrition and retirements at a level to be determined.
- Existing OCWD debt would be repaid by the Groundwater Producers and not shared with the South Orange County agencies

OCWD again thanks LAFCO for preparing the consolidation study. District staff and legal counsel are available to discuss our comments to assist in finalizing the LAFCO study.

Sincerely

John C. Kennedy
General Manager
Orange County Water District



ORANGE COUNTY LAFCO

MUNICIPAL SERVICE REVIEW

Orange County Water District

MSR 23-06 | SOI 23-06

Public Review Draft

PUBLIC REVIEW DRAFT

Municipal Service Review and Sphere of Influence Update for the Orange County Water District

Including a Feasibility Analysis of the Potential Consolidation of Orange County Water District and Municipal Water District of Orange County

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November 15, 2024

Acknowledgement

Orange County LAFCO and the consultants acknowledge the time and effort of the staff of Orange County Water District and Municipal Water District of Orange County in the preparation of this report.

Photo Cover:
From left to right, Anaheim Lake,
Microfiltration Facility, and Prado Wetlands
from Orange County Water District

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Acronyms and Abbreviations

Acronyms	
AB	Assembly Bill
ACWA	Association of California Water Agencies
AF	acre-feet
AFY	acre-feet per year
BEA	Basin Equity Assessment
BPP	Basin Production Percentage
CCR	Consumer Confidence Reports
CDR	Center for Demographic Research at California State University, Fullerton
CKH Act	Cortese-Knox-Hertzberg Local Government Reorganization Act of 2000
CSDA	California Special Districts Association
CWP	California Water Plan
CY	Calendar Year
DUC	Disadvantaged Unincorporated Community
DWR	California Department of Water Resources
EPA	U.S. Environmental Protection Agency
FIRO	Forecast-Informed Reservoir Operations
FY	Fiscal Year
GAP	Green Acres Project
Gov. Code	Government Code
GMP	Groundwater Management Plan
Groundwater Basin	Orange County (OC) Groundwater Basin
GSA	Groundwater Sustainability Agency
GWRS	Groundwater Replenishment System
IRWD	Irvine Ranch Water District
JPA	Joint Powers Authority
LAFCO	Local Agency Formation Commission
MCL	maximum contaminant level
MGD	million gallons per day
MSR	Municipal Service Review
MWD	The Metropolitan Water District of Southern California
MWDOC	Municipal Water District of Orange County
O&M	Operation and maintenance
OCBC	Orange County Business Council
OC LAFCO	Local Agency Formation Commission of Orange County
OC San	Orange County Sanitation District
OCWA	Orange County Water Association
OCWD Act	Orange County Water District Act
OCWD	Orange County Water District

Acronyms

OPEB	Other Post-Employment Benefits
PFAS	Per- and Polyfluoroalkyl Substances
PFOA	Perfluorooctanoic Acid
PFOS	Perfluorooctanesulfonic Acid
ppt	parts per trillion
RA	Replenishment Assessment
RWQCB	Regional Water Quality Control Board – Santa Ana Region
SAR	Santa Ana River
SAWPA	Santa Ana Watershed Project Authority
SB	Senate Bill
SGMA	Sustainable Groundwater Management Act of 2014
SOI	Sphere of Influence
SWP	State Water Project
USACE	U.S. Army Corps of Engineers
UWMP	Urban Water Management Plan
WACO	Water Advisory Committee of Orange County
WEBB MF	Webb Municipal Finance
WEROC	Water Emergency Response Organization of Orange County
WRD	Water Replenishment District of Southern California
WY	Water Year

Executive Summary

Municipal Service Review & Sphere of Influence Update

On October 4, 2022, Orange County Water District (OCWD or "District") submitted an application with the Local Agency Formation Commission of Orange County (OC LAFCO) to prepare a Comprehensive Municipal Service Review (MSR) and Sphere of Influence (SOI) update. The MSR is located in Chapter 3 and the SOI is located in Chapter 4, herein. The application from OCWD included a request for a feasibility analysis of the potential consolidation of OCWD and the Municipal Water District of Orange County (MWDOC). The Consolidation Feasibility Study is located in Chapter 5.

OCWD was created by a special act of the state legislature in 1933 (the "OCWD Act") to manage the Orange County (OC) Groundwater Basin ("Basin"). OCWD is governed by a 10-member Board of Directors representing the District's 10 Divisions. The District's boundary is limited by the Basin and includes the Orange County portion of the Santa Ana River Watershed. The OCWD Act limits the District from providing water outside of the Basin unless it is for the purpose of managing the Basin (OCWD Act, Section 2). The Basin is not adjudicated so there is no court judgment that stipulates how water rights are allocated and how management should occur. The OCWD Act gives legal authority to the District's Board of Directors to fulfill its charge by working cooperatively with groundwater producers (pumpers), conducting extensive groundwater elevation and water quality monitoring, constructing and expanding recharge facilities, procuring recharge water supplies, and setting the annual percentage of total water demands that each groundwater producer can extract without triggering an additional assessment ("Basin Equity Assessment ," or BEA), among other efforts. OCWD manages the Basin and does not supply water directly to retail customers. OCWD manages the Basin like a reservoir that holds approximately 500,000 acre-feet (AF) of water; however, it keeps the Basin less than 100 percent full in order to maintain storage space for flood events, minimize water loss to the Los Angeles County side of the basin, and to calculate the fee that each groundwater producer pays for each AF pumped ("Replenishment Assessment").

The District's sphere of influence (SOI) totals 569 square miles, of which 52 square miles extends into the Pacific Ocean and 125 square miles include unincorporated Orange County. OCWD's Service Area encompasses 430 square miles of the SOI and includes retail water suppliers consisting of 13 cities and five water districts and one investor owned utility, which distribute water directly to their customers (collectively referred to as the "19 Groundwater Producers"), and small private well owners and mutual water companies within the Service Area. The boundaries of OCWD's SOI and Service Area are not coterminous. A total of 18 incorporated Orange County cities are fully located

within the OCWD SOI and Service Area. These cities are Anaheim, Buena Park, Costa Mesa, Cypress, Fountain Valley, Garden Grove, Huntington Beach, La Palma, Los Alamitos, Placentia, Santa Ana, Seal Beach, Stanton, Tustin, Villa Park, Westminster and Yorba Linda. Portions of the Cities of Irvine and Newport Beach are within both OCWD's SOI and Service Area. The Cities of Orange and Fullerton are fully within the SOI; however, a small area of Orange and Fullerton are not fully within the OCWD Service Area. Five incorporated Orange County cities are totally or partially within the SOI but outside of the OCWD Service Area: Aliso Viejo, Brea, Laguna Hills, Laguna Woods, and Lake Forest. The District has no facilities nor provides services outside of the District's Service Area.

Approximately 125 square miles of the SOI is unincorporated county (35 square miles of which is in the OCWD Service Area). A total of 11 disadvantaged unincorporated communities (DUCs) were identified within the OCWD SOI, specifically within Division 1. DUCs are census blocks with a median household income that is 80 percent or less than the statewide value that are also located in unincorporated county areas. Water service to customers within these areas is provided by the local retail water suppliers who obtain groundwater from OCWD. Four of the 11 DUCs are also within the City of Anaheim's SOI and collectively identified as the Southwest Anaheim DUC; two DUCs are in the City of Stanton's SOI and individually identified as Mac/Syracuse DUC and Dale/Augusta DUC; and five DUCs are in the City of Westminster's SOI that include the three in the Bolsa/Midway DUC, one in Bolsa/Pacific DUC, and one in Bolsa/McFadden DUC. The water suppliers include four mutual water companies, the Cities of Anaheim and Westminster, and Golden State Water Company.

This study identified nine mutual water companies within the SOI; four of which serve portions of the 11 DUCs located in Division 1. The other five mutual water companies are located elsewhere in the SOI including Knott's Berry Farm in Buena Park, the Los Alamitos Racetrack, Anaheim, Huntington Beach, and Fullerton. Mutual water companies are private not-for-profit organizations that are organized under California Corporations Code 14300, and regulated under the federal Safe Drinking Water Act, the California Water Code and Health and Safety Code, and the California Department of Public Health. They also report their boundaries to OC LAFCO. Although included in OCWD's Well Monitoring Program, mutual water companies are not often equipped to address water quality constraints and/or upgrade their infrastructure as quickly as larger, more well-funded water suppliers. Therefore, this study recommends OCWD offer technical assistance to mutual water companies upon their request for things like funding opportunities for system improvements, well monitoring or water testing.

OCWD conducts annual, independent financial audits and maintains AAA credit ratings with Fitch Ratings and Standard & Poors. The OCWD Fiscal Year 2023-2024 Budget was

adopted by the Board of Directors on April 19, 2023 with a total budget of $279.2 million, which represents a decrease of 10.5 percent from the previous year. The majority of revenue (62 percent of revenues) comes from the Replenishment Assessment and the largest expenditure (36 percent of expenses) is attributed to 19 Capital Projects which are debt and PAYGO funded. OCWD has a defined contribution retirement plan, and the District's medical retirement plan is fully funded as of June 30, 2023. OCWD continues to meet the requirements of its reserve policy and total reserves are approximately $308 million on June 30, 2023. The District has approximately $870 million in outstanding debt as of July 1, 2023. Debt repayment is budgeted annually at approximately $45 million. The District is able to meet all its budgeted expenses and obligations and maintain an AAA credit rating with Fitch and Standard and Poors. Replenishment Assessments can and do increase annually when necessary to help ensure revenues meet expense requirements. This flexibility along with its other revenue sources, budgeted reserves, and great credit ratings put OCWD in a stable financial position to continue providing current groundwater management services to its customers.

According to the 2020 Census, the OCWD Service Area contains approximately 2.44 million residents. The Center for Demographic Research's "Orange County Progress Report 2023" estimates the Service Area population to increase 4.5 percent over 25 years to approximately 2.55 million residents by 2045. Therefore, significant population growth is not expected in the Service Area. Between Water Years (WY) 2012-2013 and 2022-2023 groundwater pumping has decreased on average 1.5 percent each year.[1] This is likely the result of several influences including a prolonged drought from 2012-2016[2] that triggered significant conservation of groundwater and imported water, and new state guidelines established in 2019 and 2020 for certain PFAS contaminants resulting in decreased groundwater pumping. Total water demands within OCWD were at their lowest in 50 years at the end of WY 2022-2023, which is likely the result of reduced outdoor irrigation because of the above-average rainfall. However, groundwater pumping for WY 2023-2024 is projected to increase 14.2 percent over the one-year period from WY 2022-2023 and projected to increase gradually for the next 25 years, but still less than total water demands recorded in the early 2000s. To bolster its water supply for the Basin, OCWD has recently completed projects that will allow for additional capture of Santa Ana River water, and recently expanded the treatment capacity of its

[1] WY (Water Year) is defined as the 12-month period beginning October 1 through September 30 of the following year (e.g., WY 2023-2024 would be October 1, 2023 – September 30, 2024).

[2] According to the California Department of Water Resources' *Report to the Legislature on the 2012-2016 Drought* (March 13, 2021), "It unfolded in a context of record statewide temperatures, which exacerbated the impacts of water shortage, setting new markers for extreme conditions. The Sierra Nevada snowpack in 2015, for example, was the lowest on record. Based on statewide precipitation, 2012–2015 were the four driest consecutive years on record."

advanced recycled water treatment facility. Records indicate that recharge efforts by OCWD have been effective in replenishing the Basin water supply.

Water demands within the OCWD Service Area are expected to be met over the planning horizon of this MSR analysis including the future increase in population, given the following factors: (1) the District's collaboration with the Center for Demographic Research to proactively monitor demographic changes in the Service Area and in particular, population growth; (2) District projections accounting for future growth in each Groundwater Producer's service area; and (3) the District's demonstrated ability to meet greater water demands in the past as compared to current water demands.

The capacity of OCWD's infrastructure to manage the basin sufficiently was demonstrated in WY 2022-2023 when rainfall exceeded 158 percent of the long-term average. By the end of June 2022, more water was recharged than anticipated resulting in filling the Basin with an additional 69,000 AF, despite some losses to the ocean. Therefore, OCWD's capacity is commensurate with the population it currently serves. The District's planning efforts are demonstrated in the annual Comprehensive Financial Report, Annual Budget, and CIP by identifying the resources required to repair, replace, and expand facilities in order to meet its stated mission. In terms of supply capacity, the District has many water rights and entitlements to water supplies. OCWD will need to continue to budget for maintenance and expansions of capacity as infrastructure ages, regulations change, and collaboration opportunities arise.

The primary constraint on the ability of OCWD to provide its services is water quality. Specifically, per- and polyfluoroalkyl substances (PFAS), groundwater contamination plumes, and seawater intrusion causes wells to be turned off until additional actions are taken. In the meantime, alternative sources of water supply, primarily imported water are utilized. These constraints, however, do not diminish the District's ability or capacity to replenish the Basin adequately.

The District partners with many different entities on projects that benefit and further the goals of the OCWD Act. OCWD is also the largest buyer of imported water supplies from the local imported water wholesaler agency, MWDOC. The status of shared projects and facilities is well-documented to support the services provided by OCWD and referenced in this report. Partnership opportunities are expected for the future, which may include but are not limited to, a second emergency connection to South Orange County water agencies, addressing seawater intrusion at the "Sunset Gap" and/or "Bolsa Gap," securing funding for the 19 Groundwater Producers to construct water treatment systems to address PFAS contamination in wells, and paying one-half of all PFAS treatment system operation and maintenance (O&M) costs. The opportunities for shared

facilities continue to evolve at a sufficient pace for the purpose of supporting the services provided by OCWD.

During the course of our review, three gaps were noted in the OCWD Service Area that are located within the City of Newport Beach (Figure 2). The total area not included in the Service Area is 31 acres and likely an inadvertent mapping error. The three gaps in the District's Service Area boundary are within the water service area of the City of Newport Beach. These gaps are fully within the SOI of OCWD, and the District has indicated no reason to not annex these gaps into their Service Area; however the District indicated that further research would need to be done prior to submitting an annexation application to OC LAFCO.

In conclusion, OCWD has always been able to meet the water demands of its Groundwater Producers, and it is expected the District would continue to do so in the future, accounting for population projections.

Consolidation Feasibility Study

In the October 4, 2022 application from OCWD to OC LAFCO for an updated MSR/SOI, OCWD requested preparation of a "Focused MSR" in response to the criticisms of the Grand Jury report to "dive deep" into the different issues that would need to be considered in consolidating the two agencies, OCWD and MWDOC. The consolidation feasibility study uses the adopted budgets of Fiscal Years 2021/2022, 2022/2023, and 2023/2024 from OCWD and MWDOC on which to estimate fiscal efficiencies upon consolidation. A Successor Agency is unknown, and pursuant to the CKH Act, the analysis assumed the Successor Agency would continue providing all services currently provided by each agency. In order to make a finding on fiscal sustainability of the Successor Agency, the study estimates the cost-savings of changes in staffing, board members, and two retirement plan options (defined benefit and defined contribution plans) for the Successor Agency, as well as a combined Statement of Net Position. In accordance with Gov. Code Section 56881(b)(1), LAFCO must make the determination that public service costs of a proposal are likely to be less than or substantially similar to costs under alternative means of providing services.

CHAPTER ONE | INTRODUCTION

1.0 History and Mission of Local Agency Formation Commissions

To improve regional planning and growth management as California's population grew after the end of World War II, the California Legislature adopted in 1963 the Knox-Nisbet Act, which established a Local Agency Formation Commission (LAFCO) in each county. Subsequently in 1971, the Legislature expanded the responsibilities of each LAFCO to include the establishment of spheres of influence (SOI) – areas of planned growth – for all cities and special districts. Furthermore, in 2001 the Legislature enacted the Cortese-Knox-Hertzberg Local Government Reorganization Act of 2000 (CKH Act) that has improved the effectiveness of LAFCOs to fulfill their legislative mission. The CKH Act requires SOIs to be reviewed every five years and updated as conditions warrant and prepare Municipal Service Reviews (MSRs) to evaluate the adequacy of service relative to current and future community needs.

1.1 Authority and Powers

The California Legislature has bestowed its authority to regulate local government boundaries, including the power to create and dissolve local agencies and change their boundaries, to LAFCOs. No local government can unilaterally change its own boundary, nor can voters use an initiative or referendum to modify a boundary to bypass LAFCO consideration.

Local Agency Formation Commission of Orange County

OC LAFCO serves Orange County cities, special districts, and the county to ensure effective and efficient delivery of municipal services.

The CKH Act directs LAFCOs to achieve three primary goals:

1. Discourage urban sprawl.
2. Encourage orderly governmental boundaries.
3. Preserve open space[3] and prime agricultural lands.[4]

[3] "Open space" is defined in Gov. Code Sections 56059 and 56060, and Gov. Code Section 65560.

[4] "Prime agricultural land" is defined in Gov. Code Section 56064.

Reviewing and approving (or denying) proposals to change boundaries is the method by which each LAFCO can regulate boundary changes. Adopting and revising SOIs is the method by which each LAFCO plans for the future.

Regulatory Authority

LAFCOs' regulatory authority resides in reviewing and approving or denying proposals to change the jurisdictional boundaries of cities and special districts.[5] Specifically, these types of boundary changes are commonly referred to as "changes of organization" include:

- Annexations;
- Detachments;
- City incorporations and disincorporations;
- Special district formations and dissolutions;
- Mergers;
- Consolidations;[6]
- Creation of subsidiary districts;
- Reorganizations, which combine two or more of these changes of organization in one proposal; and
- Exercise of new or different functions or classes of services, or divestiture of the power to provide particular functions or classes of services, within all or part of the jurisdictional boundaries of a special district. (CKH Act, Sec. 56021)

Every change of organization (or reorganization) requires five, sometimes six, steps:

1. Initiation of proceedings;
2. LAFCO review and approval;
3. LAFCO conducts hearings and 30-day reconsideration period;
4. Protest proceedings;
5. City or county conducts election, if needed; and
6. Completion of proceedings and filing with the State.

Additionally, LAFCOs' regulatory authority includes overseeing the process for a city or special district to provide new or extended services by contract or agreement outside its jurisdictional boundaries only if the city or district first requests and receives written approval from the local LAFCO. In addition to the law under which they are governed,

[5] LAFCOs do not regulate boundaries for counties and some local government agencies, including school districts, community facilities districts (Mello-Roos), and community college districts.

[6] "Consolidation" is defined in Gov. Code Section 56030 as: the uniting or joining of two or more cities located in the same county into a single new successor city or two or more districts into a single new successor district.

many LAFCOs have established local policies and procedures to support the efficient and effective processing of these changes of organization.

Planning Authority

LAFCOs' planning authority is carried out through the establishment and updating of SOIs as well as the preparation of comprehensive MSRs that analyze service or services within a designated geographic area.

Spheres of Influence

SOIs are established to identify the probable physical boundaries and service area of a local agency. Any person or local government may request an amendment or change to a SOI. State law requires that all changes of organization be consistent with the SOI independently established by the Commission for each city and special district. The statute further requires SOIs to be reviewed every five years and updated as conditions warrant.

With each SOI that is established, amended, or updated, LAFCOs are required to consider and prepare a written statement of its determinations with respect to the following factors codified in Government Code Section 56425:

(1) Present and planned land uses in the area, including agricultural and open-space lands.

(2) Present and probable need for public facilities and services in the area.

(3) Present capacity of public facilities and adequacy of public services that the agency provides or is authorized to provide.

(4) Existence of any social or economic communities of interest in the area if the commission determines that they are relevant to the agency.

(5) If a city or special district provides public facilities or services related to sewers, municipal and industrial water, or structural fire protection, the present and probable need for those facilities and services of any disadvantaged unincorporated communities within the existing sphere of influence.

Municipal Service Reviews

MSRs involve comprehensive reviews and regional studies on future growth and how local agencies are planning for their municipal services and infrastructure systems. These studies are prepared before or in conjunction with the establishment, review, or update of an SOI and are generally intended to inform in the areas of efficiency and

affordability of infrastructure and municipal service delivery and assist LAFCOs in the review and initiation of changes of organization.

In accordance with Gov. Code Section 56430, with each MSR that is prepared, LAFCOs are required to prepare a written statement of its determinations with respect to each of the following:

(1) Growth and population projections for the affected area.

(2) The location and characteristics of any disadvantaged unincorporated communities (DUCs) within or contiguous to the affected sphere of influence.

(3) Present and planned capacity of public facilities, adequacy of public services, and infrastructure needs or deficiencies including needs or deficiencies related to sewers, municipal and industrial water, and structural fire protection in any disadvantaged, unincorporated communities within or contiguous to the affected sphere of influence.

(4) Financial ability of agencies to provide services.

(5) Status of, and opportunities for, shared facilities.

(6) Accountability for community service needs, including governmental structure and operational efficiencies.

(7) Any other matter related to effective or efficient service delivery, as required by commission policy.

1.2 Local Agency Formation Commission of Orange County

The Local Agency Formation Commission of Orange County (OC LAFCO) is authorized by the California Legislature to maintain orderly boundaries for the County's 34 cities and 34 independent and dependent special districts through SOIs and MSRs. Since its creation, the Commission has formed more than nine cities, approved several changes of organization and reorganization involving cities and special districts and encouraged orderly development through the establishment of agency SOIs and preparation of numerous studies. OC LAFCO has also provided proactive leadership on efficient government through its implementation of the CKH Act and its web-based resources. In addition to State law, the Commission's authority is guided through adopted local policies and procedures that assist in the implementation of the provisions of the CKH Act and consideration of the local conditions and circumstances of Orange County.

Commission Composition

OC LAFCO is comprised of 11 commission members, with seven serving as regular members and four serving as alternate members. LAFCO members, called *commissioners,* are a composite of three county supervisors appointed annually by the Board of Supervisors, three city council members appointed by the City Selection Committee (made up of the 34 city mayors), three independent special district members appointed by the Special District Selection Committee (made up of the Board Presidents of the 27 independent special districts), and two representatives of the general public appointed by the Commission. The OC LAFCO commissioners as of **November 2024** are shown in Table 1.

Table 1: Orange County LAFCO Commission Roster (as of November 2024)

Commissioner	Appointing Authority	Current Term
Donald P. Wagner, Chair *County Member*	Board of Supervisors	2022-2026
Wendy Bucknum, Vice Chair *City Member*	City Selection Committee	2024-2028
Douglass Davert, Immediate Past Chair *Special District Member*	Independent Special District Selection Committee	2022-2026
James Fisler *Special District Member*	Independent Special District Selection Committee	2024-2028
Derek J. McGregor *Public Member*	Commission	2022-2026
Bruce Whitaker *City Member*	City Selection Committee	2023-2026
Vacant ***County Member***	Board of Supervisors	
Alternate Members		
Kathryn Freshley *Alternate Special District Member*	Independent Special District Selection Committee	2022-2026
Carol Moore *Alternate City Member*	City Selection Committee	2024-2028
Lou Penrose *Alternate Public Member*	Commission	2021-2025

Commissioner	Appointing Authority	Current Term
Vacant ***Alternate County Member***	Board of Supervisors	
OC LAFCO Staff Carolyn Emery, ***Executive Officer*** Scott Smith, ***Legal Counsel***		

In accordance with the CKH Act, while serving on the Commission, all commission members shall exercise their independent judgement on behalf of the interests of residents, property owners, and the public as a whole. All members serve four-year terms and there are no term limits.

Commission Meeting and Contact Information

The regular meetings of the Commission are held on the second Wednesday of the month at 8:15 a.m. The meetings are conducted in the Hall of Administration – Planning Commission Hearing Room located at County Administration North (CAN) First Floor Multipurpose Room 101, 400 W. Civic Center Drive, Santa Ana, 92701.

The OC LAFCO administrative offices are located at 2677 North Main Street, Suite 1050, in the City of Santa Ana, 92705. Commission staff may be reached by telephone at (714) 640-5100. The agency's agendas, reports, and other resources are available online at www.oclafco.org.

CHAPTER TWO | AGENCY OVERVIEW

2.0 Purpose of Municipal Service Review

Pursuant to the CKH Act, OC LAFCO will conduct service reviews in conjunction with SOI updates on or before January 1, 2008, and every five years thereafter. OC LAFCO has completed three cycles of MSRs; the first round completed between 2005 and 2008, the second round completed between 2008 and 2013, and the third round completed between 2013 and 2018. The fourth cycle is currently ongoing and expected to be completed near 2025. An MSR for OCWD was last conducted in 2013. This MSR and SOI update is being conducted as part of the fourth cycle of updates.

On October 4, 2022, the District filed an application with OC LAFCO to prepare a study focused on the potential consolidation of OCWD and Municipal Water District Orange County (MWDOC). OCWD's application was submitted following a report prepared by the 2021-2022 Orange County Grand Jury entitled, *Water in Orange County Needs 'One Voice'* (June 22, 2022).

In light of OCWD's application, this MSR process includes a comprehensive review of OCWD in accordance with the state mandate and a feasibility analysis of the potential consolidation of OCWD and MWDOC. Notably, the most recent five-year cycle MSR for MWDOC was conducted and approved by the Commission in 2020. That MSR did not, however, include a discussion of potential consolidation of the agencies.

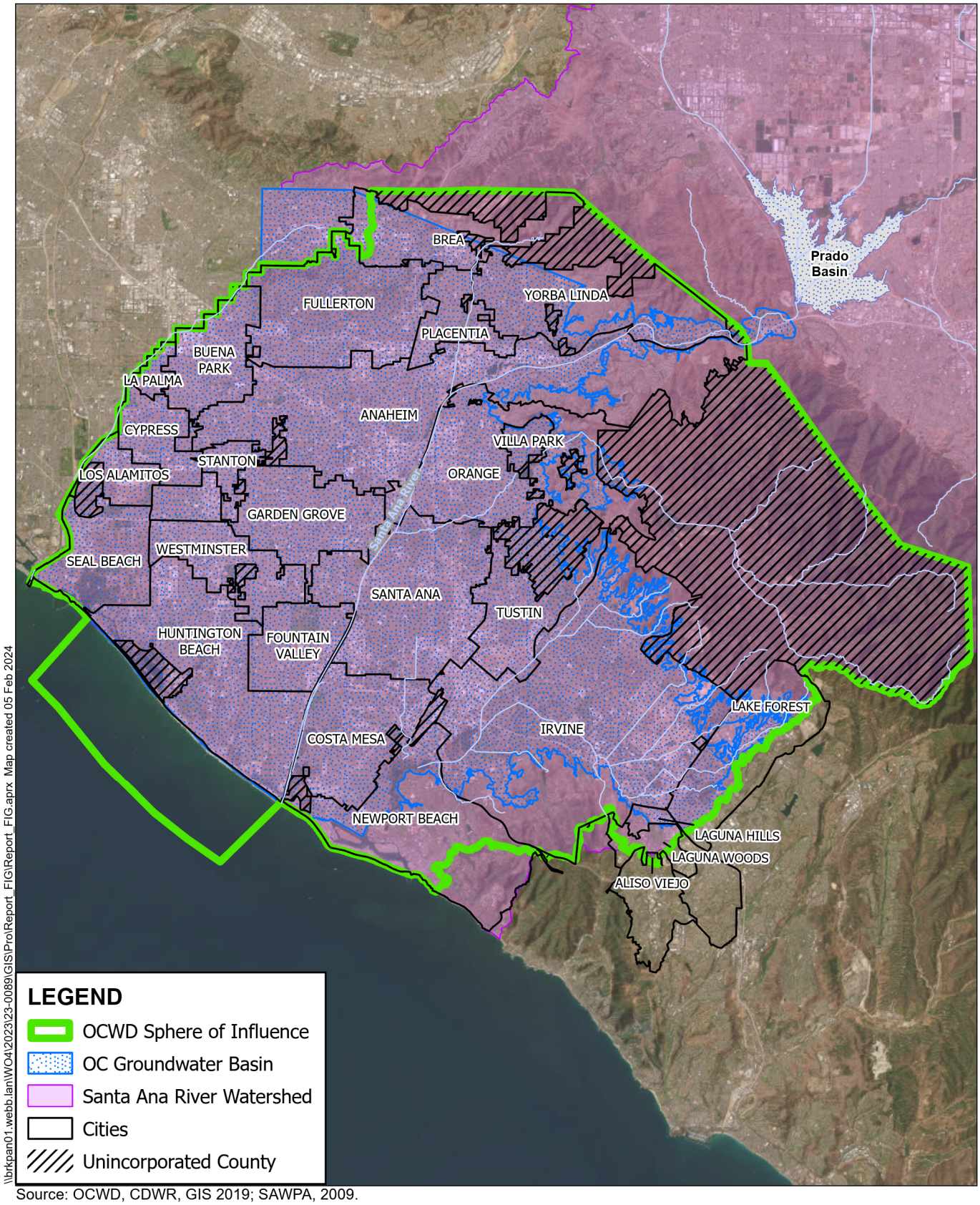
Therefore, this MSR report includes a comprehensive MSR update, an SOI update, and a feasibility study of consolidation of OCWD and MWDOC. Adoption of this MSR by the Commission does not trigger an action of governmental reorganization by OC LAFCO, OCWD, or MWDOC.

2.1 Agency Overview

OCWD was created in 1933 by a special act of the California Legislature ("OCWD Act") that granted broad powers to protect the water supply of the Coastal Plain of Orange County Groundwater Basin ("OC Groundwater Basin" or "Basin") (**Figure 1 – Orange County Groundwater Basin**). The California Department of Water Resources (DWR) identifies it as Basin No. 8-001. OCWD is charged with managing the Basin in order for the 19 retail water suppliers ("Groundwater Producers") that have wells in the basin to serve approximately 2.44 million northern and central Orange County residents with a reliable and sustainable water supply. As of 2023, 85 percent of the annual water demand of the Groundwater Producers is supplied with water from the Basin.

The Basin is not adjudicated. Adjudicating a groundwater basin is a lengthy and expensive endeavor to have a court define each pumper's water rights. The groundwater basins in the upper Santa Ana River Watershed along the river in San Bernardino and Riverside Counties were all adjudicated by 1970. However, the early leaders of OCWD ("Committee of Twelve") collectively agreed in the 1950s, during a housing boom with wells drying up, that approaching the water rights as a group, instead of individuals would make it possible to manage and replenish the basin so that all had more water. In addition, these leaders concluded that "equitable financing for importing water to replenish the groundwater basin was the most practical solution to having adequate water for landholders and inhabitants alike" (OCWD 2014, pp. 24-25).

This common pool approach without adjudication continues today. Water surplus in wet years is shared the same as shortage in dry years. Every pumper has an equal right to pump as much water as can be beneficially used, but that each has the obligation to pay the costs of replacing what was extracted (OCWD 2014, p. 25).



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Source: OCWD, CDWR, GIS 2019; SAWPA, 2009.

Figure 1 – Orange County Groundwater Basin

OCWD Municipal Service Review

ALBERT A. WEBB ASSOCIATES

MISSION STATEMENT

OCWD's mission is to provide a reliable, high-quality water supply in a cost-effective and environmentally responsible manner.

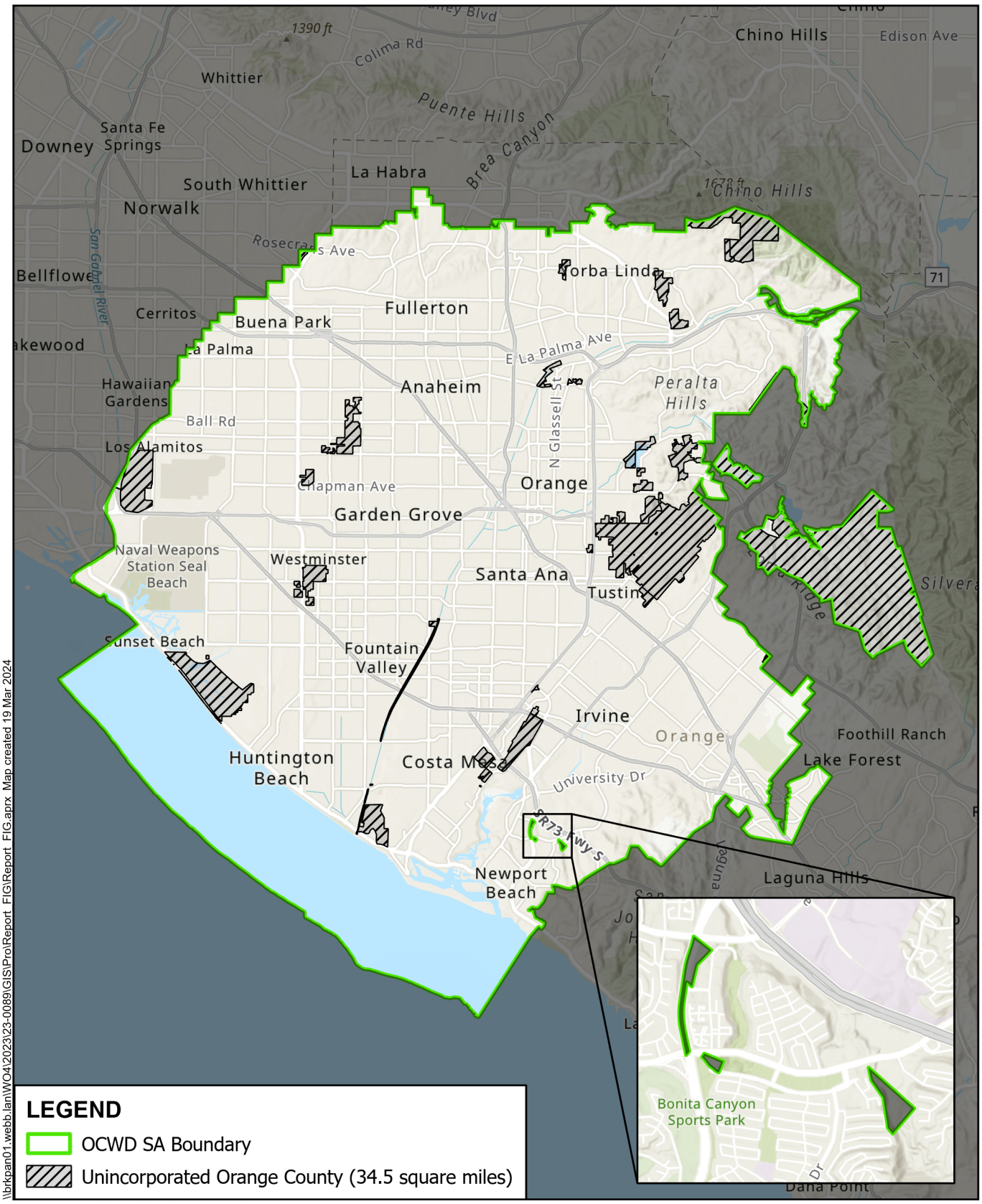
The Cities of Anaheim, Fullerton, and Santa Ana are pumpers in the Basin as well as independent member agencies of The Metropolitan Water District of Southern California (MWD), which provides imported water from the State Water Project (Sacramento/San Joaquin Delta) and the Colorado River Aqueduct. The Cities of Anaheim and Santa Ana joined MWD when it formed in 1927 and Fullerton joined in 1931. By 1951, other cities desired to join MWD to access imported water. Because MWD had a policy that cities could join as geographic groups, the cities formed MWDOC. MWDOC acts as a water wholesaler and pass-through agency representing 27 of Orange County's water suppliers (except Anaheim, Santa Ana, and Fullerton) so that they have the ability to purchase MWD imported water and have representation on the MWD Board of Directors. OCWD is the largest purchaser of imported water from MWDOC.

OCWD is governed by the OCWD Act (Stats. 1933 c. 924, p. 2400). "Managing the basin" as mandated by the OCWD Act generally consists of groundwater monitoring, wastewater reclamation, monitoring surface flows of the Santa Ana River at and below Prado Dam, groundwater recharge projects and seawater barrier systems as well as supporting the 19 Groundwater Producers with funding for groundwater treatment systems, laboratory facilities for water testing, and advocacy at state and federal venues.

VALUES STATEMENT

OCWD's Board of Directors and staff are committed to serving the people of Orange County. Solid science and state-of-the-art technologies guide their decisions. OCWD is committed to sound planning and investment, high standards for water reliability, exceptional water quality, environmental stewardship, sound financial management, and transparency.

As of 2023, the OCWD sphere of influence (SOI) totals 569 square miles, or approximately 71 percent of the entire county. The District's Service Area is 430 square miles and includes 52 square miles of ocean, as shown on **Figure 2 – OCWD Service Area**.



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Source: OCWD GIS, Feb.15, 2024

Figure 2 - OCWD Service Area

OCWD Municipal Service Review

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As shown on Figure 2, three small gaps or holes in the Service Area that are located within the water service area of the City of Newport Beach have been identified. These are likely inadvertent mapping errors but further research would be needed. The northerly Service Area gap is partly street right-of-way and partly owned by The Irvine Company; the middle gap does not have an assigned parcel number; and the southerly gap touches on six different parcels, three of which are owned by City of Irvine, and three are owned by a property management group. OCWD has indicated that they have no reason not to include these areas into their official Service Area and recognizes further research would need to be done prior to submitting an annexation application to OC LAFCO.

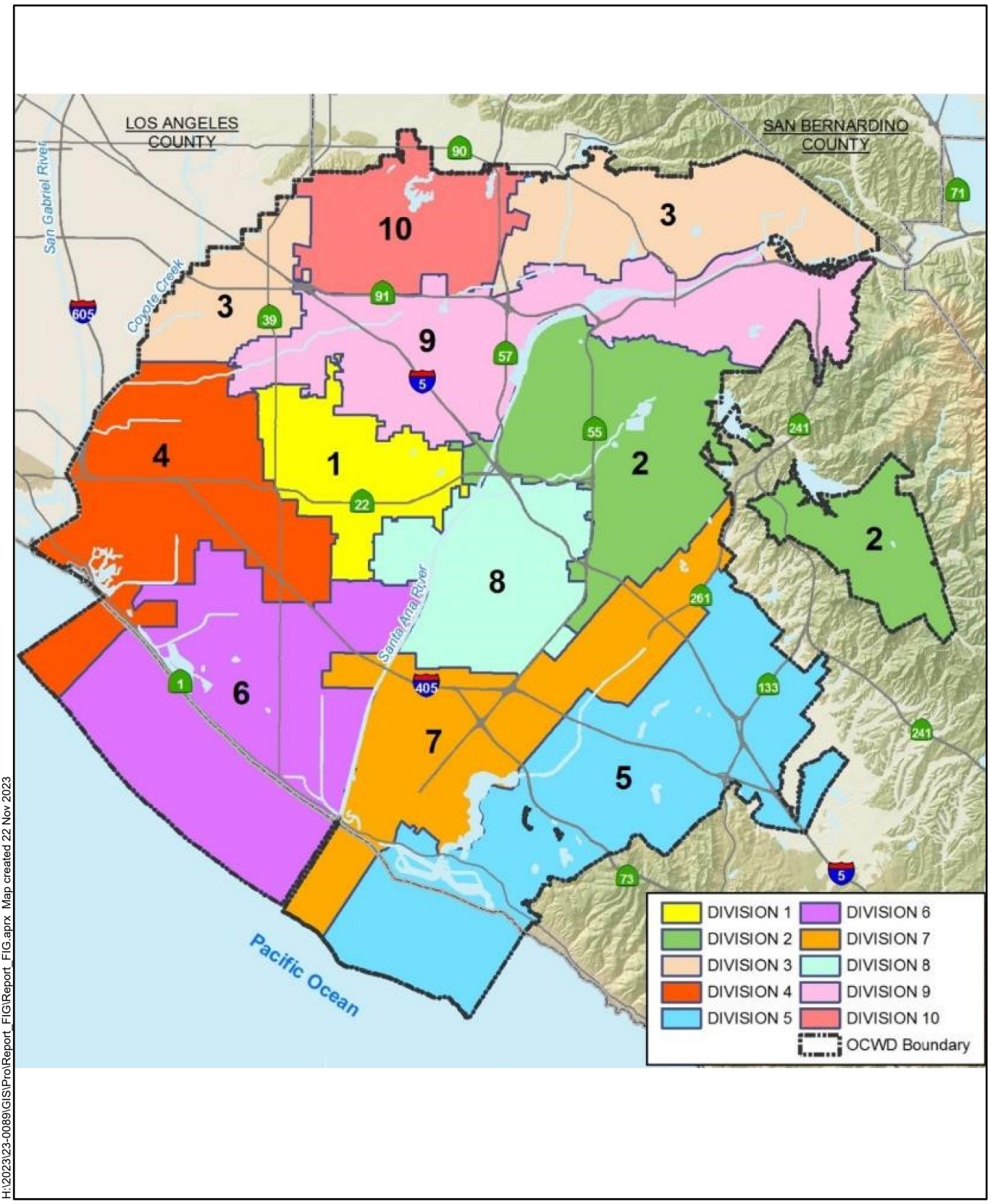
The OCWD Act established that the District boundary may not extend beyond the limits of the Santa Ana River Watershed and all areas within the OCWD must also be included within the service area of MWD.[7] Governance is provided by a 10-member Board of Directors that represent the 10 Divisions of the District. The Cities of Anaheim, Fullerton, and Santa Ana each appoint one City Councilmember to the OCWD Board and the other seven Divisions are represented by elected individuals (**Figure 3 – OCWD Directorial Divisions**). All directors serve four-year terms. A summary profile of OCWD is provided in **Table 2 – Agency Profile** (next page).

[7] The City of La Habra is technically within the Santa Ana River Watershed and the OC Groundwater Basin but is not in OCWD's sphere of influence. City of Brea is partly in the SOI. This is because La Habra and Brea's portion of the Basin is hydrologically separate from OCWD's portion and the Cities have managed it as such; specifically, OCWD's surface water recharge efforts do not replenish La Habra/Brea's part of the Basin and instead, groundwater flows from La Habra/Brea into the OCWD area. The Cities of La Habra and Brea have formed the City of La Habra Groundwater Sustainability Agency (GSA) and at one time requested to DWR for an internal jurisdictional boundary modification to remove the cities from the OC Basin and create a new groundwater basin, but DWR has not issued a decision.

Table 2: Agency Profile

District	Orange County Water District
Website	www.ocwd.com
Agency Type	Special District
Address	18700 Ward Street, Fountain Valley, CA 92708
Date Formed	1933
Employees (full-time)	226.5, as of July 1, 2023
Key Services	Provide potable and non-potable groundwater supply to 13 cities, five retail water agencies, and one investor-owned water utility ("19 Groundwater Producers").
Service Area	
Member Agencies ("19 Groundwater Producers")	Cities of Anaheim, Buena Park, Fountain Valley, Fullerton, Garden Grove, Huntington Beach, La Palma, Newport Beach, Orange, Santa Ana, Seal Beach, Tustin, and Westminster East Orange County Water District, Golden State Water Company, Irvine Ranch Water District, Mesa Water District, Serrano Water District, and Yorba Linda Water District
Service Area	Land Portion: 378 square miles Ocean Portion: 52 square miles
Sphere of Influence	569 square miles
Land Uses	Residential, commercial, industrial, institutional, and open space
Population Served	2,387,383 persons, as of January 1, 2023[(a)]
Last MSR Conducted	February 13, 2013
Governance	
Local Representation	Ten-member Board of Directors, with each director representing a Division and elected to a four-year term by voters within their Division, except for the Cities of Anaheim, Fullerton, and Santa Ana who appoint a City Councilperson to serve on the Board.
Board Compensation	Effective October 2023, Board members are compensated $330.75 per meeting for up to ten meetings per month. Board members are eligible for medical, dental, vision, and life insurance benefits, and participation in 401(a) and 457 plans.
Board Meetings	Monthly on the 1st and 3rd Wednesday at 5:30 p.m. Meetings are held at the District office and open to the public.
Agency Contact	John Kennedy, P.E., General Manager

[(a)] From Center for Demographic Research, California State University, Fullerton.



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Source: OCWD GWMP 2015 Figure 1-6

Figure 3 – OCWD Directorial Divisions

OCWD Municipal Service Review

Not to Scale

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CHAPTER THREE | OCWD MUNICIPAL SERVICE REVIEW

3.0 MSR History for OCWD

OC LAFCO has prepared the following past studies and updates for OCWD.

