REGULAR MEETING
OF THE BOARD OF DIRECTORS
MUNICIPAL WATER DISTRICT OF ORANGE COUNTY
18700 Ward Street, Boardroom, Fountain Valley, California
May 20, 2026, 8:30 a.m.

Teleconference Sites:
25652 Paseo De La Paz, San Juan Capistrano, CA 92675
17420 Walnut Street, Fountain Valley, CA 92708

This meeting will be held in person at 18700 Ward Street, Fountain Valley, California, 92708 (Boardroom). 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: You can join the Zoom meeting by clicking on the following link:
https://zoom.us/j/8828665300

Telephone Audio: **(669) 900 9128**
Webinar ID: **882 866 5300#**

AGENDA

MOMENT OF SILENCE

PLEDGE OF ALLEGIANCE

ROLL CALL

PUBLIC COMMENTS
At this time, members of the public will be given an opportunity to address the Board concerning items within the subject matter jurisdiction of the Board. Members of the public may also address the Board about a particular Agenda item at the time it is considered by the Board and before action is taken. If the item is on the Consent Calendar, please inform the Board Secretary before action is taken on the Consent Calendar and the item will be removed for separate consideration.

The Board requests, but does not require, that members of the public who want to address the Board complete a voluntary "Request to be Heard" form available from the Board Secretary prior to the meeting.

ITEMS RECEIVED TOO LATE TO BE AGENDIZED
Determine need and take action to agendize items(s) which arose subsequent to the posting of the Agenda. (ROLL CALL VOTE: Adoption of this recommendation requires a two-thirds vote of the Board members present, or, if less than two-thirds of the Board members are present, a unanimous vote of those members present.)

ITEMS DISTRIBUTED TO THE BOARD LESS THAN 72 HOURS PRIOR TO THE MEETING
Pursuant to Government Code Section 54957.5, non-exempt public records that relate to open session agenda items and are distributed to a majority of the Board less than 72 hours prior to the meeting will be available for public inspection in the lobby of the District's business office located at 18700 Ward Street, Fountain Valley, California 92708, during regular business hours. When practical, these public records will also be made available on the District's website, accessible at http://www.mwdoc.com.

NEXT RESOLUTION NO. 2173

CONSENT CALENDAR (Items 1 to 6)
All matters under the Consent Calendar will be approved by one motion unless a Board member requests separate action on a specific item.

1. MINUTES

a. April 1, 2026 Workshop Board Meeting
b. April 6, 2026 Planning & Operations Committee Meeting
c. April 8, 2026 Administration & Finance Committee Meeting
d. April 15, 2026 Regular Board Meeting
e. April 16, 2026 Executive Committee Meeting
f. April 20, 2026 Jt. Planning Committee Meeting

Recommendation: Approve as presented.

2. TREASURER'S REPORTS

a. MWDOC Revenue/Cash Receipt Register as of April 30, 2026
b. Disbursement Registers (April/May)

Recommendation: Ratify and approve as presented.

c. Summary of Cash and Investment and Portfolio Master Summary Report (Cash and Investment report) as of March 31, 2026
d. PARS Monthly Statement (OPEB Trust)

Recommendation: Receive and file as presented

3. FINANCIAL REPORT

a. Combined Financial Statements and Budget Comparative for the Period Ending March 31, 2026

Recommendation: Receive and file as presented.

4. NV5 GEOSPATIAL LANDSCAPE CLASSIFICATION AND MAPPING CONTRACT CHANGE ORDER

Recommendation: Approve a contract change order with NV5 Geospatial in the amount of $200,000, for a total revised not to exceed amount of $1.6 million, to provide landscape classification and mapping requirements and to extend the contract term for an additional two years through June 30, 2028 and authorize the General Manager to execute the contract.

5. AWARD OF CONTRACT FOR GEOGRAPHIC INFORMATION SYSTEM (GIS) IMPLEMENTATION ASSISTANCE

Recommendation: Award Hazen and Sawyer a 1-year contract, for $144,260 plus a 10% contingency for a total not to exceed amount of $158,686, to provide Geographic Information System implementation assistance and authorize the General Manager to execute the contract, with the option for an additional 1-year renewal.

6. ELECTION INFORMATION FOR SPECIAL DISTRICT – CANDIDATE'S STATEMENTS OF QUALIFICATIONS

Recommendation: Authorize staff to submit the Transmittal of Election Information form to the Orange County Registrar of Voters, indicating that the Candidate's Statement of Qualifications will be limited to 200 words and that the District will not pay for the statements.

End of Consent Calendar

ACTION ITEMS

7. ADOPT A RESOLUTION TO SUPPORT A BUREAU OF RECLAMATION 2026 WATERSMART SMALL-SCALE WATER EFFICIENCY PROJECTS GRANT APPLICATION

Recommendation: Adopt a resolution supporting a Bureau of Reclamation 2026 WaterSMART Small-Scale Water Efficiency Projects Grant Application.

8. ADOPT RESOLUTIONS TO APPROVE THE 2025 WATER SHORTAGE CONTINGENCY PLAN AND 2025 URBAN WATER MANAGEMENT PLAN

Recommendation:
a. Open the public hearing (as noticed) regarding the proposed 2025 Water Shortage Contingency Plan and proposed 2025 Urban Water Management Plan to receive input from the public;
b. Discuss and consider the proposed plans and resolutions;
c. Adopt a resolution Approving the Adoption of the 2025 Water Shortage Contingency Plan; and
d. Adopt a resolution Approving the Adoption of the 2025 Urban Water Management Plan.

9. ADOPT A RESOLUTION APPROVING THE INVESTMENT POLICY AND GUIDELINES

Recommendation: Adopt a resolution approving the Investment Policy and Guidelines.

INFORMATION CALENDAR (All matters under the Information Calendar will be Received/Filed as presented following any discussion that may occur)

10. GENERAL MANAGER'S REPORT (ORAL AND WRITTEN)

Recommendation: Receive and file report(s) as presented.

11. MWDOC GENERAL INFORMATION ITEMS

a. Board of Directors - Reports re: Conferences and Meetings
b. Requests for Future Agenda Topic

Recommendation: Receive and file as presented.

ADJOURNMENT

Note: Accommodations for the Disabled. Any person may make a request for a disability-related modification or accommodation needed for that person to be able to participate in the public meeting by contacting Angela Crespi, District Secretary, at (714) 963-3058, or writing to Municipal Water District of Orange County 18700 Ward Street, Unit B, Fountain Valley, CA 92708. Requests must specify the nature of the disability and the type of accommodation requested. A telephone number or other contact information should be included so that District staff may discuss appropriate arrangements. Persons requesting a disability-related accommodation should make the request with adequate time before the meeting for the District to provide the requested accommodation.