- First Cycle of MSRs: September 2006
    - No significant issues were noted during this MSR for OCWD. The Service Area population was projected by the MSR to grow modestly over the next 20 years and does not appear to have negatively impacted the District's service capacity. The District's infrastructure was adequate to address future needs including increased water demand from infill development and annexation of new territory. The District had no identified financial constraints. The District collaborated and shared facilities for water resource management.
    - Six government structure options were discussed in the 2006 MSR: (1) maintain the status quo; (2) annexation of lands within Anaheim; (3) annexation of lands within Irvine Ranch Water District (IRWD); (4) annexation of lands within Yorba Linda Water District (YLWD); (5) reduce the SOI to exclude areas that are outside the MWD service area; and, (6) merge OCWD and MWDOC. The MSR acknowledged that a merger of OCWD and MWDOC had not been considered in the past due to the differing missions of the agencies and was "not considered feasible" for reasons including: "implementing it would take an act of legislation because it involves changing OCWD's principal act; a merging of these two agencies would not necessarily achieve great efficiencies in overall management of water resources in Orange County; and keeping these two agencies separate maintains an important check and balance system, preventing one agency from having control over water supply for the entire County." Because of the necessary review required into the potential annexation of the aforementioned areas into OCWD, the SOI update was delayed. Notably, the 2006 MSR did not include a feasibility study and the idea for merging OCWD and MWDOC was generated through a stakeholder group process.
    - SOI Update: May 14, 2008
        - A SOI update for OCWD was approved in 2008 resulting in several changes in the District's SOI. This was a continuance of the 2006 MSR. As a result, the SOI aligned closer to the Santa Ana River Watershed boundary in the southern part of the District. The Laguna

Coast Wilderness Park was removed from the SOI since it drains away from the OC Groundwater Basin and portions of El Toro Water District were also removed. The SOI was enlarged into the ocean and finally, portions of the City of Brea were added to the SOI because in the event surface water or groundwater began to flow into the OC Groundwater Basin from Brea and the City began pumping that water, then OCWD might want to annex Brea to protect water rights within the watershed and manage the OC Groundwater Basin more effectively.

  - The areas included in this annexation proposal, however, were already wholly contained within OCWD's original 1977 SOI and were historically designated as "the probable physical boundaries and service area of" OCWD, according to Gov. Code Section 56076.

- Second Cycle of MSR: November 12, 2008
  - The Commission reconfirmed the MSR and SOI determinations of OCWD from the first cycle of MSRs.
- Third Cycle of MSR: February 13, 2013
  - The Commission reconfirmed the MSR and SOI determinations of OCWD from the second cycle of MSRs.
- On May 14, 2014, OC LAFCO approved the Anaheim/IRWD/YLWD annexations to OCWD (DA 13-13) that were initially contemplated in the September 2006 MSR. This annexation increased the Service Area by 23 square miles and increased the District boundary at that time by 7 percent. OCWD entered into Annexation Agreements with Anaheim/IRWD/YLWD pursuant to OCWD's annexation policy. Development of the Annexation Agreements was collaborative in a facilitated process with OCWD and the 19 Groundwater Producers. The goal of the Annexation Agreements is to balance the benefit of extending OCWD oversight and management to new territory within the OC Groundwater Basin with the potential financial impacts to other Producers. Several notable components of the Annexation Agreements are noted below:
  - Included within the agreement terms was a 10-year moratorium on any future annexations by Anaheim, IRWD, and YLWD beginning October 2013, which expired in October 2023.
  - YLWD and IRWD were both restricted to a BPP of 70 percent regardless of the rate set annually by OCWD; YLWD for 5 years and IRWD for 10 years. The IRWD restriction expired in October 2023.

- Anaheim and IRWD are required to send stipulated quantities of sewage flows to the Orange County Sanitation District (OC San) treatment facilities for the following periods: 50 years for Anaheim (2013-2063) and 20 years for IRWD (2013-2033).
- Payment by Anaheim, IRWD, and YLWD of the annual annexation charge to OCWD in the amounts of $110,000/year, $395,000/year, and $290,000/year, respectively. These funds go to the OCWD general fund, water purchased for basin recharge, and programs to increase recharge.

3.1 Growth and Population Projections

OCWD is a Sponsor of the Center for Demographic Research (CDR) at California State University, Fullerton. Sponsors of CDR receive demographic data for their applicable geographic areas, which is especially important for entities like OCWD that do not fully align with city or county boundaries. Because OCWD does not have land use authority, it relies on the cities and county within its Service Area to provide CDR accurate, timely, and thorough data on growth projections. The demographic data provided herein comes from the CDR *2023 Orange County Progress Report,* the U.S. Census Bureau including American Community Survey and California Department of Finance*.* OC LAFCO is a Contributing Partner to CDR and uses their services for OC LAFCO MSR reports.

According to the 2020 Census, the OCWD Service Area includes approximately 2.44 million Orange County residents. Projections by CDR of population, housing, and employment within the OCWD existing Service Area are shown in Table 3. The Service Area population is projected to reach a high of approximately 2.55 million residents by 2045, which is an increase of approximately 4.5 percent from 2020.

Table 3: County and District Growth Projections, 2019-2050

		2019	2025	2030	2035	2040	2045	2050	Overall Change
Population	OCWD	2,441,587	2,468,968	2,505,669	2,529,630	2,545,747	2,550,830	2,544,170	+4.2% +102,583
	County	3,196,231	3,239,474	3,287,447	3,327,150	3,345,665	3,343,718	3,327,124	+4.1% +130,893
Households	OCWD	830,225	867,141	900,711	922,873	938,187	955,512	973,335	+17.2% +143,110
	County	1,124,849	1,176,165	1,220,390	1,252,783	1,271,438	1,290,931	1,311,738	+16.6% +186,889
Employment	OCWD	1,470,235	1,470,235	1,537,772	1,574,038	1,603,116	1,623,409	1,643,992	+11.8% +173,757
	County	1,805,476	1,843,470	1,897,773	1,941,915	1,976,791	1,997,885	2,018,954	+11.8% +213,478

Source: OCP-2022 (Center for Demographic Research, Cal State Fullerton)

The most recent OCWD Groundwater Management Plan is dated 2015. The District repurposed the plan in 2017 (and renamed as the "Basin 8-1 Alternative") to comply with the Sustainable Groundwater Management Act of 2014 (SGMA). The projected population estimate used for the Groundwater Water Management Plan/Basin 8-1 Alternative is consistent with what is presented in Table 3, above and states, "Population within OCWD's Service Area is expected to increase from approximately the current 2.38 million to 2.54 million by 2035…" (Basin 8-1 Alternative, p. 10-10).

The city with the highest population growth rate during 2022 within all of Orange County was the City of Brea (2.6 percent), followed by City of Placentia (2.3 percent) and City of Los Alamitos (2.0 percent) (OCP, p. 189). All three cities are within OCWD's SOI and Placentia and Los Alamitos are also within the Service Area.

Since 2006 when the first cycle MSR report for OCWD was prepared, the District has not observed adverse effects of population growth on its ability to perform services. In fact, groundwater pumping has declined over this time period, as shown in Table 4, which is the result of several factors including water conservation efforts during droughts, and water quality constraints to pumping (e.g., PFAS contamination). Future groundwater pumping, however, is projected to increase, as shown in Table 4.

Table 4: Groundwater Pumping, 2013-2025

Fiscal Year Ending	Groundwater Pumped in OCWD (AF)[a]	Percentage Change in Groundwater Pumping from Prior Year
Actual		
2013	309,295	-
2014	330,782	6.9%
2015	305,259	-7.7%
2016	277,090	-9.2%
2017	301,637	8.9%
2018[b]	236,916	-21.5%
2019	303,496	28.1%
2020[b]	277,195	-8.7%
2021	281,793	1.7%
2022	256,921	-8.8%
2023	245,210	-4.6%
Average Annual Percentage Change in Groundwater Pumping		**-1.5%**
Projected[c]		
2024	280,000	14.2%
2025	292,000	4.3%

Source: *Table 1: Historical Groundwater Production Within OCWD*, *2021-2022 Engineer's Report*. Values exclude In-Lieu Program water, MWD Groundwater Storage Program extractions, and any groundwater used for the Talbert Barrier.
(a) For non-irrigation and irrigation uses, where irrigation is for agricultural, horticultural, or floricultural crops and for pasture grown for commercial purposes.
(b) In-Lieu Program water supplies were available and used to decrease groundwater pumping in FY 2017-2018 and FY 2019-2020.
(c) Source: *Table 5: Water Demands Within OCWD, 2022-2023 Engineer's Report*. Projected assuming average hydrology. Includes BEA-exempt groundwater pumped pursuant to Section 38.1 of the OCWD Act. However, that volume is not included in calculations of a projected BPP.
AF = acre-feet.

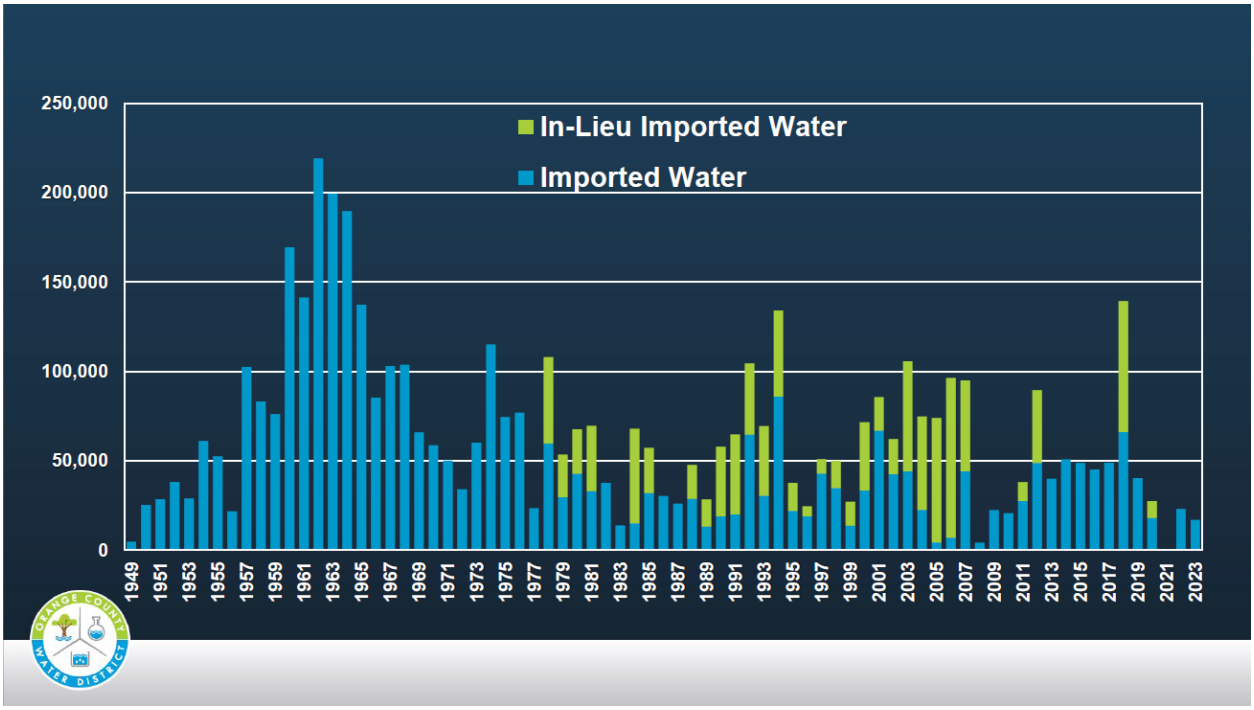
OCWD's In-Lieu Program brings additional treated imported water supplies via MWDOC (when they are available for purchase) for Producers to use. Producers are asked to turn off their wells and take imported treated water in lieu of pumping groundwater. OCWD will pay the 19 Groundwater Producers the incremental additional cost of taking imported water versus groundwater to make the cost of this water equivalent to groundwater (2015 OCWD Groundwater Management Plan (GMP), p. 5-11). This supply source is not available consistently, as noted in Table 4 (i.e., available in FY 2017-2018 and FY 2019-2020).

The source of water for the In-Lieu Program is different than supplemental replenishment water available for purchase from MWD via MWDOC. There are several types of water available from MWD: treated (potable) or untreated (non-potable), and uninterruptible or

interruptible. Interruptible water can be shut-off, hence why it is cheaper than uninterruptible water which is not subject to being shut-off. Uninterruptible treated or untreated water is also known as "full-service" water that can be used for domestic and municipal uses and OCWD uses it for groundwater recharge. Interruptible in-lieu water from MWD is generally no longer available unless it is provided under the terms of a Cyclic Program agreement.[8]

MWDOC charges an annual capacity charge from OCWD (in addition to all other member agencies) that is based on the rate of MWD imported water used between May 1 and September 30 of each year. There is no minimum amount that must be purchased. The capacity charge is paid over the following three years. If no imported water from MWDOC is used during this five-month period, then no capacity charge is applied. OCWD's purchases of imported water through MWDOC for replenishment of the Basin are shown in Chart 1. In-Lieu Water, which is also imported water from MWDOC, is identified in the years it was available.

Chart 1 – OCWD Imported Water Purchases, 1949-2023 (acre-feet)



[8] Cyclic Program agreements are between MWD and member agencies for groundwater or surface water storage or pre-deliveries within MWD's service area. (MWD, *FY 24-25 Rate Structure Administrative Procedures Handbook,* p. 8, located at https://www.mwdh2o.com/media/gzboneuu/fy24-25-rate-structure-administrative-procedures-handbook.pdf)

Some Producers meet 100 percent or more of their annual water demands from groundwater, while others pump well below the BPP with much smaller demand for groundwater, so it is difficult to correlate the demand for groundwater supplies from the whole OCWD Service Area with changes in the population. What can be certain is that groundwater pumping has and will continue to vary from year to year, as shown in Table 4. Because the population of the District is expected to increase (Table 3), Producer's demand for groundwater supplies will assumably increase, on the whole.

Given that OCWD has consistently indicated in past MSR and SOI Updates that population growth is expected to have minimal effect, if any, on the ability to provide water service, the reader may question the District's investment of over $900 million to expand the treatment capacity of the District's Ground Water Replenishment System (GWRS) in order to put more local, recycled water back into the basin if increased demands are not expected; or why there is investment in capturing more water at Prado Dam using the new Forecast-Informed Reservoir Operations (FIRO) management strategy. OCWD has indicated these projects are not to address future growth per se, but to increase the District's ability to capture more local water for the 19 Groundwater Producers and increase the BPP for the existing customer base so that less imported water, which is more expensive than groundwater and less reliable, has to be brought into the Basin to meet water demands. For example, the District estimates in WY 2024-2025 the estimated cost for one AF of groundwater from the Basin is $1,009 compared to the estimated cost of treated, uninterruptible supplemental water is $1,380 per AF (OCWD 2024, p. 25). OCWD passes on cost-savings to the 19 Groundwater Producers in the form of a reduced RA when less imported water has to be purchased by the District.

The OCWD Act does not dictate the amount of water that can be pumped from the OC Groundwater Basin. But OCWD attempts to influence pumping rates in the Basin primarily through how it sets the Basin Production Percentage (BPP) for Producers each year. The BPP is defined in the OCWD Act as, "…the ratio that all water to be produced from groundwater supplies within the district bears to all water to be produced by persons and operators within the district from supplemental sources as well as from groundwater within the district." The origin of the BPP begins with attempts by the District in the 1960s to mitigate low groundwater levels that had caused shifts in the aquifer and land subsidence resulting in seawater intrusion. Even as groundwater levels recovered, the seawater continued to flow inland and new communities like Fountain Valley were likely to return to swamp land if groundwater continued to rise. The BPP and Basin Equity Assessment (BEA) were then established to influence the quantities of groundwater pumping throughout the Basin (OCWD 2014, p. 29).

All groundwater pumping pays the Replenishment Assessment (RA) which is currently $344/af for FY2024-25. Non-agricultural groundwater pumping (such as occurs by the 19 Producers) also pays what is called the Additional Replenishment Assessment (ARA) which is also set at $344/af for FY2024-25. So the total combined assessment paid by the 19 Producers is $688/af while an agricultural groundwater user only pays $344/af. For convenience in this report the combined assessment paid by the 19 groundwater producers will be referred to as the RA.

The BPP is established each April by the OCWD Board of Directors and goes into effect each July for all Producers that use more than 25 AF per WY. For example, if the BPP is set at 75 percent, then the Producers can pump 75 percent of their water demand from the OC Groundwater Basin and only pay the RA. Calculating the BPP involves evaluating groundwater storage conditions, availability of recharge water supplies, and basin management objectives in order to divide projected groundwater supplies by projected total water demands to get the BPP. OCWD's stated goal is to set the BPP as high as possible to allow Groundwater Producers to sustainably maximize pumping and reduce their overall water supply cost by avoiding the purchase of imported water supplies that are more expensive (Basin 8-1 Alternative, p. 10-7).

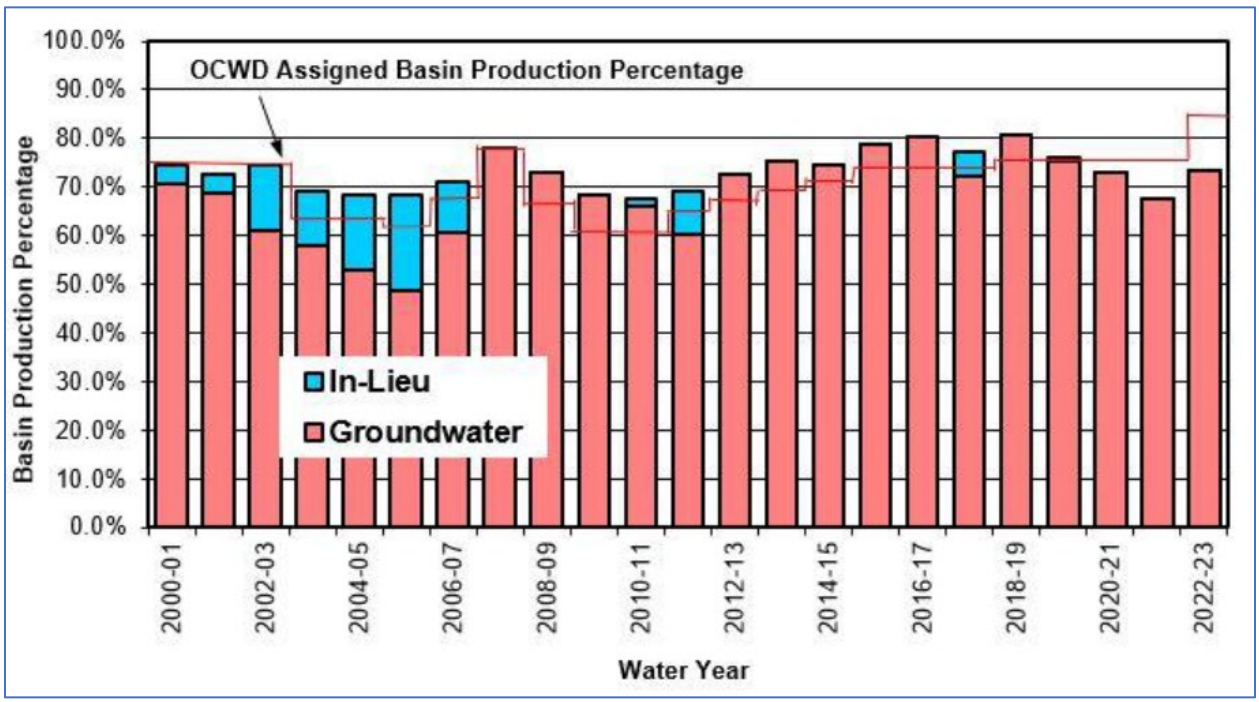
Groundwater pumping less than or equal to the BPP is charged the RA, and pumping more than the BPP is charged the RA plus the Basin Equity Assessment (BEA), which can be increased as needed by OCWD to further disincentivize pumping. Agricultural pumpers pay 50 percent of the RA rate.

The origin of the RA was to ensure everyone paid alike based on the amount of water pumped, regardless of when they started pumping (i.e., no special protections or reservations for newcomers). "Beginning in 1954, each pumper was required to register the city's well(s) with OCWD, maintain records of the amount withdrawn during the year, report that figure, and pay a tax (the RA) in proportion to the amount of water used" (OCWD 2014, p. 27). Furthermore, because the RA is calculated on how much was pumped the prior year and the costs to replenish it, the Producers are incentivized to consider how their efforts affect the groundwater supply.

In addition to the BPP, pumping rates in the Basin are influenced by the cost of the RA and keeping it less than the cost of an AF of treated, imported water. The BPP fluctuates periodically, as shown in Chart 2. The red line in Chart 2 is the assigned BPP established by OCWD each year and the columns represent the actual BPP achieved by the Producers (i.e., the percentage of their total water demands met with Basin groundwater). The columns combine the percentage of total water demand met with groundwater supplies plus the percentage of total water demand met with In-Lieu

Program water (i.e., In-Lieu Program water is when wells are turned off and imported water used instead). For example, during WY 2022-2023, OCWD increased the assigned BPP from 77 to 85 percent, but less pumping was realized with an actual BPP of 73.3 percent.. This graph shows when Groundwater Producers collectively pump more than or less than the assigned BPP .

Chart 2 – OCWD Assigned and Actual Basin Pumping Percentage, WY 2001-2023



Excerpt from 2022-2023 Engineer's Report, p. 7.

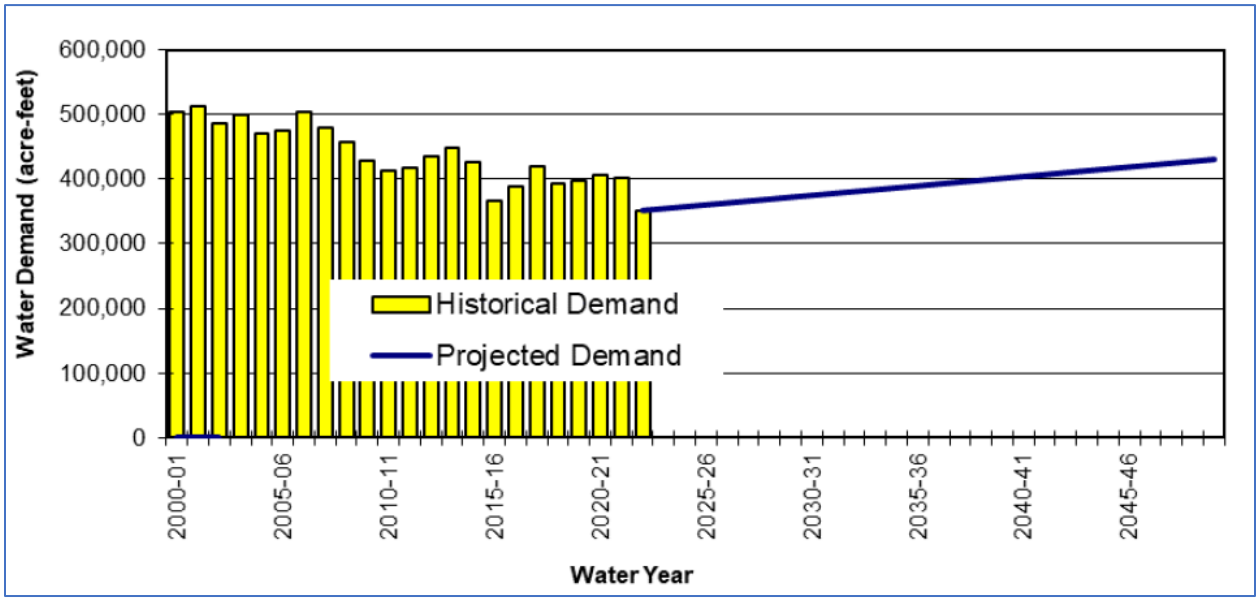
As shown in Chart 2, in WY 2020-2021, 2021-2022, and 2022-2023 the actual water demand met with groundwater supplies was less than the BPP (or the assigned allowable amount of groundwater that could have been produced without incurring BEA). The years when In-Lieu water (imported water) was available and utilized are the same in Charts 1 and 2.

Although the OCWD Service Area and SOI have not reached the anticipated buildout, the District does not expect significant population growth for the foreseeable future based on population projections prepared by CDR as shown in Table 3. Furthermore, the District intends to match growth with effective water conservation efforts.

OCWD prepares an annual forecast of water demands in its Engineer's Report using population projections provided by CDR and each Producers' projections of total water

demands. According to the 2022-2023 Engineer's Report, total water demands[9] may increase by 22.5 percent from 351,719 AF in WY 2022-2023 to 431,000 acre-feet per year (AFY) by 2050, an increase of approximately 79,281 AFY, or about 2,900 AF every year for 27 years. This is reflected in Chart 3. The 2050 projection includes future water conservation (reduction in water demand). As shown in Chart 3, the projected total water demand in 2050 is less than the total water demand of WY 2000-2001. OCWD staff believes these projections are high and is jointly working with the Municipal Water District of Orange County to prepare updated future water demand estimates.

Chart 3– OCWD Water Demands and Projections, WY 2001-2050



Excerpted graph from 2022-2023 Engineer's Report (page 21).

Meeting future water demands will not be met by groundwater supplies alone and will require a combination of water supply sources plus demand management (conservation). This may be why OCWD does not separate water supply projections by supply source because it is the totality of the supply and the ability to switch from one source to another that will meet water demands.

Water demands within OCWD Service Area are expected to be met over the planning horizon of this MSR analysis including the future increase in population, given the following factors: (1) the District's collaboration with CDR to proactively monitor

[9] Total water demands include the use of groundwater, MWD In-Lieu Program water, supplemental sources (imported water and Santiago Creek native water), and recycled water (which is not included within supplemental sources if originating from within the Santa Ana River watershed). Groundwater, supplemental water, and recycled water that is used by OCWD for groundwater recharge is excluded from total water demands.

demographic changes in the Service Area and in particular, population growth; (2) District projections accounting for future growth in each Producer's Service Area; and (3) the District's demonstrated ability to meet water demands in the past that were higher than current water demands.

3.2 Disadvantaged Unincorporated Communities (DUC)

The CKH Act defines a disadvantaged unincorporated community (DUC) as, "inhabited territory, as defined by Gov. Code Section 56046, or as determined by commission policy, that constitutes all or a portion of a "disadvantaged community" as defined by Section 79505.5 of the Water Code." The term, "inhabited territory" in Gov. Code Section 56046 means territory within which there resides 12 or more registered voters. "Disadvantaged Community" in Water Code Section 79505.5 is defined as "a community with an annual median household income that is less than 80 percent of the statewide annual median household income."

Senate Bill 244 (Wolk; effective January 1, 2012) imposed several new requirements with regard to DUCs. The Legislature found DUCs lack access to basic infrastructure, including but not limited to streets, sidewalks, storm drainage, clean drinking water, and adequate sewer service. The purpose of the new requirements was to include DUCs in the scope of MSR and SOI updates prepared by each LAFCO in order to avoid a situation where an agency might exclude a DUC from a future annexation or provision of key services, such as water and sewer. The CKH Act requires an MSR to include determinations regarding the present and probable need for public facilities or services related to water in any DUC that is within the existing OCWD sphere of influence.

There are approximately 125 square miles of unincorporated county land within OCWD's SOI. In addition, there are disadvantaged communities identified based on American Community Survey five-year estimates at the census block level. According to CDR, the most recently measured statewide annual median household income is $84,097, 80 percent of which is $67,277.60. When the two datasets are combined, there are 11 DUCs within OCWD's Service Area that meet these criteria totaling 0.85 square mile (541 acres), as shown on **Figure 4 – Disadvantaged Unincorporated Communities**. This is an increase in the number of DUCs from prior years.

The characteristics of each DUC are described below:

1. City of Anaheim Sphere of Influence

There are four neighborhoods that qualify as DUCs that are collectively referred to as the "Southwest Anaheim DUC." The DUCs total 192 acres and are generally located north of

Katella Avenue, west of Brookhurst Street, east of Magnolia Street, and south of Lincoln Avenue.

Although located outside of the City limits, water service and sewer service are provided by the City of Anaheim (Anaheim 2020 UWMP, p. 3-5). Solid waste disposal service for the DUCs is provided by the City through a contract with Republic Waste Services.

2. City of Stanton Sphere of Influence

There are two DUCs in the City of Stanton's Sphere of Influence; the first is 27 acres located at the northwest corner of Katella Avenue and Magnolia Street ("Mac/Syracuse DUC"), and the second is 34 acres located northeast of the intersection of Dale Avenue and Chapman Avenue ("Dale/Augusta DUC").

Water service to Mac/Syracuse DUC is provided by Golden State Water Company, which also serves the City of Stanton (Garden Grove 2020 UWMP, p. 3-3). Water service to Dale/Augusta DUC is provided by a combination of the City of Garden Grove and Hynes Estates Mutual Water Company.

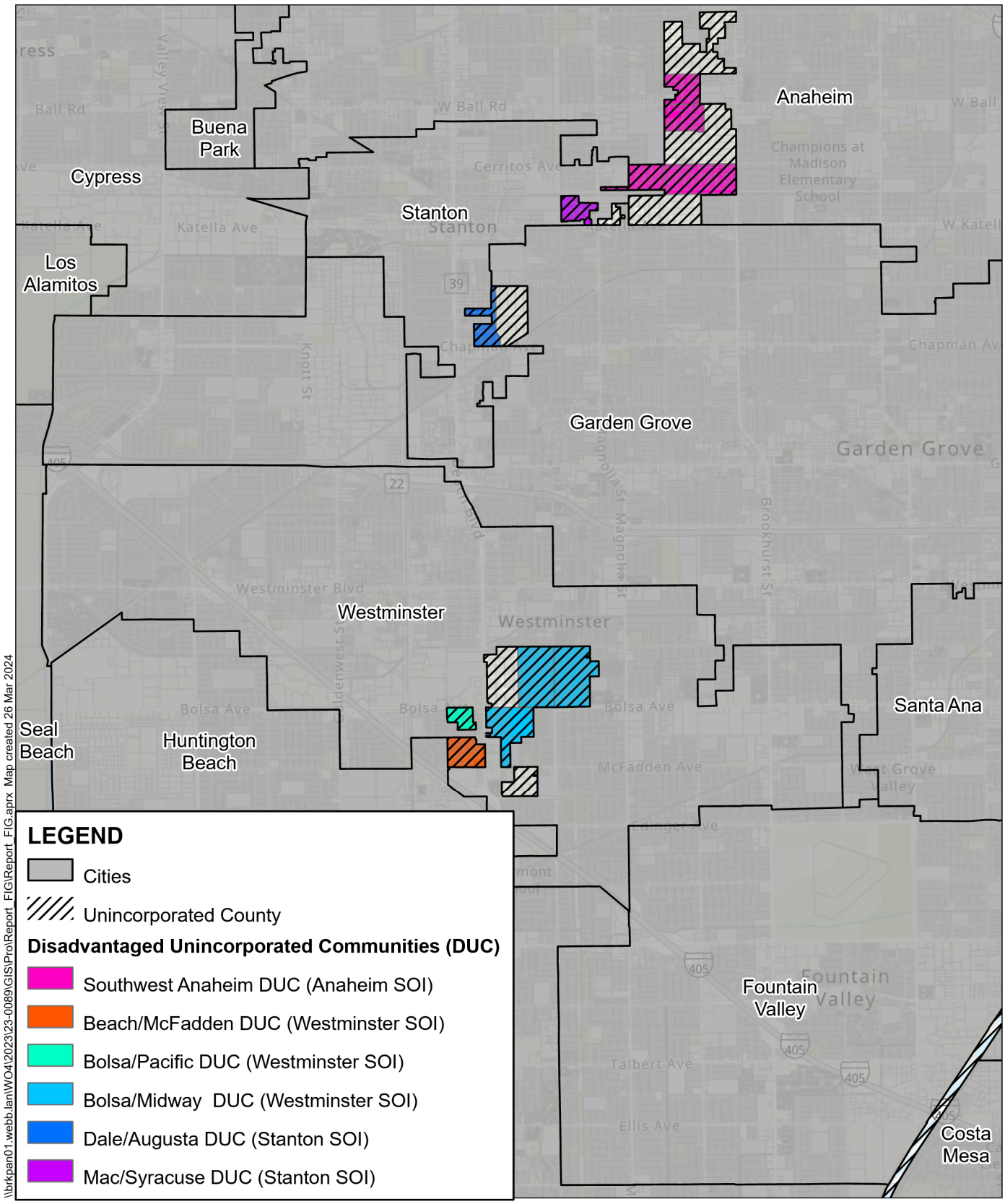
The Garden Grove Sanitary District provides wastewater services and Republic Waste Services provides solid waste disposal services to both DUCs (OCLAFCO 2023, p. 54).

3. City of Westminster Sphere of Influence

There are five DUCs in the City of Westminster Sphere of Influence and they collectively total 288 acres. Three DUCs are located east of State Route 39 (Beach Blvd.) and south of Westminster Boulevard, which are identified as the "Bolsa/Midway DUC." The remaining two DUCs are located south of Bolsa Avenue, north of McFadden Avenue, west of State Route 39, and are referred to as "Bolsa/Pacific DUC" and "Bolsa/McFadden DUC" (Figure 4).

Water service to Bolsa/Midway DUC is provided by a combination of the City of Westminster, Midway City Mutual Water Company, Eastside Water Association, and South Midway City Mutual Water Company. Water service to Bolsa/Pacific DUC and Bolsa/McFadden DUC is provided by the City of Westminster.

The Midway City Sanitary District provides sewer and solid waste collection services to all five DUCs and most other services are provided to the DUCs by the County (OCLAFCO 2023, p. 54).



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Source: OC-LAFCO, ESRI OC

Figure 4 – Disadvantaged Unincorporated Communities

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All of the DUCs identified herein are within OCWD Division 1 (Figure 3) and within the water service boundaries of their respective retail water suppliers. The City of Anaheim, Golden State Water Company, and City of Westminster are three of the 19 Groundwater Producers of OCWD. In addition, four private mutual water companies also serve portions of the DUCs in the spheres of influence for Stanton and Westminster (Figure 4): Hynes Estates Mutual Water Company, Midway City Mutual Water Company, Eastside Water Association, and South Midway City Mutual Water Company. OCWD identifies these water suppliers as "active small producers" and each pumped more than 25 AF of water from the Basin in WY 2022-2023. According to OCWD's Monitoring Program records, these four small producers have active production wells that are monitored by OCWD for Title 22 (water quality) compliance (2015 OCWD Groundwater Management Plan, Appendix E).[10] OCWD also collects pumping records from small producers every 6 months to account for their pumping from the Basin.

Keeping up with changing regulations and aging infrastructure can be very challenging for small mutual water companies. The State Water Resources Control Board has funding and technical assistance available for mutual water companies ready to consolidate with a neighboring public water supplier. It is not the task of this study to assess whether any small water producers in OCWD's SOI are having deficiencies in their provision of potable water to their customers. The provision of water service to customers in the DUC areas (i.e., water mains, laterals, and meters) is the responsibility of their respective retail water suppliers. However, the monitoring, record-keeping, and water testing efforts the District is providing to these small producers are services that benefit their customers' ability to have water and, in turn, is part of the Basin management OCWD must perform to meet its charge. Nothing in the OCWD Act appears to limit the District's ability to assist public or private water suppliers within its jurisdiction, including those in disadvantaged communities. Because OCWD monitors the water quality of the wells and accounts for the water pumped by both large and small producers, including those within the DUCs when making its water demand and water supply projections, and the District recharges the Basin for large and small producers to access regardless of where DUCs exist, OCWD is meeting its responsibility for the present and probable needs of potable water services for the DUCs. Nonetheless, it is recommended that OCWD make available to some reasonable degree its extensive technical resources when requested by mutual water companies that serve a DUC and need help to navigate funding opportunities for system improvements.

[10] Title 22 of the California Code of Regulations refers to Environmental Health regulations and contains the standards for water reclamation.

3.3 Capacity and Adequacy of Public Facilities and Services

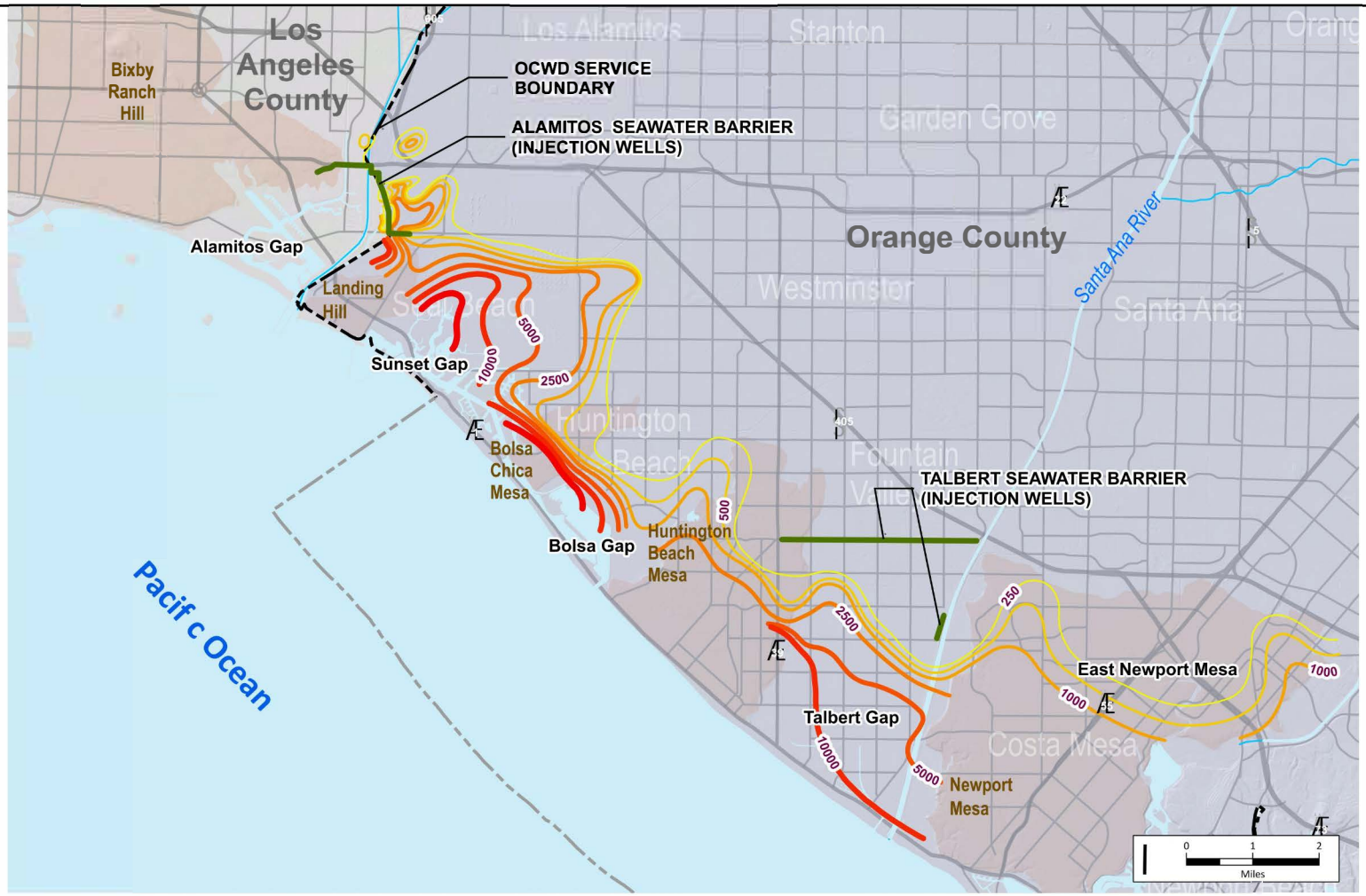
OCWD is tasked with providing the public service of sustainably managing the Basin as a water supply source for the groundwater producers within its Service Area. The Basin covers approximately 350 square miles in north and central Orange County and extends 4,000 feet at its deepest point (Basin 8-1 Alternative, p. 2-3). There are three major aquifer systems in the OC Groundwater Basin. They are referred to as Shallow Aquifer (closest to the surface), Principal Aquifer, and Deep Aquifer (farthest from the surface).

Over 90 percent of groundwater pumping occurs from wells that are pumping from the Principal Aquifer at depths between 200 and 1,300 feet. The Deep Aquifer system extends up to 4,000 feet below ground surface. Natural organic material from ancient, buried plants and wood gives the water in the Deep Aquifer an amber tint and a sulfur odor. The depth and presence of amber colored groundwater in some coastal areas hinders pumping from the Deep Aquifer system. (Basin 8-1 Alternative, p. 2-3) Although this water is of high quality, its color and odor produce negative aesthetic qualities that require treatment before use as drinking water. (*ibid*, p. 11-7) Mesa Water District and IRWD have water treatment facilities to treat amber-colored groundwater (*ibid*, p. 11-8).

The volume of water in the Basin when it is full is estimated by OCWD staff at approximately 66 million AF (*ibid*, p. 10-1); however, up to 500,000 AF is considered available water in storage. OCWD's current policy of maintaining a groundwater storage level of up to 500,000 AF below full was established based on completion of a comprehensive hydrogeological study of the Basin in 2007 (*ibid,* p. 10-2).[11] OCWD determined that pumping more than 500,000 AF for more than an emergency, short-term instance, would incrementally result in undesirable effects such as seawater intrusion, land subsidence, increased pumping costs, and higher potential for upwelling of amber-colored groundwater from the Deep Aquifer (*ibid,* p. 10-1).

Seawater intrusion has been well-documented along coastal Orange County since the early 1900s. OCWD has operated two seawater barriers using injection wells to control seawater intrusion since 1965 and 1975, respectively. The current extent of intrusion and locations of the barriers are shown in **Figure 5 – Areas of Seawater Intrusion**. As the groundwater drops and the amount of freshwater stored in the Basin decreases, the hydraulic force pulling seawater intrusion into the Basin worsens.

[11] Orange County Water District, *Report on Evaluation of Orange County Groundwater Basin Storage and Operational Strategy,* February 2007.



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Source: OCWD (01/2024)

Figure 5 - Areas of Seawater Intrusion

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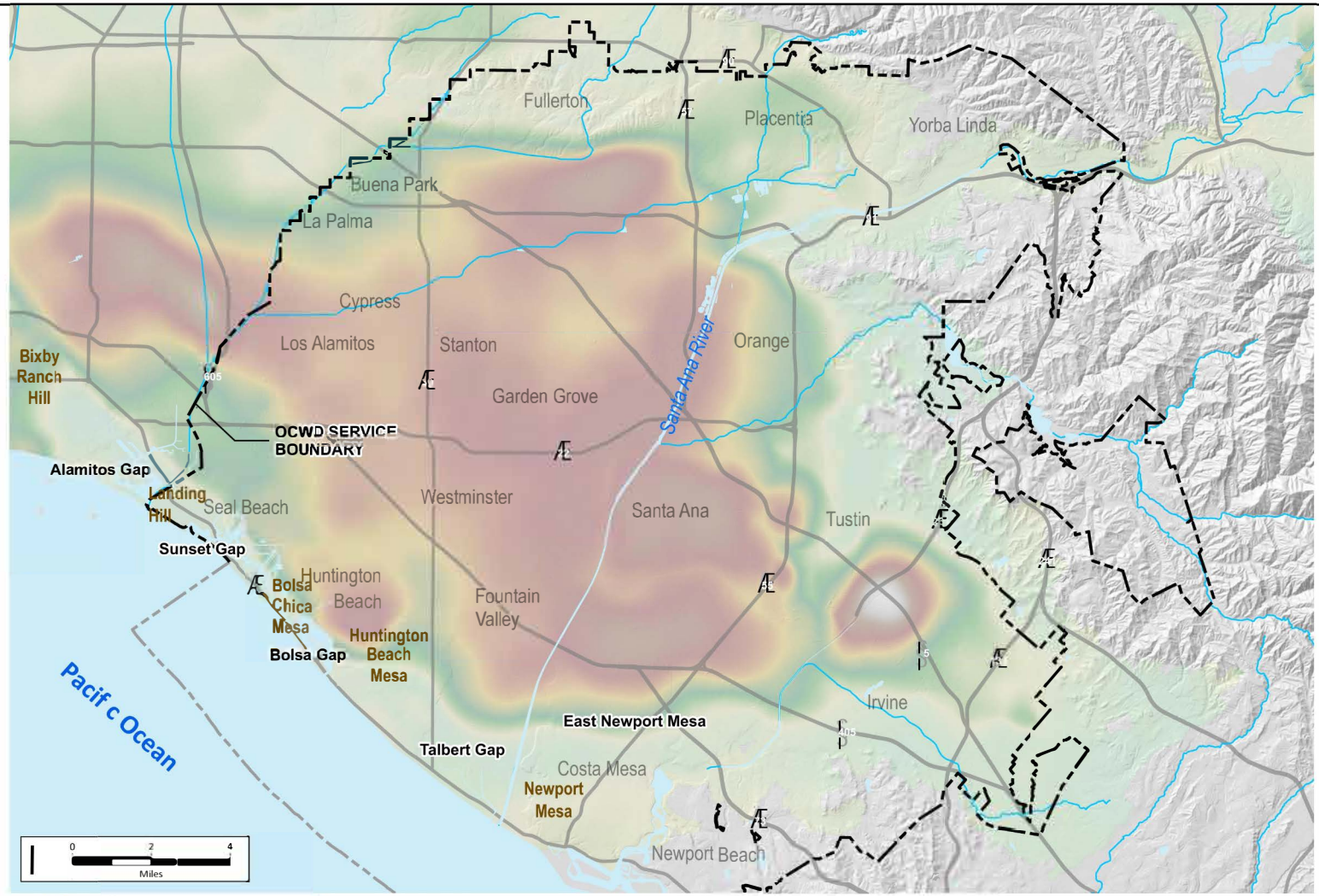
The seawater barriers were designed to control seawater intrusion with the Basin storage staying within the 500,000 AF range, so pumping beyond that may allow seawater intrusion to move inland beyond the barriers. Brackish groundwater (fresh water and seawater combined) flowing inland can render drinking water wells inoperable without expensive treatment using reverse osmosis. The longer the Basin storage were to remain overdrafted (or, drawn down) more than 500,000 AF, the farther inland and extensive the intrusion would be. In other words, a one- to two-year period beyond 500,000 AF may cause little to no irreversible groundwater quality degradation, while periods beyond five years could cause long-term salinity degradation. (PC(1))

With regard to land subsidence, the Basin is composed of sedimentary deposits of permeable sands and gravels interlayered with low-permeability clays and silts. Land subsidence occurs when groundwater levels decrease such that the reduced water pore pressure in the clays and silts causes them to compact under the weight of sediment above them. Over time, this sediment compaction leads to ground surface sinking or land subsidence. Significant land subsidence, like that documented in California's Central Valley, can damage infrastructure (e.g., transportation, buildings, flood control channels, water and sewer lines, etc.). Because of the extensive subsurface clays and silts, the Basin has the characteristics to be susceptible to land subsidence. This susceptibility has been confirmed by studies in the last 20 years using satellites and ground-based sensors that show the ground surface in areas including Santa Ana have subsided and then rebounded in correlation with groundwater levels. **Figure 6 – Areas Showing Land Movement Potential** shows the areas that have shown the greatest tendency for ground surface changes, which have been on the order of ±1 inch over the last eight years. Like seawater intrusion, the severity and irreversibility of land subsidence increases the longer the Basin storage remains beyond 500,000 AF of overdraft. Because OCWD's management of the Basin has kept groundwater levels within an established historical range, there has been no documented long-term land subsidence. One key consideration of land subsidence is that once it is triggered by a sustained groundwater storage reduction (several years or longer), it can continue even after the groundwater storage has recovered. (PC(1))



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Source: OCWD (01/2024); SGMA SAR Data (11/2023)

Figure 6 - Areas of Showing Land Movement Potential

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In addition to seawater intrusion and land subsidence, groundwater storage reductions beyond 500,000 AF would reduce the pumping capacity of wells. This is because as groundwater levels drop, the pump intakes inside the wells can be left too shallow or out of the water. Many wells in the basin already have their pump intakes set at their lowest depth. The result of, say, a 100-foot drop in groundwater levels at a well is a loss in its pumping capacity of potentially hundreds of gallons per minute or, alternatively, to construct a deeper well for a cost of $5 million to $10 million. In most cases, there is no cost-effective way to "deepen" an existing production well without significantly reducing its diameter and, hence, its pumping capacity. (PC(1))

Upwelling of deep groundwater is another potential result of drawing down the Basin by more than 500,000 AF. Groundwater from the Basin's deepest depths could bring water that, although technically potable, looks and smells unappealing and more importantly requires expensive nano-filtration membranes to remove the color and smell. OCWD has modeled the effects of pumping up to 700,000 AF from the Basin and based on the results determined this amount of pumping is considered acceptable only in an extreme emergency (Basin 8-1 Alternative, p. 10-1).

OCWD has many facilities to facilitate surface water diversions and groundwater recharge, reclamation and recharge of wastewater, and monitoring of groundwater elevations and water quality, as summarized in Table 5:

Table 5: OCWD Assets and Capacity

OCWD Asset	Purpose	Capacity
OCWD Fountain Valley Headquarters • OCWD owns all the land including under the OCWD and MWDOC buildings "Office Facilities"). • OCWD owns about 66% of the Joint Office Facilities and MWDOC owns about 33%. • OCWD leases 50% of the land under the Office Facilities to MWDOC.	Office space, parking, equipment storage	n/a
Ground Water Replenishment System • Advanced Purification Facility** • Pipeline	Treat recycled water* from OC San to drinking water standards that is then used for groundwater recharge.	Capacity: 130 MGD (134,000 AFY) Actual WY 21-22: 82.7 MGD

OCWD Asset	Purpose	Capacity
Santa Ana River Field Headquarters (Anaheim) • Recharge Basins[a] • > 25 facilities covering > 1,000 wetted acres	OCWD staff field office in close proximity to the recharge basins in Anaheim and Orange.	Maximum storage capacity: 26,000 AF[b] Average annual recharge: 250,000 AF
Green Acres Project (GAP) Title 22 Reclamation • Since 1991 • 37 miles of OCWD distribution pipelines, 2 pump stations, 2 reservoirs, and intertie to IRWD • 107 active meters	Take secondary treated wastewater from OC San, provide additional (tertiary) treatment such that recycled water* is available for retail agencies for 100 different sites that use it for landscape irrigation, industrial use, toilet flushing and power generation cooling.	Capacity: 7.5 MGD (Current demand is ~3.4 MGD or 3,827 AF for WY 21-22)
Talbert Seawater Intrusion Barrier • Since 1975 • Supplied by Supplemental Water[d] and GWRS • 36 injection wells	A line of groundwater injection wells to create a hydraulic barrier using recycled water that has been treated to drinking water standards (or treated imported water) against seawater moving inland between Huntington Beach Mesa and Newport Beach Mesa along Ellis Avenue. Can also be used for basin recharge.	Supplemental Water: 12,500 gallons (14 AF) in WY 21-22 Recycled Water: 23,980 AF
Alamitos Barrier Project • Since 1964 • 43 injection wells and 177 monitoring wells • Supplied by GWRS and WRI[j] • O&M with Los Angeles Dept. of Public Works	A line of jointly owned groundwater injection wells to create a hydraulic barrier along the Los Angeles County/Orange County boundary using recycled water that has been treated to drinking water standards (or treated imported water) against seawater moving inland between Bixby Ranch Hill and Landing Hill.	WRD has 8 MGD design capacity; but pumping closer to 3 MGD. WRD supplied 1,475.9 AF in WY 21-22. GWRS: 1,228.1 AF in WY 21-22
Philip L. Anthony Water Quality Laboratory • Analysis of 1,500 OCWD sites and > 200 drinking water wells for local water providers. • 31 chemists and technicians, 12 water quality monitoring personnel	Federally accredited and state-certified public agency laboratory for water quality testing for OCWD's monitoring sites, as well as Producers.	>400,000 analyses45 approx. 20,000 water samples each year

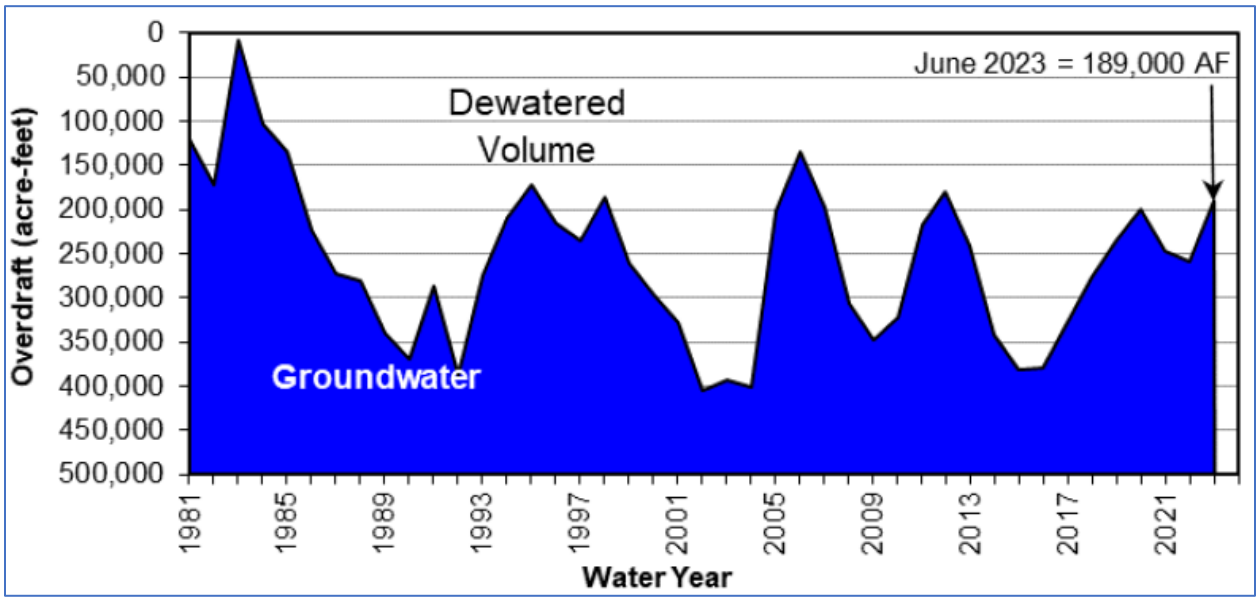
OCWD Asset	Purpose	Capacity
Prado Basin • Working with the USACE since 1960s; monitoring wetlands since 1998 • Approx. half of the non-storm flows of the Santa Ana River diverted through wetland ponds • *Arundo donax* removal, native plantings, least Bell's vireo population rebound • Sediment removal behind dam	The wetlands behind Prado Dam in Riverside County are designed to remove nitrogen and other chemicals from the Santa Ana River (both storm flows and a diverted segment of non-storm flows) to improve water quality before the river enters Orange County and diverted into OCWD's recharge basins.	Owns 2,400 acres behind Prado Dam and 6-mile stretch of Santa Ana River Wetlands on 465 acres remove 15 to 40 tons of nitrates per month Minimum 42,000 AFY of river water to Orange County[(e)]
Non-barrier wells (monitoring wells) • Approx. 400 wells	Critical to understanding what is happening beneath the ground and how much is being extracted, OCWD gathers groundwater data from its own wells located throughout its Service Area and combines that with data from Producer's monitoring wells.	-
Rolling Stock	Vehicles and equipment used by OCWD staff to access sites and provide maintenance of facilities.	-

Notes: IRWD = Irvine Ranch Water District; AFY = acre feet per year; MGD = million gallons per day; WY 21-22 = Water Year 2021-2022 (July 1 to June 30); USACE = U.S. Army Corps of Engineers.
*Recycled (or, reclaimed) water means raw sewage (wastewater) that has been treated to meet California's Title 22 guidelines so that the water can be reused for direct beneficial (but not potable) use. Typically, this means a tertiary level of treatment.
**Advanced treatment means tertiary-treated recycled water that is then purified further using methods like microfiltration, reverse osmosis, and ultraviolet (UV) light with hydrogen peroxide or chlorine. Typically produces water that meets drinking water standards, although still referred to as "recycled water" or "effluent."
(a) Refer to Table 5-3 of GMP 2015. Four basins are not owned by OCWD.
(b) Maximum storage capacity is typically not achieved because of need to reserve buffer space. (GMP 2015)
(c) Water Replenishment District of Southern California (WRD), serving southern Los Angeles County.
(d) Supplemental Water typically includes imported deliveries from MWD (i.e., Colorado River or State Water Project), diversions from Irvine Lake/Santiago Reservoir (i.e., Santiago Creek), non-local waters, and deliveries from water exchanges within the Santa Ana River Watershed.
(e) One of the results of OCWD v. City of Chino, et al., Case no. 117628 – County of Orange, is at least 42,000 AF of Santa Ana River baseflow shall be delivered to Orange County, and OCWD gained the rights to all storm flows reaching Prado Dam. Parties to the judgment include Western Municipal Water District, San Bernardino Valley Municipal Water District, and Inland Empire Utilities Agency.

The term, "capacity" for OCWD speaks to the ability to recharge the Basin and offset groundwater pumping. OCWD manages the Basin like a reservoir; at 100 percent full, overdraft is zero. The "reservoir" can be drawn down by no more than 500,000 AF, or when overdraft is 100 percent. In wet years, the reservoir refills and in dry years, it typically draws down. Indeed, the District is not required to keep the basin at 100 percent full but rather manages it in a constant fluctuating state of overdraft, roughly

between -150,000 AF to -200,000 AF (or, 60 to 70 percent full) that reflects how much rain fell and constraints on well production (e.g., pollutants in groundwater). OCWD uses the term, "accumulated overdraft" to represent the volume of empty basin storage that is available to fill with groundwater (BSU, p. 1), which is shown as 189,000 AF in Chart 4. The increase of water in the Basin as of June 2023 comes after two years of decline and ended up being more recharge than originally projected due to higher than expected rainy seasons.

Chart 4 – OCWD Basin Overdraft, WY 1980-2023



Excerpt from *2022-2023 Engineer's Report,* page 11. Unpublished data provided by OCWD indicates the accumulated overdraft is 133,000 AF as of June 2024.

The reasons OCWD maintains this overdraft "sweet-spot" of -150,000 AF to -200,000 AF are: 1) to reserve space for rainfall events; 2) maintain a reservoir of about 300,000 AF of supply; and 3) minimizes water loss to Los Angeles' side of the basin (the Los Angeles side of the basin is kept in a deeper state of overdraft than the Orange County side).

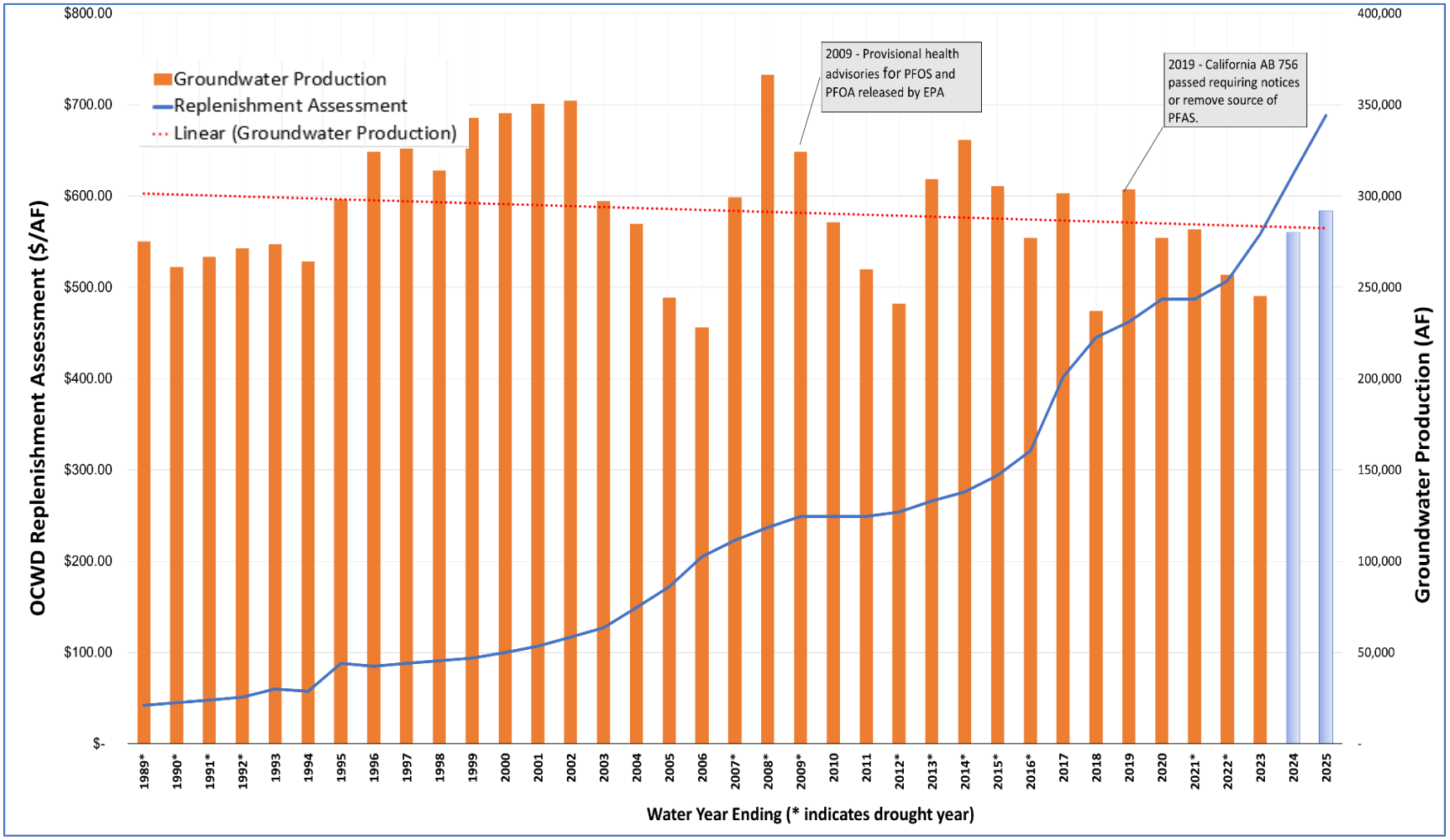
Chart 5 (on page 47) graphs the recorded RA from 1989 to 2024. The RA has steadily increased from a low of $42/AF in 1989 to $624/AF in WY 2023-2024. Years in which the RA increased substantially include 1993 (following four years of drought), 1995, 2004, 2005, 2006, 2017 (following five years of drought), and 2024. The primary reasons for the RA increases include: (1) the amount of Santa Ana River base flows coming to OCWD have decreased from a high of over 150,000 afy in 1999 to the current amount of approximately 80,000 afy; (2) to provide funding for the Groundwater Replenishment System (GWRS); and (3) to provide funding to construct PFAS treatment systems.

Years marked with an asterisk (*) are drought years when groundwater pumping tends to increase because of a decrease in surface and imported water supplies. However, Chart 5 suggests drought years may not be a decisive factor in groundwater pumping trends (i.e., there is not a steady increase during multiple-dry year periods). This reflects the effect of water conservation measures and other demand management strategies.

RA fees are shown with annual volume of recorded groundwater pumping, which ranges from a low of 228,159 AF in 2006 to a high of 366,185 AF just two years later in 2008. The linear trendline shows an average decline in pumping overall during the time period. The RA is not a significant factor in decreasing groundwater pumping. For example, the RA increased 35 percent between 1994 and 1995 and groundwater pumping increased nonetheless during and following the increase through 1997.

The current primary constraint for OCWD on groundwater use is water quality, especially concentrations of PFAS compounds, which has resulted in wells being turned off until additional treatment can be added to the system. The decline in pumping after the PFAS regulations took effect in 2019 reflects this (a decrease of approximately 22 percent). Because the rate for MWD water is currently about $1,300 per AF, the RA could be increased by OCWD significantly without jeopardizing financial stability.

Chart 5 – Groundwater Pumping and Replenishment Assessment Since 1989



Source: EPA 2012, AB756 2019, OCWD 2024

The OCWD Act defines the term "overdraft" differently than a traditional definition. A hydrologist might define overdraft as: "Overdraft occurs when, over a period of years, more water is pumped from a groundwater basin than is replaced from all sources- such as rainfall, irrigation water streams fed by mountain runoff, and intentional recharge" (Water Education Foundation). The OCWD Act defines overdraft in terms of natural replenishment only: "the amount, determined by the board of directors, by which the production of water from the groundwater supplies within said district during the WY [July 1 to June 30] exceeds the natural replenishment of such groundwater supplies in such WY." In other words, the overdraft occurs when the volume pumped is greater than the volume recharged naturally through rainfall, the Santa Ana River, Santiago Creek flows, and natural infiltration of surface waters (regardless of how much is recharged from recycled water or supplemental water).

Are OCWD's facilities sufficient to recharge the groundwater basin?

WY 22-23 is the most recent data available to address this question. First, the total water supply into the basin was 313,555 AF and the amount pumped from the basin was 245,210 AF (OCWD 2024, Appendix 5). This is a difference of about +69,000 AF and represents the amount added to the Basin over the year, which reduced the overdraft to -189,000 AF. In short, more water was put into the Basin then was pulled out. This is mostly attributable to the rainfall for the year being 21.12 inches, or 158 percent of the long-term average (i.e., a "wet year"); compared to the prior year, WY 21-22, which had about half of the average rainfall, or 6.84 inches and a net decrease of 10,000 AF.

On the other hand, the BPP for WY 22-23 was increased in February 2023 from 77 percent to 85 percent by the OCWD Board of Directors. This means the groundwater producers could pump up to 85 percent of their total water demands from the Basin and only pay the RA. However, in WY 22-23, groundwater producers ended up producing just 73.3 percent of their water demands from the Basin with the decreased pumping attributable to PFAS concentrations in certain wells. Producers also did not meet the 77 percent BPP for the prior WY. Because less pumping occurred than assigned by the BPP in WY 22-23, the Basin had a net increase of 69,000 AF and ended up in the "sweet spot" between -150,000 AF and -200,000 AF (i.e., -189,000 AF) in the Basin.

As noted in Table 5, OCWD has a network of 25 recharge basins (not including seawater barriers) that have a maximum recharge ability (if all are completely empty at the same time) of 300,000 AFY (PC(2)). OCWD has water rights to the Santa Ana River flows below Prado Dam totaling 362,000 AFY and an additional 49,980 AFY was requested in 2023 based on completed projects to capture the flows. In addition, the District's GWRS produced 101,950 AF in WY 22-23 and still operating less than its maximum capacity of

130 mgd. Based on the results of the water supplies acquired and recharge that occurred in WY 22-23, it can be reasonably concluded that the OCWD facilities have sufficient capacity to recharge the Basin.

Does a net decline in groundwater supply indicate inability to provide service?

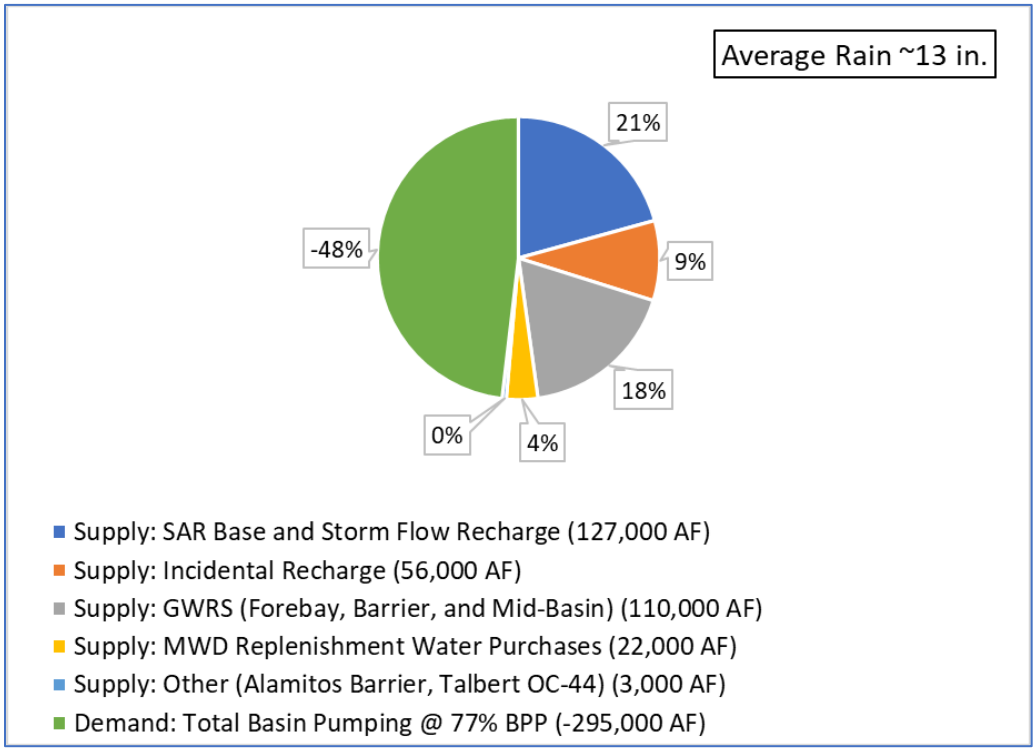
Regardless of how many recharge facilities one agency may have, if the rain does not materialize in Orange County (lower Santa Ana River Watershed), or the Inland Empire (upper Santa Ana River Watershed), Northern California, or Colorado River Watershed, then water supplies for recharge are inherently limited. For example, WY 21-22 yielded 6.84 inches or roughly half the annual average rainfall for the OCWD Service Area (12.9 inches), and the prior year had even less. However, the Basin still had a little more than 200,000 AF in storage at the end of WY 21-22.

In addition to having below-average rainfall in WY 21-22, OCWD's ability to provide its service is constrained currently due to the presence of PFAS chemicals in the Basin. Concentrations of PFAS chemicals higher than the State response levels have resulted in many wells being turned off in WY 21-22 until additional treatment can be brought online that reduces the concentration of PFAS enough to meet State response levels. Fortunately, effective removal of PFAS from water supplies can be done with tried-and-true treatment methods including carbon filters, reverse osmosis, and ion exchange. While wells are turned off waiting for treatment systems, the 19 Groundwater Producers relied on the combined effect of conservation and imported water to continue meeting customer demands. The projected and actual water supplies and water demands for WY 21-22 are shown in Charts 5 and 6, on the following page.

PFAS

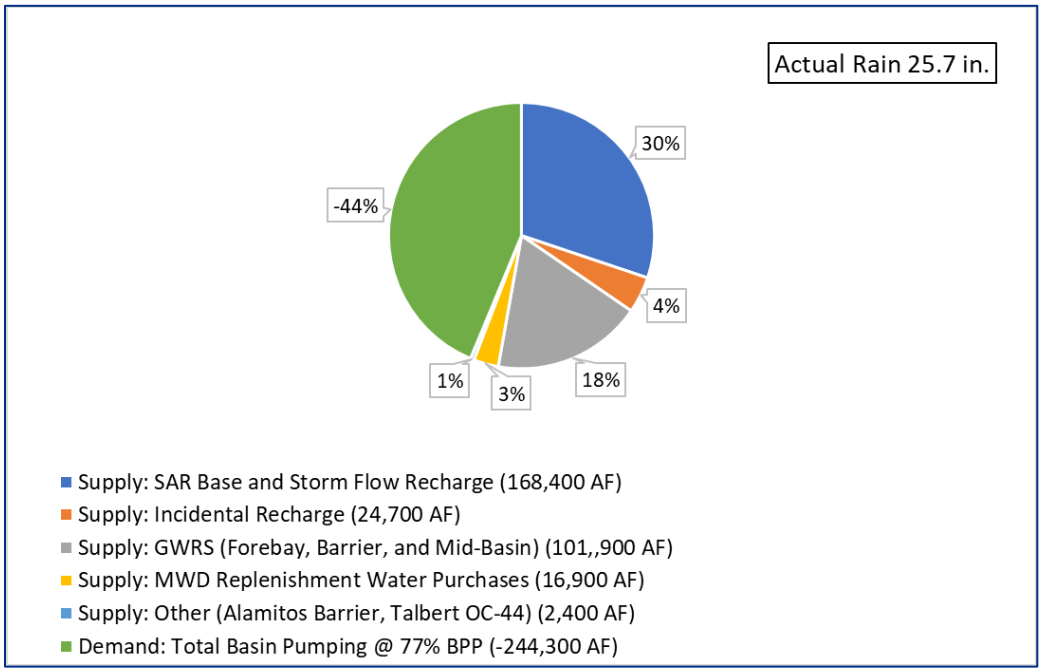
The acronym, PFAS represents thousands of man-made chemicals used to make fluoropolymer coatings and products that resist heat, oil, stains, grease, and water. Scientists are still learning how to test for them and their effects on humans and the environment. PFAS are found worldwide and do not easily break down. Regulations in California are evolving as more is learned. (https://www.epa.gov/pfas/pfas-explained)

Chart 6 – OCWD Projected Water Budget for WY 22-23



Source: OCWD Board of Directors, *Basin Storage Update for WY 2022-23*, Sept. 13, 2023.

Chart 7 – OCWD Actual Water Budget for WY 22-23



Source: OCWD Board of Directors, *Basin Storage Update for WY 2022-23*, Sept. 13, 2023.
(1) Actual "SAR Base and Storm Flow Recharge" includes 10,374 AF of percolation from prior year's carryover storage in recharge basins and 27,625 AF of Santiago Creek and other local inflows.
(2) The Basin Storage Update data was assembled in September 2023 and does not match exactly with the Engineer's Report from February 2024 referenced herein (e.g., actual rainfall 21.12 in. versus 25.7 in.).

Because the Basin is operated like a reservoir, a net decline in groundwater does not indicate that OCWD is deficient in providing its public service. In fact, this approach to basin management is supported by the State even though it contrasts with the traditional condition of "overdraft." For example, the California Water Plan Update (2013) states:

> Change in groundwater storage is the difference in stored groundwater volume between two time periods…However, declining storage over a period characterized by averaged hydrologic conditions does not necessarily mean that the basin is being managed unsustainably or is subject to conditions of overdraft. Utilization of groundwater in storage during years of diminishing surface water supply, followed by active recharge of the aquifer when surface water or other alternative supplies become available, is a recognized and acceptable approach to conjunctive water management. (CWP, p. SC-77)

Furthermore, as stated in OCWD's 2015 Groundwater Management Plan:

> Because OCWD has the means to manage basin storage with a safe operating range and has operated the basin within this range for decades, overdraft in the traditional sense does not exist in the Orange County Groundwater Basin. (GMP, p. 10-4)

The September 2023 California Water Plan Update Public Review Draft supports efforts to increase available supplies from a range of sources by expanding water storage above and below ground, increasing availability of recycled water, increasing the amount of stormwater runoff captured, and increasing desalination (2023 CWP pp. 4-5, 4-6). OCWD's water supply projects are consistent with the State's plan for water supply sources in the future.

Taking into account the District's demonstrated ability to refill the basin when supplies are available and to pursue projects that expand its capacity to refill the basin while implementing effective conservation and education programs, partnering on conjunctive use (storage) programs, and expanding wellhead treatment to bring impaired wells back online, OCWD's public facilities and services are adequate and have sufficient capacity to meet the demands of existing and currently forecasted customers.

Infrastructure Needs or Deficiencies in any DUCs

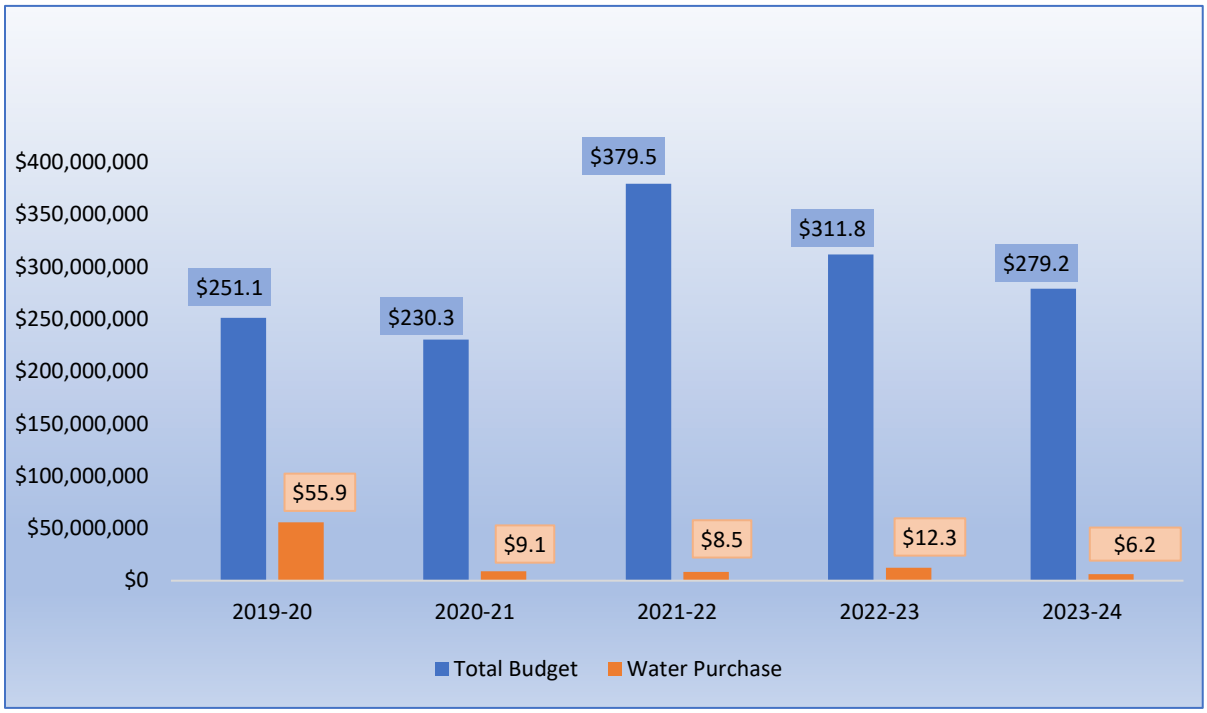
OCWD is not aware of infrastructure needs or deficiencies that exist within the aforementioned DUCs identified in Section 3.2. The retail water suppliers and mutual

water companies in those areas are responsible for operation and maintenance of the water distribution lines and laterals that bring water to individual customers and businesses. OCWD monitors the water quality of the wells and accounts for the water pumped by both large and small producers including those within the DUCs. Addressing existing or future infrastructure deficiencies to supply potable water to the identified DUCs is not the responsibility of OCWD. OCWD recharges the Basin with water for small and large producers to access regardless of where DUCs exist. OCWD is meeting the present and probable needs for potable water facilities and services of the DUCs to the extent that it is responsible for. Nonetheless, it is recommended that OCWD make available to some reasonable degree, its extensive technical resources when requested by the mutual water companies within a DUC that need help to navigate funding opportunities for system improvements.

3.4 Financial Ability to Provide Services

OCWD Board of Directors adopted the District's *Fiscal Year 2023-2024 Budget* on April 19, 2023. The total budget of $279,170,022 represents an approximate ten and one-half percent decrease over Fiscal Year 2022-2023. The approved budget reflects the required resources to proactively manage the Orange County Groundwater Basin and improve the water quality and reliability of Orange County's local water resources at the lowest possible cost to their 19 Groundwater Producers. The approved budgets for FY 2019-2020 through 2023-2024 with the amount of purchased water are shown on Chart 8.

Chart 8 – OCWD 5-year Budget Totals ($ millions)



As shown in Chart 8, since Fiscal Year 2019-2020, the District's budget has been on a downward trend until Fiscal Year 2021-2022 when the budget increased approximately 65 percent. Most of the increase can be attributed to the 20 capital improvement projects budgeted for that fiscal year. Capital improvement projects are budgeted over a 5-year period and are paid through debt in the form of bond issuances, grants, loans, and RA revenue referred to as PAYGO. The downward trend in expenses resumed in Fiscal Year 2022-2023. A factor in the budget fluctuations from year to year is the cost of water that OCWD purchases to replenish its groundwater basin, which can fluctuate year to year depending on the groundwater basin levels. Recently, the need for purchasing imported water has been low due to cooler weather, above-average precipitation in Southern California, and a dramatic reduction in groundwater pumping.
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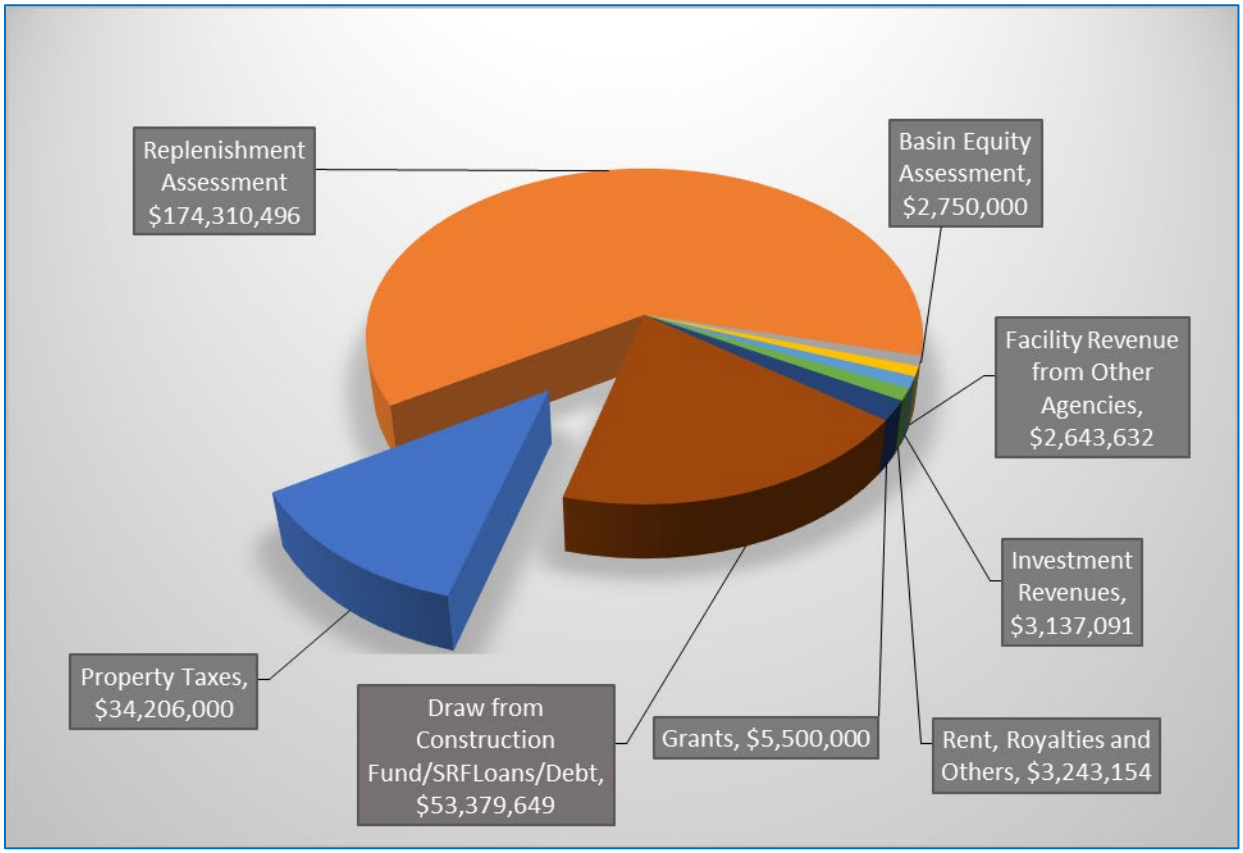
Chart 9 shows that most of OCWD's revenue sources for FY 2023-2024 are attributed to Replenishment Assessments levied on groundwater producers.

Chart 9 – OCWD Revenue Sources FY 2023-2024



OCWD's revenues for Fiscal Year 2023-2024 total $279,170,022 and include the following key categories as shown in Chart 5:

- Assessments

  Assessment revenues come from (i) Replenishment Assessments, and (ii) Basin Equity Assessments (BEA). The Replenishment Assessment is assessed on each acre-foot of water pumped from the Basin at a current rate of $624/AF (for FY 2023-24). Based on the established Basin Production Percentage (BPP) of 85 percent equivalent to 280,262 AF pumped, the Replenishment Assessment is expected to generate $174.3 million in FY 2023-24. Assessments also include the Basin Equity Assessment (BEA), which is the additional fee charged by OCWD on water pumped that exceeds the BPP. The BEA is calculated for each Groundwater Producer based on the treated full service MWD water rate and each Producer's individual energy cost to pump groundwater. The BEA is assessed each September for all groundwater pumped above the BPP. Approximately $2.75 million of BEA revenue is expected for FY 2023-2024.
- Ad Valorem Property Taxes

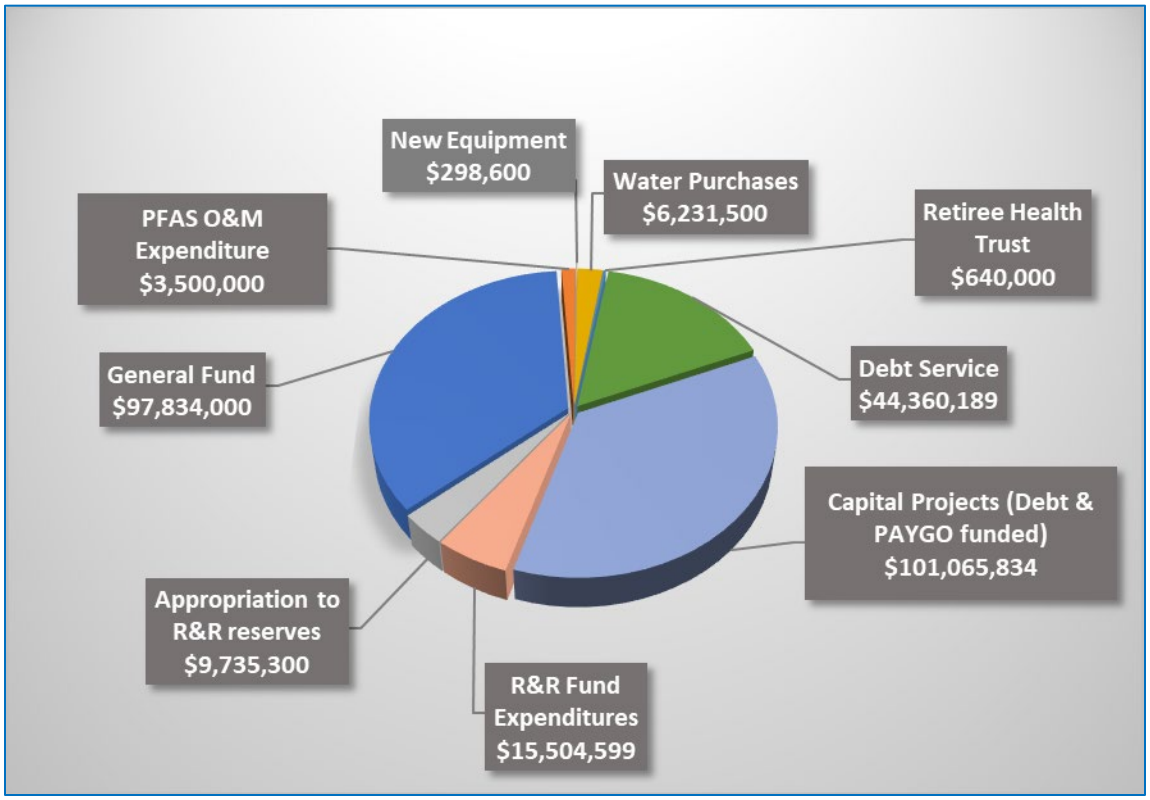
  An ad valorem tax is a tax based on the assessed value of an item, such as real property. The County of Orange imposes an ad valorem tax of approximately one

percent of the assessed value of the property within its boundaries. OCWD receives a percentage of the one percent ad valorem tax imposed on all property within its Service Area. OCWD's share of the ad valorem tax varies by Tax Rate Area (TRA) and on average is approximately 0.0081%.[12]

- Investment Revenue
  Revenue generated from cash reserves that have been invested into short-term securities pursuant to the District's Investment Policy.
- Miscellaneous Revenues
  Include such items as annexation fees, rents and leases, other grants, and miscellaneous items.
- Facility Revenue from Other Agencies
  Revenue from other agencies, such as the water reclamation project that serves treated recycled water to irrigation and industrial users, referred to as Green Acres Project.

Chart 10 represents the OCWD budgeted expenditures for Fiscal Year 2023-2024.

Chart 10 – OCWD Expenditures FY 2023-24



[12] Source: Orange County Auditor Controller, *Annual Tax increment Factor by Tax Rate Area 2023-2024*, available at https://ocauditor.gov/wp-content/uploads/2023/08/AT68AH71___Section_99_Factor_Report_by_TRA___8_29_2023.pdf

OCWD's expenses for Fiscal Year 2023-2024 total $279,170,022 and include the following key categories as shown in Chart 10:

- General Fund
  Agency operational expenses, representing approximately 35 percent of total expenses.
- PFAS O&M Expenditures
  Reimbursement of 50 percent share of PFAS Treatment Operating Cost.
- New Equipment
  Capital equipment such as laboratory equipment, computers, and software, etc. This is the smallest of the expenditure categories.
- Water Purchases
  Purchases of imported water from MWD through MWDOC.
- Retiree Health Trust
  Funds held for agency's portion of retiree health benefits.
- Debt Service
  Debt Service payment expenses, representing approximately 16 percent of total expenses.
- Capital Projects
  Comprised of 19 projects and represents approximately 36 percent of total expenses. This is the largest of the expenditure categories.
- Replacement and Refurbishment (R&R) Fund Expenditures
  Replacement and refurbishment of infrastructure type assets.
- Appropriation to Replacement and Refurbishment (R&R) Reserves
  Replenishment of replacement and refurbishment reserves.