MINUTES OF THE WORKSHOP MEETING OF THE MUNICIPAL WATER DISTRICT OF ORANGE COUNTY BOARD OF DIRECTORS WITH METROPOLITAN DIRECTORS April 1, 2026, 8:30 a.m.

At 8:30 a.m., President Dick called to order the Joint Workshop Board Meeting of the Municipal Water District of Orange County (MWDOC) with the Metropolitan Water District of Southern California (Metropolitan or MET) Directors in Conference Room 101 at the District facilities located in Fountain Valley, as well as including attendance via the Zoom Webinar application. West Coast Advisors Vice President Beth Olhasso led the Pledge of Allegiance and District Secretary Crespi called the roll.

MWDOC Directors
Al Nederhood
Larry Dick
Bob McVicker
Karl W. Seckel*
Randall Crane*
Jeffery M. Thomas
Megan Yoo Schneider

*Also MWDOC MET Directors

Other MWDOC MET Directors
Linda Ackerman
Dennis Erdman

Staff
Harvey De La Torre, General Manager
Melissa Baum-Haley, Assistant General Manager
Angela Crespi, District Secretary
Charles Busslinger, Director of Engineering/ District Engineer
Heather Baez, Director of Government Affairs
Jennifer Wicks, Communications Manager
Rachel Davis, Water Loss Programs Manager
Kathy Pham, Assistant Board Secretary
Sarina Sriboonlue, Principal Engineer
Kevin Hostert, Senior Water Resources Analyst
Jared Dawson, Water Resources Analyst
Rachel Waite-Harvey, Water Use Efficiency Programs Supervisor
Joseph Byrne, Legal Counsel

Also Present

Dick Ackerman	Ackerman Consulting
Noelani Leal	City of Westminster
Paul Jones	Dopudja & Wells
Doug Davert	East Orange County Water District
David Youngblood	East Orange County Water District
Dennis Cafferty	El Toro Water District
Vu Chu	El Toro Water District
Kathryn Freshley	El Toro Water District
Mike Gaskins	El Toro Water District
Kay Havens	El Toro Water District
Wyatt McClean	El Toro Water District
Mark Monin	El Toro Water District
Sherri Seitz	El Toro Water District
Paul Weghorst	Irvine Ranch Water District
Jim Atkinson	Mesa Water District
Jim Fisler	Mesa Water District
Albert Napoli	Metropolitan Water District of Southern California
Jonathan Cruz	Moulton Niguel Water District
Donald Froelich	Moulton Niguel Water District
Ashley Goodin	Moulton Niguel Water District
Sherry Wanninger	Moulton Niguel Water District

Garrett Durst	Natural Resource Results
John Kennedy	Orange County Water District
Emily Novak	San Diego County Water Authority
Laura Freese	Santa Margarita Water District
Frank Ury	Santa Margarita Water District
Brad Reese	Serrano Water District
Greg Mills	Serrano Water District
Larry McKenney	Trabuco Canyon Water District
Michael Boccadoro	West Coast Advisors
Beth Olhasso	West Coast Advisors
Peter Whittingham	Whittingham Public Affairs Advisors
Brett Barbre	Yorba Linda Water District
Tom Lindsey	Yorba Linda Water District
Christine McIlrevey	Yorba Linda Water District
Mark Toy	Yorba Linda Water District
Chuck Gibson	

TELECONFERENCE SITES

Directors McVicker and Yoo Schneider participated via teleconference locations (all agenda requirements pursuant to the Ralph M. Brown Act requirements were complied with).

PUBLIC COMMENTS

President Dick asked whether any members of the public wished to comment on agenda items.

There were no public comments.

ITEMS RECEIVED TOO LATE TO BE AGENDIZED

No items were received.

ITEMS DISTRIBUTED TO THE BOARD LESS THAN 72 HOURS PRIOR TO THE MEETING

President Dick inquired as to whether there were any items distributed to the Board of Directors (Board) less than 72 hours prior to the meeting.

District Secretary Crespi reported there were no items distributed to the Board less than 72 hours prior to the meeting.

NEXT RESOLUTION NO. 2170

At the suggestion of District Secretary Crespi, President Dick proposed reordering the agenda to address Action Items 4 through 7 before the Presentation Item, as a Board member needed to depart early. The Board agreed.

ACTION ITEMS

4. ORANGE COUNTY LOCAL AGENCY FORMATION COMMISSION (OC LAFCO) SPECIAL DISTRICT MEMBER SEATS APPOINTMENT – AUTHORIZATION TO VOTE

Upon MOTION by Director Crane, seconded by Director Thomas, and carried (7-0), the Board authorized President Larry Dick, and Director Crane as an alternate, to vote in the 2026 Orange County Local Agency Formation Commission Regular and Alternate Special District Member Seats appointment process; and directed staff to submit the declaration form by the deadline, by the following roll call vote:

AYES:	Directors Nederhood, Dick, McVicker, Seckel, Crane, Thomas, and Yoo Schneider
NOES:	None
ABSTAIN:	None
ABSENT:	None

5. ASSEMBLY CONCURRENT RESOLUTION NO. 161 (ADDIS) – SPECIAL DISTRICTS WEEK 2026

Upon MOTION by Director Thomas, seconded by Director Nederhood, and carried (7-0), the Board adopted a support position on Assembly Concurrent Resolution No. 161 (Addis) and join the California Special Districts Association's coalition and outreach efforts, by the following roll call vote:

AYES:	Directors Nederhood, Dick, McVicker, Seckel, Crane, Thomas, and Yoo Schneider
NOES:	None
ABSTAIN:	None
ABSENT:	None

6. SENATE BILL 1153 (CABALLERO) – WATER SYSTEMS AND WILDFIRE PREPAREDNESS

Director of Government Affairs Heather Baez provided an overview of Senate Bill 1153, supported by Association of California Water Agencies (ACWA), noting that it clarifies the limited role of public water agencies in large-scale wildfire defense, strengthens preparedness by requiring urban water suppliers in high and very high fire hazard severity zones to incorporate wildfire-specific response procedures into existing emergency plans starting in 2028, establishes that water supply or pressure limitations during a wildfire are not a substantial cause of wildfire damage, and affirms that wildfire spread is not an inherent risk of water system design.

Director Seckel expressed concern about how the bill's language could be misconstrued, asked whether it provides meaningful legal protection, and requested confirmation that retail agencies support the bill.

Legal Counsel Joe Byrne confirmed that the bill provides meaningful protection and that pending amendments are expected to require retail agencies to include greater specificity in their emergency plans regarding response procedures.

West Coast Advisors Vice President Beth Olhasso also expressed support for the bill and reassured the Board that it is favorable for retail water agencies.

Director Nederhood spoke in support, sharing his personal experience with the Freeway Complex Fire.

Director Thomas expressed support while emphasizing the complexity of wildfire liability.

Trabuco Canyon Water District General Manager Larry McKenney spoke in personal support of the bill, noting that it represents a step forward in protecting retail water agencies.

Upon MOTION by Director Thomas, seconded by Director Seckel, and carried (7-0), the Board adopted a support position on Senate Bill 1153 (Caballero) and join the Association of California Water Agencies' coalition letter, by the following roll call vote:

AYES:	Directors Nederhood, Dick, McVicker, Seckel, Crane, Thomas, and Yoo Schneider
NOES:	None
ABSTAIN:	None
ABSENT:	None

7. ASSEMBLY BILL 2180 (WARD) – PROPOSITION 218 OMNIBUS IMPLEMENTATION ACT: PROPORTIONAL COST OF SERVICE

Director of Government Affairs Heather Baez highlighted that the bill provides predictability and consistency for public water agencies statewide, reduces unnecessary litigation and associated costs, and allows retail agencies to confidently develop constitutionally sound rate structures that reflect the real cost of delivering reliable water service.

Director Seckel asked Legal Counsel whether the bill would effectively bind courts when interpreting Proposition 218 cost-of-service requirements.

Legal Counsel Joe Byrne confirmed the bill provides valuable statutory guidance, noting that his partner Lutfi Kharuf has been directly involved in drafting the bill through ACWA.

Upon MOTION by Director Crane, seconded by Director Seckel, and carried (7-0), the Board adopted a support position on Assembly Bill 2180 (Ward) and join the Association of California Water Agencies' coalition letter, by the following roll call vote:

AYES:	Directors Nederhood, Dick, McVicker, Seckel, Crane, Thomas, and Yoo Schneider
NOES:	None
ABSTAIN:	None
ABSENT:	None

PRESENTATION ITEM

1. METROPOLITAN BUDGET

Assistant General Manager Melissa Baum Haley introduced Water Resources Analyst Jared Dawson, who presented Metropolitan's proposed biennial budget for Fiscal Years 2026–27 and 2027–28. His presentation highlighted Metropolitan's focus on system reliability and resiliency, key assumptions for the Pure Water Southern California Project (PWSC), proposed rate increases, and major cost drivers, including staffing, capital improvement program levels, PWSC funding, ad valorem tax rates, local resources program budgeting, and conservation budgeting. He noted that MWDOC and the San Diego County Water Authority submitted letters to Metropolitan offering revised budgetary assumptions, investment levels, and rates, referred to as the Miller proposal.

The Board discussed whether cost savings had been addressed during the budget process, along with staffing levels, overtime, ad valorem tax rates, and the importance of focusing on revenue, rate increases, and fixed costs moving forward. The Board also discussed investment in Metropolitan's infrastructure, the PWSC project as a potential solution to challenges on the Colorado River, opportunities to better leverage grant funding, and the complex interplay of major capital projects, including the Bay Delta, Sites Reservoir, and PWSC initiatives.

General Manager De La Torre noted that if the revised proposal were adopted in its entirety, the overall rate impact at Metropolitan would likely be approximately 6% and affirmed that the current budget process reflects a renewed focus on Metropolitan's core mission of ensuring water supply reliability.

The Board thanked Mr. Dawson for his presentation.

DISCUSSION ITEMS

2. LEGISLATIVE ACTIVITIES

a. Federal Legislative Report (Natural Resource Results)

In addition to the report provided in the agenda packet, Natural Resource Results (NRR) Partner Garret Durst noted $40 million from the One Big Beautiful Bill was directed to the Shasta Dam for planning and preconstruction activities associated with a dam raise to expand storage capacity. Approximately $110 million of the $889 million remains unallocated and could be directed to the Shasta Dam or other projects as circumstances develop.

The Board thanked Mr. Durst for his report.

b. State Legislative Report (West Coast Advisors)

In addition to the report provided in the agenda packet, West Coast Advisors President Michael Boccadoro highlighted the significant increase in energy costs over the past decade and the lack of representation at the Public Utilities Commission. He also discussed inverse

condemnation concerns related to an upcoming California Earthquake Authority report on wildfire liability and the associated impacts on electricity costs.
Mr. Boccadoro provided a brief report on the snowpack and water supply conditions.

West Coast Advisors Vice President Beth Olhasso provided updates on key legislation, including the classification of data center water use under the urban water use efficiency regulations. She also summarized the three state bills currently being advanced by the State Water Contractors.

The Board discussed Bay-Delta management, various Metropolitan projects in the Delta, Assembly bills with tribal water rights, and the progress on the Sites Reservoir Project.

The Board thanked Mr. Boccadoro and Ms. Olhasso for their report.

c. Legal and Regulatory Report (Ackerman)

Mr. Dick Ackerman of Ackerman Consulting provided a correction to his report in the packet on the Groundwater Management Act adjudication in Ventura County, noting that the issue was resolved among stakeholders with judicial approval and is unlikely to advance to the California Supreme Court. He added that separate adjudication cases in the Central Valley could eventually reach the Supreme Court. Mr. Ackerman also recognized the milestone of Hoover Dam's 90th anniversary.

The Board thanked Mr. Ackerman for his report.

d. County Legislative Report (Whittingham)

Mr. Peter Whittingham of Whittingham Public Affairs Advisors highlighted that Orange County continues to maintain a state of emergency related to the Airport Fire. He also noted that South Coast Air Quality Management District (AQMD) is in a rulemaking process for proposed rule dealing with emissions from emergency generators and aimed at accelerating the transition to zero-emission emergency generators. The rule is expected to come before the AQMD Governing Board in the fourth quarter of 2026.

The Board thanked Mr. Whittingham for his report.

e. MWDOC Legislative Matrix
f. Metropolitan Legislative Matrix

There were no questions or comments on the Legislative Matrices. The Board received and filed the reports.

3. QUESTIONS OR INPUT ON METROPOLITAN ISSUES FROM THE MEMBER AGENCIES/METROPOLITAN DIRECTOR REPORTS REGARDING METROPOLITAN COMMITTEE PARTICIPATION

The Board discussed Metropolitan issues in connection with the budget presentation and legislative updates earlier in the meeting. No additional questions or input were raised at this time.