Debt Administration

According to OCWD's financial statements, the District has approximately $870 million in outstanding debt as of July 1, 2023. The District uses this long-term debt, along with other funding mechanisms, to fund capital improvement projects. This policy was established in October 2000 and calls for the following:

- Preliminary project expenses related to direct research are to be paid by the General Fund and cannot be financed with long-term debt.
- Project expenses for items such as feasibility reports, pilot studies, engineer reports, compliance with CEQA, project design and construction may be capitalized and funded with long-term debt.
- Project expenses that are capitalized and funded with long-term debt and do not lead to the construction of a project will require an adjustment by the OCWD

Accounting Department to pay off the long-term debt incurred using cash reserves.

The District's Debt Management Policy (Policy No. FIN-02, November 1, 2016) allows for the following types of debt:

- Certificates of Participation (COP) and Revenue Refunding Bonds
- California State Revolving Fund Loans
- Commercial Paper
- Taxable Bonds

Debt Service budget amounts fluctuate from year to year based on debt service payment schedules and whether new debt has been issued or old debt has matured. The budgeted debt service amount for Fiscal Year 2023-2024 is approximately $44.4 million. This debt will increase by $2.2 million in Fiscal Year 2024-2025 when the first payment on the State Water Resources Control Board Clean Water State Revolving Fund Loan for the GWRS Final Expansion Project is due. Each debt series has its own debt service payment schedule and maturity date. In addition to the debt service payments, the District incurs debt administration costs, also factored in the annual budgeted debt service amounts.

Reserves and Fund Balances

OCWD has a District Reserve Policy in place to ensure it meets all its obligations and maintains its strong credit rating. Some reserve funds have set amounts not to exceed such as the Operating Reserve Fund (not to exceed 15 percent of the total current annual general and water reserve fund operating budget); some have minimum balances they should not fall under such as the Operating Fund (50 percent of the sum of the current annual budgeted General Fund appropriations, and current annual budgeted debt service appropriations); and some have set target levels to meet such as the Contingency Reserve Fund (not to exceed $3 million). As the projected reserve balance drops below the target amount, then the proposed budget would increase the budgeted contribution to bring the reserves back up to target. The depleted reserves are replenished using revenue collected from the Replenishment Assessments as well as investment revenues.

According to the Annual Comprehensive Financial Reports (see Covenants and Reserve Requirements), the Designated and Operating Reserve balances during the past five fiscal years have met the requirements of the reserve policy approved by the Board.

Table 6: OCWD 4-Year Reserve Fund Balances

	2019-20	2020-21	2021-22	2022-23
Restricted Reserves	$105,573,696	$5,502,257	$106,191,061	$18,111,407
Designated Reserves Funds	$194,163,423	$184,471,581	$198,740,266	$205,196,230
Operating Funds	$55,427,207	$90,502,826	$88,520,131	$84,330,076
Total	**$355,164,326**	**$280,476,664**	**$393,451,458**	**$307,637,713**

OCWD's Reserve Policy is categorized into three areas: restricted funds and reserves, designated reserves and funds, and operating funds.

Restricted Reserve Funds:

- Capital Project Funds
  This subcategory was established for proceeds from bond issuances or any other debt financing and is used for the District's capital projects and capital improvements. These funds are restricted to specific capital projects which are authorized and approved by the Board of Directors.
- Debt Reserve Funds
  This subcategory was established for various bond issues. These funds are not available for the general needs of the District and must be maintained at specific levels and are restricted by certain bond covenants.
- Basin Equity Assessment (BEA) Funds
  This subcategory was established for funds received from the levy of the District's BEA. These funds are to be used only for the purchase of water for the purpose of groundwater replenishment and/or to reimburse producers assigned pumping limitations pursuant to the District Act.

Designated Reserve Funds:

- Toxic Cleanup (Emergency Response Fund/Environmental Remediation Fund)
  This subcategory was established for toxic spill emergencies and cleanup. The current target level is $4 million and is to be replenished annually after the adoption of the annual OCWD budget. Funds totaling $3.528 million will have been collected from the lessee over a 30-year term.

- Contingency Reserve Fund

  This subcategory was established by the District Act to provide for expenditures that have not been anticipated or provided for in the District's annual budget. The money for this fund is to be allocated from the Operating Fund and the Water Reserve Fund at the beginning of each fiscal year. The level of this fund as established by the District Act is not to exceed $3 million.

- Capital Fund (PAYGO)

  This subcategory was established for proceeds from Replenishment Assessment revenues earmarked towards the capital improvement program as opposed to financing all the District's capital expenditures and has no legal restrictions such as bond proceeds would.

- State Revolving Fund Loan Debt Service Reserve Fund

  This subcategory was established as an unrestricted reserve as a condition of the low-cost State Revolving Fund loans equal to one year's debt service.

- Water Reserve Fund

  This subcategory was established by the District Act to accumulate any excess general assessment, or unexpended funds, other than funds allocated to the operating reserve or operating contingencies by the Board of Directors. These funds can be used for the purchase of supplemental water for groundwater replenishment, acquiring, constructing, or developing any groundwater intrusion prevention projects, pipelines, wells, or other works necessary for the purposes of the district. This fund shall be designated only for purchases of supplemental water in order to have funds set aside and available. This will provide accountability and transparency to the Board and Groundwater Producers on funds collected and spent on water purchases. The maximum upper limit is set at enough funds to purchase 50 percent of water needed to have an accumulated basin overdraft of 125,000 AF.

- Operating Reserve Fund

  This subcategory was established by the District Act and allocated from the general fund to be used to meet the cash flow needs of the District before the proceeds of taxes or Replenishment Assessment collections are available to meet emergency expenditures for operations, maintenance, and the debt service payments of the District. The level of this general operating reserve as established in the District Act shall not exceed 15 percent of the total current annual general and water reserve fund operating budget.

- Replacement and Refurbishment Fund

  This subcategory was established for replacement or refurbishment (R&R) of existing District facilities, to be equal to thirty years of projected replacement

and refurbishment costs as defined in the District's R&R model. This differs from the budget for capital projects in that capital projects typically enhance, expand, or build/purchase a new asset.

Operating Funds (Water Replenishment Fund):

- Operating Cash, Replenishment Assessment, and Annual Debt Payments
  This subcategory was established for funds collected and received from the levy of the District's Replenishment Assessment. These monies shall be sufficient to enable the District to carry out any of the projects or purposes of the District as deemed by the Board of Directors. It can also include the expenditures necessary for the maintenance, operation, and repairs of works and projects of the District as authorized by the Board of Directors. The funds can also be used for the purchase of supplemental water, and the replenishment of groundwater supplies within the District. The District shall maintain a minimum balance equal to fifty percent of the sum of the (i) current annual budgeted General Fund appropriations, plus (ii) current annual budgeted debt service appropriations.

OCWD has demonstrated that it is able to support the servicing needs of its Service Area. The revenue sources continue to meet the expenses and are able to adapt to changing needs due, in large part, to the flexible Replenishment Assessment revenues.

3.5 Status of, and Opportunities for, Shared Facilities

The following Table 7 is a summary of the major agreements OCWD has entered into with other agencies to share facilities and/or services. This table identifies shared opportunities that involve arrangements with OCWD and other agencies for services that otherwise would have been provided by the agency but partnering with OCWD creates benefits, efficiencies, or makes them cost-effective.

Table 7: Description and Status of OCWD Agreements

Partner Entity(ies)	Subject Facility(ies)	Form of Agreement	Term of Agreement	Description	Status
15 Groundwater Producers (a subset of the 19 Groundwater Producers)	Production wells	Contract	Producers will own/operate treatment system for 30 years.	Groundwater Producer-OCWD PFAS Agreement based on OCWD policy dated Nov. 22, 2019 to construct PFAS treatment systems for impacted Producers who want to participate.	In-progress and expected to expand.
Irvine Ranch Water District, Orange County Sanitation District	Green Acres Project	Contract	15 years	OC San provides treated wastewater that OCWD treats further. Includes intertie to Irvine Ranch Water District's recycled water distribution system.	Operational
Irvine Ranch Water District, Municipal Water District of Orange County, and South OC Water Agencies*	South OC Emergency Services Program	Contract	Executed Nov. 14, 2008. Up for renewal in December 2029	Used for emergencies and planned MWD operational shutdowns. IRWD would supply up to 50 cfs for up to 30 days (3,000 AF) to the 5 South OC Agencies. They would pay IRWD for the water but no compensation goes to OCWD. The amount of water being sent is very small compared to the Basin's operation.	Whether or not this is renewed, OCWD is planning for a second emergency program with City of Santa Ana and Moulton Niguel Water District.
*South OC Water Agencies include City of San Clemente, Laguna Beach County Water District, Moulton Niguel Water District, Santa Margarita Water District, and South Coast Water District.					
Los Angeles County Flood Control District, the Water Replenishment District, & City of Long Beach	Alamitos Barrier Project	Contract	No end date given	Operate joint venture of facilities necessary to prevent, control, and correct intrusion of sea water into groundwater supplies of Central Basin in LA County and the OC Basin through the Alamitos Gap Area.	As long as there is pumping of the Basin and an ocean, this will continue. WRD has ample capacity in their water treatment facility for additional supply for injection wells along the Alamitos seawater barrier.

Partner Entity(ies)	Subject Facility(ies)	Form of Agreement	Term of Agreement	Description	Status
Municipal Water District of Orange County	Agreement and Lease executed April 15, 1987	Contract	Agreement and Lease has a 50-year term from April 15, 1987 through April 15, 2037.	OCWD owns all of the land at its Fountain Valley headquarters, including the land under the OCWD and MWDOC buildings (collectively, the "Office Facilities"). OCWD owns about 66% and MWDOC owns 33% of the Shared Office Facilities. OCWD leases 50% of the land under the Office Facilities to MWDOC.	Still current. MWDOC has the option, at its sole discretion, to extend the term of the Agreement and Lease for periods of 15 years.
Orange County Sanitation District	Ground Water Replenishment System	Contract	Upon dissolution	Cost-share of Phase 1; OC San provides secondary treated wastewater at no charge and built a pump station; OCWD manages and funds the GWRS operations. Partners in public outreach and grant procurement.	Functional and successful though limited by what OC San can provide. Advanced treatment capacity expanded in 2023 from 100 to 130 mgd. Additional expansion not proposed at this time.
Santa Ana Watershed Project Authority (SAWPA)	n/a	Joint Exercise of Powers Agreement dated 1975	Upon dissolution	Create a public agency with Inland Empire Utilities Agency, and San Bernardino Valley, Eastern and Western Municipal Water Districts to undertake projects for water quality control, pollutant abatement in the SAR Watershed using funds contributed by member agencies and grants and by issuing articles of indebtedness to finance project costs.	OCWD continues to be a member agency of SAWPA.

Partner Entity(ies)	Subject Facility(ies)	Form of Agreement	Term of Agreement	Description	Status
SAWPA Partner Agencies and The Metropolitan Water District of Southern California	Santa Ana River Conservation and Conjunctive Use Program water bank (SARCCUP)	Contract	Construction deadline: July 31, 2025 Operations contract	Prop. 84 grant between SAWPA and DWR. OCWD can store up to 36,000 AF for dry years from surplus State Project Water from MWD (extraordinary supply water) and imported water (local water). Both types of water are tracked and can be used in dry years.	Started 2021. $128 million project. $8 million provided to 5 Producers for 5 additional wells. 2,000 AF from WY 20-21 in the bank. Partners committed to making surplus SARCCUP water available for MWDOC.
The Metropolitan Water District of Southern California, Cities of Buena Park, Garden Grove, Orange, Santa Ana, Westminster, Yorba Linda Water District, Golden State Water Co., and Municipal Water District of Orange County	MWD Long-Term Groundwater Storage Program	Contract	Ending 2028	Conjunctive use program allows MWD to store up to 66,000 AF of water in the Basin in wet periods to be pumped in dry periods, droughts, or emergencies by groundwater producers in place of receiving imported water supplies during water shortage events. MWD funded 8 wells, improvements to seawater intrusion barrier, and constructed Diemer Bypass Pipeline to redirect lower-salinity imported water from State Water Project to OCWD recharge basin and pays an annual administrative fee.	25-year agreement starting 2003 with goal of 20 billion gallons for dry years and emergencies. Goal is on-track to be met. Cumulative water purchased since WY02-03 is 42,243.1 AF via Forebay Recharge and 57,100.8 AF via In-Lieu Delivery.
U.S. Army Corps of Engineers	Prado Dam & wetlands	Project-by project contracts	Depends on the terms of the project	Various collaborations since construction of Prado Dam in 1941 to increase the volume stored behind the dam and eventually delivered to the Basin.	Ongoing. Currently partnering on Forecast-Informed Reservoir Operations (FIRO) and sediment removal from behind the dam to maximize water conveyed to OCWD facilities with estimated increase of water captured by 7,000 AFY.

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Opportunities for Shared Facilities

The following are opportunities that were made known during preparation of this report for OCWD to share facilities:

- Announced in early January 2023, OCWD received funding from U.S. Bureau of Reclamation for two research projects to test water treatment technologies. The results are anticipated to improve not only the District's future operations and ability to safely recharge the Basin, but the results will be shared with Producers.
    - The first project, "In-Situ Gravity Driven Removal of PFAS During Groundwater Recharge to Protect Drinking Water," will evaluate the performance of an engineered adsorbent media when installed into the ground for the passive removal of PFAS in impacted surface waters that are used to recharge groundwater supplies. Awarded $199,430 in funding, OCWD is the project lead and will collaborate with technical advisors from Colorado School of Mines and Jacobs.
    - The second project, "Improving RO [reverse osmosis] Recovery through Optimization of Flux and Pump Usage with Real-Time Sensor Connectivity, Data-driven Modeling, and Automation," is in partnership with Hazen and Sawyer who was awarded $197,294 in funding. OCWD is supporting the research on site as a test bed location. The project aims to develop predictive algorithms with automated process controls that can optimize RO operational settings to reduce energy, maximize production, and minimize chemical costs while reducing membrane fouling and scaling. RO is the heart of the three-step GWRS advanced purification process.
- OCWD is currently studying the possibility of developing a second emergency water connection to South Orange County water agencies. This may replace or add to the existing emergency water connection via Irvine Ranch Water District. Discussions are underway with Moulton Niguel Water District and City of Santa Ana for the proposed connection. This is to prepare for the potential sunset of the existing emergency agreement via Irvine Ranch Water District in December 2029.
- OCWD is currently studying the extent of seawater intrusion in the City of Huntington Beach at "The Sunset Gap" located between Landing Hill and Bolsa Chica Mesa. OCWD Budget for FY 2023-2024 indicates a plan is being developed to address the issue including potentially building the District's third seawater intrusion barrier.
- PFAS will be a significant focus for OCWD in the immediate future because of the number of wells that lack treatment in areas where PFAS concentrations are known to exist. The District currently estimates up to 102 wells could be impacted

at a cost to OCWD of $550 million.[13] Therefore, to head off the shock of significant increases in the RA for local retail water suppliers to pay for PFAS treatment (estimated at 10 percent per year for 2-3 years), OCWD is pursuing several grant opportunities to fund PFAS treatment projects on behalf of its Groundwater Producers. OCWD has also budgeted to pay for 50 percent of all treatment system operation and maintenance (O&M) costs. Awarded grant applications are:

  - Orange County Regional PFAS Groundwater Treatment Program: Cities of Garden Grove and Santa Ana Projects; Proposition 1 Grant amount awarded is $4,200,000.
  - OCWD has received a $5,000,000 federal earmark for PFAS.

- Grant applications for the State Water Resources Control Board Drinking Water State Revolving Fund (DWSRF), "State FY 2023-2024 DWSRF Comprehensive List" for treating PFAS are listed below. The following projects have been included in the FY 2024-2025 Intended Use Plan Emerging Contaminants Fundable List:[14]
  - City of Tustin PFAS Water Treatment Plant Project ($5 Million grant)
  - City of Orange Wells 20, 21 and 22 PFAS Treatment Systems Project ($4 Million grant)
  - City of Fullerton Main Plant PFAS Water Treatment Plant Project ($5 Million grant)
  - East Orange County Water District PFAS Water Treatment Plant Project ($5 Million grant)
  - Irvine Ranch Water District Well OPA-1 PFAS Treatment System Project ($3.15 Million grant)
  - City of Anaheim PFAS Water Treatment Systems Project ($5 Million loan)
  - City of Santa Ana Wells 27 and 28 PFAS Water Treatment Systems Project ($4 Million grant)
  - City of Garden Grove Wells 22 and 25 PFAS Water Treatment Systems Project ($6 Million grant)

[13] U.S. EPA announced on April 10, 2024 the final National Primary Drinking Water Regulation for six PFAS with an enforceable level of 4.0 parts per trilling (ppt) for PFOA and PFOS. The final rule requires: (1) Public water systems must monitor for the 6 PFAS and have three years to complete initial monitoring (by 2027), followed by ongoing compliance monitoring. Water systems must also provide the public with information on the levels of these PFAS in their drinking water beginning in 2027; (2) Public water systems have five years (by 2029) to implement solutions that reduce these PFAS if monitoring shows that drinking water levels exceed these MCLs; and (3) Beginning in five years (2029), public water systems that have PFAS in drinking water which violates one or more of these MCLs must take action to reduce levels of these PFAS in their drinking water and must provide notification to the public of the violation. (https://www.epa.gov/sdwa/and-polyfluoroalkyl-substances-pfas)

[14] Source: Section XII.
https://www.waterboards.ca.gov/water_issues/programs/grants_loans/srf/docs/2024/2024-25-supp-iup-ec.pdf

- City of Huntington Beach PFAS Water Treatment Systems Project ($6 Million grant)
- City of Westminster PFAS Water Treatment Systems Project ($5.5 Million grant)
  Golden State Water Company Wells SCK5 and SBCH PFAS Water Treatment Systems Project ($5 Million grant)

- The "PFAS O&M Expenditure" is budgeted at $3.5 million. This is consistent with the District's plan to install well head treatment systems incrementally over a multi-year (2.5 years) period, grant awards are often received long after (0.5-1 year) they are applied for, and other funding methods are available including low-interest loans and reserves:
- OCWD and MWDOC continue to share the same office property at 18700 Ward Street in Fountain Valley and, in turn, both benefit from sharing maintenance and overhead costs. The arrangement is spelled out in the Agreement and Lease document, which says the District owns all the land at its Fountain Valley headquarters, including the land under the OCWD and MWDOC buildings (collectively, the "Shared Office Facilities"). OCWD and MWDOC jointly own the Shared Office Facilities: OCWD owns about 66 percent and MWDOC owns about 33 percent. OCWD leases 50 percent of the land under the Office Facilities to MWDOC (PC(3)). Furthermore, as part of OCWD's application to OC LAFCO to prepare this MSR and SOI update, Chapter 5 of this report includes findings of a feasibility study for consolidation between the two agencies.

3.6 Accountability for Community Service Needs

The OCWD Board of Directors represents the interests of 2.5 million residents and the Groundwater Producers within the limits of the District Act.

Governmental Structure

OCWD is divided into 10 Divisions as specified in the District Act. Divisions 1 through 7 hold elections for their Board representative. The method of electing directors was modified by the 1967 amendments to the OCWD Act, which put the vote in compliance with the general election voting laws (California Codes). After this, directors in Divisions 1 through 7 were elected in the geographic regions on the basis of one vote per registered voter. The boundaries of the 10 Divisions are shown on Figure 3. Division boundaries can by adjusted by resolution pursuant to Chapter 8 (commencing with Section 22000 of Division 21 of the California Elections Code).

When the Cities of Anaheim, Fullerton, and Santa Ana were extended membership into OCWD, the cities were considered as individual units, and the boundary of their Divisions was based on the city boundary. These three cities make up Divisions 8, 9 and 10. Each city's governing board (city council) is permitted to name a director that will serve the same term as the elected directors. Therefore, no direct vote of the residents is required within these cities. (OCWD 2014, p. 26)

Appointed members of the Board from Divisions 8, 9, and 10 serve a four-year term and may be removed at any time and without cause by the majority vote of the appointing governing body (OCWD Act, Section 12(b)). Elected members of the board in Divisions 1 through 7 also serve four-year terms and may be re-elected without limits. (OCWD Basin 8-1 Alternative, p. 2-3)

The Board of Directors meets twice a month, normally on the first and third Wednesdays of the month. Board committees also meet on a monthly basis. These committees include the Water Issues, Communication/Legislation, Administration/Finance, Property Management and Retirement. (OCWD Basin 8-1 Alternative, pp. 2-3, 2-4)

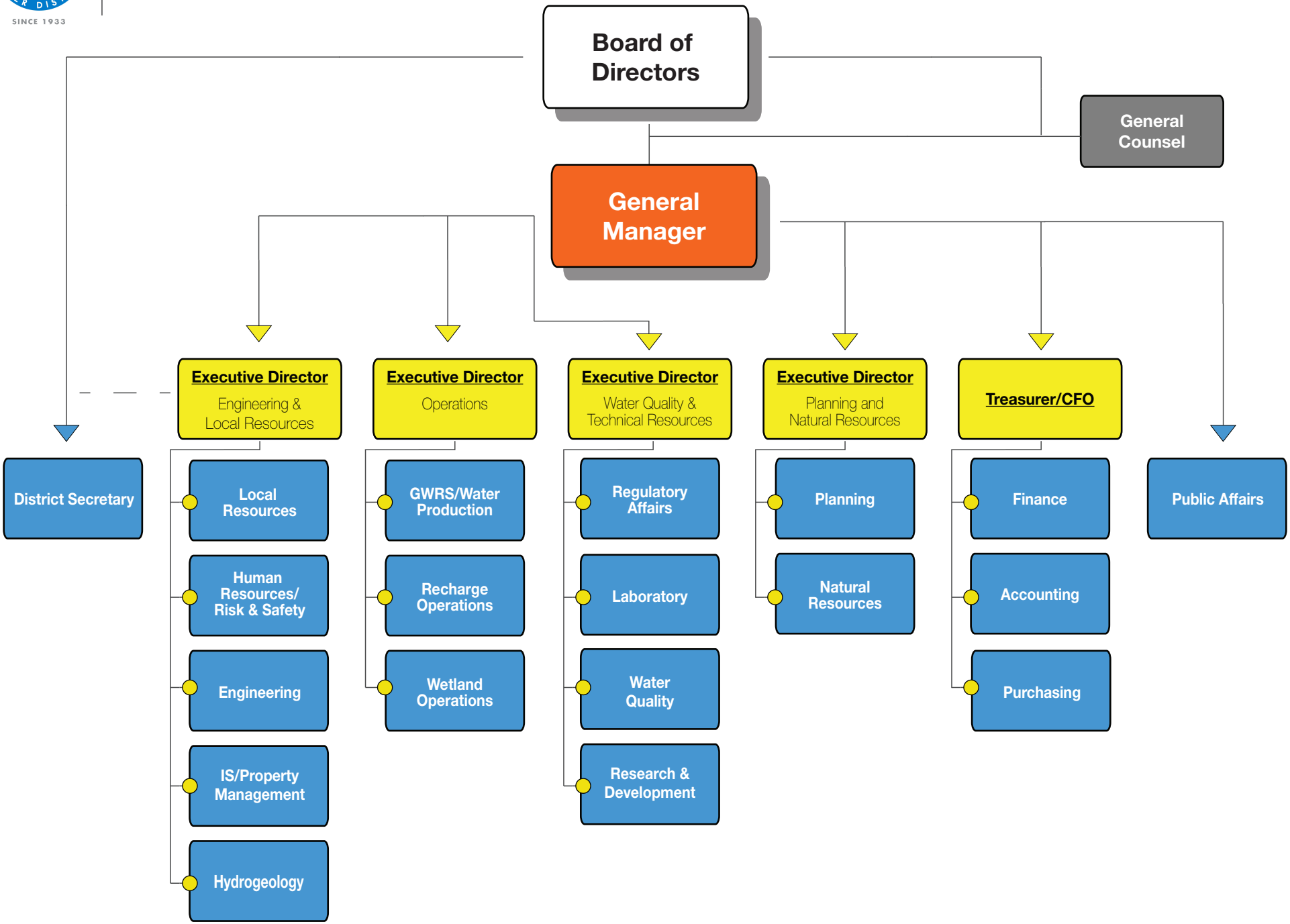
OCWD's governing structure is designed to give fair representation of the groundwater producers from within the ten Divisions. The 10 Divisions are comprised of the following areas (OCWD Basin 8-1 Alternative, pp. 2-4, 2-5):

- Division One: Garden Grove, Stanton, Westminster
- Division Two: Orange, Villa Park, and parts of Tustin
- Division Three: Buena Park, La Palma, Placentia, Yorba Linda, and parts of Cypress
- Division Four: Los Alamitos, Seal Beach, and parts of Buena Park, Cypress, Garden Grove, Huntington Beach, Stanton, and Westminster
- Division Five: Parts of Irvine and Newport Beach
- Division Six: Parts of Fountain Valley and Huntington Beach
- Division Seven: Costa Mesa and parts of Fountain Valley, Irvine, Newport Beach, and Tustin
- Division Eight: Santa Ana
- Division Nine: Anaheim
- Division Ten: Fullerton

The 19 Groundwater Producers meet on a monthly basis with OCWD staff.

The OCWD organizational chart for 2023 is shown on the following page.

Organizational Structure



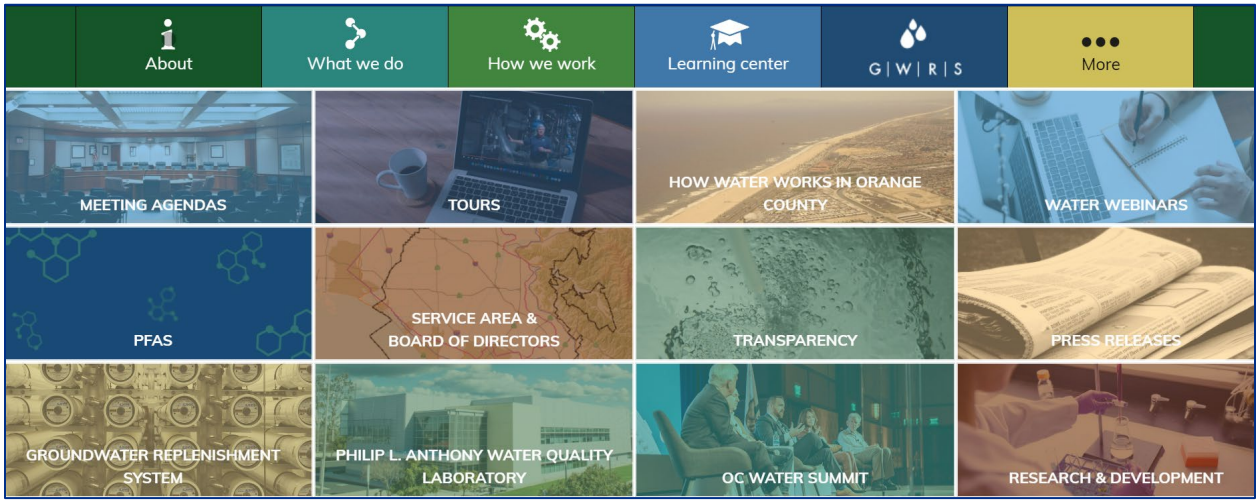
OCWD uses the expertise of many consultants to support its staff, including outside legal counsel, civil engineering consultants to design and oversee construction, landscape maintenance, employee development, safety programs, and more so that OCWD maintains full-time staffing of core employees. As of July 1, 2023, OCWD maintains 226.5 full-time positions in the departments shown on the organization chart on the prior page.

OCWD staff attend many meetings to gather information and further the interests of the District, including, the Association of California Water Agencies (ACWA), the California Special Districts Association (CSDA), the Independent Special Districts of Orange County (ISDOC), The Metropolitan Water District of Southern California (MWD), the Orange County Water Association (OCWA), the Orange County Business Council (OCBC), the Regional Water Quality Control Board (RWQCB), the Santa Ana Watershed Project Authority (SAWPA), and the Water Advisory Committee of Orange County (WACO).

OCWD staff and lobbyists meet with county, state, and federal representatives to petition for funding opportunities; specifically, they meet with newly elected legislators every two years after the November election cycle.

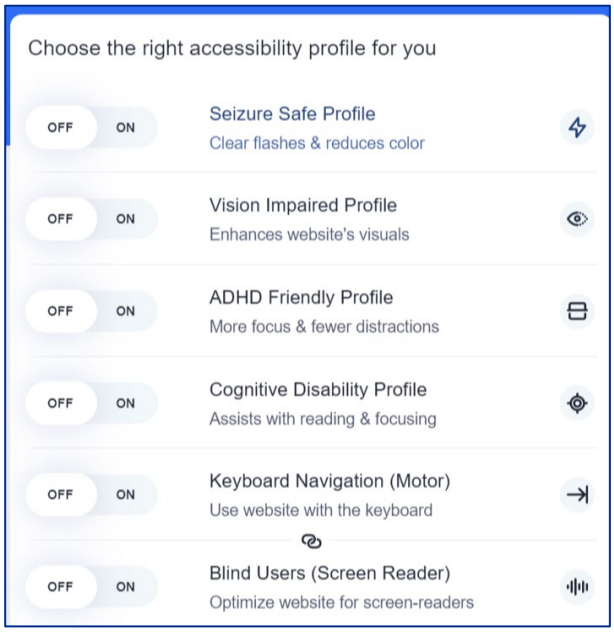
Accessibility, Accountability, and Transparency

The District's website (www.ocwd.com) offers a wide range of information on the District, as well as links to the retail water suppliers within its boundary for the public (see screenshot of Home Page, below).



Snapshot of www.OCWD.com website home page (dated November 7, 2023).

The OCWD Transparency webpage that is accessed through the Home Page shown above, provides access to financial documents (i.e., Annual Budget Reports, Annual Comprehensive Financial Reports, Audits, Annual Rate Assessment, Basin Pumping Percentage, and Statement of Revenues and Expenses), compensation and human resources (i.e., Board stipends and compensation, General Manager's compensation, Salary Structure, CA state Controller's Reports, How to Apply for a Job, Memorandum of Understanding between the District and OCWD Employees Association, and Personnel Manual), water quality and other reports (i.e., GWRS Annual Reports, Environmental Impact Reports and other public notices, local retail agencies' water quality reports, engineer's and groundwater recharge reports, groundwater level contour maps, and studies/publications), ethics (i.e. Conflict of Interest code, Board members and divisions, Board reporting forms), policies and procedures (i.e., Media Policy Rules of Order, Social Media Code of conduct, ticket distribution policy and Board of Directors policies and procedures), and instructions on how to make a public records request. The website also includes agendas, minutes, list of Board committees, the public comment policy, Brown Act, District Act, and a sign-up for public meeting email notices for Board of Directors meetings. As stated on the website, "Agendas for [Board of Directors] meetings are posted a minimum of 72 hours in advance of the meeting. OCWD welcomes productive dialogue with its governing board, utility partners, community leaders, and the public. Visitor participation is included at all agendized meetings. During this time, members of the public may offer public comment for up to three minutes." Furthermore, the OCWD website allows for Accessibility Adjustments, such as those shown in the snapshot to the left, as well as Content Adjustments, Color Adjustments, and Orientation Adjustments. The District also uses YouTube and social media outlets like LinkedIn, Facebook, Instagram, and Twitter. The OCWD Board Secretary's Office ensures compliance with all state laws regarding access to public meetings, public documents, financial disclosure laws, and the Brown Act.[15]



[15] The Ralph M. Brown Act was enacted in 1953 ("Open Meeting Law") to guarantee the public's right to attend and participate in meetings of local legislative bodies (Gov. Code Section 54950).

California Elections Code 22000-22002 requires OCWD to adjust the boundaries of Board Divisions 1 through 7 based on the 2020 census data in order to, as far as practicable, equalize the populations in each of these Divisions. Factors such as topography, geography, cohesiveness, and communities of interest in the District may be considered. Boundary adjustments to all Divisions 1 through 7 were recommended by staff and approved by the OCWD Board of Directors in Resolution No. 22-4-31 (April 6, 2022) following three public hearings (Staff Report, March 16, 2022).

3.7 Other Matters Related to Efficient Service Delivery

In its application to OC LAFCO for an MSR and SOI Update, OCWD requested a feasibility study of a consolidation with MWDOC. The purpose of the feasibility study is to analyze certain aspects of the two agencies using multiple factors to find whether efficiencies in the provision of services could exist upon combining the two wholesale water agencies. Therefore, this MSR includes said analysis with findings; no conclusions or recommendations are provided.

MSR STATEMENT OF DETERMINATIONS

The municipal services provided by OCWD were first comprehensively reviewed by OC LAFCO in 2006. The MSR determinations for OCWD were reviewed and reconfirmed in 2008 and 2013. This section includes the Statement of Determinations for the 2024 comprehensive review of municipal services provided by OCWD. The seven statutory determinations are examined in more detail in Chapter 3 of this report.

RECOMMENDATION:

Staff recommends the Commission adopt the MSR Statement of Determinations for the Orange County Water District as shown on *Exhibit 1* (next page).

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Exhibit 1
Orange County Water District
Municipal Service Review (MSR)
STATEMENT OF DETERMINATIONS

MSR DETERMINATION 1: Growth and Population Projections for the Affected Area

The Orange County Water District (OCWD) sphere of influence (SOI) encompasses 569 square miles including 52 square miles of ocean, 125 square miles of unincorporated Orange County, and includes 27 cities in the northern and central portions of Orange County. Within its Service Area of 430 square miles, OCWD manages the Orange County Groundwater Basin (Basin) and acts as a wholesale groundwater supplier to the retail water suppliers of northern and central Orange County. The Basin provides approximately 85 percent of the drinking water supply to the people within its Service Area.

OCWD has no land use authority and therefore relies on the information provided by the county and cities within its Service Area to estimate future changes in population and land use in order to forecast water demands on the Basin. The District also uses demographic data including projections of population, housing, and employment produced by the Center for Demographic Research (CDR) at California State University, Fullerton. According to CDR, the population of the OCWD Service Area is 2.44 million people as of 2020, which is projected to increase to a peak of 2.55 million people by 2045. (CDR's projection is based on the OCWD Service Area and not the entire sphere of influence of OCWD.) Based on the current and projected increase of approximately 4.5 percent over 25 years, there will be a continuing need for groundwater supplies and OCWD's management of the Basin.

OCWD prepares forecasts of water demands in its annual *Engineer's Report* and periodically in the *Groundwater Management Plan* based on recorded water use patterns and expected constraints on groundwater quality. The retail water suppliers within the Service Area ("19 Groundwater Producers") also prepare forecasts of water demands within their respective service areas and communicate their expected groundwater pumping to OCWD. The present and future needs provided by OCWD are addressed in the annual *Comprehensive Annual Financial Report* (CAFR), *Annual Budget Report*, and annual *Capital Improvement Program* (CIP). The CIP is a multiyear plan of improvements to the District's infrastructure taking into account District priorities, policies, and budget.

Exhibit 1
Orange County Water District
Municipal Service Review (MSR)
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Based on review of the data, water demands within OCWD Service Area are expected to be met over the planning horizon of this MSR analysis including the future increase in population, given the following factors: (1) the District's collaboration with CDR to proactively monitor demographic changes in the Service Area and in particular, population growth; (2) District projections accounting for future growth in each Groundwater Producer's service areas; and (3) the District's demonstrated ability to meet greater water demands in the past as compared to current water demands.

MSR DETERMINATION 2: The Location and Characteristics of Any Disadvantaged Unincorporated Communities Within or Contiguous to the Affected Sphere of Influence

The Center for Demographic Research at California State University, Fullerton (CDR) provided information on census block boundaries and the current statewide median household income threshold, from which 11 Disadvantaged Unincorporated Communities (DUCs) within the OCWD sphere of influence (SOI) were identified. Specifically, the DUCs are located within OCWD Division 1 and the SOIs of the Cities of Anaheim, Stanton, and Westminster. The DUCs receive water service from the Cities of Anaheim and Westminster and Golden State Water Company, as well as several private mutual water companies (Hynes Estates Mutual Water Company, Midway City Mutual Water Company, Eastside Water Association, and South Midway City Mutual Water Company). The Cities of Anaheim and Westminster as well as Golden State Water Company are three of the 19 Groundwater Producer Agencies of OCWD. The DUCs total 0.85 square mile (541 acres) and are part of larger urban communities with land uses dominated by residential, commercial, industrial, and recreational uses.

MSR DETERMINATION 3: Present and planned capacity of public facilities, adequacy of public services, and infrastructure needs or deficiencies including needs or deficiencies related to sewers, municipal and industrial water, and structural fire protection in any disadvantaged, unincorporated communities within or contiguous to the affected Sphere of Influence.

OCWD was created by a special act of the state legislature in 1933 (the OCWD Act) to manage the Orange County Groundwater Basin (Basin) for the Groundwater Producers. Therefore, in order to balance the effects of groundwater pumping, OCWD

Exhibit 1
Orange County Water District
Municipal Service Review (MSR)
STATEMENT OF DETERMINATIONS

has facilities to maximize recharge of the Basin using local surface water, stormwater runoff, reclaimed wastewater, and imported water supplies. OCWD does not directly serve water to retail customers, such as homes and businesses; therefore, OCWD's facility capacity and sufficient infrastructure relates to water reclamation and recharge facilities for OCWD to fulfill its mandate in the OCWD Act to sustainably manage the Basin.

Managing 85 percent of the water supply for the 2.44 million residents of northern and central Orange County, OCWD performs deliberate planning efforts for maintaining its infrastructure through its Replacement and Refurbishment (R&R) Model. The R&R Model is user-driven and proprietary; it tracks the useful life spans of all the District's infrastructure to prioritize facilities that need repair or replacement. The R&R Model forecasts into the future how much budget will be required for repairs and the annual contribution to the R&R fund increases each year to reflect the increasing costs of maintenance. According to the R&R Model, sufficient funds will be available for maintenance of infrastructure for the next 25 years.

During WY 2022-2023, the Basin showed a net increase of 69,000 acre-feet (AF) attributable to OCWD's network of 25 recharge basins capturing higher-than-average rainfall, and less than expected pumping rates attributable to the presence of PFAS. In regard to capacity, OCWD has several water rights and entitlements to water supplies. OCWD is pursuing an expansion of its water rights to the Santa Ana River flows based on additional capture and storage projects that it recently completed. OCWD also has an entitlement to purchase an amount of imported water up to that which it can recharge, which is a maximum of 300,000 AF (if all of the recharge basins are empty). OCWD has an entitlement to recycled water produced from its Groundwater Replenishment System (GWRS) up to 130 million gallons per day, dependent on the flows received from Orange County Sanitation District (OC San). Based on the results of the water supplies acquired and recharge that occurred in WY 22-23, it can be reasonably determined that the OCWD facilities have sufficient capacity to recharge the Basin.

A total of 11 DUCs have been identified within OCWD. All of the DUCs are located in OCWD Division 1, within the SOIs of the Cities of Anaheim, Stanton, and Westminster. Retail water service is provided to the DUCs by the Cities of Anaheim and Stanton and Golden State Water Company, as well as four mutual water companies (Hynes Estates

Exhibit 1
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Mutual Water Company, Midway City Mutual Water Company, Eastside Water Association, and South Midway City Mutual Water Company). Although the DUCs are located within the Service Area of OCWD, it is the responsibility of the public and private water suppliers to provide adequate water service to the individual customers, including areas identified as DUCs. The retail water suppliers are also responsible for addressing deficiencies in their production, treatment, and distribution systems, including seeking assistance from the State or neighboring agencies. The purpose of this study is not to assess the retail water systems' ability to provide water to their customers. Notably, nothing in the OCWD Act appears to limit OCWD's ability to assist public or private water suppliers within its jurisdiction, including those in disadvantaged communities. The wells owned by the mutual water companies that serve the DUCs are monitored as part of OCWD's Monitoring Program. The California Department of Public Health regulates the water quality of private mutual water companies. The monitoring, record-keeping, and water testing efforts OCWD is providing to these small producers are services that benefit their customers' ability to have water and, in turn, is part of the Basin management OCWD must perform to meet its charge. Because OCWD monitors the water quality of the wells and accounts for the water pumped by both large and small producers including those within the DUCs when making its water demand and water supply projections, and OCWD recharges the Basin with water for small and large producers to access regardless of where DUCs exist, OCWD is meeting the present and probable needs for potable water facilities and services of the DUCs to the extent that it is responsible for. Nonetheless, it is recommended that OCWD make available to some reasonable degree its extensive technical resources when requested by the mutual water companies within a DUC that need help to navigate funding opportunities for system improvements.

The Basin is estimated to hold, when full, roughly 66 million AF of water; however, OCWD limits overdrafting the basin to 500,000 AF. When more than 500,000 AF is removed for longer than a temporary, emergency scenario, adverse effects can occur including seawater intrusion, land subsidence, increased pumping costs, and upwelling of amber colored water. As such, OCWD manages the Basin to keep it at 150,000 to 200,000 AF less than full, which is a little less than one-half of maximum draw down amount of 500,000 AF. Groundwater in the equivalent elevation range keeps seawater from intruding anymore inland then existing, minimizes risk for subsidence, pumps can continue to pump, and amber-colored water stays in the Deep Aquifer.

Exhibit 1
Orange County Water District
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All pumpers are charged a flat Replenishment Assessment (RA) fee per AF produced. The OCWD Board of Directors issues a Basin Production Percentage (BPP) to pumpers each year that gives them an idea of how much of their total water demands can be met by groundwater. The BPP is currently 85 percent (increased from 77 percent in February 2023). Pumpers who exceed the BPP pay an additional fee called the Basin Equity Assessment (BEA). The combination of the RA, BPP, and BEA are the financial tools OCWD uses to manage the amount pumped from the Basin. However, in recent years a larger influence on pumping rates has been the presence of PFAS chemicals in the groundwater. Pumpers have turned off their wells until treatment systems are installed and, in the meantime, meet customer demands with imported water purchased from the local imported water wholesaler, Municipal Water District of Orange County (MWDOC).

The primary constraint on OCWD's management of the Basin currently and in the future is water quality; specifically, adding treatment systems for PFAS chemicals on Groundwater Producer's wells that need them. The RA has been increased approximately 10 percent each year for the last 3 years to fund the wellhead treatment systems. OCWD has also applied for many grant opportunities to defray the cost to the District and its 19 Groundwater Producers. Another water quality constraint is seawater intrusion; OCWD is planning for a third seawater intrusion barrier. A third constraint for the District is the inability at this time is to capture all of the anticipated storm flows from the Santa Ana River. OCWD applied for a water rights permit for up to 505,000 AFY from the State Water Resources Control Board that would capture the majority of storm flows. The District was granted 362,000 AFY based on the existing facilities and is pursuing additional rights in order to reach 505,000 AFY.

Based on the information provided for this study, it is determined that the present and planned capacity of OCWD's facilities are sufficient; the public services it provides are adequate; and the aforementioned water quality constraints that exist are being addressed cooperatively with retail water suppliers within a reasonable response time to meet anticipated regulations so that OCWD can continue managing the Basin.

Exhibit 1
Orange County Water District
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MSR DETERMINATION 4: Financial ability of agency to provide services.

The OCWD Fiscal Year 2023-2024 Budget was adopted by the Board of Directors on April 19, 2023, with a total budget of $279.2 million, which represents a decrease of 10.5 percent from the previous year. OCWD's audited budget reports demonstrate that the District is able to maintain a balanced budget, fully funded reserves, and fund capital improvement projects. The District is able to meet all its budgeted expenses and obligations and maintain an AAA credit rating with Fitch and Standard and Poors. Replenishment Assessments represent over 62% of total revenues in Fiscal Year 2023-2024 and can and do increase annually when necessary to help ensure revenues meet expense requirements. This flexibility along with its other revenue sources, budgeted reserves and great credit ratings put OCWD in a stable financial position to continue providing services to its customers.

MSR DETERMINATION 5: Status of, and opportunities for, shared facilities.

OCWD partners with many entities on projects that benefit and further the goals of the OCWD Act. This includes, but is not limited to, OC San, the 19 Groundwater Producers (13 Cities of Anaheim, Buena Park, Fountain Valley, Fullerton, Garden Grove, Huntington Beach, La Palma, Newport Beach, Orange, Santa Ana Seal Beach, Tustin, and Westminster, and 6 water agencies, East Orange County Water District, Golden State Water Company, Irvine Ranch Water District, Mesa Water District, Serrano Water District, and Yorba Linda Water District), MWDOC, County of Los Angeles, Water Replenishment District of Southern California, The Metropolitan Water District of Southern California, the members of the Santa Ana Watershed Project Authority, and U.S. Army Corps of Engineers. OCWD is also the largest buyer of imported water supplies from the local imported water wholesaler agency, MWDOC. The status of shared projects and facilities is well-documented to support the services provided by OCWD.

Partnership opportunities are expected for the future, which may include but are not limited to, a second emergency connection to the South Orange County water agencies, addressing seawater intrusion at the "Sunset Gap" and/or "Bolsa Gap," securing funding for the 19 Groundwater Producers to construct water treatment systems to address PFAS contamination in wells, and paying one-half of all PFAS

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treatment system operation and maintenance (O&M) costs. The opportunities for shared facilities continue to evolve at a sufficient pace for the purpose of supporting the services provided by OCWD.