ACTION ITEMS

4. ORANGE COUNTY LOCAL AGENCY FORMATION COMMISSION (OC LAFCO) SPECIAL DISTRICT MEMBER SEATS APPOINTMENT – AUTHORIZATION TO VOTE

This item was taken earlier in the agenda.

5. ASSEMBLY CONCURRENT RESOLUTION NO. 161 (ADDIS) – SPECIAL DISTRICTS WEEK 2026

This item was taken earlier in the agenda.

6. SENATE BILL 1153 (CABALLERO) – WATER SYSTEMS AND WILDFIRE PREPAREDNESS

This item was taken earlier in the agenda.

7. ASSEMBLY BILL 2180 (WARD) – PROPOSITION 218 OMNIBUS IMPLEMENTATION ACT: PROPORTIONAL COST OF SERVICE

This item was taken earlier in the agenda.

INFORMATION ITEMS

8. METROPOLITAN ITEMS CRITICAL TO ORANGE COUNTY

a. Metropolitan's Finances
b. Metropolitan's Water Supply Condition Update
c. Metropolitan's Water Quality Update
d. Colorado River Issues
e. Delta Conveyance Activities and State Water Project Issues

9. METROPOLITAN BOARD AGENDA DISCUSSION ITEMS

a. Summary regarding March Metropolitan Board Meeting
b. Review items of significance for the Metropolitan Board Agenda

ADJOURNMENT

There being no further business, President Dick adjourned the meeting at 10:31 a.m

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Angela Crespi
District Secretary

MINUTES OF THE MEETING OF THE BOARD OF DIRECTORS OF THE MUNICIPAL WATER DISTRICT OF ORANGE COUNTY
Jointly with the
PLANNING & OPERATIONS COMMITTEE
18700 Ward Street, Conference Room 101, Fountain Valley, CA 92708
April 6, 2026 – 8:30 a.m. to 9:32 a.m.

The meeting was in-person at the Municipal Water District of Orange County's (MWDOC) Conference Room 101 and included attendance via the Zoom Webinar application.

P&O Committee
Karl W. Seckel, Chair
Bob McVicker
Megan Yoo Schneider

MWDOC Directors
Al Nederhood
Larry Dick
Randall Crane
Jeffery M. Thomas (absent)

MWDOC MET Directors
Linda Ackerman
Dennis Erdman

Staff
Harvey De La Torre, General Manager
Angela Crespi, District Secretary
Charles Busslinger, Director of Engineering/ District Engineer
Cathy Harris, Director of HR/Administration
Hilary Chumpitazi, Director of Finance/IT
Heather Baez, Director of Government Affairs
Damon Micalizzi, Director of Public Affairs
Tiffany Baca, Education & Workforce Manager
Rachel Davis, Water Loss Control Programs Manager
Kathy Pham, Assistant Board Secretary
Sarina Sriboonlue, Principal Engineer
Rachel Waite-Harvey, Water Use Efficiency Programs Supervisor

Also Present

Dick Ackerman	Ackerman Consulting
Dennis Cafferty	El Toro Water District
Vu Chu	El Toro Water District
Kathryn Freshley	El Toro Water District
Mike Gaskins	El Toro Water District
Kay Havens	El Toro Water District
Mark Monin	El Toro Water District
Doug Reinhart	Irvine Ranch Water District
Paul Weghorst	Irvine Ranch Water District
Jim Atkinson	Mesa Water District
James Fisler	Mesa Water District
Laura Rocha	Moulton Niguel Water District
John Kennedy	Orange County Water District
Laura Freese	Santa Margarita Water District
Bill Green	South Coast Water District
Jennifer Lopez	South Coast Water District
Brad Reese	Serrano Water District
Brett Barbre	Yorba Linda Water District
Chuck Gibson	

Chairperson Seckel called the meeting to order at 8:30 a.m.

ROLL CALL

District Secretary Crespi conducted a roll call attendance of the Planning & Operations Committee members. Committee members Directors Seckel, McVicker, and Yoo Schneider were present. Directors Nederhood, Dick, and Crane were also present.

TELECONFERENCE SITE

Director McVicker participated via teleconference location (all agenda requirements pursuant to the Ralph M. Brown Act requirements were complied with).

PUBLIC COMMENTS

There were no public comments.

ITEMS RECEIVED TOO LATE TO BE AGENDIZED

No items were received.

ITEMS DISTRIBUTED TO THE BOARD LESS THAN 72 HOURS PRIOR TO THE MEETING

No items were distributed to the Board of Directors (Board) less than 72 hours prior to the meeting.

PRESENTATION ITEM

1. 2025 URBAN WATER MANAGEMENT PLAN (UWMP) STATUS UPDATE

General Manager Harvey De La Torre provided a brief overview of the item and introduced Principal Engineer Sarina Sriboonlue, who proceeded with a presentation highlighting UWMP requirements, MWDOC's regional approach in coordination with Orange County water agencies and Metropolitan Water District of Southern California (Metropolitan), key elements of the UWMP, the project timeline, and an overview of the shared services.

The Board discussed the historical changes in UWMP approaches and the usefulness of comparing the trends, MWDOC's regional value and cost savings and efficiencies provided to Member Agencies through the Shared Services Program, ways to make the UWMP more useful and less technical for future reference, and compliance with Senate Bill x7-7.

Director Yoo Schneider left the meeting at 9:00 a.m.

ACTION ITEM

2. AWARD OF CONTRACT FOR DESIGN AND IMPLEMENTATION OF K-12 WATER EDUCATION SCHOOL PROGRAMS SERVICES

Education & Workforce Manager Tiffany Baca provided a brief overview and introduced Education & Workforce Supervisor Sarah Wilson, who provided details on the Request for Proposal (RFP) process, review panel, and evaluations.

The Board discussed expanding the program to include career-focused content and high school opportunities, the absence of statewide requirements for water education, and opportunities to expand water education beyond schools.

The Board requested that staff include additional detail regarding vendor qualifications, the approach to providing the requested services, other notable changes to the services, and, possibly, the winning proposal for future RFPs.

Upon MOTION by Director McVicker, seconded by Director Seckel, and carried (2-0), the Planning & Operations Committee recommended the Board of Directors award Orange County Department of Education's Inside the Outdoors a 2-year contract with the option for three additional 1-year renewals, to design and deliver a comprehensive regional K-12 water education school program, and authorize the General Manager to execute the contract by the following roll call vote:

AYES:	Directors Seckel and McVicker
NOES:	None
ABSTAIN:	None
ABSENT:	Director Yoo Schneider

INFORMATION ITEMS

3. SOLE SOURCE – PROJECT WET (WATER EDUCATION TODAY)

Education & Workforce Manager Tiffancy Baca clarified that the reference to K-20 was intentional, as Project WET training is designed for educators from kindergarten through post-secondary school. The program expands teacher capacity by training facilitators and offering teacher workshops.

Director Yoo Schneider returned to the meeting at 9:20 a.m.

The Board discussed the program's value, capacity needs, and long-term benefits to regional water awareness.

4. QUARTERLY MUNICIPAL WATER DISTRICT OF ORANGE COUNTY (MWDOC) K-12 CHOICE SCHOOL PROGRAMS UPDATE

5. DEPARTMENT ACTIVITIES REPORTS
   a. Ongoing MWDOC Reliability and Engineering/Planning Projects
   b. WEROC
   c. Water Use Efficiency Projects
   d. Public and Government Affairs

The Board provided positive feedback on the recent State Water Project Inspection Trip co-hosted by Director Crane, noting strong engagement, effective collaboration with Metropolitan, and

positive participant feedback. Staff highlighted the value of MWDOC videos shared during the tour.

6. REVIEW OF ISSUES RELATED TO PLANNING OR ENGINEERING PROJECTS, WEROC, WATER USE EFFICIENCY, FACILITY AND EQUIPMENT MAINTENANCE, WATER STORAGE, WATER QUALITY, CONJUNCTIVE USE PROGRAMS, EDUCATION, PUBLIC AFFAIRS PROGRAMS AND EVENTS, PUBLIC INFORMATION PROJECTS, PUBLIC INFORMATION CONSULTANTS, DISTRICT FACILITIES, AND MEMBER AGENCY RELATIONS

ADJOURNMENT

There being no further business, Chairperson Seckel adjourned the meeting at 9:32 a.m.

_____
Angela Crespi
District Secretary

MINUTES OF THE MEETING OF THE BOARD OF DIRECTORS OF THE MUNICIPAL WATER DISTRICT OF ORANGE COUNTY
Jointly with the
ADMINISTRATION & FINANCE COMMITTEE
April 8, 2026 – 8:30 a.m. to 9:19 a.m.

The meeting was in-person at the Municipal Water District of Orange County's (MWDOC) Conference Room 101 and included attendance via the Zoom Webinar application.

A&F Committee
Jeffery M. Thomas, Chair
Al Nederhood
Randall Crane

MWDOC Directors
Larry Dick
Bob McVicker
Karl W. Seckel
Megan Yoo Schneider

MWDOC MET Directors
Dennis Erdman
Linda Ackerman

Staff
Harvey De La Torre, General Manager
Melissa Baum-Haley, Assistant General Manager
Angela Crespi, District Secretary
Charles Busslinger, Director of Engineering/ District Engineer
Hilary Chumpitazi, Director of Finance/IT
Cathy Harris, Director of HR/Administration
Damon Micalizzi, Director of Public Affairs
Jennifer Wicks, Communications Manager
Tiffany Baca, Education & Workforce Manager
Kathy Pham, Assistant Board Secretary
Rachel Waite-Harvey, Water Use Efficiency Programs Supervisor

Also Present

Dick Ackerman	Ackerman Consulting
Dennis Cafferty	El Toro Water District
Vu Chu	El Toro Water District
Kathryn Freshley	El Toro Water District
Mike Gaskins	El Toro Water District
Kay Havens	El Toro Water District
Mark Monin	El Toro Water District
Marco Gomez	Highroad Information Technology
Michael Holtorf	Highroad Information Technology
Mika Perra	Highroad Information Technology
Paul Weghorst	Irvine Ranch Water District
Donald Froelich	Moulton Niguel Water District
Ashley Goodin	Moulton Niguel Water District
Sherry Wanninger	Moulton Niguel Water District
Jim Atkinson	Mesa Water District
John Kennedy	Orange County Water District
Saundra Jacobs	Santa Margarita Water District
Jennifer Lopez	South Coast Water District
Wyatt McClean	Trabuco Canyon Water District
Michael Perea	Trabuco Canyon Water District
Brett Barbre	Yorba Linda Water District
Chuck Gibson	

Chairperson Thomas called the meeting to order at 8:30 a.m.

ROLL CALL

District Secretary Crespi conducted a roll call attendance of the Administration & Finance Committee members. Committee members Directors Thomas, Nederhood, and Crane were present. Directors Dick, McVicker, Seckel, and Yoo Schneider were also present.

TELECONFERENCE SITE

Director McVicker participated via teleconference location (all agenda requirements pursuant to the Ralph M. Brown Act requirements were complied with).

PUBLIC COMMENTS

There were no public comments.

ITEMS RECEIVED TOO LATE TO BE AGENDIZED

No items were received.

ITEMS DISTRIBUTED TO THE BOARD LESS THAN 72 HOURS PRIOR TO THE MEETING

No items were distributed to the Board of Directors (Board) less than 72 hours prior to the meeting.

PROPOSED BOARD CONSENT CALENDAR ITEMS

1. TREASURER'S REPORT
    a. Revenue/Cash Receipt Report – March 2026
    b. Disbursement Approval Report for the month of April 2026
    c. Disbursement Ratification Report for the month of March 2026
    d. GM Approved Disbursement Report for the month of March 2026
    e. Consolidated Summary of Cash and Investment – February 2026
    f. OPEB and Pension Trust Fund statement

2. FINANCIAL REPORT
    a. Combined Financial Statements and Budget Comparative for the Period Ending February 28, 2026

Director Seckel inquired about the California Environmental Education Foundation (CEEF) Sponsorship on page 6 in the Disbursement Approval Report as well as Prop 1 Project Partner Reimbursement per Report 20 on page 13 in the Disbursement Ratification Report. Staff provided clarification regarding the two disbursements.