MSR DETERMINATION 6: Accountability for community service needs, including governmental structure and operational efficiencies.

OCWD is an independent special district that serves 19 large Groundwater Producers, many small producers, and roughly 2.44 million northern and central Orange County residents, which are represented by the 10-member Board of Directors.

OCWD is accountable to the service needs of its community through Board-approved policies that support the efficient and transparent operations of the agency. The Board of Directors conducts public meetings twice a month and the Board Secretary ensures compliance with the Brown Act. OCWD staff maintain a robust website that contains a wide range of up-to-date information about the District's meetings, programs, and services, as well as social media, speaking engagements, and school-aged educational programs.

As of October 2023, members of the Board of Directors are paid $330.75 per meeting attended, up to 10 meetings per month. Board members are eligible for medical, dental, vision, and life insurance benefits, and participating in 401(a) and 457 plans.

The District has received many awards for its efforts in providing useful information, as well as promoting transparency and prudent fiscal practices; for example in 2020, the Government Finance Officers Association awarded a Certificate of Achievement in Excellence for OCWD's Comprehensive Annual Finance Report and One Planet awarded three gold medals for PR Campaign of the Year, Publicity Campaign of the Year, and Marketing Campaign of the Year. In addition, awards were received for the District's virtual outreach efforts during the COVID-19 pandemic and an Outreach Recognition Award from the Association of California Water Agencies. OCWD demonstrates sufficient accountability to community service needs including its governmental structure and operations that do not hinder the services provided to its Service Area.

Exhibit 1
Orange County Water District
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MSR DETERMINATION 7: Any other matter related to effective or efficient service delivery, as required by commission policy.

As part of its MSR and SOI update application to OC LAFCO, OCWD requested a feasibility study of consolidation with MWDOC to be included with the MSR. The findings of this analysis are provided in Chapter 5 of the MSR report.

CHAPTER FOUR | OCWD SPHERE OF INFLUENCE REVIEW

4.0 Sphere of Influence History

Gov. Code Section 56076 defines Sphere of Influence as, "a plan for the probable physical boundaries and service area of a local agency, as determined by the commission." The Sphere of Influence (SOI) for OCWD was originally adopted on November 23, 1977; it was last modified in 2008 as part of the first cycle of MSRs, and last reviewed by OC LAFCO on February 13, 2013 as part of the third cycle of MSRs.

The current SOI for OCWD totals 569 square miles, which includes 52 square miles of ocean. Approximately 139 square miles of the SOI (on land) is outside of the District's current Service Area, as shown on Figure 2. OCWD does not have facilities nor provide services beyond its current Service Area of 430 square miles. OCWD has indicated to OC LAFCO that it does not request any changes to the SOI at this time, although it should be acknowledged that OCWD has filed an application with OC LAFCO to conduct an MSR that reviews the feasibility of the consolidation of the District and MWDOC. Subsequent actions to the MSR initiated by either district may involve changes to the respective SOIs.

There are currently 11 DUCs within the SOI. They are all within OCWD Division 1 where unincorporated County land abuts the Cities of Anaheim, Stanton, and Westminster. Potable water service is provided to the DUCs by a combination of public water systems that are members of OCWD (i.e., Groundwater Producers) and private water companies on wells. There are no Williamson Act Contracts currently within the OCWD SOI.[16]

Since its formation in 1933, there have been approximately 45 separate annexations affecting the OCWD jurisdictional boundary. The geographic span of OCWD's Service Area on land has increased nearly 50 percent from the original 162,676 acres to its current Service Area of 241,920 acres. Sections 50 through 64 of the OCWD Act contain the District's annexation policy and procedures. Sections 65 through 74 of the OCWD Act describe the District's policy for the exclusion of lands from the District's jurisdictional boundary.

[16] The California Land Conservation Act of 1965 (Williamson Act) enabled local governments to enter into contracts with private landowners to restrict the use of their land to agricultural or related open space use, in return for reduced tax assessment based on farming/open space instead of full market value.

4.1 Present and Planned Land Uses

Figure 1 depicts the current OCWD SOI totaling approximately 569 square miles. The land use authorities within the SOI include the County of Orange and the 27 incorporated cities as shown in Table 8.

Table 8: Land Use Authorities in OCWD Sphere of Influence

OCWD	Incorporated Cities	County of Orange	Ocean	Total
SOI: Within Service Area	23 cities 343 sq.mi.	35 sq.mi.	52 sq.mi.	430 sq.mi.
SOI: Outside Service Area	13 cities 49 sq.mi.	90 sq.mi.	0	139 sq.mi.
Total	27 cities 392 sq.mi.	125 sq mi.	52 sq.mi.	569 sq.mi.

Land use data was obtained from the cities and county as part of this analysis. Because each agency categorizes land use types differently, each one was manually grouped into simple categories of residential, commercial, industrial, public facilities, mixed use, right-of-way, and open space. Results suggest that open space (including a combination of conservation, recreational, agricultural, and water uses) making up 63 percent of the area analyzed, is the predominant land use type within the SOI outside the Service Area.

Notably, a majority of the Cities of Laguna Woods and Lake Forest are within the OCWD SOI but both are fully outside of the OCWD Service Area. El Toro Water District is the potable water supplier to Laguna Woods and part of Lake Forest. Its water supply source is 100 percent from MWD imported water purchased from MWDOC. Irvine Ranch Water District provides potable water service to the portion of Lake Forest not served by El Toro Water District. Its water supply comes mostly from groundwater in the OC Groundwater Basin, as well as recycled water, surface water, and MWD imported water purchased from MWDOC. The City of Laguna Hills is partially within the OCWD SOI but receives its water from El Toro Water District.

One accomplishment of the May 14, 2008 SOI Update for OCWD was to align the SOI closer to the Santa Ana River Watershed boundary in the southern part of the District where "OCWD identified those lands that drain into and provide surface water that replenishes the groundwater basin" (OC LAFCO 2008). To be clear, the District's SOI does not fully align with the watershed boundary; for example, the Laguna Coast Wilderness Park is technically within the watershed, but because it drains away from the Basin, the area was not included in the SOI modifications (OC LAFCO 2008, p. 2). In addition, the watershed boundary is not coterminous with the OC Groundwater Basin boundary (Figure 1), resulting in some communities that happen to be fully or partially within the watershed boundary but are not within the groundwater basin; for example,

Laguna Hills and Laguna Woods, and therefore are not receiving their water from the Basin. Nonetheless, this study recommends no changes to the OCWD SOI and it should remain as currently mapped by OC LAFCO (Figure 1). The land uses for the part of the SOI that is outside of the OCWD Service Area and represents areas where no services are provided by OCWD, is outlined in Table 9. The majority land use type in this area is Open Space.

Table 9: Land Use Types within OCWD Sphere of Influence but Outside of Service Area

Land Use	County	Aliso Viejo	Anaheim	Brea	Fullerton	Irvine	Laguna Hills	Laguna Woods	Lake Forest	Newport Beach	Orange	Placentia	Tustin	Yorba Linda	Total (acres)
	(acres)														
Commercial	-	-	-	398	-	17	83	88	422	1	-	-	-	46	**1,055**
Industrial	-	-	-	493	-	41	-		614	-	-	-	-	31	**1,179**
Mixed Use	-	-	-	248	-	50	262		363	-	-	-	33	-	**956**
Open Space*	43,555	6*	2,431	1,422*	-	8,320*	62*	328	2,313	295*	376*	-	-	238	**59,346**
Public Facilities	2,571	4	2	229	-	75	8		268	7	100	-	-	-	**3,264**
Residential	11,516	92	5	3,288	65	2,513	319	683	2,969	41	729	15	-	-	**22,235**
Rights-of-way	-	1	-	-	-	396	-	48	473	4	143	-	-	96	**1,161**
Total (acres)	**57,642**	**103**	**2,438**	**6,078**	**65**	**11,412**	**734**	**1,147**	**7,422**	**348**	**1,348**	**15**	**33**	**411**	**89,196**

Notes: * When asterisk is included, Open Space includes recreational land uses in addition to preserved/conserved areas. Agriculture and Water Bodies are included in this category for Irvine.

Source: GIS data was obtained from each agency's website or directly from city staff in December 2023. Values are rounded to nearest whole number.

The land use designations shown in Table 9 represent the local jurisdiction's currently approved land use plan, which should ideally reflect the existing as well as the future land uses planned for the area. Non-conforming land uses currently in-place would not necessarily be represented in these land use totals and figures (e.g., homes in areas now zoned for industrial, etc.).

The land uses for the OCWD Service Area are tallied on Table 10. This data was obtained from agency websites and/or directly from agency staff in December 2023/January 2024. Land use types were manually grouped into general categories to give an approximate estimate of each. Open Space land uses (including water, active and passive parks, golf courses, etc.) follows Residential land uses as the second most common type of land use within the OCWD Service Area.

Table 10: Land Use Types within OCWD Service Area

Land Use	County	Anaheim	Brea	Buena Park	Costa Mesa	Cypress	Fountain Valley[e]	Fullerton	Garden Grove	Huntington Beach	Irvine	La Palma	Los Alamitos	Newport Beach	Orange	Placentia	Santa Ana	Seal Beach	Stanton	Villa Park	Westminster	Yorba Linda	Total (acres)
	(acres)																						
Commercial	57	2,345	0.06	841	1,256	232	-	803	335.3	570	1,585	28.3		945	926	244	2,527	159	206	12		Access to the City's GIS files was limited to a services layer and analysis tools could not be used. Approximately 97% of the City is within the OCWD Service Area.	**13,940**
Industrial	-	2,767	0.15	585.4	1,026	24	-	1,220	575.8	1,128	5,796	57	275	42	1,113	298	2,298	172	187	-	593		**17,289**
Mixed Use	-	825	0.02	322.2	150.5	815	-	333[a]	1,070	638	406	119	1,501	384	543	-	674	-	12	-	571		**8,364**
Open Space*	11,542	5,216*	1.8	449.2	554	182	460.5	2,306*	355.3	3,274	6,506[c]	14	82	2,800	5,683	111	994	1,365	105	28	121		**42,150**
Public Facilities	524	1,201	-	-	1,263.4	499	-	851	726.5	1,615	2,291	119	**	419	808	212	-	77.1	99	-	452		**11,157**
Residential	10,076	16,532	13.6	3,012	3,793	1,624	-	6,044	5,833	8,066	12,862	502	1,403	4,080	8,627	2,504	7,522	1,026	971	1,306	3,218		**99,015**
Rights-of-way	-	147	-	-	-	881	-	136[b]	2,568	3,682	1,309	60	340	124	120	47[b]	4	-	377	-	1,880		**11,675**
Total (acres)	**22,199**	**29,032**	**15.6**	**5,210[d]**	**8,045[d]**	**4,257**	**461**	**11,692**	**11,464**	**18,972**	**30,754**	**899[d]**	**3,601**	**8,794**	**17,820**	**3,416**	**14,018**	**7,134.5[g]**	**1,985[f]**	**1,346**	**6,836**		**208,000**

Notes: Values are rounded to nearest whole number.
* When asterisk is included, Open Space includes recreational land uses in addition to preserved/conserved areas.
**Included in Mixed Use category.
Source: GIS data was obtained from each agency's website or directly from city staff in December 2023.
(a) includes Specific Plan land use designation.
(b) includes Railroad land use designation.
(c) includes Agricultural land use designation.
(d) Values are net acres and therefore exclude unparcelled rights-of-way, including roadways and freeways, and parcels without land use designations.
(e) City of Fountain Valley General Plan EIR (June 2023) does not summarize land use areas other than the total area and the open space. Electronic files of the General Plan land use plan were not available.
(f) Includes 29 acres of vacant land of unknown designation.
(g) Includes 4,336 acres of Military land use type.

According to the California Department of Conservation's Farmland Mapping and Monitoring Program, there are approximately 4,370 acres (7 square miles) outside the Service Area and 6,142 acres (9.5 square miles) within the Service Area of Prime Farmland, Farmland of Statewide Importance, Grazing Land, and Unique Farmland within the SOI (based on best available data dated 2018), as summarized in Table 10 and shown on Figure 7.

Table 11: Mapped Farmland Categories in OCWD Sphere of Influence

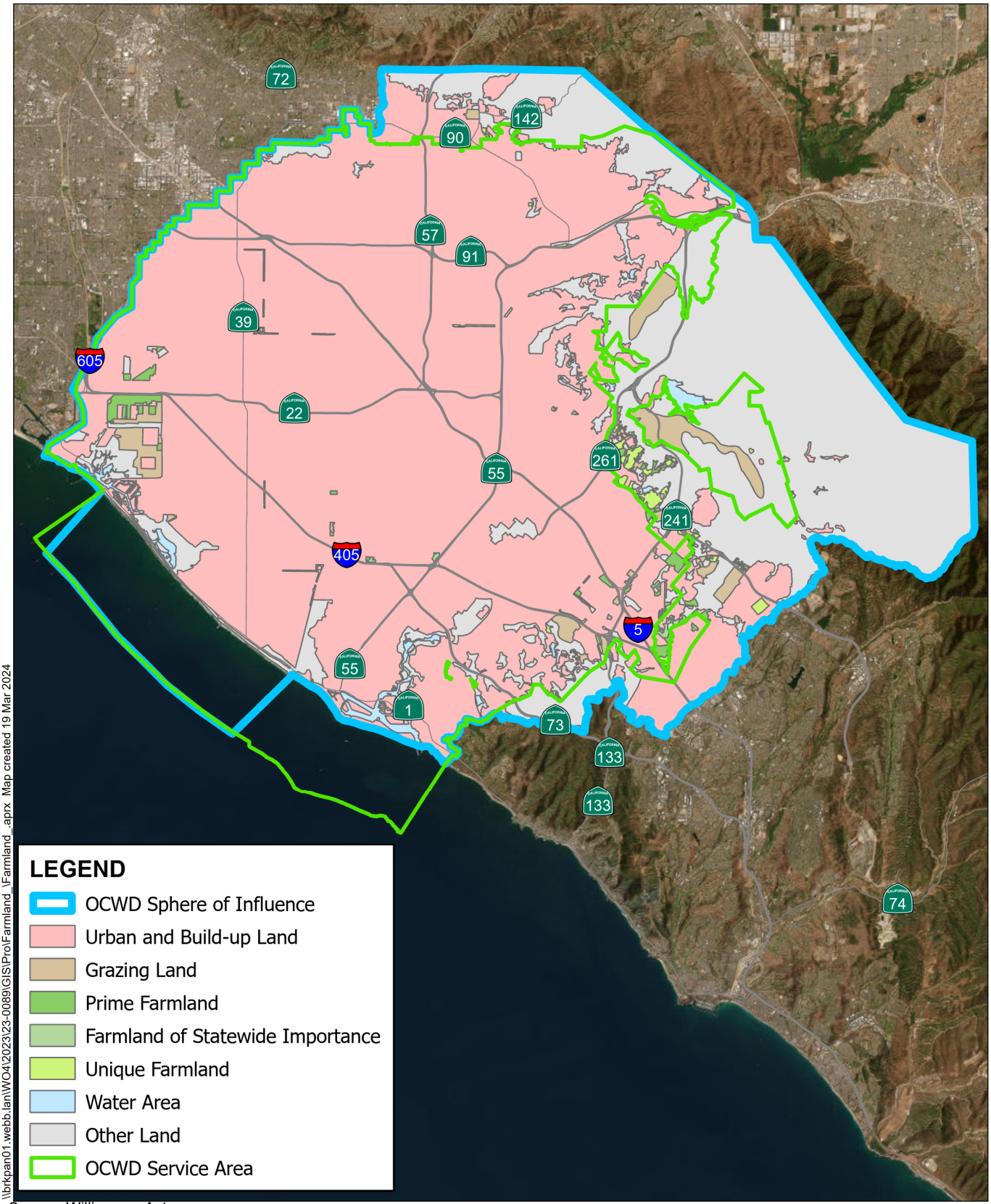
Farmland Categories	Acres within OCWD Sphere of Influence Within Service Area (2018)	Acres within OCWD Sphere of Influence Outside of Service Area (2018)
Prime Farmland	1,428 (2.2 sq.mi.)	660.3 (1.0 sq.mi.)
Farmland of Statewide Importance	66 (0.1 sq.mi.)	239.3 (0.4 sq.mi.)
Unique Farmland	471 (0.7 sq.mi.)	1,158.2 (1.8 sq.mi.)
Grazing Land	4,177 (6.5 sq.mi.)	2,312.7 (3.6 sq.mi.)
Urban and Built-up Land	207,815 (325 sq.mi.)	16,752.3 (26.2 sq.mi.)
Other Land	27,889 (44 sq.mi.)	66,992.1 (105 sq.mi.)
Water	2,219 (3.5 sq.mi.)	631.5 (1.0 sq.mi.)
Ocean	31,457 (49 sq.mi.)	0
Total[a]	**275,523 (430 sq.mi.)**	**88,746.2 (139 sq.mi.)**

Farmland Definitions	
Prime Farmland	Farmland with the best combination of physical and chemical features able to sustain long term agricultural production. This land has the soil quality, growing season, and moisture supply needed to produce sustained high yields. Land must have been used for irrigated agricultural production at some time during the four years prior to the mapping date.
Farmland of Statewide Importance	Farmland similar to Prime Farmland but with minor shortcomings, such as greater slopes or less ability to store soil moisture. Land must have been used for irrigated agricultural production at some time during the four years prior to the mapping date.
Unique Farmland	Farmland of lesser quality soils used for the production of the state's leading agricultural crops. This land is usually irrigated but may include unirrigated orchards or vineyards as found in some climatic zones in California. Land must have been cropped at some time during the four years prior to the mapping date.
Grazing Land	Land on which the existing vegetation is suited to the grazing of livestock. This category was developed in cooperation with the California Cattlemen's Association, University of California Cooperative Extension, and other groups interested in the extent of grazing activities.
Urban and Built-up Land	Land occupied by structures with a building density of at least 1 unit to 1.5 acres, or approximately 6 structures to a 10-acre parcel. This land is used for residential, industrial, commercial, construction, institutional, public administration, railroad and other transportation yards, cemeteries, airports, golf courses, sanitary landfills, sewage treatment, water control structures, and other developed purposes.

Other Land	Land not included in any other mapping category. Common examples include low density rural developments; brush, timber, wetland, and riparian areas not suitable for livestock grazing; confined livestock, poultry or aquaculture facilities; strip mines, borrow pits; and water bodies smaller than forty acres. Vacant and nonagricultural land surrounded on all sides by urban development and greater than 40 acres is mapped as Other Land.
Water Area	Perennial water bodies with an extent of at least 40 acres.

Source: California Department of Conservation Farmland Mapping and Monitoring Program Important Farmland Categories website, https://www.conservation.ca.gov/dlrp/fmmp/Pages/Important-Farmland-Categories.aspx.

(a) The area analyzed in this table is the same general area analyzed in the prior land use table (Table 7); however, the total acreages do not match exactly which is attributable to boundaries representing different time periods and rights-of-way.



\\brkpan01.webb.lan\WO4\2023\23-0089\GIS\Pro\Farmland_\Farmland_aprx Map created 19 Mar 2024

Source: Williamson Act; OC 2018

Figure 7 – Farmland within OCWD Sphere of Influence

OCWD Municipal Service Review

ALBERT A. WEBB ASSOCIATES

4.2 Present and Probable Need for Facilities and Services

OCWD's present need for facilities and services is represented by the 19 Groundwater Producers and approximately 2.5 million residents in north and central Orange County that receive part or all of their potable water from the OC Groundwater Basin. Probable future needs are represented by the projected population growth in Table 3 and land use plans in Tables 9 and 10 and Figure 6.

There is a present need for OCWD to remediate contamination within the soil and groundwater of the Basin in order for Producers to use the groundwater. With regulatory oversight from U.S. EPA, the District is targeting a plume of volatile organic compounds (VOCs) that underlies portions of Fullerton, Anaheim, Placentia, and Buena Park (North Basin Superfund Site.) A feasibility investigation is expected in 2024 that will guide a remedial action plan. The District is also targeting VOC and perchlorate contamination underlying portions of Irvine, Santa Ana, and Tustin (South Basin Groundwater Protection Project). The remedial investigation and feasibility study are completed, and the remedial action plan is undergoing CEQA review. This underscores the importance of regular well monitoring and acting quickly to start the cleanup process.

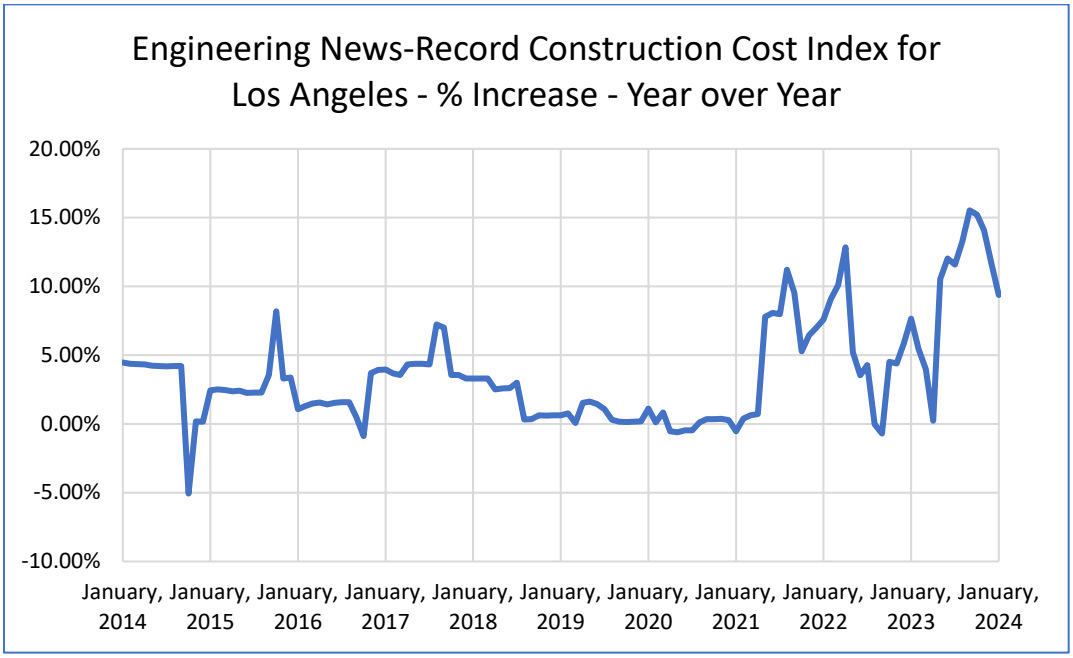
Similar to the need to address contamination, brackish groundwater (when fresh water is mixed with seawater) can render drinking water wells inoperable. Monitoring seawater intrusion and taking actions to minimize the degree of intrusion is a present need for OCWD. The District has two seawater barriers, the Alamitos and Talbert Barriers, which were built in 1964 and 1975, respectively. The barriers are a line of injection wells where recycled water is injected into the ground to push back the intrusion of seawater. The District is investigating a third location called the Sunset Gap where monitoring data suggests seawater has migrated inland and impacting a Huntington Beach well.

The facilities and projects the District has or is planning to have in order to meet present and probable needs for groundwater from the Basin are listed in Tables 5 and 7 in Sections 3.3 and 3.5 of the MSR report. To plan for future repairs and replacement of existing facilities (i.e., probable needs), the District maintains an impressive Replacement and Refurbishment (R&R) program model. The R&R model is interactive so that assumptions/constraints can be changed before it forecasts what will be needed each year in expenses. Funding for R&R projects comes primarily from RA revenue and a small portion from investment revenue. Transfers to the R&R Fund from operational revenues are increased by 7 percent each year. The model and listed assets are reviewed by department heads annually in order to forecast expenses for things that have lifetimes such as pumps, pipelines, and membranes. The model has about 1,700 entries in the infrastructure asset list (infrastructure that can be repaired or replaced) and

approximately 152 entries with expired useful lives (e.g., tractors purchased in 1985, etc.).

Given recent increases in the cost of construction, according to the Engineering News Record Construction Cost Index for Los Angeles, as shown in Chart 11, the District should consider adjusting its model to reflect higher costs of construction as well as delays in procuring equipment from overseas.

Chart 11 – Construction Cost Index, Jan. 2014 – Jan. 2024



Total capital investment by the District as of 2022 was approximately $1 billion to $1.5 billion, which is a significant addition of assets to the R&R model, but not all of these assets will need to be repaired or replaced. The R&R model currently forecasts that sufficient funding will be available for the repairs and replacement needed for the next 25 years, including the recent capital investments.

The R&R model is one method the District uses to plan for present and probable needs for facilities and services within its jurisdiction. Another method is the annual Capital Improvement Program (CIP). The CIP is a five-year budget for a list of OCWD projects identified to support its mission. Being on the list does not guarantee a project will proceed; several stages of approval by the Board of Directors will bring a project to fruition. In the fiscal year 2023-2024 budget, the CIP has 19 projects totaling $101.1 million. Funding for the CIP comes from long-term debt, grants, and $47.7 million of the FY 23-24 budget will come from RA revenue or current revenue (called “PAYGO”) to minimize debt service costs.

Of OCWD's 19 CIP projects, 13 are PFAS treatment systems for Irvine Ranch Water District and East Orange County Water District, and the Cities of Anaheim, Tustin, Orange, Fullerton, Santa Ana, and Garden Grove. Two CIP projects are related to seawater intrusion, one is for modernizing in-house research and development equipment, two projects are related to remediation of contaminated soil or groundwater, and the last CIP project is constructing monitoring wells (FY23-24 Budget, Table 8-2). The CIP projects demonstrate current priorities for the future that address both present and probable need, as well as the planned funding sources.

There is a present need from the Groundwater Producers to equip wells with treatment methods that will reduce certain PFAS chemicals in anticipation of a federal limit to be issued by the U.S. EPA. Since 2020, OCWD has planned for PFAS treatment systems. Initially, 61 wells needed treatment and up to 200 wells could be impacted at a cost of $550 million to OCWD if U.S. EPA establishes a 4 ppt MCL. Currently, 30 of the 61 wells are back in operation with treatment, another 22 are under construction, and the remaining wells are in design. Each PFAS treatment system project requires roughly 2.5 years from design to construction, at a cost of roughly $5 million each. Another 45 wells are planned for completion in the next few years. It is fortunate for all water agencies facing this scenario that PFAS can be removed with known and tested technology. Considering that the District's current reserves are about $247 million (projected year-end fiscal year 2022-2023), the cost for OCWD to meet the MCL will need to be a dominant component of both the budget and grant procurement for the next several years. Increases in the RA to cover this cost are planned in the amount of 10 percent annually for 2-3 years.

For fiscal year 2023-2024, OCWD has budgeted $3.5 million for its share of PFAS O&M expenses and grant funding revenue in the amount of at least $5 million to help defray the cost to meet this future MCL. The U.S. EPA Water Infrastructure Finance and Innovation Act (WIFIA) program awarded the District a low-interest loan that OCWD can also use for PFAS treatment systems expenses. Although OCWD is party to a class-action lawsuit against the manufacturers of PFAS chemicals, OCWD's fiscal year 2023-2024 budget conservatively plans for zero settlement monies to be received.

To meet the need for the service it provides, OCWD invests in projects that recharge more water into the Basin and projects that improve the quality of the water pumped from the Basin. The GWRS and Green Acres Project collaborations with OC San, for example, currently meet the demands of 83 mgd and 3.4 mgd of recycled water that is suitable for groundwater recharge and irrigation, respectively (Table 5). Operating these projects at full capacity could produce up to 130 mgd and 7.5 mgd of supply, respectively (Table 5). If these projects were not in place, then effluent from OC San would be discharged to the ocean and it would not benefit the Basin. Irrigation water

would have been supplied from potable water. An equivalent amount of water supply would have to be obtained from elsewhere to recharge the Basin and to irrigate, such as purchasing more imported water or diverting more surface water; or another approach could be decreases in the BPP combined with increases in the RA and BEA to incentivize less pumping depending on how much overdraft was occurring.

Reclamation and reuse of wastewater that would have otherwise been discharged to the ocean is one way the District is planning for present and probable needs for its services. Another method is working with the U.S. Army Corps of Engineers (USACE) at Prado Dam to find ways to increase the amount of water that can be stored behind Prado Dam. OCWD owns the land behind the dam and holds the water rights, but USACE operates the dam. OCWD estimates approximately 7,000 AFY of storm flows could be captured that would have otherwise been released downstream to the ocean. This is done with a management strategy called Forecast Informed Reservoir Operations (FIRO) to better inform the USACE when to release or retain water behind the dam by using better weather forecasts. For example, a pending storm might normally trigger a release of water to meet a set reservoir depth, but with FIRO, the forecast will guide the release volume to maximize the volume that can be held behind the dam and to avoid releases that are not necessary. FIRO is still being tested by USACE and other agencies. OCWD's proactive involvement in testing this new operational strategy speaks to planning for present and future needs for recharge water.

OCWD has not indicated an intention at this time to apply for or request changes to its Service Area boundary, nor its SOI boundary. If OCWD has a reason in the future to request a change in its Service Area boundary or its SOI boundary, then an application to OC LAFCO will be required. Because the District does not provide services outside of its Service Area, it does not have present or planned needs beyond those already planned for.

The City of Brea is within OCWD's SOI but is not within the District's existing Service Area and therefore Brea is not one of OCWD's 19 Groundwater Producers. At this time, the aforementioned conditions described in the May 14, 2008 SOI Update (see Section 3.0) have not occurred (i.e., groundwater flowing into the OC Groundwater Basin from Brea and subsequent groundwater pumping by Brea). In addition, the existing OCWD Annexation Policy only allows annexation of land into the Service Area from the District's existing 19 Producers, of which Brea is not a part. Therefore, no probable need for expansion of the Service Area into Brea is known at this time.

Based on the information reviewed for this study, OCWD demonstrates adequate facilities and planning efforts to meet present and probable needs for services in the future through financial, maintenance, and operational planning activities.

4.3 Present Capacity and Adequacy of Facilities and Services

The present capacity of facilities and services provided by OCWD within its Service Area are discussed in Section 3.3 (Table 5). According to OCWD, the District has no facilities and provides no services within the portion of its SOI that is outside of the Service Area. If a need arises for facilities and services to extend beyond the current Service Area and into the SOI, then OCWD will need to prepare appropriate studies to determine adequate capacity to meet expected demands, as well as request annexation from OC LAFCO.

The sources of water supply for the Basin include Santa Ana River flows, rainfall, recycled water, and imported water. The District makes a projection each year of what it expects to get from each of these sources. Constraints on these supplies include droughts, reductions in river flows, water quality limitations, and restrictions on available imported water supplies. On the other hand, as urbanization continues upstream of Prado Dam, more flows in the river are expected in the form of base flow (i.e., wastewater discharges) and storm flows (i.e., from more impervious surfaces). But when storm flows exceed the capacity of diversion facilities, river water that would have been recharged is lost to the ocean.

Water Rights and Entitlements

OCWD has certain water rights and entitlements that define maximum thresholds for water supplies. First, OCWD has a right to an average of 42,000 AFY of base flow at Prado Dam and all storm flow reaching Prado according to the 1969 Judgment.[17] For reference, the actual base flow plus storm flow from the Santa Ana River in WY 21-22 was 108,200 AF. OCWD also holds a permit from the State Water Resources Control Board (SWRCB) for an appropriative water right to divert water from the Santa Ana River for groundwater recharge in the amount of 362,000 AFY (A031174). The District's request for an additional 143,000 AFY is held in abeyance (A031174B) until the facilities to capture this additional amount are completed.

In 2023, OCWD submitted a report to SWRCB indicating the completion of projects so that an additional 49,980 afy can be diverted and stored. The SWRCB is currently reviewing the request to include this amount in the granted 362,000 afy, potentially raising OCWD's water right to 411,980 afy, with the remaining 93,020 afy still in abeyance. Discussions with the SWRCB are ongoing, exploring the possibility of granting OCWD more time to further expand its diversion and storage capacity, further augmenting its water rights to Santa Ana River flows at Prado Dam.

[17] Orange County Water District v. City of Chino, et al., Case No. 117628-County of Orange, entered by the court on April 17, 1969. The Judgment became effective on October 1, 1970.

In addition to the Santa Ana River, OCWD has a diversion permit issued by SWRCB on September 25, 1984 to divert water from Santiago Creek and Alameda Storm Channel to the Santiago Basin (A027261).

OCWD has an entitlement as a member agency of MWDOC to purchase MWD imported water from MWDOC. The maximum purchase amount would be equivalent to the maximum amount that could be recharged, which is about 300,000 AFY if all of the recharge basins were emptied, and therefore unrealistic. OCWD purchases what it can put to use, which varies from year to year.

OCWD has an entitlement to the recycled water produced by the GWRS facility, which was expanded in January 2023 from 100 mgd to 130 mgd of treatment capacity. The amount produced by GWRS is limited by the amount provided by OC San, not including treatment losses. For example, 175 mgd from OC San converts to 130 mgd from GWRS. When OC San completes construction at Plant 2, then recycled water produced by GWRS will increase up to 130 mgd.

Present Capacity

At the end of WY 2021-2022, a shortfall of 10,000 AF existed as the difference between the volume pumped and the volume replenished in the Basin. With this shortfall, the Basin held 258,000 AF of the maximum 500,000 AF. The largest discrepancy between the District's projected and actual water supplies for WY 2021-2022 occurred in Incidental Recharge, which represents rainfall. In WY 2021-2022, roughly half of the 35-year rainfall average fell at the OCWD offices, resulting in 35,600 AF of anticipated water that did not materialize. Had the rainfall occurred, OCWD would have had capacity for it in the recharge facilities and in the Basin. Instead, OCWD purchased water for recharge from MWDOC in the amount of 23,000 AF.

Adequacy of Facilities and Services

The Basin was refilled by OCWD in the four years prior to WY 2021-2022 because they were wet years, and filling in wet years to draw down in dry years is the planned operational strategy for the Basin. The District's existing water rights and entitlements have provided for sufficient ability to replenish the Basin and maintain the ability of producers to pump what they require. Combined with the District's mission to procure as many local sources of water supply as economically as possible including planned increases in river water diversions and GWRS production of recycled water that are well within the District's rights and entitlements will bolster the District's ability to meet its mission into the future.

Any applications to OC LAFCO that would change a SOI resulting from this study's findings will warrant another review of the adequacy of facilities and services.

4.4 Social or Economic Communities of Interest

Unincorporated County

There are approximately 35 square miles of unincorporated County within the District's 430-square mile Service Area, including 0.85-square mile (541 acres) of DUCs (Figure 4). Potable water is supplied to land uses within unincorporated areas by local retail water providers, both large and small (i.e., Groundwater Producers and mutual water companies). It is the responsibility of the local retail water provider to maintain a functioning distribution system that delivers water that meets state and federal drinking water standards. OCWD has shown itself to be a good partner to the Groundwater Producers for collaborations on projects that have mutual benefits.

DUCs

Disadvantaged unincorporated communities (DUCs) are communities located in both an unincorporated county area and a census block reporting a median household income that is 80 percent or less than the statewide median household income. The CDR assisted in this study to determine 11 DUCs within the OCWD SOI that meet these criteria (Figure 4). They are all located within Division 1 of the OCWD Service Area and total 0.85 square mile (541 acres). The water suppliers to the DUCs include the Cities of Anaheim and Westminster, Golden State Water Company and four mutual water companies.

OCWD's Monitoring Program includes the wells used by the water suppliers to the DUCs. Water quality testing is performed, and pumping rates are recorded every 6 months by OCWD in order to monitor the quality and quantity of water in the Basin. Mutual water companies are discussed in detail in the following section.

Mutual Water Companies

Mutual water companies are private, not-for-profit organizations that are organized under California Corporations Code 14300. They are regulated by the U.S. EPA Safe Drinking Water Act, California Department of Public Health, State Water Resources Control Board, California Water Code, and Health and Safety Code and they report their boundaries to LAFCOs. Mutual water companies have shareholders instead of customers and annual shareholders' meetings with financial reports must be held. They are typically small in size and were often organized at a time when there was not a regional public water system available to connect to and they often rely on a limited supply source, such as one well. There are currently nine mutual water companies within the OCWD SOI, as shown in Table 12.

Table 12: Mutual Water Companies in OCWD Sphere of Influence

Mutual Water Company Name	City or County	System Number	In OCWD's Monitoring Program?[a]	WY 21-22 Non-Irrigation Pumping (AF)[c]
Crescent Water Association	Anaheim	CA3000811	No	<25
Eastside Water Association[b]	Unincorporated	CA3010008	Yes	201.8
Hynes Estates Mutual Water Company[b]	Unincorporated	CA3000519	Yes	79.4
Knott's Berry Farm	Buena Park	CA3000734	Yes	197.2
Liberty Park Water Association	Huntington Beach	CA3000618	Yes	<25
Los Alamitos Race Track	Cypress	CA3000819	Yes	245.1
Midway City Mutual Water Company[b]	Unincorporated	CA3010097	Yes	100.2
Page Avenue Mutual Water Company	Fullerton	CA3000585	Yes	<25
South Midway City Mutual Water Company[b]	Unincorporated	CA3000825	Yes	71.2

Notes: WY = Water Year; AF = acre-feet

Recent consolidations include: Diamond Park Mutual Water Company with City of Santa Ana; Houston Avenue Water Association with City of Anaheim; and Old Pirate Lane Water Company with City of Huntington Beach.

(a) According to the list provided in Appendix A of the 2017 Basin 8-1 Alternative.

(b) Mutual water companies with shareholders located in at least one of the DUCs in the OCWD SOI.

(c) The BPP applies to producers who pump more than 25 AF per WY.

The companies in Table 12 are a mix of small producers that pump less than 25 AF of water per year and those who pump more but are not one of the large producers. The wells utilized by all but one of these mutual water companies are included in the OCWD Monitoring Program and meter data is collected by OCWD every 6 months to account for how much they pump from the Basin. However, OCWD is not actively testing their water quality on a regular basis for concentrations of PFAS.

Senate Bill (SB) 88 (2015) added sections 16680-116684 to the California Health and Safety Code, allowing the State Water Resources Control Board to require certain water

systems that consistently fail to provide safe drinking water to consolidate with, or receive an extension of service from, another public water system. The consolidation can be physical or managerial. SB 552 (2016) expands the state's authority to include state small water systems and mobile home parks. The state has long encouraged the voluntary consolidation of public water systems where possible but mandatory consolidation can only be used when all of the following criteria are met: located in a disadvantaged community, "documented" water quality or quantity issue exists; and a functional water system is nearby that can serve the subsumed system (Fact Sheet 2021).

The current ability or functionality of the mutual water companies listed in Table 12 was not investigated for this study nor were their water quality test results. OCWD previously assisted with the consolidation of a failing private water system with the City of Santa Ana (Diamond Park Mutual Water Company) in 2014. Santa Ana was willing to subsume the mutual water company and secured funds for new piping and infrastructure to upgrade the system and decommission the company's well. OCWD has tested small producers for PFAS in a few isolated instances when the small producer received an order to do so from state regulators (PC(3)).

Nothing in the OCWD Act appears to restrict the District from engaging with mutual water companies within its jurisdiction for the benefit of the basin, specifically, to "act jointly with or cooperate with…private corporations…to carry out the provisions and purposes of this act" (Section 2, Item 11). To the extent that it is feasible, OC LAFCO can engage with the State Water Resources Control Board and mutual water companies in Orange County on funding opportunities to review facilities, costs, and rates and identify potential service alternatives to facilitate adequate and quality water to the respective communities. Any applications to OC LAFCO resulting from this study's findings that would change an SOI will warrant another review of social or economic communities of interest.

4.5 Present and Probable Need for Services to DUCs

A total of 11 DUCs have been identified in Division 1 of OCWD's Service Area as discussed in Section 4.4. In addition, five mutual water companies are within the OCWD SOI in addition to the four that serve portions of the DUCs (Table 12). There is a probable need in the future for consolidation of the mutual water companies that serve portions of certain DUCs with their neighboring large public water supplier. When the proposed MCL for PFAS (specifically, PFOA and PFOS) of 4 ppt goes into effect, small producers will be testing their water for this constituent, and then based on the results weighing their options. In light of this, this study recommends OCWD to avail its technical resources if requested by the small producers in disadvantaged areas, particularly the

11 DUCs. Technical resources could include water quality testing services and/or navigating the guidance and funding opportunities the State provides to small producers to fund treatment systems or to consolidate. If at such time any of the mutuals within the DUCs (and the Service Area) initiates consolidation with their neighboring public system, then this study recommends OCWD to assist in the process if requested.

Any applications to OC LAFCO resulting from this study's findings that would change a SOI will warrant another review of present and probable needs for services within DUCs.

SOI STATEMENT OF DETERMINATIONS

OC LAFCO first established the sphere of influence (SOI) of the Orange County Water District in 1977. Since that time, the District's SOI has been reviewed in conjunction with boundary change applications and during the preparation of previous MSRs. The most recent comprehensive review of the District's SOI was completed in 2013. This section includes the Statement of Determinations for the 2024 review of OCWD's SOI. The five statutory determinations are examined in more detail in Chapter 4 of this report.

RECOMMENDATION:

Staff recommends the Commission adopt the Statement of Determinations to reaffirm the SOI as shown on *Exhibit 2*. The SOI would need to be revisited as part of any future District reorganization or consolidation application.

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Exhibit 2
Orange County Water District
Sphere of Influence (SOI)
STATEMENT OF DETERMINATIONS

SOI DETERMINATION 1: The present and planned land uses in the area, including agricultural and open space lands

The Sphere of Influence (SOI) of Orange County Water District (OCWD) is 569 square miles. The SOI contains 52 square miles of ocean, 125 square miles of unincorporated county, and 392 square miles of 27 incorporated cities. The OCWD Service Area is 430 square miles containing 35 square miles of unincorporated county, 52 square miles of ocean, and 343 square miles of 23 incorporated cities. Open space land uses make up the majority of the Service Area and the SOI. According to the latest data from California Department of Conservation's Farmland Mapping and Monitoring Program (dated 2018), there are approximately 3.2 square miles of Prime Farmland, 0.5 square mile of Farmland of Statewide Importance, 10.1 square miles of Grazing Land, and 2.5 square miles of Unique Farmland within the SOI for a total of 16.3 square miles, or 3 percent of the SOI area. The remaining area is mapped as Other Land (149 square miles), Water (4.5 square miles), and Urban Built-Up Land (351.2 square miles).

OCWD does not have land use authority and relies on the General Plans of the county and cities within its boundaries for accurate information on the present and planned land uses of the areas within the Service Area and SOI. In cooperation with the Center for Demographic Research at California State University, Fullerton, OCWD monitors land use changes within its Service Area. Because OCWD does not provide services outside of the Service Area, it is presumed the retail water suppliers that serve the SOI beyond the OCWD Service Area track land use changes and water demands within their respective service areas. OCWD is not requesting changes to its Service Area or SOI.

Pursuant to OCWD's application to OC LAFCO, a feasibility study of consolidation between OCWD and MWDOC is underway. If a subsequent application to OC LAFCO is filed in response to the feasibility study, then the SOI of both entities would be reviewed again.

Exhibit 2
Orange County Water District
Sphere of Influence (SOI)
STATEMENT OF DETERMINATIONS

SOI DETERMINATION 2: The present and probable need for public facilities and services in the area

To continue its mission, OCWD has a present need for targeting areas of groundwater contamination and for adding PFAS treatment systems to affected wells. The District's fiscal year 2023-2024 budget and Capital Improvement Program (CIP), which is guided by the District's Replacement and Refurbishment (R&R) Model, lists 15 of the 19 total CIP projects that target these present needs. PFAS treatment will be a dominant component of the District's budget into the future. There is also present need to have facilities that capture more of the Santa Ana River base flows and storm flows once they pass Prado Dam. The District is working to expand river diversion efforts even further, to up to 505,000 AFY so that more of the wet year storm events can replenish the basin instead of flowing to the ocean. There is also a present need to address seawater intrusion occurring in the Sunset Gap in Huntington Beach.

OCWD facilities and services are limited to its Service Area. The District is not requesting changes to its services, Service Area, or sphere of influence as part of this review. If the need becomes apparent in the future to alter the OCWD Service Area and/or SOI boundary, then OCWD will have to undertake appropriate studies to assess the extent of water service demand involving the Basin and submit an application to OC LAFCO for approval of such changes.

During the course of our review, a potential update to the OCWD Service Area was noted. As shown on Figure 2, there are three gaps or holes in the OCWD Service Area that are located within the City of Newport Beach. They total 31 acres and are fully within the SOI of OCWD and completely surrounded by OCWD Service Area. OCWD has indicated they have no reason not to include these areas in their official Service Area and recognizes that further research would need to be conducted prior to submitting an annexation application to OC LAFCO for review and processing.