Upon MOTION by Director Crane, seconded by Director Thomas, and carried (3-0), the Administration & Finance Committee recommended adding Items 1 – 2 to the next regular Board meeting Consent Calendar by the following roll call vote:

AYES: Directors Thomas, Nederhood, and Crane
NOES: None
ABSTAIN: None
ABSENT: None

ACTION ITEMS

3. SCHEDULE PUBLIC HEARING FOR CONSIDERATION OF ORDINANCE REGARDING DIRECTOR COMPENSATION

Upon MOTION by Director Crane, seconded by Director Nederhood, and carried (3-0), the Administration & Finance Committee directed staff to schedule a public hearing for the April 15 Regular Board meeting to consider a draft ordinance that, if adopted by the Board of Directors, would adjust Director Compensation by the following roll call vote:

AYES: Directors Thomas, Nederhood, and Crane
NOES: None
ABSTAIN: None
ABSENT: None

4. SCHEDULE PUBLIC HEARING FOR CONSIDERATION OF ORDINANCE ESTABLISHING CLASSES OF WATER SERVICE & TERMS AND CONDITIONS OF WATER SERVICE WITHIN THE DISTRICT

Upon MOTION by Director Nederhood, seconded by Director Crane, and carried (3-0), the Administration & Finance Committee directed staff to schedule a public hearing for the April 15 Regular Board meeting to consider a draft ordinance that, if adopted by the Board of Directors, would establish the classes of water service and terms and conditions of water service within the District by the following roll call vote:

AYES: Directors Thomas, Nederhood, and Crane
NOES: None
ABSTAIN: None
ABSENT: None

5. ADOPT A RESOLUTION APPROVING THE FINAL DRAFT BUDGET FOR FISCAL YEARS 2026-27 & 2027-28

Upon MOTION by Director Crane, seconded by Director Nederhood, and carried (3-0), the Administration & Finance Committee recommended the Board of Directors adopt a resolution approving and establishing the Biennial Budget for Fiscal Year 2026-27 and 2027-28 by the following roll call vote:

AYES: Directors Thomas, Nederhood, and Crane
NOES: None
ABSTAIN: None
ABSENT: None

6. ADOPT A RESOLUTION ESTABLISHING WATER RATES FOR FISCAL YEARS 2026-27 & 2027-28

General Manager Harvey De La Torre informed the Board that the Metropolitan Water District of Southern California (Metropolitan) rates will not be finalized until its budget is approved on April 14. Staff will revise the resolution with the appropriate figure prior to the Board meeting next week. If Metropolitan does not approve their budget, then this item will be deferred to the following month.

Upon MOTION by Director Crane, seconded by Director Nederhood, and carried (3-0), the Administration & Finance Committee recommended the Board of Directors adopt a resolution Establishing Water Rates for Fiscal Year 2026-27 and 2027-28 by the following roll call vote:

AYES: Directors Thomas, Nederhood, and Crane
NOES: None
ABSTAIN: None
ABSENT: None

7. ADOPT A RESOLUTION APPROVING THE LOAN POLICY FOR THE 401(a) MONEY PURCHASE PENSION PLAN

Upon MOTION by Director Nederhood, seconded by Director Crane, and carried (3-0), the Administration & Finance Committee recommended the Board of Directors adopt a resolution Approving the Loan Policy for the 401(a) Money Purchase Pension Plan by the following roll call vote:

AYES: Directors Thomas, Nederhood, and Crane
NOES: None
ABSTAIN: None
ABSENT: None

8. AWARD OF CONTRACT FOR CO-MANAGED INFORMATION TECHNOLOGY (IT) SERVICES

General Manager Harvey De La Torre provided a brief overview of the topic and introduced Information Technology Systems Administrator Dave Anderson who informed the Board about the Request for Proposal process and selection of Highroad Information Technology.

The Board requested that staff agendize a Closed Session regarding the cybersecurity assessment at a future Board meeting.

Upon MOTION by Director Nederhood, seconded by Director Crane, and carried (3-0), the Administration & Finance Committee recommended the Board of Directors award Highroad Information Technology a 1-year contract in the amount of $37,000, with the option of four additional 1-year renewals for a total not to exceed amount of $185,000 over five years to provide co-managed Information Technology services and authorize the General Manager to execute the contract by the following roll call vote:

AYES: Directors Thomas, Nederhood, and Crane

NOES: None
ABSTAIN: None
ABSENT: None

INFORMATION ITEMS

9. DEPARTMENT ACTIVITIES REPORTS
   a. Administration
   b. Finance and Information Technology

Director Seckel informed the Board that at a recent Metropolitan meeting, he asked whether the Department of Water Resources would lower the State Water Project allocation this year, given the disappearance of snow, and the answer was no.

Director of Finance and Information Technology Hilary Chumpitazi introduced Marlena Quintana as the Accountant, then shared a brief overview of her professional background.

10. MONTHLY WATER USAGE DATA AND WATER SUPPLY INFORMATION

OTHER ITEMS

11. REVIEW ISSUES REGARDING DISTRICT ORGANIZATION, PERSONNEL MATTERS, EMPLOYEE BENEFITS FINANCE, AND INSURANCE

ADJOURNMENT

There being no further business, Chairperson Thomas adjourned the meeting at 9:19 a.m.

_____
Angela Crespi
District Secretary

MINUTES OF THE REGULAR MEETING OF THE BOARD OF DIRECTORS MUNICIPAL WATER DISTRICT OF ORANGE COUNTY April 15, 2026

At 8:30 a.m., President Dick called to order the Regular Meeting of the Municipal Water District of Orange County (MWDOC) in the Boardroom at the District facilities located in Fountain Valley, as well as including attendance via the Zoom Webinar application. Following a moment of silence, Information Technology Systems Administrator Dave Anderson led the Pledge of Allegiance, and District Secretary Crespi called the roll.

MWDOC Directors
Al Nederhood
Larry Dick
Bob McVicker
Karl W. Seckel*
Randall Crane*
Jeffery M. Thomas
Megan Yoo Schneider (arrived at 8:32 a.m.)

*Also MWDOC MET Directors

Other MWDOC MET Directors
Linda Ackerman
Dennis Erdman

Staff
Harvey De La Torre, General Manager
Melissa Baum-Haley, Assistant General Manager
Angela Crespi, District Secretary
Charles Busslinger, Director of Engineering/ District Engineer
Heather Baez, Director of Government Affairs
Hilary Chumpitazi, Director of Finance/IT
Cathy Harris, Director of Human Resources and Administration
Damon Micalizzi, Director of Public Affairs
Tiffany Baca, Education and Workforce Manager
Rachel Davis, Water Loss Control Programs Manager
Kathy Pham, Assistant Board Secretary
Sarina Sriboonlue, Principal Engineer
Rachel Waite-Harvey, Water Use Efficiency Programs Supervisor
Joe Byrne, Legal Counsel

Also Present

Dick Ackerman	Ackerman Consulting
Doug Davert	East Orange County Water District
Dennis Cafferty	El Toro Water District
Kathryn Freshley	El Toro Water District
Mike Gaskins	El Toro Water District
Kay Havens	El Toro Water District
Paul Weghorst	Irvine Ranch Water District
Doug Reinhart	Irvine Ranch Water District
Jim Atkinson	Mesa Water District
Albert Napoli	Metropolitan
Dick Fiore	Moulton Niguel Water District
Donald Froelich	Moulton Niguel Water District
Marina Lindsay	Moulton Niguel Water District
Sherry Wanninger	Moulton Niguel Water District
Lisa Ohlund	Ohlund Management & Technical Services
Alicia Dunkin	Orange County Water District
John Kennedy	Orange County Water District

Saundra Jacobs	Santa Margarita Water District
Frank Ury	Santa Margarita Water District
Brad Reese	Serrano Water District
Jennifer Lopez	South Coast Water District
Brett Barbre	Yorba Linda Water District
Tom Lindsey	Yorba Linda Water District
Chuck Gibson	

TELECONFERENCE SITE

Director McVicker participated via teleconference location (all agenda and meeting requirements pursuant to the Ralph M. Brown Act were complied with).

PUBLIC COMMENTS

President Dick asked whether any member of the public had any comments on items that were not on the agenda.

There were no public comments.

ITEMS RECEIVED TOO LATE TO BE AGENDIZED

No items were received.

ITEMS DISTRIBUTED TO THE BOARD LESS THAN 72 HOURS PRIOR TO THE MEETING

President Dick inquired as to whether there were any items distributed to the Board of Directors (Board) less than 72 hours prior to the meeting.

District Secretary Crespi advised that a revised resolution establishing water rates for Fiscal Years 2026-27 and 2027-28 for Item No. 9 was distributed to the Board and made available to the public.

Director Yoo Schneider arrived at 8:32 a.m.

NEXT RESOLUTION NO. 2170

CONSENT CALENDAR (Items 1 to 5)

Upon MOTION by Director Thomas, seconded by Director Seckel, and carried (7-0), the Board approved Consent Calendar Items 1 – 5 by the following roll call vote:

AYES:	Directors Nederhood, Dick, McVicker, Seckel, Crane, Thomas, and Yoo Schneider
NOES:	None
ABSTAIN:	None
ABSENT:	None

1. MINUTES

The following minutes were approved.

a. March 2, 2026 Planning & Operations Committee Meeting
b. March 4, 2026 Workshop Board Meeting
c. March 11, 2026 Administration & Finance Committee Meeting
d. March 18, 2026 Regular Board Meeting
e. March 19, 2026 Executive Committee Meeting

2. TREASURER'S REPORTS

The following items were ratified and approved as presented.

a. MWDOC Revenue/Cash Receipt Register as of March 31, 2026
b. Disbursement Registers (March/April)

The following items were received and filed as presented.

c. Summary of Cash and Investment and Portfolio Master Summary Report (Cash and Investment report) as of February 28, 2026
d. PARS Monthly Statement (OPEB Trust)

3. FINANCIAL REPORT

The following item was received and filed as presented.

a. Combined Financial Statements and Budget Comparative for the Period Ending February 28, 2026

4. AWARD OF CONTRACT FOR DESIGN AND IMPLEMENTATION OF K-12 WATER EDUCATION SCHOOL PROGRAM SERVICES

The Board awarded Orange County Department of Education’s Inside the Outdoors a 2-year contract with the option for three additional 1-year renewals, to design and deliver a comprehensive regional K-12 water education school program and authorize the General Manager to execute the contract.

5. AWARD OF CONTRACT FOR CO-MANAGED INFORMATION TECHNOLOGY (IT) SERVICES

The Board awarded Highroad Information Technology a 1-year contract in the amount of $37,000 with the option of four additional 1-year renewals for a total not to exceed amount of $185,000 over five years, to provide co-managed Information Technology services and authorize the General Manager to execute the contract.

End of Consent Calendar

ACTION ITEMS

6. PUBLIC HEARING TO CONSIDER DIRECTOR COMPENSATION

President Dick opened the Public Hearing to receive comments on the proposed ordinance to adjust Director Compensation.

There being no public comments, President Dick closed the Public Hearing and announced that the proposal to adopt an ordinance to adjust Director Compensation was before the Board for consideration.

After considerable discussion, upon MOTION by Director Nederhood, seconded by Director Thomas, and carried (4-3), the Board adopted Ordinance No. 57 regarding Director Compensation by the following roll call vote:

AYES: Directors Nederhood, Dick, McVicker, and Thomas
NOES: Directors Seckel, Crane, and Yoo Schneider
ABSTAIN: None
ABSENT: None

7. PUBLIC HEARING TO CONSIDER ESTABLISHING CLASSES OF WATER SERVICE & TERMS AND CONDITIONS OF WATER SERVICE WITHIN THE DISTRICT

President Dick opened the Public Hearing to receive comments on the proposed ordinance to consider establishing classes of water service & terms and conditions of water service within the District.

There being no public comments, President Dick closed the Public Hearing and announced that the proposal to adopt an ordinance to establish classes of water service & terms and conditions of water service within the District was before the Board for consideration.

General Manager Harvey De La Torre provided a brief overview of the topic and clarified the difference between the water rates ordinance and the water rates resolution.

Upon MOTION by Director Seckel, seconded by Director Crane, and carried (7-0), the Board adopted Ordinance No. 58 Establishing Classes of Water Service & Terms and Conditions of Water Service within the District by the following roll call vote:

AYES: Directors Nederhood, Dick, McVicker, Seckel, Crane, Thomas, and Yoo Schneider
NOES: None
ABSTAIN: None
ABSENT: None

8. ADOPT A RESOLUTION APPROVING THE FINAL DRAFT BUDGET FOR FISCAL YEARS 2026-27 & 2027-28

Director Seckel requested that staff provide him with additional information regarding Metropolitan Water District of Southern California (Metropolitan) Rates and Charges Comparison for Calendar Year 2025 – 2027.

The Board commended the MWDOC-MET Directors for their time and efforts on the Metropolitan budget and for securing its approval.

General Manager Harvey De La Torre thanked Assistant General Manager Melissa Baum-Haley and staff for their efforts in transitioning from an annual budget to a biennial budget.