Pursuant to OCWD's application to OC LAFCO, a feasibility study of consolidation between OCWD and MWDOC is underway. If a subsequent application to OC LAFCO is filed in response to the feasibility study, then the SOI of both entities would be reviewed again.

Exhibit 2
Orange County Water District
Sphere of Influence (SOI)
STATEMENT OF DETERMINATIONS

SOI DETERMINATION 3: The present capacity of public facilities and adequacy of public services that the agency provides or is authorized to provide

The capacity of OCWD's infrastructure to manage the basin sufficiently was demonstrated in WY 2022-2023 when rainfall exceed 158 percent of the long-term average. By the end of June 2022, more water was recharged than anticipated resulting in filling the Basin with an additional 69,000 AF, despite some losses to the ocean. Therefore, the District's capacity is commensurate with the population it currently serves. The District's planning efforts are demonstrated in the annual Comprehensive Financial Report, Annual Budget, and CIP by identifying the resources required to repair, replace, and expand facilities in order to meet its stated mission.

In terms of supply capacity, the District has many water rights and entitlements to water supplies. OCWD recharge basins have a maximum capacity potential of 300,000 AF per year, if all are starting from empty. Furthermore, the District has a water rights permit from the State Water Resources Control Board for diverting up to 362,000 AFY of Santa Ana River base flows and storm flows, with another 143,000 AFY held in abeyance. OCWD submitted a request in 2023 to the State Water Board containing a list of completed projects that would enable the District to divert an additional 49,980 AFY. If approved, this would increase the water right to 411,980 AFY, with 93,020 AFY still in abeyance. The District is also entitled to receive up to 130 million gallons per day from the Groundwater Replenishment System (GWRS), as well as entitlements to recycled water from OC San for the Green Acres Project and recycled water from the Water Replenishment District of Southern California for the Alamitos Barrier Project. OCWD will need to continue to budget for maintenance and expansions of capacity as infrastructure ages, regulations change, and collaboration opportunities arise.

Pursuant to OCWD's application to OC LAFCO, a feasibility study of consolidation between OCWD and MWDOC is underway. If a subsequent application to OC LAFCO is filed in response to the feasibility study, then the SOI of both entities would be reviewed again.

Exhibit 2
Orange County Water District
Sphere of Influence (SOI)
STATEMENT OF DETERMINATIONS

SOI DETERMINATION 4: The existence of any social or economic communities of interest in the area, if the Commission determines that they are relevant to the agency

OCWD is charged with managing the water supply of the Orange County Groundwater Basin within its sphere of influence area of 569 square miles. The 19 Groundwater Producers supply the majority of water to the 2.44 million residents within the service area. A total of nine mutual water companies are also within the OCWD Service Area. A total of 11 Disadvantaged Unincorporated Communities (DUCs) were identified within the OCWD Service Area as part of this study. Land uses within the DUCs receive their potable water service from the Cities of Anaheim, Westminster, and Golden State Water Company, and four mutual water companies. Areas of unincorporated Orange County, the 11 DUCs, and the nine mutual water companies within the OCWD Service Area are considered communities of interest. OCWD is a wholesale entity and does not provide water directly to customers, so it is not responsible for the provision of retail water service to these communities of interest. Noting that OCWD has been an excellent partner to its retail agencies in the past, it is recommended that OCWD continue to do so by providing a reasonable level of technical assistance to the water providers of these communities of interest when requested.

Pursuant to OCWD's application to OC LAFCO, a feasibility study of consolidation between OCWD and MWDOC is underway. If a subsequent application to OC LAFCO is filed in response to the feasibility study, then the communities of interest of both entities would be reviewed again.

Exhibit 2
Orange County Water District
Sphere of Influence (SOI)
STATEMENT OF DETERMINATIONS

SOI DETERMINATION 5: If a city or special district provides public facilities or services related to sewers, municipal and industrial water, or structural fire protection, the present and probable need for those facilities and services of any disadvantaged unincorporated communities within the existing sphere of influence

A total of 11 DUCs are identified within Division 1 of the OCWD Service Area based on the current statewide median household income threshold and the census block boundaries. The retail water suppliers to the DUCs are responsible for the provision of water service and are responsible for the present and future potable water facilities to serve individual customers, not OCWD. The water demands of the water suppliers within the DUCs are accounted for in OCWD's planning projections of water demands. Furthermore, OCWD includes the wells that service the DUCs in its Monitoring Program. In light of pending changes to water quality regulations, it is recommended that OCWD continue to support retailers within its Service Area by providing a reasonable level of technical assistance to the water providers to the DUCs when requested. Additionally, OC LAFCO can engage or facilitate an effort with the State and the private mutual water companies of Orange County on a review of facilities, associated costs, and rates to find opportunities for efficiencies.

Pursuant to OCWD's application to OC LAFCO, a feasibility study of consolidation between OCWD and MWDOC is underway. If a subsequent application to OC LAFCO is filed in response to the feasibility study, then the present and probably need for facilities and services of any DUCs for both entities would be reviewed again.

CHAPTER FIVE | CONSOLIDATION FEASIBILITY STUDY

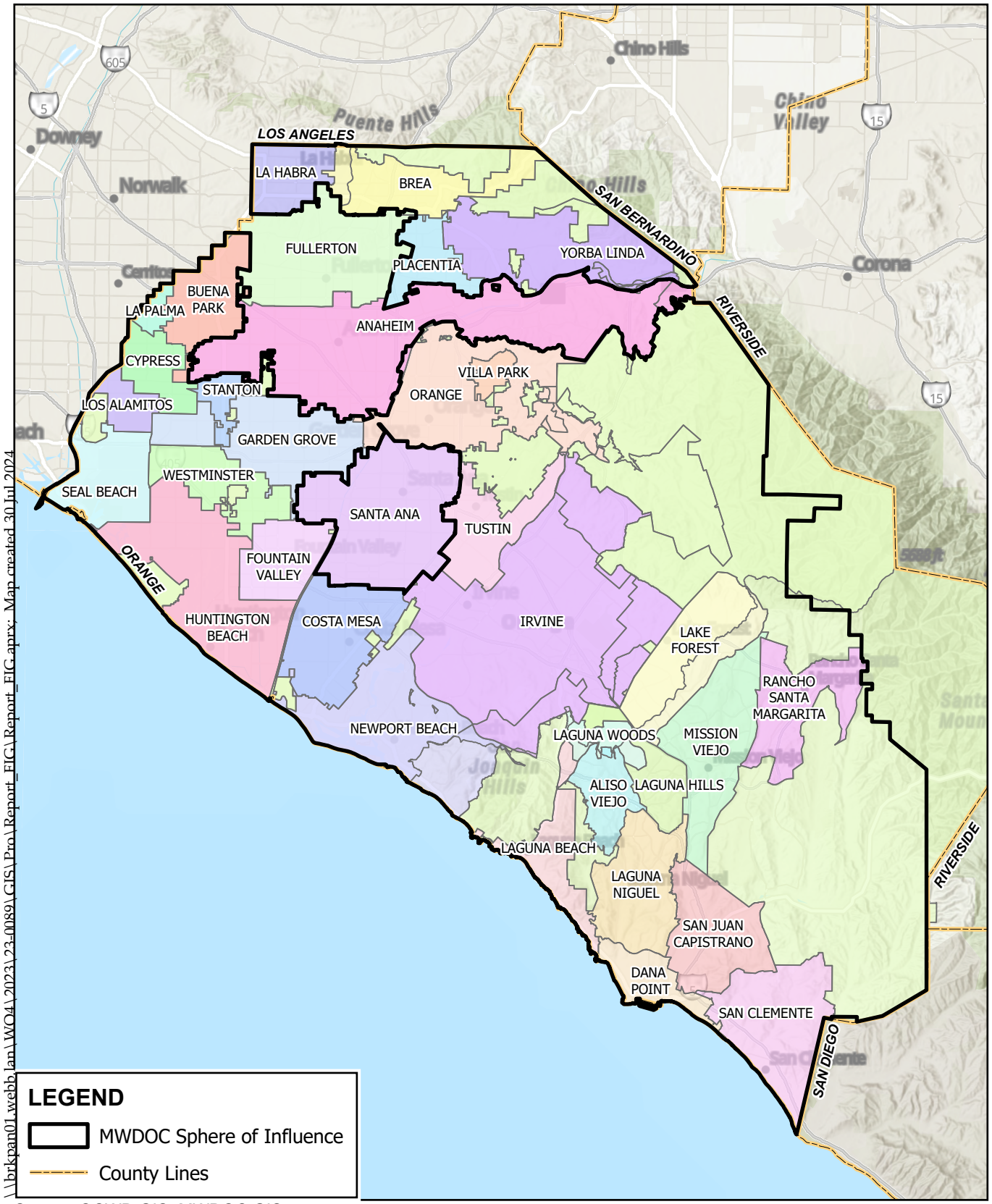
5.1 Background

On October 4, 2022, OCWD submitted an application with OC LAFCO to prepare a Comprehensive MSR including a feasibility analysis of the consolidation of OCWD and MWDOC. The current Sphere of Influence of MWDOC is shown in Figure 8. MWDOC serves an area of approximately 600 square miles over most of Orange County (except the Cities of Anaheim, Fullerton, and Santa Ana). MWDOC provides imported water to 27 member agencies with a seven-member Board of Directors, with each member representing a division elected to a four-year term by voters within their division (September 9, 2020, MWDOC MSR, p. 10). OCWD's Sphere of Influence and MWDOC's Sphere of Influence are shown on Figure 9.

OCWD's application to OC LAFCO was submitted following a June 2022 report prepared by the Orange County Grand Jury entitled, Water in Orange County Needs "One Voice." The Grand Jury report discusses the consolidation of OCWD and MWDOC into a single County wholesale water agency to increase the efficiency and effectiveness in delivering imported water and groundwater, major infrastructure investments, development of forward-thinking policies and practices, and opportunities at the local, State, and federal levels in legislation, policy making and receiving subsidies and grants.

There has been a total of four such reports from the Orange County Grand Jury (1982, 1994, 2013, and 2022); two recommended a single wholesale agency (1982 and 2022) and two recommended staying separate (1994 and 2013).[18] In addition, an April 1994 Wholesale Water Agency Reorganization Study prepared jointly by Coastal Municipal Water District, MWDOC, and OCWD, "did not come to unanimous agreement on a single option [but] several relevant conclusions and recommendations were reached" (WWAPG, 1994).

[18] Source: *MWDOC and OCWD Relations & OCWD's LAFCO Focused MSR Study* presentation at MWDOC Board Study Session, April 28, 2023, p.16.



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Source: OCWD GIS, MWDOC GIS

Figure 8 - MWDOC Sphere of Influence

OCWD Municipal Service Review

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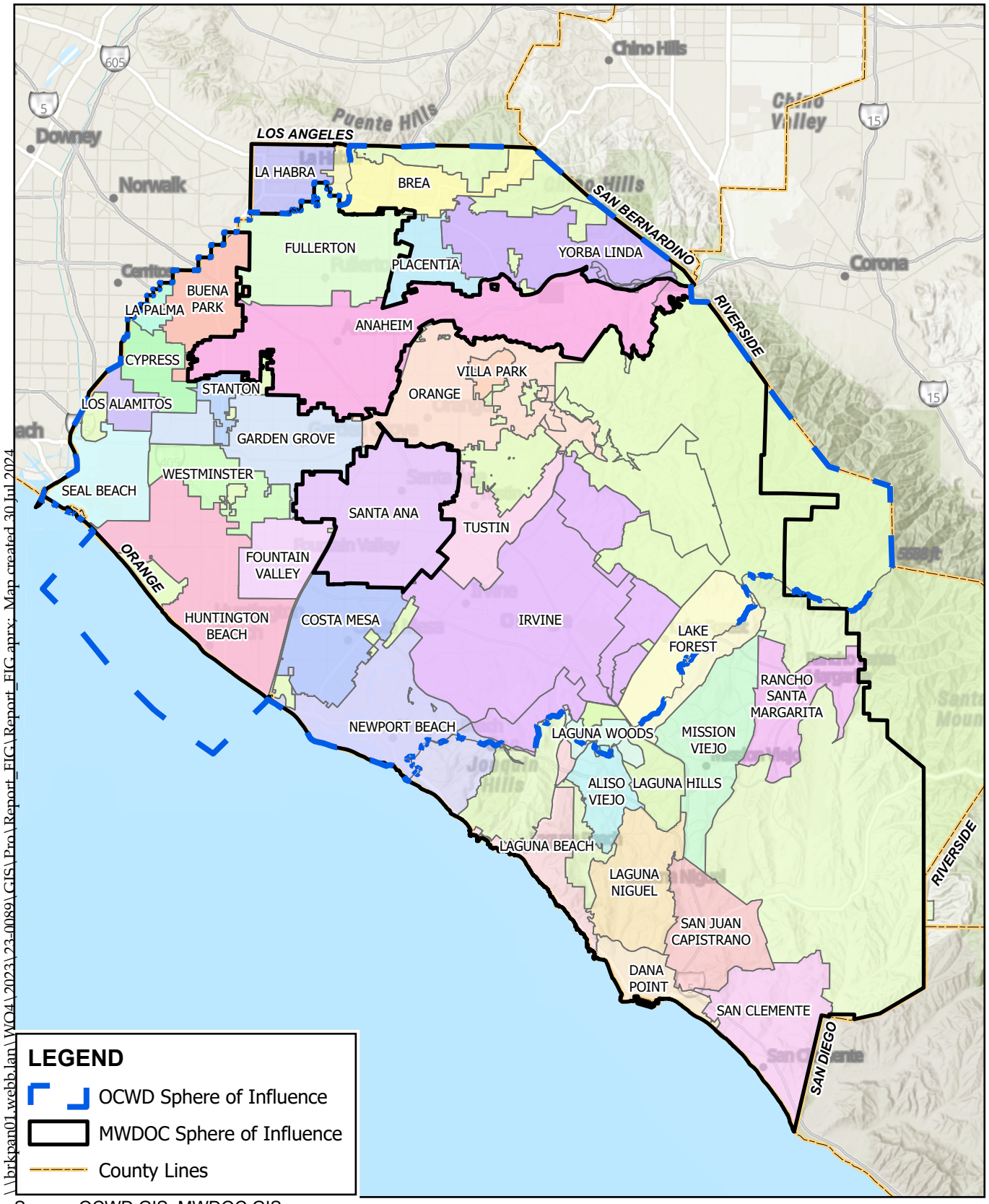

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Source: OCWD GIS, MWDOC GIS

Figure 9 - MWDOC and OCWD Sphere of Influence

OCWD Municipal Service Review

ALBERT A. WEBB ASSOCIATES

Merging of the two entities was also discussed in OC LAFCO reports, including the August 2009 Governance Study for the Municipal Water District of Orange County (OC LAFCO 2009) and September 2006 OCWD MSR/SOI Study (OC LAFCO 2006). The September 2006 OCWD MSR/SOI Study did not have a fiscal analysis but based on stakeholder discussions determined consolidation with MWDOC would not be feasible for the following reasons (OCWD 2006, p. 56):

- Implementing it would take an act of legislation because it involves changing OCWD's principal act.
- Merging these two agencies would not necessarily achieve great efficiencies in overall management of water resources in Orange County.
- Keeping these two agencies separate maintains an important check and balance system, preventing one agency from having control over water supply for the entire County.

The 2009 MWDOC Governance Study concluded, "that only two governance structure options, 'MWDOC Baseline' (or maintain status quo) and 'Reorganization of South County Agencies to Form a County Water Authority' are viable within the constraints imposed by existing law" (p. 78). A fiscal analysis was also not prepared as part of this study and alternatives that required changes to existing law were "parked" based on input from the stakeholders.

An MSR for OCWD was last conducted by OC LAFCO in 2013, which did not include a discussion of consolidation. The most recent MSR for MWDOC was completed in 2020, which also did not include a discussion of consolidation of the agencies.

5.2 Scope of Work

The scope of work for this study includes, but is not limited to, Gov Code Sections 56653, 56700, 56826.5, 56865, 57150(d), 57500, 57502, 57077.2 as well as the following topics:

- Fiscal sustainability of consolidating OCWD and MWDOC operations, infrastructure, programs, contracts and agreements, retirement plans, and other obligations through evaluation of each District's revenues and expenditures; audited financials; rates, fees, and assessments; rate studies and projections; debt obligations; current and projected staffing levels; and transition cost projections involving consolidation; and
- Potential benefits of consolidation.

5.3 Fiscal Sustainability of Consolidation

Fiscal sustainability is the ability of an agency to continue meeting its current obligations and expenditures without defaulting. Maintaining fiscal sustainability requires informed planning of future revenues and liabilities taking into account the many influencing factors that can drive prices up or down such as water rates and availability, equipment costs, and weather forecasts. To inform whether a consolidation of OCWD and MWDOC would be fiscally sustainable, this study begins with establishing a combined baseline of average expenses and revenues for operations, infrastructure, programs, contracts and agreements, retirement plans, and other obligations of both agencies. The baseline budget is then used to discern whether costs or savings could result for the Successor Agency upon consolidation. In this study, fiscal sustainability is measured through the effects of combining of employees, eliminating certain redundant staff positions, reducing overhead costs, reducing the number of board members, and modifying employee benefits.

Budget Comparison and Analysis

The baseline budget information used in this analysis is a three-year average of each agency's board-adopted budgets for Fiscal Years 2021-22, 2022-23, and 2023-24. Using an average baseline budget reduces potential bias that may be introduced by a data outlier in any one year. The three-year average budget of each agency and their combined sum are shown in Table 13. Through consultation with staff from each agency, similar line items were grouped together into similar subgroups (e.g., "Salaries & Wages," "Employee Benefits," etc.) to compare each agency's unique budget side-by-side. Therefore, some budget line items appear without value; for example, Column 3, Lines 3 through 7 have no budget because MWDOC does not have those line items in its budget for the last three fiscal years. Rather, those expenses for MWDOC are grouped into Lines 1 and 2, or they are simply not applicable as is the case with Line 5, Capitalized Salaries. Refer to Appendix A for descriptions of line items that have no assigned value in Table 13.

Table 13: Three-Year Average of Adopted Budget Expenses for OCWD and MWDOC

Column 1 Line	Column 2 Item Description[a]	Column 3 MWDOC Expenses [b]	Column 4 OCWD Expenses [b]	Column 5 Total Combined Expenses [c]
	Salaries & Wages			
1	Salaries & Wages	$4,581,009	$27,109,293	$31,690,302
2	less for Recovery from Grants	($22,888)	$0	($22,888)
3	Overtime	$0	$681,610	$681,610
4	Payroll Taxes	$0	$460,440	$460,440
5	Capitalized Salaries	$0	($349,748)	($349,748)

Column 1 Line	Column 2 Item Description[a]	Column 3 MWDOC Expenses [b]	Column 4 OCWD Expenses [b]	Column 5 Total Combined Expenses [c]
6	Temporary Workers - General Total	$0	$149,167	$149,167
7	Expense - Contra	$0	($73,333)	($73,333)
	Subtotal	**$4,558,121**	**$27,977,429**	**$32,535,550**
	Employee Benefits			
8	Employee Benefits	$674,340	$4,518,881	$5,193,221
9	CALPERS Unfunded Liability Contribution	$207,000	$0	$207,000
10	Health Insurance Coverage for Retirees	$93,500	$5,859	$99,359
11	Retirement[d]	$760,975	$4,550,184	$5,311,159
12	Capitalized Benefits	$0	($99,997)	($99,997)
13	Retiree Health Trust	$0	$1,278,667	$1,278,667
	Subtotal	**$1,735,815**	**$10,253,593**	**$11,989,409**
	Director Fees & Costs			
14	Director Compensation	$279,628	$359,100	$638,728
15	Director Benefits	$132,891	$0	$132,891
16	MWD Representation	$146,690	$0	$146,690
17	Election Expense	$0	$133,000	$133,000
18	Contribution to Election Reserve	$287,916	$0	$287,916
	Subtotal	**$847,125**	**$492,100**	**$1,339,225**
	Insurance Expense			
19	Insurance Expense	$150,992	$695,567	$846,559
20	Insurance Refund	$0	($50,000)	($50,000)
21	Workers' Compensation	$0	$455,704	$455,704
22	Claims Total	$0	$5,333	$5,333
	Subtotal	**$150,992**	**$1,106,604**	**$1,257,596**
	Office Supplies/Expense			
23	Office Expense - General Total	$0	$295,167	$295,167
24	Outside Printing, Subscription & Books	$87,567	$0	$87,567
25	Office Supplies	$32,333	$0	$32,333
26	Postage / Mail Delivery	$10,739	$0	$10,739
	Subtotal	**$130,639**	**$295,167**	**$425,806**
	Supplies			
27	Supplies - Water Loss Control	$4,000	$0	$4,000
28	Business Expense	$2,333	$0	$2,333
29	Chemicals - Polymer Total	$0	$10,836,393	$10,836,393
30	Operational Supplies	$0	$2,544,233	$2,544,233
	Subtotal	**$6,333**	**$13,380,627**	**$13,386,960**
	Professional Fees			
31	Legal Expense - General	$233,917	$966,667	$1,200,583
32	Audit Expense	$33,907	$0	$33,907
33	Outside Consulting Expense	$365,667	$0	$365,667
34	Professional Fees	$1,596,774	$0	$1,596,774
35	Professional Services - General Total	$0	$2,183,980	$2,183,980
36	Legal Advertising Total	$0	$4,667	$4,667
37	Professional Services - Engineer Total	$0	$673,333	$673,333
38	Lab Samples Analysis Total	$0	$208,000	$208,000
39	Security Program Total	$0	$445,867	$445,867

Column 1 Line	Column 2 Item Description[a]	Column 3 MWDOC Expenses [b]	Column 4 OCWD Expenses [b]	Column 5 Total Combined Expenses [c]
	Subtotal	**$2,230,264**	**$4,482,513**	**$6,712,777**
	Rent			
40	Rents & Leases	$1,800	$0	$1,800
41	Rent Equipment - Gen Total	$0	$50,733	$50,733
	Subtotal	**$1,800**	**$50,733**	**$52,533**
	Vehicle Expense			
42	Vehicle Expense - Water Loss Control	$8,381	$0	$8,381
43	Automotive & Toll Road Expenses	$14,408	$0	$14,408
44	Gas & Diesel Fuel Total	$0	$115,267	$115,267
45	Fuel - Off Road Total	$0	$117,667	$117,667
	Subtotal	**$22,789**	**$232,933**	**$255,723**
	Repairs & Maint			
46	Maintenance Expense	$164,220	$0	$164,220
47	Building Repair & Maintenance	$20,752	$0	$20,752
48	Maint Equipment	$0	$1,694,933	$1,694,933
49	Building Repair & Maintenance	$0	$3,481,644	$3,481,644
	Subtotal	**$184,972**	**$5,176,577**	**$5,361,549**
	Computer & Software			
50	Software Support & Expense	$130,690	$0	$130,690
51	Computer Maintenance	$6,667	$0	$6,667
52	Computers and Equipment	$36,800	$0	$36,800
53	Hardware/Software Total	$0	$448,167	$448,167
	Subtotal	**$174,157**	**$448,167**	**$622,324**
	Telephone Expense			
54	Telecommunications Expense	$44,323	$243,500	$287,823
	Subtotal	**$44,323**	**$243,500**	**$287,823**
	Memberships			
55	Membership / Sponsorship	$152,085	$483,661	$635,746
56	CDR Participation	$61,715	$0	$61,715
	Subtotal	**$213,799**	**$483,661**	**$697,461**
	Conferences & Travel			
57	Conference Expense - Staff	$50,199	$0	$50,199
58	Conference Expense - Directors	$21,272	$0	$21,272
59	Travel & Accommodations - Staff	$87,450	$0	$87,450
60	Travel & Accommodations - Directors	$32,183	$0	$32,183
61	Travel/Conference/Mileage Total	$0	$138,800	$138,800
	Subtotal	**$191,104**	**$138,800**	**$329,904**
	Utilities Exp			
62	Utilities - Electricity Total	$0	$910,000	$910,000
63	Utilities - Electricity (66Kv Fv Site Sce) Total	$0	$17,598,513	$17,598,513
64	Utilities Electrical Curtailment Power Cr	$0	($933,333)	($933,333)
65	Utilities - Gas Total	$0	$58,667	$58,667
66	Utilities - Water Total	$0	$97,333	$97,333
	Subtotal	**$0**	**$17,731,179**	**$17,731,179**
	Training			
67	Training Expense	$47,000	$136,385	$183,385

Column 1 Line	Column 2 Item Description[a]	Column 3 MWDOC Expenses [b]	Column 4 OCWD Expenses [b]	Column 5 Total Combined Expenses [c]
68	Tuition Reimbursement	$5,000	$0	$5,000
69	Education Tuition Reimbursement Total	$0	$32,000	$32,000
70	Subscriptions Total	$0	$38,233	$38,233
	Subtotal	**$52,000**	**$206,618**	**$258,618**
	Misc Exp			
71	Miscellaneous Expense	$105,767	$2,250	$108,017
72	Temporary Help Expense	$5,000	$0	$5,000
73	MWDOC's Contribution to WEROC: Operations	$283,314	$0	$283,314
74	WFB/County Banking Charge Total	$0	$40,000	$40,000
	Subtotal	**$394,081**	**$42,250**	**$436,331**
	Marketing			
75	Event and Marketing	$0	$1,056,617	$1,056,617
76	MWDOC Cost Share	$0	($6,000)	($6,000)
	Subtotal	**$0**	**$1,050,617**	**$1,050,617**
	Inter-agency			
77	Licenses And Permits Total	$0	$93,179	$93,179
78	Inter Agency Total	$0	$767,636	$767,636
79	Taxes & Assessments Total	$0	$73,946	$73,946
	Subtotal	**$0**	**$934,762**	**$934,762**
	Capital Acquisition			
80	Capital Acquisition (excluding building)	$137,410	$0	$137,410
81	Capital Acq Prior Year Carryover Credit	($1,934)	$0	($1,934)
82	Capital Projects (Debt & PAYGO funded)	$0	$160,909,914	$160,909,914
83	New Equipment	$0	$429,700	$429,700
	Subtotal	**$135,476**	**$161,339,614**	**$161,475,090**
	Building Expense			
84	MWDOC's Building Expense	$512,896	$0	$512,896
85	Building Expense Prior Year Carryover Credit	($50,318)	$0	($50,318)
	Subtotal	**$462,579**	**$0**	**$462,579**
	PFAS			
86	PFAS O&M Expenditure	$0	$3,087,667	$3,087,667
	Subtotal	**$0**	**$3,087,667**	**$3,087,667**
	Water Expenses			
87	Water Purchases	$169,380,146	$9,011,156	$178,391,303
88	Local Resource Program Incentives	($4,789,759)	$0	($4,789,759)
89	Readiness-To-Serve Charge	$12,017,805	$0	$12,017,805
90	Capacity Charge	$4,981,793	$0	$4,981,793
91	SCP/SAC Pipeline Surcharge	$330,333	$0	$330,333
	Subtotal	**$181,920,319**	**$9,011,156**	**$190,931,476**
	Debt Expenses			
92	Debt Service	$0	$42,048,787	$42,048,787
	Subtotal	**$0**	**$42,048,787**	**$42,048,787**
	Replacement and Refurbishment (R&R) Expenses			

Column 1 Line	Column 2 Item Description[a]	Column 3 MWDOC Expenses [b]	Column 4 OCWD Expenses [b]	Column 5 Total Combined Expenses [c]
93	R&R Fund Expenditures	$0	$16,381,543	$16,381,543
94	Appropriation to R&R Reserves	$0	$6,898,423	$6,898,423
	Subtotal	**$0**	**$23,279,966**	**$23,279,966**
	Total	**$193,456,689**	**$323,495,021**	**$516,951,711**

(a) Line item descriptions in Column 2 appear exactly as written in each agency's budget. Similar line items were grouped in consultation with each agency as part of this study.

(b) All values shown in this table are a three-year average of the respective agency's last three years of adopted budgets, including negative values (FY 21/22, FY 22/23. and FY 23/24).

(c) Column 5 is the sum of Columns 3 and 4. Refer to Appendix A for explanations of cells with no value.

(d) This line item includes retirement benefits for members of the OCWD Board of Directors. Members of the MWDOC Board of Directors are not eligible to participate in the CalPERS retirement benefit that is provided to MWDOC employees. Instead, they can participate in a 401(a) plan in lieu of FICA at a rate of 7.5% and participate in the District's deferred compensation retirement plan (457 plan) on a voluntary basis at their own cost.

As shown in Table 13, MWDOC's average budgeted expenses are about 60 percent of OCWD's average budgeted expenses. Combined, the average three-year budgets of the two agencies total approximately $517 million.

Opportunities for Cost-Savings Upon Consolidation

Consolidating two agencies that provide similar services into a Successor Agency may create redundancies in certain areas, such as governance, staffing, facilities, and infrastructure. Identifying where those redundancies exist is an important step in determining opportunities for cost savings and efficiencies. One area that was identified during this study was employee positions that would likely become redundant and ultimately reorganized as a result of consolidation of the agencies. Logic dictates that certain executive and administrative positions would become redundant upon consolidation.

As stated in the FY 2023-24 board-adopted budgets, OCWD has 226 full-time equivalent (FTE) positions and MWDOC has 38 FTE positions.[19] The executive level management positions and supportive administrative positions employed by each agency that were deemed potentially redundant upon consolidation are shown in Table 14. For this finding, redundant means each agency had an employee with the same title or similar role as the other agency that could be reorganized into a single position or eliminated as a result of consolidation.

[19] MWDOC Board of Directors' Administration & Finance Committee Meeting on April 12, 2023, and OCWD Board of Directors Meeting on April 19, 2023.

Table 14: Summary of Potentially Redundant Employee Positions

Department	Position	Redundant Positions	Average Annual Salary[1]	Total
Administration	Administrative Assistant	2	$6,144	$122,289
Administration	District Secretary	1	$149,392	$149,392
Administration	Records Coordinator	1	$73,994	$73,994
Engineering	Director of Engineering	1	$214,106	$214,106
Finance	Accounting Manager	1	$158,115	$158,115
Finance	Senior Accountant	1	$102,667	$102,667
General Manager	Executive Assistant	1	$90,113	$90,113
General Manager	General Manager	1	$345,269	$345,269
Human Resources	Director of Human Resources	1	$189,791	$189,791
Information Services	Database Coordinator	1	$50,738	$50,738
Information Services	Financial Analyst/Database Analyst	1	$125,866	$125,866
Information Services	Network Systems Engineer	1	$123,127	$123,127
Public Affairs	Director of Public Affairs	1	$187,040	$187,040
Public Affairs	Public Affairs Coordinator	3	$55,376	$166,127
Public Affairs	Public Affairs Manager/Liaison	1	$153,141	$153,141
Total		**18**	**$2,079,877**	**$2,251,773**

(1) Positions and salaries for each agency were obtained from the State Controller's *Government Compensation in California* website, which is published under the authority of Gov Code section 12463 (https://publicpay.ca.gov/). The salaries of same/similar positions of the two agencies were averaged together for this analysis.

To determine which staff positions were redundant, a detailed comparison was conducted of the full roster of positions including salary information for both MWDOC and OCWD. As shown in Table 14, approximately $2.25 million could be saved through reducing overall staffing of the Successor Agency by 18 FTE positions for a total of 246 FTEs. For example, within the positions classified as administrative such as Administrative Assistant, District Secretary, and Records Coordinator a total of nine positions could be reduced to five positions for efficiency or to eliminate redundancy. This reasoning for the most part holds true for the balance of the positions referenced in Table 14, including for most non-technical and leadership positions that are cross trainable and/or redundant. While these actions would reorganize or eliminate certain positions, it would align the required staffing resources to support the operations of a single Successor Agency while eliminating redundancy in positions and responsibilities to ultimately achieve cost savings and efficiencies. In the event a consolidation occurs,

the Successor Agency will need to consider its consolidated staffing needs before determining which positions can be reorganized and/or eliminated.

Economies of scale can occur when fixed costs are spread across more units. With the consolidation of MWDOC and OCWD employees (i.e., 38 + 226 = 264 FTE's), some redundant positions may be eliminated as previously discussed (18 positions), and the Successor Agency would ultimately have more employees (i.e., 264 – 18 = 246 FTE's) then either OCWD or MWDOC individually. Therefore, certain administrative and operational expenses of the Successor Agency could decrease as a result of economies of scale including insurance expenses (workers compensation), office supplies and expenses, professional fees, computer and software expenses, telephone expenses, travel expenses, and training expenses. To calculate the savings from economies of scale, these expenditures were reduced proportionally to the reduction in the number of FTE's (18) using the average of the expenses of MWDOC and OCWD per FTE. Reduced expenditures for the Successor Agency could also be expected in training, sponsorships, subscriptions, and memberships. For example, expenditures for participation with groups like the Association of California Water Agencies, the California Special Districts Association, the Independent Special Districts of Orange County, the Orange County Water Association, the Orange County Business Council, and the Water Advisory Committee of Orange County.

In regard to employee healthcare benefits, a similar economies of scale could occur through elimination of redundant positions. These expenditures were reduced proportionally to the reduction in the number of FTE's (18 positions) using the average of the expenses of MWDOC and OCWD per FTE.

In addition to staffing efficiencies and economies of scale for expenses and healthcare benefits, consolidation can also result in a change in the total number of directors representing the Successor Agency. Currently, MWDOC and OCWD have a combined 17 board members (10 for OCWD and seven for MWDOC). To maintain appropriate governance representation, this study assumes that the Successor Agency Board of Directors would consist of 10 members representing the consolidated boundary of the respective service areas. This study also assumes the Successor Agency would have representation on The Metropolitan Water District of Southern California Board of Directors as well, which has an associated cost. Some cost savings would result from this governance restructure through an overall reduction in per diem payments, director benefits, retirement contributions, travel expenses, conference attendance, and election expenses.[20]

[20] A water district does not necessarily have to provide compensation or benefits to its board members. California Water Code Section 20201 sets the maximum amount of compensation per meeting at $100 unless compensation

Using the combined three-year average budgets of MWDOC and OCWD in Table 13, the redundant employee positions identified in Table 14, economies of scale for certain expenses and healthcare benefits, and the reduction in board members from 17 to 10 members, a consolidated budget has been prepared in Table 15 for a hypothetical Successor Agency that reflects the aforementioned savings and additional expenses assumed as a result of consolidation. Because the OCWD and MWDOC budgets have different degrees of specificity and categorization methodology, and in order to present the agency comparison that is needed in determining the feasibility of consolidation, similar budget line items through discussions with representatives of each agency, have been grouped together (e.g., Salaries & Wages, Employee Benefits, Director's Fees & Costs, etc.). It should be noted the analyses noted in this MSR are high-level attempts to compare and identify associated costs and savings resulting from consolidation of the agencies into a single successor agency.

Table 15: Estimated Results of Consolidation Excluding Retirement Expenses

Column 1 Line	Column 2 Item Description[a]	Column 3 Combined MWDOC & OCWD Average Expenses [b]	Column 4 Estimated Expenses of Successor Agency [c]	Column 5 Estimated Annual (Savings) / Costs [d]
	Salaries & Wages			
1	Salaries & Wages	$31,690,302	$29,438,529	($2,251,773)
2	less for Recovery from Grants	($22,888)	($22,888)	$0
3	Overtime	$681,610	$681,610	$0
4	Payroll Taxes	$460,440	$460,440	$0
5	Capitalized Salaries	($349,748)	($349,748)	$0
6	Temporary Workers - General Total	$149,167	$149,167	$0
7	Expense - Contra	($73,333)	($73,333)	$0
	Subtotal	**$32,535,550**	**$30,283,777**	**($2,251,773)**
	Employee Benefits[e]			
8	Employee Benefits	$5,193,221	$4,642,123	($551,098)
9	*CALPERS Unfunded Liability Contribution[e]*	*$207,000*	*$294,704[f]*	*$87,704*
10	Health Insurance Coverage for Retirees	$99,359	$99,359	$0
11	*Retirement[e]*	*$5,311,159*	*$2,902,609*	*$0*
12	Capitalized Benefits	($99,997)	($99,997)	$0
13	Retiree Health Trust	$1,278,667	$1,278,667	$0

is prohibited by the agency's principal act. Water Code Section 20201 also authorizes board members to increase compensation above $100, but there are notable restrictions on a water supplier's ability to do so. Under Government Code sections 53201 and 53205.1, special district board members can receive group insurance benefits if the board elects to do so. And a special district board may elect to also provide benefits to its retired board members, and the families of board members and retired board members. Benefits for board members can include medical, dental, vision, and life insurance. The provision of compensation and benefits to board members are subject to local laws/ordinances passed by the district.

Column 1 Line	Column 2 Item Description[a]	Column 3 Combined MWDOC & OCWD Average Expenses [b]	Column 4 Estimated Expenses of Successor Agency [c]	Column 5 Estimated Annual (Savings) / Costs [d]
	Subtotal	**$11,989,409**	**$9,029,761**	**($463,394)**
	Director Fees & Costs			
14	Director Compensation	$638,728	$375,722	($263,006)
15	Director Benefits	$132,891	$78,171	($54,720)
16	MWD Representation	$146,690	$146,690	$0
17	Election Expense	$133,000	$66,500	($66,500)
18	Contribution to Election Reserve	$287,916	$143,958	($143,958)
	Subtotal	**$1,339,225**	**$811,042**	**($528,183)**
	Insurance Expense			
19	Insurance Expense	$846,559	$846,559	$0
20	Insurance Refund	($50,000)	($50,000)	$0
21	Workers' Compensation	$455,704	$437,557	($18,148)
22	Claims Total	$5,333	$5,333	$0
	Subtotal	**$1,257,596**	**$1,239,449**	**($18,148)**
	Office Supplies/Expense			
23	Office Expense - General Total	$295,167	$268,897	($26,270)
24	Outside Printing, Subscription & Books	$87,567	$79,773	($7,793)
25	Office Supplies	$32,333	$29,456	($2,878)
26	Postage / Mail Delivery	$10,739	$10,739	$0
	Subtotal	**$425,806**	**$388,865**	**($36,941)**
	Supplies			
27	Supplies - Water Loss Control	$4,000	$4,000	$0
28	Business Expense	$2,333	$2,333	$0
29	Chemicals - Polymer Total	$10,836,393	$10,836,393	$0
30	Operational Supplies	$2,544,233	$2,544,233	$0
	Subtotal	**$13,386,960**	**$13,386,960**	**$0**
	Professional Fees			
31	Legal Expense - General	$1,200,583	$1,080,525	($120,058)
32	Audit Expense	$33,907	$0	($33,907)
33	Outside Consulting Expense	$365,667	$329,100	($36,567)
34	Professional Fees	$1,596,774	$1,437,096	($159,677)
35	Professional Services - General Total	$2,183,980	$2,183,980	$0
36	Legal Advertising Total	$4,667	$4,667	$0
37	Professional Services - Engineer Total	$673,333	$673,333	$0
38	Lab Samples Analysis Total	$208,000	$208,000	$0
39	Security Program Total	$445,867	$445,867	$0
	Subtotal	**$6,712,777**	**$6,362,568**	**($350,209)**
	Rent			
40	Rents & Leases	$1,800	$1,800	$0
41	Rent Equipment - Gen Total	$50,733	$50,733	$0
	Subtotal	**$52,533**	**$52,533**	**$0**
	Vehicle Expense			
42	Vehicle Expense - Water Loss Control	$8,381	$8,381	$0
43	Automotive & Toll Road Expenses	$14,408	$14,408	$0

Column 1 Line	Column 2 Item Description[a]	Column 3 Combined MWDOC & OCWD Average Expenses [b]	Column 4 Estimated Expenses of Successor Agency [c]	Column 5 Estimated Annual (Savings) / Costs [d]
44	Gas & Diesel Fuel Total	$115,267	$115,267	$0
45	Fuel - Off Road Total	$117,667	$117,667	$0
	Subtotal	**$255,723**	**$255,723**	**$0**
	Repairs & Maint			
46	Maintenance Expense	$164,220	$0	($164,220)
47	Building Repair & Maintenance	$20,752	$0	($20,752)
48	Maint Equipment	$1,694,933	$1,859,153	$164,220
49	Building Repair & Maintenance	$3,481,644	$3,502,396	$20,752
	Subtotal	**$5,361,549**	**$5,361,549**	**$0**
	Computer & Software			
50	Software Support & Expense	$130,690	$99,737	($30,953)
51	Computer Maintenance	$6,667	$5,088	($1,579)
52	Computers and Equipment	$36,800	$28,084	($8,716)
53	Hardware/Software Total	$448,167	$430,319	($17,847)
	Subtotal	**$622,324**	**$563,229**	**($59,095)**
	Telephone Expense			
54	Telecommunications Expense	$287,823	$267,628	($20,194)
	Subtotal	**$287,823**	**$267,628**	**($20,194)**
	Memberships			
55	Membership / Sponsorship	$635,746	$580,465	($55,281)
56	CDR Participation	$61,715	$0	($61,715)
	Subtotal	**$697,461**	**$580,465**	**($116,996)**
14	**Conferences & Travel**			
57	Conference Expense - Staff	$50,199	$35,139	($15,060)
58	Conference Expense - Directors	$21,272	$10,636	($10,636)
59	Travel & Accommodations - Staff	$87,450	$61,215	($26,235)
60	Travel & Accommodations - Directors	$32,183	$16,092	($16,092)
61	Travel/Conference/Mileage Total	$138,800	$97,160	($41,640)
	Subtotal	**$329,904**	**$220,242**	**($109,662)**
	Utilities Exp			
62	Utilities - Electricity Total	$910,000	$910,000	$0
63	Utilities - Electricity (66Kv Fv Site Sce) Total	$17,598,513	$17,598,513	$0
64	Utilities Electrical Curtailment Power Cr	($933,333)	($933,333)	$0
65	Utilities - Gas Total	$58,667	$58,667	$0
66	Utilities - Water Total	$97,333	$97,333	$0
	Subtotal	**$17,731,179**	**$17,731,179**	**$0**
	Training			
67	Training Expense	$183,385	$154,788	($28,597)
68	Tuition Reimbursement	$5,000	$0	($5,000)
69	Education Tuition Reimbursement Total	$32,000	$35,816	$3,816
70	Subscriptions Total	$38,233	$38,233	$0
	Subtotal	**$258,618**	**$228,837**	**($29,781)**
	Misc Exp			
71	Miscellaneous Expense	$108,017	$108,017	$0

Column 1 Line	Column 2 Item Description[a]	Column 3 Combined MWDOC & OCWD Average Expenses [b]	Column 4 Estimated Expenses of Successor Agency [c]	Column 5 Estimated Annual (Savings) / Costs [d]
72	Temporary Help Expense	$5,000	$5,000	$0
73	MWDOC's Contribution to WEROC: Operations	$283,314	$283,314	$0
74	WFB/County Banking Charge Total	$40,000	$40,000	$0
	Subtotal	**$436,331**	**$436,331**	**$0**
	Marketing			
75	Event and Marketing	$1,056,617	$1,056,617	$0
76	MWDOC Cost Share	($6,000)	($6,000)	$0
	Subtotal	**$1,050,617**	**$1,050,617**	**$0**
	Inter-agency			
77	Licenses And Permits Total	$93,179	$93,179	$0
78	Inter Agency Total	$767,636	$767,636	$0
79	Taxes & Assessments Total	$73,946	$73,946	$0
	Subtotal	**$934,762**	**$934,762**	**$0**
	Capital Acquisition			
80	Capital Acquisition (excluding building)	$137,410	$137,410	$0
81	Capital Acq Prior Year Carryover Credit	($1,934)	($1,934)	$0
82	Capital Projects (Debt & PAYGO funded)	$160,909,914	$160,909,914	$0
83	New Equipment	$429,700	$429,700	$0
	Subtotal	**$161,475,090**	**$161,475,090**	**$0**
	Building Expense			
84	MWDOC's Building Expense	$512,896	$512,896	$0
85	Building Expense Prior Year Carryover Credit	($50,318)	($50,318)	$0
	Subtotal	**$462,579**	**$462,579**	**$0**
	PFAS			
86	PFAS O&M Expenditure	$3,087,667	$3,087,667	$0
	Subtotal	**$3,087,667**	**$3,087,667**	**$0**
	Water Expenses			
87	Water Purchases	$178,391,303	$178,391,303	$0
88	Local Resource Program Incentives	($4,789,759)	($4,789,759)	$0
89	Readiness-To-Serve Charge	$12,017,805	$12,017,805	$0
90	Capacity Charge	$4,981,793	$4,981,793	$0
91	SCP/SAC Pipeline Surcharge	$330,333	$330,333	$0
	Subtotal	**$190,931,476**	**$190,931,476**	**$0**
	Debt Expenses			
92	Debt Service	$42,048,787	$42,048,787	$0
	Subtotal	**$42,048,787**	**$42,048,787**	**$0**
	Replacement and Refurbishment (R&R) Expenses			
93	R&R Fund Expenditures	$16,381,543	$16,381,543	$0
94	Appropriation to R&R Reserves	$6,898,423	$6,898,423	$0
	Subtotal	**$23,279,966**	**$23,279,966**	**$0**
	Total[e]	**$516,951,710**	**$512,395,314**	**($3,984,377)**

Column 1 Line	Column 2 Item Description[a]	Column 3 Combined MWDOC & OCWD Average Expenses [b]	Column 4 Estimated Expenses of Successor Agency [c]	Column 5 Estimated Annual (Savings) / Costs [d]

(a) Line item descriptions appear exactly as written in each agency's adopted budget. Similar line items were grouped together with subheaders in consultation with each agency as part of this study.

(b) Column 3 in this table is the same as Column 5 in Table 13.

(c) Estimated Budget of Successor Agency (Column 4) is the difference between Column 3 (Combined Agency Budgets) and Column 5 (Estimated Annual Savings/Cost).

(d) Estimated Annual Savings/Cost (Column 5) represents savings/cost upon consolidation. Refer to Appendix B for explanations of what each savings/cost consists. No inflationary factors were applied in this table.

(e) No changes to the retirement benefits that are in Lines 9 and 11 are reflected in this table. Their costs are held static in order to highlight savings/costs outside of changes to retirement plans. Changes to retirement benefits are shown in Tables 16 and 18.

(f) MWDOC budgets consistently show $207,000; however, according to CalPERS annual evaluation reports (Classic and PEPRA reports combined) as of June 30, 2022, reflect an unfunded liability total payment of $294,704, including net present value discount of approximately 3.2%.

As shown in Table 15, no net savings is expected for Successor Agency expenses related to repairs and maintenance (Replacement and Refurbishment) because it is assumed that the Successor Agency would provide the same services currently being provided by each agency independently and would be required to repair and maintain the same assets and equipment to provide continuity and uninterrupted services. Furthermore, Table 15 reflects the assumption that existing expenses for public services, programs, and activities will continue to be provided or performed by the Successor Agency in the same manner and to the same customers that are currently being served. Likewise, the facilities currently owned by each agency shall be retained, operated, and maintained by the Successor Agency. Likewise, expenses related to technical supplies, rent, vehicle expenses, repair and maintenance, utilities, miscellaneous items, marketing, inter-agency expenses, capital acquisition, building expenses, and PFAS O&M have been maintained in the Successor Agency budget in Table 15, as it is assumed those expenses would not immediately increase or decrease as the result of a consolidation.

The consolidated budget of a Successor Agency in Table 15 reflects cost savings in the amount of approximately $3.98 million, but it does not reflect any changes to retirement plans as discussed previously, or temporary transitional costs associated with undertaking a consolidation. Examples of temporary transitional costs may include establishing single retirement and Other Post-Employment Benefit (OPEB) plans, reorganization of employee positions, associated legal fees, consultant fees, and other

unknown or unanticipated costs.[21] Further detailed review of the scope and function of professional service providers may allow for additional efficiencies, economies of scale, and resulting savings.

Retirement Plans

OCWD offers a defined contribution plan to its employees (i.e., 401(k) plan)[22] and MWDOC offers its employees a defined benefit plan (i.e., California Public Employees' Retirement System "CalPERS").[23] To evaluate the potential costs or savings from a change to the provided retirement plans upon consolidation, three scenarios were reviewed:

A Successor Agency offering both a defined benefit and defined contribution plan to employees.
A Successor Agency offering a defined benefit program to employees (in this instance, CalPERS).
A Successor Agency offering a defined contribution program to employees.

Retirement Plan Scenario 1

The first scenario, where a Successor Agency offers a defined benefit plan such as CalPERS, and a defined contribution plan to employees is likely infeasible because of a prior legal challenge. In the 2004 California Supreme Court Case, *Metropolitan Water District of Southern California v. Superior Court of Los Angeles County*, the court ruled that MWD was mandated to enroll all common law employees in CalPERS, except those excluded under a specific statutory or contractual provision.[24] This ruling essentially requires any CalPERS member agency to enroll all eligible employees in CalPERS, effectively negating the idea of offering a dual retirement plans.

Retirement Plan Scenario 2

The second scenario of a Successor Agency offering a defined benefit program would facilitate the enrollment in CalPERS of all eligible agency employees. Each new plan participant of the Successor Agency (which would be all OCWD employees) would be

[21] Other Post-Employment Benefits (OPEB) are benefits that an employee receives after their employment, but are not considered part of their pension. This commonly consists of retiree medical insurance.

[22] A defined contribution plan is a retirement plan where an employee and/or employer contribute money into an individual account for the employee. The contributions are usually invested on the employee's behalf, and the account's value changes based on the contributions and the investments' performance.

[23] A defined benefit plan is a retirement plan that provides employees with a fixed monthly benefit when they retire. The benefit is usually based on the employee's salary and length of service and may be calculated using a formula.

[24] "Cargill" (2004) 32 Cal. 4th 491.

required to complete an enrollment form and would be evaluated to determine if they would be subject to the Public Employees' Pension Reform Act (PEPRA) as a new member or whether they would qualify for a Non-PEPRA classic CalPERS membership. However, without an actuarial evaluation, the precise quantification of the annual cost to provide a defined benefit program is not possible.

For the purpose of this study, an estimate is made using rates and amounts from the MWDOC PEPRA actuarial valuation for the reporting period ended June 30, 2022. The employer contribution rate for the 2024-25 fiscal year, net of employee contribution offset, is 7.9% of payroll. This assumes all newly enrolled employees join on a go-forward basis, with no assumptions of retroactive enrollment benefits. Using required contribution amounts from MWDOC actuarial reports for the 2024-25 fiscal year, plus estimated salaries of the newly enrolled employees ($27,109,293 from Line 1 of Table 13), the estimated annual contribution would be approximately $2,902,609. There may be additional transitional costs which are unknown at this time.

Table 16: Employee Benefits for Successor Agency Budget Comparison and Proforma with Defined Benefit Plan (CalPERS)

Column 1 Line	Column 2 Item Description	Column 3 Combined MWDOC & OCWD Expenses	Column 4 Estimated Budget of Successor Agency	Column 5 Estimated Annual (Savings) / Costs
	Employee Benefits			
8	Employee Benefits	$5,193,221	$4,642,123	($551,098)
9	*CALPERS Unfunded Liability Contribution*	*$207,000*	*$294,704*	*$87,704*
10	Health Insurance Coverage for Retirees	$99,359	$99,359	$0
11	*Retirement*	*$5,311,159*	*$2,902,609*	*($2,408,550)*
12	Capitalized Benefits	($99,997)	($99,997)	$0
13	Retiree Health Trust	$1,278,667	$1,278,667	$0
	Total	**$11,989,409**	**$9,117,465**	**($2,871,944)**

Note: Line 11 is the only line that differs from the prior Table 15 and subsequent Table 18.

As shown in Table 16, if the Successor Agency transitions to CalPERS, then the Employee Benefits could result in a net annual savings of approximately $2,871,944. Of which, $2,408,550 would be in addition to the total savings identified in Table 15 ($3.98 million) for an overall estimated net savings of approximately $6,391,927.

Retirement Plan Scenario 3

The third scenario analyzed herein is a Successor Agency offer of enrollment in a defined benefit contribution plan (401(k)), which requires the payment of an unfunded termination liability to CalPERS to end the availability of the defined benefit option and plan with

CalPERS. To evaluate this potential option, the CalPERS Actuarial Evaluation from June 30, 2022 was used, and the cost to terminate membership is estimated to range between $9,882,750 to $23,762,256 for classic (Non-PEPRA) members and between $503,748 and $2,241,665 for PEPRA members (Table 17). These estimates are based on Discount Rates ranging from 1.75% to 4.5% and Inflation Rates ranging from 2.5% to 2.75%. Also included in these estimated termination liabilities is a 5% contingency load.[25]

Table 17: CalPERS Termination Liability Summary

	Low	High
Discount Rate	1.75%	4.50%
Price Inflation	2.50%	2.75%
CLASSIC	$9,882,750	$23,762,256
PEPRA	$503,748	$2,241,665
Total	**$10,386,498**	**$26,003,921**

Source: *CalPERS Actuarial Valuation – June 30, 2022, PEPRA Miscellaneous Plan of the Municipal Water District of Orange County*

When a CalPERS member agency terminates its membership with CalPERS, the agency would need to contact the CalPERS Pension Contract Services department and initiate a Resolution of Intent to Terminate and obtain a more up-to-date estimate of its retirement liabilities. Once obtained, the unfunded termination liability should then be evaluated by the Successor Agency, including the engagement of qualified professionals (internal and external) and general counsel specializing in municipal advising. The Successor Agency may also consider making a cash payment from available unrestricted cash assets or reserves and/or, financing the liability through Pension Obligation Bonds (POBs).[26]

The estimated annual impact of transitioning all employees of the Successor Agency to a defined contribution retirement plan has been projected using the calculation of the current percentage of retirement contribution to current salary and wage expenses for the Agency offering the defined contribution plan (i.e., OCWD). As shown in Table 18, if

[25] Source: CalPERS Actuarial Valuation Miscellaneous Plan and PEPRA Miscellaneous Plan CalPERS ID: 649793438

[26] POBs are taxable bonds that some state and local governments issue to pay off unfunded pension liabilities. POBs carry significant risks, including investment risk and timing risk. It should be noted that options described above should be fully evaluated for impacts such as a reduction in interest earnings related to the cash payment, or the requirement to pay an annual debt service payment related to the issuance of POB's. Mention of these options are for informational purposes and do not represent professional advice or recommendation.

the Successor Agency offers only a defined contribution retirement plan, then the estimated annual savings of consolidation related to retirement benefits is approximately $376,734. However, this estimated annual savings does not take into account potential annual debt service payment required should any type of financing mechanism be leveraged to fund the termination liability. An estimate of that annual payment requirement would need to be provided in consultation with a Municipal Advisor.

Table 18: Employee Benefits for Successor Agency Budget Comparison and Proforma with Defined Contribution Plan (401(k))

Column 1 Line	Column 2 Item Description	Column 3 Combined MWDOC & OCWD Expenses	Column 4 Estimated Budget of Successor Agency	Column 5 Estimated Annual (Savings) / Costs
	Employee Benefits			
8	Employee Benefits	$5,193,221	$4,642,123	($551,098)
9	*CALPERS Unfunded Liability Contribution*	*$207,000*	*$0*	*($207,000)*
10	Health Insurance Coverage for Retirees	$99,359	$99,359	$0
11	*Retirement*	*$4,550,184*	*$4,931,548*	*$381,364*
12	Capitalized Benefits	($99,997)	($99,997)	$0
13	Retiree Health Trust	$1,278,667	$1,278,667	$0
	Total	**$11,228,434**	**$10,851,700**	**($376,734)**

Note: Lines 9 and 11 are the only lines that differ from the prior Tables 15 and 16.

As shown in Table 18, if the Successor Agency transitions to a defined contribution plan, then the Employee Benefits would have a net annual savings of approximately $376,734, which is a reduction in savings of $86,660 compared to that shown in Table 15. With the reduction in savings, the overall net savings would be approximately $3,897,717. However, this does not include the termination payment for CalPERS, which ranges from $10.4 million to $26 million (Table 17).

Other Post-Employment Benefits

MWDOC and OCWD both offer defined benefit Other Post-Employment Benefit (OPEB) plans to their employees. An analysis of the benefits provided, the cost associated with those benefits, and termination payments required to eliminate one plan would need to be performed by the Successor Agency to determine the best route for consolidation of OPEB plans, if required.

Revenues

It is important to show revenues over time to allow for an evaluation of consistency and the ability of a Successor Agency to maintain expenses, whether higher or lower

following a consolidation. The three-year average board-adopted revenues of Fiscal Years 2021-22, 2022-23, and 2023-24 from both OCWD and MWDOC are shown in Table 19. These average revenues have been used to determine an estimated revenue proforma for a Successor Agency. No inflationary factors were considered because no future timeline for consolidation is being considered.

Table 19: Projected Average Annual Revenues of Successor Agency – Estimated from Three Year Average Revenues

Column 1 Revenues	Column 2 MWDOC Average Revenue [a]	Column 3 OCWD Average Revenue [a]	Column 4 Combined Revenue	Column 5 Estimated Successor Agency Revenue
Property Taxes	$0	$32,135,333	$32,135,333	$32,135,333
Replenishment Assessment (RA)	$0	$154,932,306	$154,932,306	$154,932,306
Basin Equity Assessment (BEA)	$0	$2,083,333	$2,083,333	$2,083,333
Facility Revenue from Other Agencies (GAP)	$0	$2,567,381	$2,567,381	$2,567,381
Investment/Interest Revenues	$228,460	$2,607,830	$2,836,290	$2,836,290
Rent, Royalties and Others	$0	$3,409,821	$3,409,821	$3,409,821
Grants	$0	$1,833,333	$1,833,333	$1,833,333
Draw from Construction Fund / SRF Loans /Debt	$0	$123,925,520	$123,925,520	$123,925,520
Retail Meter Charge	$8,816,296	$0	$8,816,296	$8,816,296
Ground Water Customer Charge	$362,296	$0	$362,296	$362,296
Miscellaneous Income	$3,000	$0	$3,000	$3,000
Choice Revenue	$1,807,201	$0	$1,807,201	$1,807,201
MWDOC Water Revenues[b]				
Water Sales	$169,380,146	$0	$169,380,146	$169,380,146
Local Resource Program Incentives (Offset)	($4,789,759)	$0	($4,789,759)	($4,789,759)
Readiness-To-Serve Charge	$12,017,805	$0	$12,017,805	$12,017,805
Capacity Charge	$4,981,793	$0	$4,981,793	$4,981,793
Interest Revenue - Tier 2 Contingency	$5,016	$0	$5,016	$5,016
SCP/SAC Pipeline Surcharge	$330,333	$0	$330,333	$330,333
Total Revenue	**$193,142,587**	**$323,494,857**	**$516,637,444**	**$516,637,444**

(a) The average of adopted budgets from Fiscal Years 2021-22, 2022-23, and 2023-24 are shown. No inflationary factors or other uncertain revenues are included. If the value is $0, then that line item is not included in the budget revenues for that agency.

Column 1 Revenues	Column 2 MWDOC Average Revenue [a]	Column 3 OCWD Average Revenue [a]	Column 4 Combined Revenue	Column 5 Estimated Successor Agency Revenue

(b) Water Sales, Readiness-to-Serve Charge, Capacity Charge, and SCP/SAC Pipeline Surcharge are pass-through charges from MWD to MWDOC Member Agencies. LRP Incentives (Offset) are pass-through credits from MWD to MWDOC Member Agencies.

(c) The total average revenues shown here do not match the total average expenses in Tables 13 and 15 exactly because they are based on a three-year average and because Adopted Budgets may not have expenses that equal revenues in accordance with the agency's reserve policy.

As shown in Table 19, no change in average annual revenue of the Successor Agency is anticipated based on the assumption the Successor Agency will provide the same services as currently provided by OCWD and MWDOC. Services are expected to remain the same for the same population of member agencies and groundwater producers at the same service levels.

Infrastructure

The potential qualitative impact of consolidation on the infrastructure owned by MWDOC and OCWD is estimated to be minimal. This MSR for OCWD and the 2020 MSR for MWDOC identified no deficiencies in infrastructure. Because MWDOC and OCWD provide different services with overlapping service areas, all existing services (and the infrastructure necessary to provide those services) would be retained, operated, and maintained by the Successor Agency consistent with Gov Code Section 56653. The infrastructure expenses of the Successor Agency are noted in Table 13 and infrastructure revenue of the Successor Agency are noted in Table 19. The Successor Agency budget assumes that services provided by the agencies would not change and therefore does not include additional revenue, costs, or cost-savings respective to existing or future infrastructure. However, a temporary increase in costs for the Successor Agency to transition infrastructure contracts/agreements or develop a Capital Improvement Program should be anticipated but have not been estimated here. If an application for consolidation is submitted to OC LAFCO, then costs anticipated by the Successor Agency as a direct result of consolidation would be identified in the Plan of Service in accordance with Gov Code Section 56653.

Programs, Contracts, and Agreements

The potential qualitative impact of consolidation on programs, contracts, and agreements for the Successor Agency is estimated to be minimal. MWDOC and OCWD have developed robust and vital programs related to the services each provides. Consistent with Gov Code Section 56653, the current services would be continued by the Successor Agency at the same levels and to the same member agencies and

groundwater producers within the newly consolidated boundary. Upon creation of a Successor Agency, certain contracts and agreements that are held by OCWD and MWDOC would need to be reconsidered. Because MWDOC's SOI encompasses most of OCWD and OCWD's SOI encompasses most of the groundwater basin, savings related to contracts and agreements would likely be limited to those by and between the Agencies and overhead and/or administrative support services providers. An example is the fee OCWD currently pays to MWDOC to purchase imported water. Contracts that may need to be renegotiated upon creation of a consolidated Successor Agency include, but are not limited to, those listed in Appendix C. A temporary cost to transition programs, contracts, and agreements to the Successor Agency should be anticipated. Program expenses of the Successor Agency are noted in Table 13 and general revenue used to fund programs of the Successor Agency are noted in Table 19. A list of existing programs, projects, and agreements for OCWD and MWDOC that may need modifying if transferred to a Successor Agency is located in Appendix C.

Statement of Net Position

The Statement of Net Position is a calculation of the difference between all assets and liabilities of an entity. The combined Statement of Net Position for MWDOC and OCWD are shown in Table 20 and has been prepared using the respective final audited financials for FY ending June 30, 2023.

Table 20: Projected Statement of Net Position based on FY 2022-2023 Final Audited Financials

Column 1 Description	Column 2 MWDOC FY 2022-2023	Column 3 OCWD FY 2022-2023	Column 4 Combined FY 2022-2023	Column 5 Estimated Successor Agency
Assets and Deferred Outflows of Resources				
Current Restricted Assets				
Cash and Cash Equivalents[(a)]	$365,110	$2,094,523	$2,459,633	$2,459,633
Cash with Fiscal Agent	$0	$16,016,885	$16,016,885	$16,016,885
Investments	$1,120,665	$0	$1,120,665	$1,120,665
Custodial Escrow Retention	$0	$1,574,275	$1,574,275	$1,574,275
Accounts Receivable Other	$2,169,947	$0	$2,169,947	$2,169,947
Accrued Interest Receivable	$149	$0	$149	$149
Subtotal	**$3,655,871**	**$19,685,683**	**$23,341,554**	**$23,341,554**
Current Unrestricted Assets				
Cash and Cash Equivalents	$6,740,899	$61,245,251	$67,986,150	$67,986,150
Investments	$2,875,886	$228,281,053	$231,156,939	$231,156,939
Accounts Receivable	$19,058,196	$72,663,787	$91,721,983	$91,721,983
Accrued Interest Receivable	$135,419	$1,404,759	$1,540,178	$1,540,178
Inventory	$0	$4,819,812	$4,819,812	$4,819,812
Deposits and Prepaid Expenses	$169,843	$810,495	$980,338	$980,338
Grants Receivable	$0	$1,405,582	$1,405,582	$1,405,582

Column 1 Description	Column 2 MWDOC FY 2022-2023	Column 3 OCWD FY 2022-2023	Column 4 Combined FY 2022-2023	Column 5 Estimated Successor Agency
Current Portion of Notes Receivable	$0	$305,640	$305,640	$305,640
Leases Receivable, Due in Less Than One Year	$0	$1,378,042	$1,378,042	$1,378,042
Subtotal	**$28,980,243**	**$372,314,421**	**$401,294,664**	**$401,294,664**
Total Current Assets	**$32,636,114**	**$392,000,104**	**$424,636,218**	**$424,636,218**
Noncurrent Assets				
Capital Assets, Not Depreciated	$0	$258,164,396	$258,164,396	$258,164,396
Capital Assets, Depreciated, Net	$3,877,338	$741,665,222	$745,542,560	$745,542,560
Net Other Post Employment Benefits (OPEB) Asset	$0	$0	$0	$0
Notes Receivable, Less Current Portion Above	$202,948	$4,278,964	$4,481,912	$4,481,912
Leases Receivable, Due in Less Than One Year	$0	$13,295,739	$13,295,739	$13,295,739
Total Noncurrent Assets	**$4,080,286**	**$1,017,404,321**	**$1,021,484,607**	**$1,021,484,607**
Total Assets	**$36,716,400**	**$1,409,404,425**	**$1,446,120,825**	**$1,446,120,825**
Deferred Outflows of Resources[(a)]				
Deferred Amount Related to Pensions	$2,150,394	$0	$2,150,394	$2,150,394
Deferred Amount Related to OPEB	$203,488	$4,818,115	$5,021,603	$5,021,603
Deferred Charges on Refunding	$0	$7,706,668	$7,706,668	$7,706,668
Derivative Instruments	$0	$5,502,867	$5,502,867	$5,502,867
Subtotal	**$2,353,882**	**$18,027,650**	**$20,381,532**	**$20,381,532**
Total Assets and Total Deferred Outflows of Resources	**$39,070,232**	**$1,427,432,075**	**$1,466,502,357**	**$1,466,502,357**
Liabilities, Deferred Inflows of Resources				
Current Liabilities				
Payable from Restricted Current Assets				
Accrued Liabilities	$48,412	$0	$48,412	$48,412
Advances from Participants	$1,054,844	$0	$1,054,844	$1,054,844
Retentions Payable	$0	$1,574,275	$1,574,275	$1,574,275
Subtotal	**$1,103,256**	**$1,574,275**	**$2,677,531**	**$2,677,531**
Payable from Unrestricted Current Assets				
Accounts Payable and Accrued Expenses	$0	$37,632,998	$37,632,998	$37,632,998
Accrued Interest Payable	$0	$6,413,670	$6,413,670	$6,413,670
Grants Payable	$0	$2,577,462	$2,577,462	$2,577,462
Deposits	$0	$82,829	$82,829	$82,829
Retention Payable	$0	$120,022	$120,022	$120,022
Current Portion of Compensated Absences	$0	$557,136	$557,136	$557,136

Column 1 Description	Column 2 MWDOC FY 2022-2023	Column 3 OCWD FY 2022-2023	Column 4 Combined FY 2022-2023	Column 5 Estimated Successor Agency
Current Portion of Long-Term Debt	$0	$35,393,278	$35,393,278	$35,393,278
Short-Term Commercial Paper	$0	$27,400,000	$27,400,000	$27,400,000
Leases Payable, Due in Less Than One Year	$0	$17,280	$17,280	$17,280
Subscriptions-Related Payables, Due in Less Than One Year	$0	$143,425	$143,425	$143,425
Subtotal	**$0**	**$110,338,100**	**$110,338,100**	**$110,338,100**
Unrestricted Liabilities				
Accounts Payable, Metropolitan Water District	$18,900,555	$0	$18,900,555	$18,900,555
Accrued Liabilities	$2,100,680	$0	$2,100,680	$2,100,680
Subtotal	**$21,001,235**	**$0**	**$21,001,235**	**$21,001,235**
Total Current Liabilities	**$22,104,491**	**$111,912,375**	**$134,016,866**	**$134,016,866**
Noncurrent Liabilities				
Long-Term Debt				
Certificates of Participation	$0	$257,021,531	$257,021,531	$257,021,531
Revenue Refunding Bonds	$0	$273,201,785	$273,201,785	$273,201,785
State of California Loans Payable	$0	$196,845,121	$196,845,121	$196,845,121
WIFIA Loan	$0	$115,357,848	$115,357,848	$115,357,848
Less Current Portion Above	$0	($35,393,278)	($35,393,278)	($35,393,278)
Subtotal	**$0**	**$807,033,007**	**$807,033,007**	**$807,033,007**
Other Noncurrent Liabilities				
Net Pension Liability	$3,612,624	$0	$3,612,624	$3,612,624
Net Other Post-Employment Benefits (OPEB) Liability	$0	$920,921	$920,921	$920,921
Accrued Compensated Absences	$0	$6,376,661	$6,376,661	$6,376,661
Liability from Derivative Instruments	$0	$5,502,867	$5,502,867	$5,502,867
Leases Payable, Due in More Than One Year	$0	$4,152	$4,152	$4,152
Subscriptions Payable, Due in More Than One Year	$0	$45,047	$45,047	$45,047
Subtotal	**$3,612,624**	**$12,849,648**	**$16,462,272**	**$16,462,272**
Total Noncurrent Liabilities	**$3,612,624**	**$819,882,655**	**$823,495,279**	**$823,495,279**
Total Liabilities	**$25,717,115**	**$931,795,030**	**$957,512,145**	**$957,512,145**
Deferred Inflows of Resources[(a)]				
Deferred Amount Related to Pensions	$274,992	$0	$274,992	$274,992
Deferred Amount Related to OPEB	$158,066	$8,335,517	$8,493,583	$8,493,583
Deferred Charges on Refunding	$0	$560,190	$560,190	$560,190

Column 1 Description	Column 2 MWDOC FY 2022-2023	Column 3 OCWD FY 2022-2023	Column 4 Combined FY 2022-2023	Column 5 Estimated Successor Agency
Deferred Inflows Related to Leases	$0	$14,065,870	$14,065,870	$14,065,870
Total Deferred Inflows of Resources	**$433,058**	**$22,961,577**	**$23,394,635**	**$23,394,635**
Total Liabilities and Total Deferred Inflows of Resources	**$26,150,173**	**$954,756,607**	**$980,906,780**	**$980,906,780**
Net Position				
Net Investment in Capital Assets	$3,877,338	$151,262,495	$155,139,833	$155,139,833
Restricted	$2,552,615	$0	$2,552,615	$2,552,615
Restricted for the Construction of Capital Assets	$0	$2,894,945	$2,894,945	$2,894,945
Restricted for Debt Service	$0	$14,435	$14,435	$14,435
Restricted for Custodial Costs	$0	$1,974,922	$1,974,922	$1,974,922
Unrestricted	$6,490,156	$316,528,671	$323,018,827	$323,018,827
Total Net Position	**$12,920,109**	**$472,675,468**	**$485,595,577**	**$485,595,577**

(a) Deferred inflows of resources: Acquisition of a resource which relates to a future period. An example of this would be a receivable for a governmental fund like the general fund that will be received too far in the future to meet the government's revenue recognition policy, typically 180 days or less.
Deferred outflow of resources: Consumption of resources which relates to a future period. An example of this are the charges associated with refunding bonds. Instead of recognizing these all up front, a government must recognize the cost over the life of the new bonds. The part not recognized is the deferred balance.

Aside from changes to Net Pension Liability, Net OPEB liability, deferred inflows and outflows related to pensions and OPEB, and potential use of unrestricted cash assets to pay for costs associated with consolidation, it is anticipated that the Successor Agency's Statement of Net Position would otherwise remain stable related to the combination of assets and liabilities for both OCWD and MWDOC.

Any changes to Net Pension Liability, Net OPEB liability, and deferred inflows and outflows related to pensions and OPEB, would be based upon the Successor Agency's approach to retirement and OPEB offerings. Net pension liability and net OPEB liability represent the cost of all future benefits of the plan less and asset held by the plan. Deferred inflows and outflows of resources represent acquisition or consumption of assets that will be recognized in future reporting periods.

If the Successor Agency offers a defined contribution plan to all employees, a termination payment would be made for the defined benefit plan, and all pension-related balances would be eliminated from the statement of net position. If a defined benefit plan is offered, changes in pension-related balances would not occur until new employees were enrolled in the plan, and service time was earned. The impact would be determined through the aforementioned actuarial valuation performed annually.

If the Successor Agency elects to move all employees into a single OPEB plan, the net OPEB liability, and deferred inflows and outflows of resources related to OPEB would be eliminated through a termination payment. The remaining plan's balances would remain unchanged until new employees are enrolled in the remaining plan and service credit is earned.

If available unrestricted funds are used to pay the pension termination and OPEB termination payments, then the resulting Net Position would decrease by the amount of that payment. Should a debt financing mechanism be utilized for the termination payments, then the total of that debt financing would be added to the Statement as a Liability, also decreasing ending Net Position.

Aside from potential fluctuations resulting from the Successor Agency offering one type of pension plan and potential use of Reserves to facilitate the action of a consolidation, the projected Reserves are estimated to remain stable as it is assumed that the Successor Agency will provide the same services at the same level and to the same customers currently being served. It is estimated that reserve accounts would be maintained in separate accounts to ensure all services and stakeholders would remain stable, however, a further evaluation of the breakdown between what would remain as Restricted and Unrestricted Assets would need to be completed once all assets have been evaluated. This analysis would need to be included as part of the Plan of Service for potential consolidation.

As shown in Table 20, the combined Statement of Net Position of the Successor Agency is estimated to result in a positive annual Total Net Position of approximately $486 million. Because a majority of the Total Net Position consists of unrestricted funds ($323,018,827) largely consisting of unrestricted cash and investments, this would indicate that the Successor Entity would have a healthy financial position. However, individual line items could change based upon the Successor Agency resolution related to the transition of OPEB, pension, and retirement benefits, as discussed in Retirement Plan section, and any potential use of Unrestricted Assets or Reserves to fund any transitional costs related to consolidation to the Successor Agency.

Impacts to Water Supply Reliability

The water supply managed by OCWD is based on groundwater in the OC Groundwater Basin, which provides most of the drinking water to north and central Orange County. The reliability of the Basin has proven to be sustainable, particularly as a result of a long-standing and unique collective basin management approach that avoided having a lengthy and costly court adjudication of individual water rights. MWDOC is a wholesale imported water provider and represents most of Orange County as the third largest member agency on the MWD Board of Directors. The water supply that MWDOC sells is

imported water from MWD that originates from a combination of the Sacramento/San Joaquin Delta and the Colorado River. OCWD has no direct representation on MWD's Board of Directors but is the largest purchaser of imported water of MWDOC's member agencies that is used partly to replenish the Basin. During droughts, imported water supplies are well-documented to be less reliable than groundwater supplies; nonetheless, MWD has assured its member agencies of complete reliability during multi-year droughts according to its 2020 Urban Water Management Plan, and imported water remains now and in the future an essential piece to meeting the water demands of Orange County. In order to continue water reliability throughout Orange County, the Successor Agency would need to continue these water supply programs which have been proven to be reliable. As discussed in Section 5.4, Opportunities of Consolidation, the reliability of such water supplies may benefit in the future from the opportunities of consolidation discussed below. Future proposed changes to basin management and fiscal, operational, environmental, and other impacts would need to be evaluated through other studies.

5.4 Other Opportunities of Consolidation

In addition to the fiscal sustainability of consolidation identified in this MSR, there are other opportunities that consolidation of MWDOC and OCWD may yield albeit currently qualitative and subjective. Because these topics are mentioned in the June 2022 OC Grand Jury report and the OC Grand Jury has discussed opportunities to consolidate the agencies in at least four published reports over the past 40 years, the following is a discussion of those opportunities relative to the consolidation of MWDOC and OCWD.

1. Unified representation at MWD Board of Directors

Orange County's representation on MWD Board of Directors includes three North Orange County cities that are original member agencies of MWD (Anaheim, Fullerton, and Santa Ana) and four representatives from MWDOC (two are selected from MWDOC's Board and two others are appointed by MWDOC). The number of MWD Directors is based on one representative for each member agency for each 5 percent increment of MWD's assessed valuation, or any fraction above, with each member agency receiving at least one representative. Currently, there are 38 MWD Directors for the 26 MWD member agencies.[27]

[27] In 1998, proposed Senate Bill 1885 would have reduced the MWD Board of Directors from 51 members to one member per member agency, which was 27 at the time (before Coastal Municipal Water District and MWDOC merged in 1999), while leaving the voting entitlements unchanged. The proposed legislation prompted a Conference Committee process to negotiate between MWD, its member agencies, and the Legislature. The result was an amendment to the prior version of SB 1885 so that each member public agency is authorized to appoint additional representatives not exceeding one additional representative for each 5 percent of MWD's assessed valuation, with

There have been opposing positions between MWDOC and OCWD on MWD issues. A unified stance from future MWD board members from a Successor Agency (not including Anaheim, Fullerton, and Santa Ana) on groundwater and imported water issues would help to maximize the potential opportunities available from MWD. Of additional and important note is that the Successor Agency would need to meet the requirement of MWD Act in order to become a member agency of MWD to facilitate the provision of imported water to Orange County, excepting within the boundaries of Anaheim, Fullerton, and Santa Ana. More discussion on some of the legalities involving MWD representation is provided in the legal discussion section of this MSR.

2. Unified representation to federal and state agencies for funding opportunities

State and federal agencies, such as the California State Water Resources Control Board and U.S. Bureau of Reclamation, have grants and/or low-interest loans that can help fund water infrastructure. Competition for funding opportunities commonly occurs between water suppliers; however, competition may be avoided between two agencies in the same geographic area if funding opportunities are collaboratively prioritized and targeted after careful deliberations on the direct needs and best use of resources.

Although the benefit of avoided competition is speculative, the securing of grant funding by the Eastern Municipal Water District (EMWD) serving western Riverside County and northern San Diego County is an example of successful efforts of a district managing groundwater production and wholesale water services. EMWD was formed under the Municipal Water District Act of 1911 (same principal act as MWDOC) and serves an area of similar size to MWDOC. The District has been very successful in securing funding for water supply projects, and , according to the April 5, 2024 News Release, "EMWD has been among the most active agencies in the nation at securing federal, state, and local grant funding opportunities. In the past 20 years, EMWD has secured more than $700 million in external funding for a wide range of water, wastewater, and recycled water infrastructure programs to help bolster local water supplies while offsetting rates for EMWD customers."[28]

Water suppliers like OCWD and MWDOC also approach state and federal agencies to provide input on regulations and implementation of regulatory programs that affect them directly and/or their member agencies/groundwater producers. Conflicting

each member agency receiving at least one representative. The report acted on by the Legislature shrank the MWD Board from 51 members to 38 members effective January 1, 2001. The effect of this legislation is to shift voting power based on assessed valuation among the MWD member agencies while keeping the number of MWD Directors at 38 per the Conference Committee Report/legislation (SB 1885 (Ayala), RN: 9819537, 8/24/98).

[28] Source: https://www.emwd.org/

stances on regulations from water suppliers in the same geographic area would not likely result in the most beneficial outcome for the agencies and the customers they represent. This has presented a point of disagreement between the agencies in the past. However, consolidation is not required in order for the agencies to engage in a collaborative effort to further the best interests of meeting water demands in Orange County.

3. Unified representation to federal, state, and local legislators

Water suppliers like OCWD and MWDOC hire and send lobbyists to local, state, and federal legislators to advocate for funding and support that benefit their respective priorities. Every two years after the November election cycle, water suppliers jockey for position with newly elected representatives. OCWD and MWDOC currently have separate lobbyists, priorities, and requests. This is another area that has been represented by OCWD and MWDOC as a point of disagreement in the past. For example, in 2018 the two agencies had different positions on amendments being proposed to AB 1668 (Friedman, 2018) and SB 606 (Herzberg, 2018) that relate to how much credit could be applied toward Water Use Objectives for certain water suppliers. Bringing together this effort would have a cost savings for a Successor Agency and would present a unified front of Orange County to legislators but the net effect on the Successor Agency budget is speculative.

Regardless of whether consolidation of MWDOC and OCWD occurs, the water ratepayers in Orange County would benefit from a collaborative, deliberative, and action-oriented dialogue of affected agencies and appropriate stakeholders that acknowledges the effective operations of each agency and likewise the opportunities to eliminate redundancies and bridge common efforts to bring forward goals that support sustainable, efficient, and adequate water service delivery to Orange County residents.

5.5 Statutory and Relevant Case Authority Evaluation Involving Potential Consolidation

On April 2023, OC LAFCO entered into an agreement with John J. Schatz to provide special legal services to the Commission in connection with the preparation of an MSR involving the potential consolidation of OCWD and MWDOC. Services to be provided by Mr. Schatz involve an assessment of any required legislative changes and legal impediments involving consolidation of the two special districts and potential impacts involving governance and current and future representation of Orange County at the Metropolitan Water District of Southern California (MWD). This section provides the assessment in concert with the scope of work of the aforementioned agreement.

Background

The following assessment prepared by Mr. Schatz is intended to evaluate statutory and relevant case authority, and review and provide interpretative opinions that inform the feasibility of consolidating OCWD and MWDOC involving OC LAFCO, the Legislature, or both.

The most recent Orange County Grand Jury Report regarding consolidation, "Water in Orange County Needs One Voice," references research of water-related statutes and ordinances, but does not include an analysis of the statutory framework and related issues necessary for OC LAFCO and/or legislative action.[29] Irvine Ranch Water District's August 8, 2022 responsive letter to the Report states "*incompatibilities between MWDOC's and OCWD's enabling acts make combining the agencies a statutorily complex undertaking*".[30] Similarly, MWDOC's August 15, 2022 responsive letter to the Report references statutory challenges, and multiple significant challenges that include "*the statutory inability for OCWD to be a Metropolitan Water District member agency*".[31]

OCWD legal counsel provided opinion memos in 2011 and 2013 respectively concerning a legislative consolidation of MWDOC into OCWD, and different ways consolidation can be accomplished[32]. More recently with respect to the MSR currently underway, MWDOC General Counsel has identified several issues under the OCWD Act in its present form

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[29] Page 5, Water in Orange County Needs "One Voice" (2021/22)

[30] Page 1, IRWD Response to Grand Jury Report "Water in Orange County Needs "One Voice"

[31] Pages 1 & 6, MWDOC Responses to the Orange County Grand Jury Report's Findings and Recommendations

[32] Rutan June 23, 2011 Memo re: MWD Act and LAFCO Issues Relating to Proposed Legislative Consolidation of MWDOC into OCWD [*Revised*]; and, Rutan September 11, 2013 Memo re: Approaches to Proposed Consolidation of OCWD and MWDOC into Single Combined Wholesale and Groundwater Management District.

OCWD legal counsel's June 23, 2011 memo opines that legislation can combine OCWD and MWDOC into a single entity under the OCWD Act and as the MWD member agency for all of Orange County other than the cities of Anaheim, Fullerton and Santa Ana. The legislation could exclude or include LAFCO for oversight or approval.

Either or both OCWD and MWDOC could seek legislation, to include either as the successor entity or a new entity, and completely bypass LAFCO or include LAFCO for some purpose. If so, the legislation would likely be based on the MSR/SOI Review and would probably require further implementing actions. Whether for purposes of such legislation or in connection with consolidation conducted by LAFCO, their respective enabling powers require review and identification of measures, including legislation, so LAFCO can designate the principal act under which the successor district will operate and determine that the successor district can provide all of the services of the two consolidating agencies at the time of consolidation. [underlining added. Government Code Section 56700(b); Government Code Section 56826(a)(1)].

Because OCWD was not established pursuant to statutes like the 1911 Act, its powers and purposes are necessarily detailed compared to more broadly written statutes governing 1911 Act districts that possess quasi-municipal powers. Consequently, a comparison of expressly provided powers to a special act district like OCWD with a specific purpose does not necessarily mean a 1911 Act district does not have the same powers just because they are not specifically enumerated by statute.

relating to the Metropolitan Water District Act and OCWD's eligibility to become an MWD member agency, the respective purposes of OCWD and MWDOC, the three cities within OCWD and related governance and authority questions.[33] These OCWD and MWDOC documents and conversations with their counsel and MWD counsel are further addressed in this assessment.

LAFCO Process – Legislative Authority and Determinations

LAFCOs are responsible for coordinating logical and timely changes in local government boundaries, conducting special studies that review ways to reorganize, simplify, and streamline governmental structure and preparing a sphere of influence for each city and special district within each county.

Established by the Legislature in 1997, the Commission on Local Governance for the 21st Century recommended changes to the law governing LAFCOs in its comprehensive report "Growth Within Bounds." Those recommendations became the foundation for the Cortese-Knox-Hertzberg Local Government Reorganization Act of 2000, an act that mandated greater independence for LAFCOs and further clarified their purpose and mission.[34]

A Commission's efforts are directed toward seeing that services are provided efficiently and economically while agricultural and open-space lands are protected. To better inform itself and the community as it seeks to exercise its charge, each LAFCO must conduct service reviews to evaluate the provision of municipal services within each county. Consequently, the Legislature has recognized the pivotal role of LAFCO in connection with local review, control and determination. As addressed below, depending on LAFCO's consideration and determination of a consolidation application and the successor entity, enabling legislation may be required prior to any LAFCO determination.[35] This is distinguished from the Legislature bypassing LAFCO to implement consolidation, including relegating LAFCO to a ministerial role.

[33] BB&K November 13, 2023 correspondence

[34] See CALAFCO website; About LAFCOs

[35] Government Code Section 56826(a)(1)

Consolidation and the Successor Agency

MWDOC as Successor Entity

Metropolitan Water District Member Public Agency

MWDOC is a "Public Agency" and "Member Public Agency," both as defined in the Metropolitan Water District Act (MWD Act).[36] Consolidation with OCWD for purposes of MWD does not require legislation because MWDOC is currently an MWD Member Public Agency.

Groundwater

MWDOC was organized pursuant to the Municipal Water District Act of 1911 (the 1911 Act). Section 71610(a) of the 1911 Act, Part 5 (Powers and Purposes) provides:

> **Except as provided in subdivision (b),[37] a district may acquire, control, distribute, store, spread, sink, treat, purify, recycle, recapture, and salvage any water, including sewage and storm waters, for the beneficial use or uses of the district, its inhabitants, or the owners of rights to water in the district**.

Section 71590 of the 1911 Act provides:

> **A district may exercise the powers which are expressly granted by this division or are necessarily implied**.

There are numerous examples of 1911 Act districts involved with groundwater basin projects and programs.[38] Because 1911 Act districts can exercise groundwater basin authority, in one instance it was necessary to enact legislation to resolve a dispute between a 1911 Act district and water replenishment district over control of groundwater storage.[39] The broadly written power of Section 71610(a) coupled with necessarily implied powers per Section 71590, as demonstrated by examples of 1911 Act districts exercising control over groundwater basins for beneficial use, confirm that legislation is

[36] Sections 5 and 12, respectively, Metropolitan Water District Act

[37] Subdivision (b), not applicable here, applies to a district located in a county with a population greater than 8 million persons.

[38] Of MWD's 26 member agencies, 11 are 1911 Act districts, all of which are directly or indirectly involved in groundwater projects and programs, including activities related to groundwater management (e.g., Eastern Municipal Water District). Many 1911 Act districts are actively involved in adjudicated groundwater basins overseen for basin management purposes by watermasters. These examples indicate the 1911 Act provides broad powers regarding waters, which include groundwater basin management, storage, conjunctive use/exchange programs, water reuse/reclamation and conservation.

[39] SB 1386 (Lowenthal); 2011-2012 Regular Session

not necessary in order for MWDOC to exercise its existing authority regarding the groundwater basin.[40]

Courts have categorized 1911 Act districts as "quasi-municipal districts", described by one court as formed for the purpose of supplying general municipal needs, although these needs may be specific in their delineated character; the creation of this type of district is not for the purpose of making a specific and narrowly limited improvement, but is comparable to the organization of a city (Yribarne v. County of San Bernardino, 218 Cal. App. 2d 369, 32 Cal. Rptr. 847, 1963 Cal. App. LEXIS 1788). The California Supreme Court said in the case of Morrison v. Smith Bros, Inc. "… from 1911 to date, there has been developed a new type of public corporation, resembling in many respects municipal corporations proper, and radically different in nature from irrigation [***15] and reclamation districts. The case of Henshaw v. Foster, supra, clearly recognized the distinction, holding that such quasi-municipal corporations were municipal corporations within the meaning of article XI, section 19, of the state Constitution." [Morrison v. Smith Bros., Inc., 211 Cal. 36, 293 P. 53, 1930 Cal. LEXIS 299]. These cases underscore the broad authority of 1911 Act districts, including for groundwater management purposes.

The 1975 "Joint Exercise of Powers Agreement Creating Santa Ana Watershed Project Authority" (as amended) includes OCWD and four 1911 Act districts. The Agreement provides: "each of the parties has the authority and power to protect and preserve the quality of the surface and subsurface water supplies within their respective boundaries;" that the Authority was formed pursuant to the provisions of the Government Code "relating to the joint exercise of powers common to public agencies" (Government Code Section 6502); and, that the powers "shall be exercised, to the extent not herein specifically provided for, in the manner and according to the methods provided under the "Municipal Water District Law of 1911". If OCWD is exercising common powers which includes surface and subsurface supplies according to the 1911 Act districts for purposes of SAWPA, then those common powers would also be applicable to MWDOC in connection with MWDOC's authority and exercise of powers concerning the groundwater basin.

Santa Ana River Judgment

OCWD is a party to the 1969 Orange County Water District vs. City of Chino, et al. judgment. If MWDOC is the successor entity of an OCWD/MWDOC consolidation, MWDOC will have to intervene in the Judgment. OCWD is a member agency of the Santa Ana Watershed Project Authority (SAWPA), which was established following the

[40] Government Code Sections 56050.5, 56824.10, 56824.12, however, requires LAFCO to act regarding the exercise of latent powers.

judgment and is engaged in ongoing projects and programs associated with the Judgment. SAWPA-related agreements will require amendment in connection with MWDOC's successor entity status.

MWDOC Boundary

OCWD's boundary extends past the ocean shoreline commensurate with the boundary of the groundwater basin. MWDOC's boundary does not extend beyond the shoreline. MWDOC's boundary will have to be adjusted via an annexation consistent with the OCWD/groundwater basin boundary.[41]

Board Composition and Three Cities

The Cities of Anaheim, Fullerton and Santa Ana (Three Cities) are each a Member Public Agency of MWD and are not within MWDOC.[42] Any Plan of Service submitted with a consolidation application could include the addition of three Directors to the MWDOC Board whose authority would be commensurate with the authority currently exercised as members of the OCWD Board, including for purposes of retaining their sovereignty. Specifically, that authority would be limited to groundwater basin matters within the former OCWD boundary and include provisions to avoid incompatibility of public office in connection with the Three Cities as independent MWD agencies sitting on the Board of another independent MWD agency. The Plan of Services for any consolidation proposal must address the governance issues in connection with the Three Cities.

OCWD as Successor Entity

Metropolitan Water District Member Public Agency

Per the existing provisions of the MWD Act, as a special act district, OCWD is not a Public Agency and therefore cannot be a Member Public Agency.[43] Consequently, the MWD Act would have to be amended by legislation in order for OCWD to be considered by MWD to become a member agency. Prior efforts to amend the MWD Act, including member agency proxies to attend, vote and participate at MWD meetings if the member

[41] Government Code Section 56017, 56021(d)

[42] See 1986 detachment documents

[43] Section 5: "Public agency" means any city, municipal water district, municipal utility district, public utility district, county water district, and county water authority'; Section 12: "Member public agency" means any public agency, the area of which, in whole or in part, is included within a metropolitan water district as a separate unit.

public agency cannot attend the meeting have been opposed.[44] Recently, discussion among MWD member agencies to introduce similar legislation indicated there is opposition to opening the MWD Act because other unrelated amendments are likely to be proposed.

Alternatively, it has been suggested that the OCWD Act could be amended by legislation to provide OCWD with the same powers as a 1911 Act district. The legislation might include a provision that the OCWD legislation is interpretative of the existing MWD Act with respect to the types of public agencies that are member public agencies of MWD.[45] Although Cortese-Knox- Hertzberg permits LAFCO to consolidate two districts with different principal or enabling acts, LAFCO may do so only if the successor district can provide all of the services of the two consolidating agencies at the time of consolidation. Consequently, OCWD must be eligible to become an MWD member agency prior to LAFCO processing any consolidation with OCWD as the successor entity.[46]

OCWD Boundary

The OCWD Act is clear that the primary purpose of OCWD is the management of the groundwater basin. The OCWD Act provides OCWD with the authority to import water for the benefit of the groundwater basin and sell water at retail or wholesale in connection with basin management.[47] Legislation amending the OCWD Act would be required to change OCWD's boundary consistent with MWDOC's and maintaining the three cities (Anaheim, Fullerton, and Santa Ana) within the boundary so OCWD can import and sell water outside of the basin as MWDOC currently does. This would be irrespective of OCWD's groundwater basin management and would not necessarily involve the conjunctive use of imported and basin groundwater, operationally or otherwise, except as may be authorized or enabled by legislation.

Board Composition and Authority

Legislation would be required to elect Directors representing the area not currently within OCWD's boundary. The number of Directors, divisions and authority would have to be aligned with the territory represented by the Directors and if directly related to the groundwater basin or imported water. As this may be a mixed question, any enabling legislation should carefully circumscribe the authority and limitations on the authority of

[44] AB 885 (2007-08 Legislative Session); Governor vetoed; see 7/11/07 Senate Local Govt. Comm. Bill Analysis

[45] The MWD Board of Directors still has discretionary authority to approve or disapprove the special act district/OCWD as a "member public agency".

[46] Government Code Section 56826.5(a)(1)

[47] See Section 2(6) of the OCWD Act

Directors. The Plan of Services for any consolidation application submitted to OC LAFCO must address the governance issues.[48]

Board Composition and Three Cities

The authority and jurisdiction of the Three Cities Directors would necessarily be limited to the groundwater basin area consistent with their current status as OCWD Directors. This would also have to be addressed in any enabling legislation with respect to the Board composition and authority as referenced above. The Plan of Services for any consolidation application must address the governance issues in connection with the Three Cities.

Need for Legislation

As noted above, Government Code Section 56826(a)(1) requires that the successor entity must have the authority to provide all of the services of the two consolidating agencies at the time of consolidation. As addressed above, legislation is required in order for OCWD to be considered a member agency and also for purposes of its boundaries, Board composition and governance.

5.6 Plan For Service

Submittal of an application to OC LAFCO, accompanied by a plan for providing services, to consolidate OCWD and MWDOC into a single successor agency is required. In accordance with Government Code Section 56653, the "Plan for Service" shall address all of the following information and ***any additional information required by the Commission or the Executive Officer***:

(1) An enumeration and description of services currently provided or to be extended to the affected territory.
(2) The level and range of those services.
(3) An indication of when those services can feasibly be extended to the affected territory, if new services are proposed.
(4) An indication of any improvements or upgrading of structures, roads, sewer or water facilities, or other conditions the local agency would impose or require within the affected territory if the change of organization or reorganization is completed.
(5) Information with respect to how those services will be financed.

[48] Government Code Section 56653

In addition to the requirements noted above, the "Plan for Service" shall also include all of the following information:

a) The total estimated cost to provide the **new** or **different** function or class of services within the boundary of the Successor Agency. (New or Different Services: G.C. 56824.12)

b) The estimated cost of the **new** or **different** function or class of services to customers within the boundary of the Successor Agency. (New or Different Services: G.C. 56824.12)

c) Identification of existing providers, if any, of the **new** or **different** function or class of services proposed to be provided and the potential fiscal impact to the customers of those existing providers. (New or Different Services: G.C. 56824.12)

d) A plan for financing the establishment of the **new** or **different** function or class of services within the boundary of the Successor Agency. (New or Different Services: G.C. 56824.12)

e) Alternatives for the establishment of the **new** or **different** function or class of services within the boundary of the Successor Agency. (New or Different Services: G.C. 56824.12)

5.7 Findings

In accordance with Gov Code Section 56826.5(b)(2), LAFCO must make the determination that public service costs of a proposal for consolidation are likely to be less than or substantially similar to costs under alternative means of providing services.

The following findings are not intended as conclusions or recommendations but rather have been developed in line with materials provided and interviews conducted with MWDOC and OCWD and assumptions as noted within this MSR or its attachments.

1. The combined average annual expenses based on the last three years (Fiscal Years 2021-22, 2022-23, and 2023-24) of adopted budgets for MWDOC and OCWD total approximately $517 million (Table 13).

2. In part to a consolidation of OCWD and MWDOC, 18 positions were found to be potentially redundant, resulting in cost savings in average annual salaries of approximately $2.25 million (Table 14).

3. The elimination of redundant staff positions, reduction in board members from 17 to 10, savings from economies of scale for overhead expenses and healthcare benefits as a result of consolidation would have a net savings for the Successor Agency of approximately $3.98 million annually (Table 15).

4. Consolidation with all employees enrolled in a defined benefit plan (CalPERS) is estimated to have a net annual savings of approximately $2.408 million in addition to the total savings identified in Table 15 ($3,984,377) for an estimated savings of approximately $6,391,927 (Table 16).
5. Consolidation with all employees enrolled in a defined contribution plan (401(k)) is estimated to have for Employee Benefits of approximately $376,734 (Table 18). Because the unfunded liability payment would be eliminated and the contributions to the defined contribution plan would increase, the net total savings would be $3,897,717. However, this does not include the termination payment for CalPERS, which ranges from $10.4 million to $26 million (Table 17).
6. The estimated cost to terminate MWDOC's enrollment in CalPERS is between approximately $10.4 million and $26 million. A financing instrument could be used to pay this off over time (Table 17).
7. Transitional costs of consolidation will be incurred, but the total amount is unknown. These temporary expenses may include consultant fees to guide the process, legal fees related to modifying contracts/agreements, preparation of studies and planning documents such as a Capital Improvement Program, and overlapping staff positions and board members continuing their roles temporarily during the integration phase. Other potential costs can include communication campaigns related to public relations and marketing, as well as technology and systems integration.
8. The projected annual revenues of the Successor Agency (including pass-through, net-neutral revenues) is estimated at approximately $517 million, of which the majority is from OCWD revenues (Table 19).
9. The projected Statement of Net Position for the Successor Agency estimates total assets (current and noncurrent) and total deferred outflows of resources at approximately $1.47 billion and total liabilities (current and noncurrent) at approximately $981 million. Therefore, the projected net position of the Successor Agency is a positive $485.6 million with the majority (67%) from unrestricted (Table 20).
10. Based on the financial analysis conducted herein using the last three years of adopted budgets as a baseline for the Successor Agency, and Statement of Net

Position showing a healthy net positive value, consolidation of the two agencies is considered fiscally feasible and sustainable.

11. Water supply reliability and services to MWDOC's member agencies and OCWD's Groundwater Producers are not anticipated to be interrupted or diminished by a consolidation of the agencies.

12. Consolidation of OCWD and MWDOC may offer opportunities involving unified representation of Orange County water suppliers at the local, state, and federal levels through representation of Orange County on the MWD Board of Directors, grants and low-interest loan funding opportunities, and legislative advocacy. However, if the provision of groundwater management and wholesale water services by the two agencies remains the status quo, then there may be opportunities for OCWD and MWDOC to collaborate on mutually beneficial efforts and projects and elimination of redundancies to improve efficiencies in water service delivery to Orange County ratepayers.

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APPENDIX A

Appendix A
MWDOC and OCWD Budget Line Item Explanations

Column 1 Line	Column 2 Line Item Descriptions Exactly as Printed in Adopted Budgets of Each Agency	Explanation why the budget line shows no value.
	Salaries & Wages	
1	Salaries & Wages	-
2	less for Recovery from Grants	OCWD: Grants are included in revenues, Rents, Royalties and Others
3	Overtime	MWDOC: This item is budgeted under: Salaries & Wages (Line 1)
4	Payroll Taxes	MWDOC: This item is budgeted under: Salaries & Wages (Line 1)
5	Capitalized Salaries	MWDOC: N/A – MWDOC does not have capitalizable expenses at this time
6	Temporary Workers - General Total	MWDOC: This item is budgeted under: Salaries & Wages (Line 1)
7	Expense - Contra	MWDOC: This item is budgeted under: Less for Recovery from Grants (Line 2)
	Employee Benefits	-
8	Employee Benefits	-
9	CALPERS Unfunded Liability Contribution	OCWD: N/A the District is not a defined benefit retirement
10	Health Insurance Coverage for Retirees	-
11	Retirement	MWDOC: Retirement is CalPERS and is posted to Employee Benefits (Line 8)
12	Capitalized Benefits	MWDOC: N/A – MWDOC does not have capitalizable expenses at this time
13	Retiree Health Trust	MWDOC: expense for retiree health is under Health Insurance Coverage for Retirees (Line 10)
	Director Fees & Costs	-
14	Director Compensation	-
15	Director Benefits	OCWD: Director benefits are included in Payroll Taxes, Retirement, and Workers' Comp (Lines 4, 8, 21)
16	MWD Representation	OCWD: The District does not have this expense
17	Election Expense	MWDOC: This item is budgeted under: Contribution to Election Reserve (Line 18)
18	Contribution to Election Reserve	OCWD: Election Expense is the same as MWDOC's Election Reserve (Line 17)
	Insurance Expense	-
19	Insurance Expense	-
20	Insurance Refund	MWDOC: N/A - MWDOC does not budget for Insurance Refund

Column 1 Line	Column 2 Line Item Descriptions Exactly as Printed in Adopted Budgets of Each Agency	Explanation why the budget line shows no value.
21	Workers' Compensation	MWDOC: This item is budgeted under: Insurance Expense (Line 19)
22	Claims Total	MWDOC: N/A - MWDOC does not budget for Claims Total
	Office Supplies/Expense	-
23	Office Expense - General Total	MWDOC: office expense is under: Outside Printing, Subscription & Books (Line 24); Office Supplies (Line 25); and Postage/Mail Delivery (Line 26)
24	Outside Printing, Subscription & Books	OCWD: Subscriptions are included in line 70 below
25	Office Supplies	OCWD: Office supplies are included in line 23 above
26	Postage / Mail Delivery	OCWD: Postage/Mail Delivery is included in line 23 above
	Supplies	-
27	Supplies - Water Loss Control	OCWD: the District does not have this expense category
28	Business Expense	OCWD: the District does not have this expense category
29	Chemicals - Polymer Total	MWDOC: N/A
30	Operational Supplies	MWDOC: supplies are under Office Supplies (Line 25) and Supplies - Water Loss Control (Line 27)
	Professional Fees	-
31	Legal Expense - General	-
32	Audit Expense	OCWD: This is included in Professional Services (Line 35)
33	Outside Consulting Expense	OCWD: This is included in Professional Services (Line 35)
34	Professional Fees	OCWD: This is included in Professional Services (Line 35)
35	Professional Services - General Total	MWDOC: This is budgeted under: Professional Fees (Line 34)
36	Legal Advertising Total	MWDOC: Advertising would be under Professional Fees (Line 34)
37	Professional Services - Engineer Total	MWDOC: Engineering Services is budgeted under: Outside Consulting Expense (Line 33)
38	Lab Samples Analysis Total	MWDOC: N/A
39	Security Program Total	MWDOC: N/A
	Rent	-
40	Rents & Leases	OCWD: This is included in Rent Equipment (Line 41)
41	Rent Equipment - Gen Total	MWDOC: N/A - MWDOC does not have any rental equipment
	Vehicle Expense	-
42	Vehicle Expense - Water Loss Control	OCWD: This is included in Maint Equipment (Line 48)
43	Automotive & Toll Road Expenses	OCWD: This is included in Gas & Diesel (Line 44)

Column 1 Line	Column 2 Line Item Descriptions Exactly as Printed in Adopted Budgets of Each Agency	Explanation why the budget line shows no value.
44	Gas & Diesel Fuel Total	MWDOC: This item is budgeted under: Vehicle Expense (Line 42)
45	Fuel - Off Road Total	MWDOC: N/A
	Repairs & Maintenance	-
46	Maintenance Expense	OCWD: This is included in Maintenance Equipment (Line 48)
47	Building Repair & Maintenance	OCWD: This is included in Building Repair & Maint (Line 49)
48	Maint Equipment	MWDOC: N/A - MWDOC does not have any Maintenance equipment
49	Building Repair & Maintenance	MWDOC: Same as MWDOC's Building Repair & Maintenance (Line 47)
	Computer & Software	-
50	Software Support & Expense	OCWD: This is included in Hardware/Software (Line 53)
51	Computer Maintenance	OCWD: This is included in Maintenance Equipment (Line 48)
52	Computers and Equipment	OCWD: This is included in Hardware/Software (Line 53)
53	Hardware/Software Total	MWDOC: This item is budgeted under: Software Support & Expense (Line 50), Computer Maintenance (Line 51) and Computers and Equipment (Line 52)
	Telephone Expense	-
54	Telecommunications Expense	-
	Memberships	-
55	Membership / Sponsorship	-
56	Center for Demographic Research Participation	OCWD: This is included in Membership/Sponsorship (Line 55)
	Conferences & Travel	
57	Conference Expense - Staff	OCWD: This is included in Travel/Conf./Mileage (Line 61)
58	Conference Expense - Directors	OCWD: This is included in Travel/Conf./Mileage (Line 61)
59	Travel & Accommodations - Staff	OCWD: This is included in Travel/Conf./Mileage (Line 61)
60	Travel & Accommodations - Directors	OCWD: This is included in Travel/Conf./Mileage (Line 61)
61	Travel/Conference/Mileage Total	MWDOC: This item is budgeted under: Conference Expense - Staff (Line 57), Conference Expense - Directors (Line 58), Travel & Accommodations - Staff, (Line 59) and Travel & Accommodations - Directors (Line 60)
	Utilities Expenses	-
62	Utilities - Electricity Total	MWDOC: All of MWDOC's utilities are shared with OCWD and paid through Office Maintenance (Line 46)

Column 1 Line	Column 2 Line Item Descriptions Exactly as Printed in Adopted Budgets of Each Agency	Explanation why the budget line shows no value.
63	Utilities - Electricity (66Kv Fv Site Sce) Total	MWDOC: N/A
64	Utilities Electrical Curtailment Power Cr	MWDOC: N/A
65	Utilities - Gas Total	MWDOC: N/A
66	Utilities - Water Total	MWDOC: N/A
	Training	
67	Training Expense	
68	Tuition Reimbursement	OCWD: This is included in Education Tuition Reimbursement (Line 69)
69	Education Tuition Reimbursement Total	MWDOC: This item is budgeted under: Tuition Reimbursement (Line 68)
70	Subscriptions Total	MWDOC: This item is budgeted under: Outside Printing, Subscription & Books (Line 24) or Membership/Sponsorship (Line 55)
	Misc Exp	-
71	Miscellaneous Expense	-
72	Temporary Help Expense	OCWD: This is included in Temporary Workers (Line 6)
73	MWDOC's Contribution to WEROC: Operations	OCWD: This is included in Inter Agency (Line 78)
74	WFB/County Banking Charge Total	MWDOC: Banking fees are included under Miscellaneous Expense (Line 71)
	Marketing	-
75	Event and Marketing	MWDOC: This item is budgeted under: Professional Fees (Line 34)
76	MWDOC Cost Share	MWDOC: N/A
	Inter-agency	-
77	Licenses And Permits Total	MWDOC: N/A
78	Inter Agency Total	MWDOC: N/A
79	Taxes & Assessments Total	MWDOC: N/A
	Capital Acquisition	-
80	Capital Acquisition (excluding building)	OCWD: This is included in Capital Projects (Line 82)
81	Capital Acq Prior Year Carryover Credit	OCWD: This is included in Capital Projects (Line 82)
82	Capital Projects (Debt & PAYGO funded)	MWDOC: This item is budgeted under: Capital Acquisition (excluding building) (Line 80) and Capital Acq Prior Year Carryover Credit (Line 81)

Column 1 Line	Column 2 Line Item Descriptions Exactly as Printed in Adopted Budgets of Each Agency	Explanation why the budget line shows no value.
83	New Equipment	MWDOC: This item is budgeted under: Capital Acquisition (excluding building) (Line 80) and Capital Acq Prior Year Carryover Credit (Line 81)
	Building Expense	-
84	MWDOC's Building Expense	OCWD: This is included in R&R Expenditures (Line 93)
85	Building Expense Prior Year Carryover Credit	OCWD: This is included in R&R Expenditures (Line 93)
	PFAS	-
86	PFAS O&M Expenditure	MWDOC: N/A
	Water Expenses	-
87	Water Purchases	-
88	Local Resource Program Incentives	OCWD: The District does not have this expense
89	Readiness-To-Serve Charge	OCWD: This is included in Water Purchases (Line 87)
90	Capacity Charge	OCWD: This is included in Water Purchases (Line 87)
91	SCP/SAC Pipeline Surcharge	OCWD: The District does not have this expense
	Debt Expenses	-
92	Debt Service	MWDOC: N/A
	Replacement and Refurbishment (R&R) Expenses	-
93	R&R Fund Expenditures	MWDOC: N/A
94	Appropriation to R&R Reserves	MWDOC: N/A
	Total (3-year average)	-

Note: Line item names appear exactly as they appear in the adopted budgets of each agency. Subheaders and grouping of line items were assigned by WEBB in consultation with each Agency.

APPENDIX B

Appendix B

Successor Agency Budget Explanation of Line Item Savings

The savings in Line 1 would result from reductions in staff salaries for the redundant employee positions identified in Table 5.3.2.
The savings in Line 8 would result from decreased cost of providing employee healthcare benefits because of reductions in staff identified in Table 5.3.2. No changes to retirement benefits are assumed in this instance of the budget. Changes to retirement benefits are shown in Tables 5.3.4 and 5.3.6. Notably the Retiree Health Trust for OCWD is significantly lower in FY 23/24 ($640,000) as compared to the two prior fiscal years ($10,139,956 in FY 21-22 and $10,711,809 in FY 22-23).
The savings in Lines 14 and 15 would result from a Successor Agency with a 10-member Board of Directors.
The savings in Lines 17 and 18 would result from only one election for one Successor Agency.
The savings in Line 21 would result from economies of scale due to reductions in staff identified in Table 5.3.2.
The savings in Lines 23, 24, and 25 would result from economies of scale due to reductions in staff identified in Table 5.3.2.
The savings in Lines 31, 32, 33, and 34 would result from economies of scale due to certain duplicative administrative overhead costs.
The savings in Lines 46 and 47 would result from the Successor Agency utilizing the same buildings that OCWD and MWDOC share.
The savings in Lines 50 through 53 would result from economies of scale due to reduced staff identified in Table 5.3.2 and based on the average costs of software, computer maintenance, computers and equipment, and software/hardware.
The savings in Line 54 would result from economies of scale due to reduced staff identified in Table 5.3.2 and based on the average costs of telecommunications.
The savings in Line 55 would result from economies of scale due to reduced staff identified in Table 5.3.2 and based on the average cost of membership/sponsorships.
The savings in Line 56 would result from reducing participation by one agency.
The savings in Line 57 is an estimated reduction of 30% due to reductions in staff identified in Table 5.3.2.
The savings in Line 58 is an estimated reduction of 50% due to reductions in the number of Directors from 17 to 10.
The savings in Line 59 is an estimated reduction of 30% due to reductions in staff identified in Table 5.3.2.
The savings in Line 60 is an estimated reduction of 50% due to reductions in the number of Directors from 17 to 10.
The savings in Line 61 is an estimated reduction of 30% due to reductions in staff identified in Table 5.3.2 and reduction in the number of Directors from 17 to 10.
The savings in Line 67 is due to reductions in staff identified in Table 5.3.2, calculated on a proportional basis to the reduction in full-time employees (FTE's).
The savings in Line 68 is the result of reductions in staff identified in Table 5.3.2. Line 69 is calculated to show the proportional increase in cost associated with the remaining staff of the Successor Agency.
No savings is expected in Line 87 because any potential savings resulting from consolidation related to water purchases would be offset by an equal reduction in revenue for the Successor Agency.

APPENDIX C

APPENDIX C

Existing Projects, Programs, and Contracts of MWDOC and OCWD

Municipal Water District of Orange County		
Contract or Program or Project	Description	Notes
1. America's Water Infrastructure Act (AWIA)	MWDOC's WEROC completed an effort to facilitate a contract with participating WEROC member agencies to address the requirements of America's Water Infrastructure Act (AWIA). The AWIA requires utilities to conduct a Risk and Resilience Assessment of their community water systems and develop a corresponding Emergency Response Plan.	Completed in 2022 and has a 5-year renewal period
2. Baker Pipeline	MWDOC owns the pipeline which conveys untreated water including all easements and right-of-way, subject to the right Irvine Ranch Water District (f.k.a., Los Alisos Water District) and El Toro Water District to also use the easements.	MWDOC has assigned or leased all of its capacity rights and obligations to District member agencies. The pipeline is estimated to have a remaining useful life of at least 20 years
3. Climate Adaption Master Plan	MWDOC has actively participated with The Metropolitan Water District of Southern California (MWD) in its development of this Plan.	
4. Consumer Confidence Reports	MWDOC has provided professional consulting services to MWDOC's 27-member agencies in coordinating and preparing mandated Water Quality, Consumer Confidence Reports (CCR's).	
5. Government Affairs Advocacy	MWDOC contracts with federal, state, and local lobbyists who provide representation to MWDOC and its member agencies in Washington D.C., Sacramento and throughout Orange County. MWDOC uses its contract lobbyists to advocate for issues that affect both MWDOC and its member agencies – issues that have significant impact on water providers throughout the county.	
6. Grants Tracking and Reporting	MWDOC entered into an agreement for grants tracking, writing and acquisition services. This service is made available to all member agencies and the consultant monitors and tracks potential funding opportunities for projects seeking funding.	

Existing Projects, Programs, and Contracts of MWDOC and OCWD

Municipal Water District of Orange County		
Contract or Program or Project	Description	Notes
7. Irvine Ranch Water District's Baker Treatment Plant	MWDOC performs the billing for all the participating agencies.	
8. K-12 Education Program – Grab-and-Go Activities, Water Education School Program	MWDOC in partnership with Orange County Department of Education (OCDE) have developed "Grab-and-Go" activities which are prepared and packaged by MWDOC and reviewed and vetted by OCDE. These are free activities offered to enhance educational programming. The MWDOC Water Education School Programs now serve Orange County students in Kindergarten through High School (K-12).	
9. Lead & Copper Rule Revision Shared Service Program	MWDOC assists Orange County water agencies in their compliance efforts with US EPA Federal regulations known as the *National Primary Drinking Water Regulation: Lead and Copper Rule Revisions*.	
10. Master Agreement with Cities of Anaheim, Fullerton, and Santa Ana	Streamlined many of MWDOC's regional programs through a single agreement that covers several programs. This formalization allows for timely processing of payments, clear delineation of program participation, and delineation of the roles and responsibilities for both signatories.	These agreements allow MWDOC and the Three Cities to work together on a variety of efforts including: -Urban Water Management Plan Shared Services -Water Use Efficiency Programs -Water Loss Control Shared Services & Water Loss Technical Assistance -MWDOC K-12 Water Education Programs -Lead & Copper Rule Revision Shared Services Program

Existing Projects, Programs, and Contracts of MWDOC and OCWD

Municipal Water District of Orange County		
Contract or Program or Project	Description	Notes
11. Memberships with Joint Powers Agencies (JPA)	MWDOC participates in multiple JPA agreements that involve joint operation and maintenance of facilities and infrastructure and the financing of insurance coverage. The joint agreements involving municipal service delivery include: • Santiago Aqueduct Commission – Operation and maintenance of the Baker Pipeline (previously called the Santiago Aqueduct Commission Pipeline) • Joint Exercise of Powers for Construction, Operation and Maintenance of the East Orange County Feeder No. 2 Pipeline – other parties are Metropolitan, Anaheim and Santa Ana	
12. MWDOC Headquarters	MWDOC owns its headquarters building. The land the headquarters building resides in is leased by OCWD to MWDOC per a joint agreement.	Continue remodel in Fiscal Year (FY) 2023-24 using funds in the FY 2023-24 budget.
13. Ocean Desalination Opportunities	MWDOC continues to work with local and regional water agencies on implementation planning for local resources projects, including the Doheny Ocean Desalination Project.	
14. Office Space at OC-70 Pump Station	The Water Emergency Response Organization of Orange County (WEROC) is administered by MWDOC to support and manage countywide emergency preparedness, planning, response, and recovery efforts among Orange County water and wastewater utilities. WEROC has a muti-party agreement with Metropolitan for use of this office space.	No current plans for improvements or expansion

APPENDIX C

Existing Projects, Programs, and Contracts of MWDOC and OCWD

Municipal Water District of Orange County		
Contract or Program or Project	Description	Notes
15. Outreach and Community Education	Outreach to the elected officials in the Orange County delegation on the local, state and national level and education on issues critical to the region. Through special education and outreach activities, Water Advisory Committee Orange County (WACO) meetings, Independent Special Districts of Orange County (ISDOC). MWDOC administers and negotiates Storage Agreements/Program for its member agencies. Among these include: -MWD/MWDOC/OCWD Conjunctive Use Storage Agreement -MWD/MWDOC/OCWD Cyclic Storage Agreement -MDW/MWDOC Cyclic In-Lieu Deliveries Program	
16. Public Awareness Campaign	MWDOC presently develops, coordinates, and delivers a substantial number of programs and services aimed at elevating stakeholders' awareness about water policy, efficient water use, and MWDOC's role in advocating for sound policy and water reliability investments that are in the best interest of Orange County.	
17. Reliability Planning Efforts	The Orange County Water Reliability Study is a comprehensive study of Orange County's long-term water reliability, providing valuable information to key decision makers regarding the future of Orange County's water supplies.	MWDOC's initial Orange County Reliability Study was in 2016, the study was updated in 2018, and most recently again in 2023.
18. South Emergency Operating Center (SEOC)	MWDOC has been leasing the Prothero Filtration Plant Facilities, a part of El Toro Water District, as the WEROC's South Emergency Operating Center. MWDOC also has an agreement with MWD to use their facility located off Peter Canyon Road in Orange as WEROC's North Emergency Operating Center (NEOC).	

APPENDIX C

Existing Projects, Programs, and Contracts of MWDOC and OCWD

Municipal Water District of Orange County		
Contract or Program or Project	Description	Notes
19. Strategic Communications Program and Plan	Developed through the foundational work completed through the Facilitated Discussions Project to ensure MWDOC's Strategic Priorities aligned with the needs of the community and MWDOC member agencies. Seven key goals were developed. This document serves as a blueprint, establishing a baseline understanding for how MWDOC's programs will provide information and value to its various stakeholders, partners, and employees; and support MWDOC's mission, goals, and objectives to secure long term water reliability for the region.	Completed in Fiscal Year 2023-2024
20. Urban Water Management Plans (UWMP)	In 2010, 2015, and 2020 MWDOC led the selection and administration of hiring a consultant to assist over 22 agencies (including Santa Ana and Fullerton) update their state mandated Urban Water Management Plans.	Conducted on a five year cycle
21. Water Loss Control Program	A hybrid program with policy, work group and grant acquisition related activities funded as a Core activity through the MWDOC General Fund and all other activities are Choice activities funded by participating retail agencies. All 32 retail agencies actively participate in MWDOC's choice-based Water Loss Control Program.	
22. Water Loss Control Technical Assistance	included one-on-one technical assistance from a consultant specializing in distribution system water loss and the establishment of an Orange County Water Loss Control Work Group. MWDOC now offers a total of ten services with several sub-tasks designed to assist agencies in obtaining compliance with the water loss mandate adopted by the legislature through Senate Bill (SB) 555 from 2015.	

APPENDIX C

Existing Projects, Programs, and Contracts of MWDOC and OCWD

Municipal Water District of Orange County		
Contract or Program or Project	Description	Notes
23. Water Loss Control Shared Services	Water Loss Control Shared Services include: • Water Balance Validation • Distribution System Leak Detection • Suspected Leak Investigations • Sales Meter Accuracy Testing • Distribution System Pressure Surveys • Distribution System Flushing MWDOC has secured funding from MWD to offset costs to participating retail agencies. These services are provided to agencies through a long-term shared services agreement between MWDOC and each agency. The agreement includes annual addendums that allow agencies to select which services they plan to access during the coming year.	MWDOC routinely evaluates the services offered and tailors them to reflect the needs of the Orange County retail agencies. Other Potential future Water Loss Control Shared Services include: Fire Hydrant Maintenance, Gate Valve Exercising, Air Release Valve Maintenance, Blow-off Assembly Maintenance, Cla-Val Automatic Control Valve Preventative Maintenance
24. Water Emergency Response Organization of Orange County (WREOC)	Managed and operated by MWDOC, WEROC is supported by a group of water and wastewater providers that include Anaheim, Fullerton, Santa Ana, Orange County Sanitation District, Orange County Water District, and South Orange County Wastewater Authority. Additionally, WEROC maintains an Emergency Operations Centers (EOC), which play a crucial role in the coordination of emergency response operations during disasters.	
25. Water Energy Education Alliance (WEEA)	Water Energy Education Alliance (WEEA) was created to build and bolster career pathways to water and energy jobs for Southern California students.	MWDOC began administration of WEEA in May 2020.

Existing Projects, Programs, and Contracts of MWDOC and OCWD

Municipal Water District of Orange County		
Contract or Program or Project	Description	Notes
26. Water Use Efficiency (WUE) Program	MWDOC collaborates with local water agencies, cities, and stakeholders to promote water use efficiency and sustainable water practices. MWDOC advocates for water-related policies at the state level, pushing for regulations and legislation that promote responsible water use.	

Source:

a. Webb Associates, *Responses from OCLAFCO MSR Survey for MWDOC*, September 15, 2023
b. OC LAFCO, *Municipal Service Review for the Municipal Water District of Orange County.* September 9, 2020

APPENDIX C

Existing Projects, Programs, and Contracts of MWDOC and OCWD

Orange County Water District		
Contract or Program or Project	Description	Notes
1. Alamitos Sea Water Barrier Project	OCWD has an agreement with LA County Public Works, the Water Replenishment System and the city of Long Beach to operate.	
2. Government Affairs	OCWD lobbyists at local, state, and federal levels.	
3. Green Acres Project	Deliver recycled water to 4 cities and one retail water agency	
4. Groundwater Laboratory Testing	OCWD provides to the Groundwater Producers the Philip L. Anthony Water Quality Laboratory	
5. Groundwater Replenishment System Program	OCWD expanded this water recycling project to replenish the groundwater basin. OCWD has an agreement with OC Sanitation for them to operate the system.	
6. JPA with the San Bernardino Valley Municipal Water District, Inland Empire Utilities Agency, and the Eastern and Western Municipal Water Districts	Through the JPA, OCWD participates in SAWPA. The JPA manages water supply and quality issues in the Santa Ana River Watershed.	
7. In-Lieu Program	Brings additional treated imported water supplies via MWDOC (when they are available for purchase) for Producers to use.	
8. MWD Long-Term Groundwater Storage Program	OCWD has a contract with MWD to store water in the local groundwater basin.	25-year agreement ends in 2028
9. Agreement and Lease	OCWD owns all of the land at its Fountain Valley headquarters, including the land under the OCWD and MWDOC buildings (collectively, the “Office Facilities”). OCWD owns about 66% and MWDOC owns 33% of the Shared Office Facilities. OCWD leases 50% of the land under the Office Facilities to MWDOC.	Agreement and Lease has a 50-year term from April 15, 1987 through April 15, 2037.

APPENDIX C

Existing Projects, Programs, and Contracts of MWDOC and OCWD

Orange County Water District		
Contract or Program or Project	Description	Notes
10. PFAS Grant Applications	• City of Fullerton • East Orange County Water District • Irvine Ranch Water District • City of Tustin • City of Orange	
11. PFAS Groundwater Treatment Systems	OCWD has an agreement with 15 Groundwater Producers to construct and operate PFAS groundwater treatment systems	OCWD will also pay for 50% of the annual operation and maintenance costs for these treatment systems
12. Prado Dam Wetlands	Constructed and operate natural wetlands behind Prado Dam to provide treatment to the Santa Ana River before it enters Orange County.	
13. Refurbishment and Replacement Program (R&R)	OCWD maintains this program to fund the replacement and repair of infrastructure.	The annual contribution to the fund increases 7%.
14. Santa Ana River Conservation and Conjunctive Use Program (SARCCUP) water bank	Prop. 84 grant between SAWPA and DWR for OCWD to store surplus State Project Water from MWD (extraordinary supply water) and imported water (local water).	
15. South OC Emergency Service Program	OCWD has a contract with these agencies to provide water supplies during emergency events.	Up for renewal in 2029.
16. Sunset Gap Seawater Intrusion Project	OCWD would fund the construction of this project to prevent seawater intrusion into the groundwater basin at this location.	This project would occur over the next 10 years. Seeking state and federal grant funding.

Source:

a. Webb Associates, *Responses from OCLAFCO MSR Survey for OCWD*, September 15, 2023
b. OCLAFCO, *Municipal Service Review and Sphere of Influence Update for the Orange County Water District.* September 10, 2024

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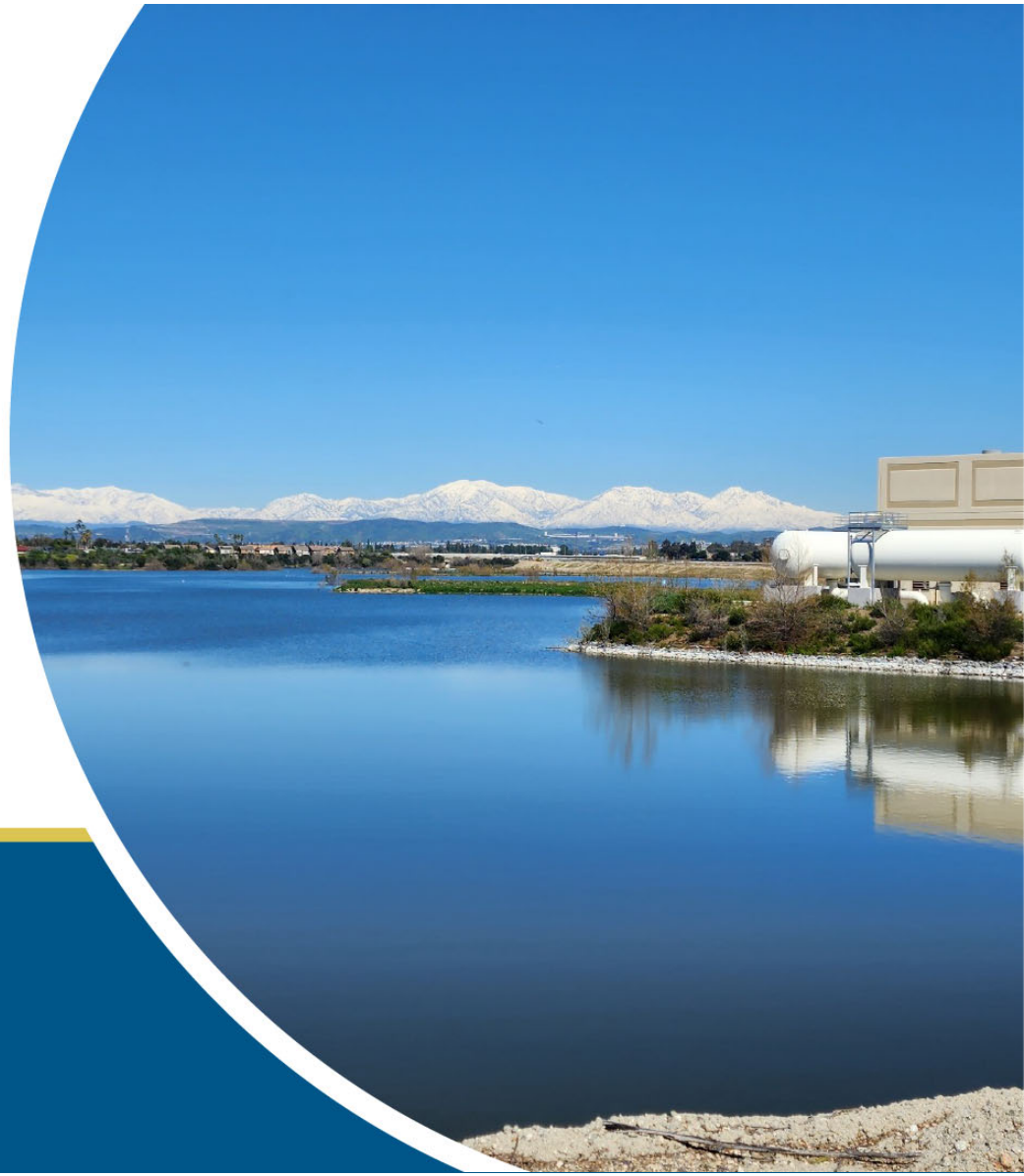
LAFCO Municipal Service Review, Sphere of Influence Review and Consolidation Feasibility Study



Water Issues Committee Meeting
December 11, 2024

LAFCO Municipal Service Review Public Review Draft

- June 2022 Orange County Grand Jury report recommended the consolidation of MWDOC and OCWD
- OCWD requested LAFCO review in October 2022
- Study began with consultant in June 2023
- Public draft released on November 15, 2024

LAFCO Municipal Service Review Public Review Draft

- Chapters 1-4, Municipal Service Review and Sphere of Influence Review
  - Routine work that typically occurs every five years
  - OCWD and MWDOC staff reviewed preliminary draft of these chapters in October
- Chapter 5, Consolidation Feasibility Study
  - First time made available
- Have 45 days to comment – December 30, 2024
- Reviewed Study “Findings” with the Board on November 13, 2024

Overall Review of Chapter 5 - Consolidation

- No new issues identified
- Confirmed that no fatal flaws or insurmountable obstacles exist that OCWD and MWDOC couldn't manage and resolve
- Fiscally feasible
- No disruption in services provided by OCWD and MWDOC
- Annual savings approximately ($4 - $6M), amount depends upon which retirement plan is implemented
  - $10 - $26 M PERS buyout if using OCWD retirement plan
- Could consolidate under MWDOC's enabling legislation without any need for new legislation in Sacramento (?)

Staff Comments to LAFCO

- 12 Total Comments
- Most are clarification type comments
- One substantial comment
  - The consolidation could occur under the MWDOC enabling legislation without any supporting state legislation
  - OCWD has believed it would be easier to consolidate under the OCWD enabling legislation along with making minor changes to the OCWD Act via state legislation
  - Legal counsel has raised significant questions and is requesting additional details on LAFCO's analysis and conclusion

Key Principles of Consolidation

1. Preserving the Groundwater Producers sole access to the groundwater basin.
2. Maintaining the seven directors Orange County has at the Metropolitan Water District of Southern California (MWD).
3. Ensuring all services currently being provided by MWDOC and OCWD would be provided by the new organization.
4. Initially combining the two staffs and boards and reducing staffing and board levels via attrition and retirements at a level to be determined.
5. Existing OCWD debt would be repaid by the Groundwater Producers and not shared with the South Orange County agencies

Going Forward

- LAFCO reviews and determines comments to be incorporated into a final draft report
- LAFCO Commission reviews the final draft report – approximately February 2025 – action is to receive and file the report
- Spring 2025 - OCWD to review the final report and determine any future action

Questions?

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Findings

1. The combined average annual expenses based on the last three years (Fiscal Years 2021-22, 2022-23, and 2023-24) of adopted budgets for MWDOC and OCWD total approximately $517 million (Table 13).

2. In part to a consolidation of OCWD and MWDOC, 18 positions were found to be potentially redundant, resulting in cost savings in average annual salaries of approximately $2.25 million (Table 14).

3. The elimination of redundant staff positions, reduction in board members from 17 to 10, savings from economies of scale for overhead expenses and healthcare benefits as a result of consolidation would have a net savings for the Successor Agency of approximately $3.98 million annually (Table 15).

4. Consolidation with all employees enrolled in a defined benefit plan (CalPERS) is estimated to have a net annual savings of approximately $2.408 million in addition to the total savings identified in Table 15 ($3,984,377) for an estimated savings of approximately $6,391,927 (Table 16).

Findings

5. Consolidation with all employees enrolled in a defined contribution plan (401(k)) is estimated to have for Employee Benefits of approximately $376,734 (Table 18). Because the unfunded liability payment would be eliminated and the contributions to the defined contribution plan would increase, the net total savings would be $3,897,717. However, this does not include the termination payment for CalPERS, which ranges from $10.4 million to $26 million (Table 17).

6. The estimated cost to terminate MWDOC's enrollment in CalPERS is between approximately $10.4 million and $26 million. A financing instrument could be used to pay this off over time (Table 17).

7. Transitional costs of consolidation will be incurred, but the total amount is unknown. These temporary expenses may include consultant fees to guide the process, legal fees related to modifying contracts/agreements, preparation of studies and planning documents such as a Capital Improvement Program, and overlapping staff positions and board members continuing their roles temporarily during the integration phase. Other potential costs can include communication campaigns related to public relations and marketing, as well as technology and systems integration.

Findings

8. The projected annual revenues of the Successor Agency (including pass-through, net-neutral revenues) is estimated at approximately $517 million, of which the majority is from OCWD revenues (Table 19).

9. The projected Statement of Net Position for the Successor Agency estimates total assets (current and noncurrent) and total deferred outflows of resources at approximately $1.47 billion and total liabilities (current and noncurrent) at approximately $981 million. Therefore, the projected net position of the Successor Agency is a positive $485.6 million with the majority (67%) from unrestricted (Table 20).

10. Based on the financial analysis conducted herein using the last three years of adopted budgets as a baseline for the Successor Agency, and Statement of Net Position showing a healthy net positive value, consolidation of the two agencies is considered fiscally feasible and sustainable.

Findings

11. Water supply reliability and services to MWDOC's member agencies and OCWD's Groundwater Producers are not anticipated to be interrupted or diminished by a consolidation of the agencies.

12. Consolidation of OCWD and MWDOC may offer opportunities involving unified representation of Orange County water suppliers at the local, state, and federal levels through representation of Orange County on the MWD Board of Directors, grants and low-interest loan funding opportunities, and legislative advocacy. However, if the provision of groundwater management and wholesale water services by the two agencies remains the status quo, then there may be opportunities for OCWD and MWDOC to collaborate on mutually beneficial efforts and projects and elimination of redundancies to improve efficiencies in water service delivery to Orange County ratepayers.