Upon MOTION by Director Seckel, seconded by Director Thomas, and carried (7-0), the Board adopted Resolution No. 2170 Approving and Establishing the Biennial Budget for Fiscal Year 2026-27 and 2027-28 by the following roll call vote:

AYES: Directors Nederhood, Dick, McVicker, Seckel, Crane, Thomas, and Yoo Schneider
NOES: None
ABSTAIN: None
ABSENT: None

9. ADOPT A RESOLUTION ESTABLISHING WATER RATES FOR FISCAL YEARS 2026-27 & 2027-28

Upon MOTION by Director Seckel, seconded by Director Crane, and carried (7-0), the Board adopted Resolution No. 2171 Establishing Water Rates for Fiscal Year 2026-27 and 2027-28 by the following roll call vote:

AYES: Directors Nederhood, Dick, McVicker, Seckel, Crane, Thomas, and Yoo Schneider
NOES: None
ABSTAIN: None
ABSENT: None

10. ADOPT A RESOLUTION APPROVING THE LOAN POLICY FOR THE 401(a) MONEY PURCHASE PENSION PLAN

Upon MOTION by Director Seckel, seconded by Director Thomas, and carried (7-0), the Board adopted Resolution No. 2172 Approving the Loan Policy for the 401(a) Money Purchase Pension Plan by the following roll call vote:

AYES: Directors Nederhood, Dick, McVicker, Seckel, Crane, Thomas, and Yoo Schneider
NOES: None
ABSTAIN: None
ABSENT: None

11. APPOINTMENT OF A SPECIAL (AD HOC) COMMITTEE TO REVIEW THE ADMINISTRATIVE CODE

Upon MOTION by Director Seckel, seconded by Director Yoo Schneider, and carried (7-0), the Board ratified the appointment of Directors Nederhood, Thomas, and Yoo Schneider to a Special (Ad Hoc) Committee, with Director Thomas serving as Chair, to complete a review of the Administrative Code and make recommendations to the Board by the following roll call vote:

AYES:	Directors Nederhood, Dick, McVicker, Seckel, Crane, Thomas, and Yoo Schneider
NOES:	None
ABSTAIN:	None
ABSENT:	None

INFORMATION CALENDAR

12. GENERAL MANAGER'S REPORT, APRIL (ORAL AND WRITTEN)

13. MWDOC GENERAL INFORMATION ITEMS

a. Board of Directors - Reports re: Conferences and Meetings

The Board members each reported on their attendance at the regular MWDOC Board and Committee meetings. In addition to these meetings, the following reports were made on conferences and meetings attended on behalf of the District.

Director Nederhood advised that he attended all of the regularly scheduled MWDOC meetings (Planning & Operations, Administration & Finance, and Executive Committee meetings, as well as the Joint Workshop and Regular Board meeting), several Metropolitan Board and Committee meetings, Independent Special Districts of Orange County (ISDOC), Water Advisory Committee of Orange County (WACO) meeting, and Orange County Water Summit Ad Hoc Committee meeting. Director Nederhood expressed his concerns about the Metropolitan budget and challenges in the Colorado River Basin.

Director Thomas reported that he attended all of the regularly scheduled MWDOC meetings (Planning & Operations, Administration & Finance, Executive Committee meetings, as well as the Joint Workshop and Regular Board meeting) and the Orange County Water Summit Ad Hoc Committee meeting.

Director Seckel advised that he attended most of the regularly scheduled MWDOC meetings (Planning & Operations and Administration & Finance Committee meetings, as well as the Joint Workshop and Regular Board meeting), Metropolitan Board and Committee meetings as well as planning meetings, meeting with Metropolitan General Manager, Caucus meetings, and meeting with Orange County Coast Keeper Gary Brown. Director Seckel informed the Board that he is the Chair of the newly formed Metropolitan Ethics Committee. He provided additional details in response to Director Nederhood’s comments on the Colorado River.

Director Crane reported that he attended all of the regularly scheduled MWDOC meetings (Planning & Operations, Administration & Finance, and Executive Committee meetings, as well as the Joint Workshop and Regular Board meeting), Metropolitan Board and Committee meetings, meetings with Metropolitan Finance staff, and co-hosted an inspection trip on the Sites Reservoir and Oroville Lake. He informed the Board that Metropolitan will be assessing the Delta Islands and their value to Metropolitan.

Director Yoo Schneider advised that she attended all of the regularly scheduled MWDOC meetings (Planning & Operations, Administration & Finance, and Executive Committee meetings, as well as the Joint Workshop and Regular Board meeting), California Council for Environmental and Economic Balance Water meetings and media briefing, meeting with City of San Clemente staff, meeting with MWDOC staff, South Coast Water District Committee and Board meetings, Santa Margarita Water District Committee meetings, WACO, and she was a speaker at the California State University, Long Beach Women in Engineering Conference.

Director McVicker reported that he attended all of the regularly scheduled MWDOC meetings (Planning & Operations, Administration & Finance, and Executive Committee meetings, as well as the Joint Workshop and Regular Board meeting), several Metropolitan Board and Committee meetings, WACO, and ISDOC Executive Committee meeting.

Director Dick advised that he attended all of the regularly scheduled MWDOC meetings (Planning & Operations and Administration & Finance, and Executive Committee meetings, as well as the Joint Workshop and Regular Board meeting), WACO and WACO Planning, ISDOC Executive Committee meeting, Orange County Business Council, and South Orange County Economic Council. He thanked Director of Government Affairs Heather Baez for her continued efforts and support in enhancing MWDOC's public visibility.

b. Requests for Future Agenda Topics

No future agenda topics were requested.

ADJOURNMENT

There being no further business, President Dick adjourned the meeting at 9:39 a.m.

_____
Angela Crespi
District Secretary

MINUTES OF THE MEETING OF THE BOARD OF DIRECTORS OF THE MUNICIPAL WATER DISTRICT OF ORANGE COUNTY
Jointly with the
EXECUTIVE COMMITTEE
April 16, 2026 8:30 a.m. to 8:52 a.m.

At 8:30 a.m., President Dick called to order the Executive Committee Meeting of the Municipal Water District of Orange County (MWDOC) in Conference Room 101 at the District facilities located in Fountain Valley, as well as including attendance via the Zoom Webinar application. District Secretary Crespi called the roll.

Executive Committee
Larry Dick President
Jeffery M. Thomas, Vice President
Bob McVicker, Immediate Past President

MWDOC Directors
Al Nederhood (absent)
Karl W. Seckel
Randall Crane
Megan Yoo Schneider

MWDOC MET Directors
Linda Ackerman

Staff
Harvey De La Torre, General Manager
Melissa Baum-Haley, Assistant General Manager
Angela Crespi, District Secretary
Damon Micalizzi, Director of Public Affairs
Kathy Pham, Assistant Board Secretary

Also Present

James Fisler	Mesa Water District
Donald Froelich	Moulton Niguel Water District
Greg Mills	Serrano Water District
Brad Reese	Serrano Water District
Jerry Vilander	Serrano Water District
Chuck Gibson	

TELECONFERENCE SITES

Directors McVicker and Yoo Schneider participated via teleconference locations (all agenda requirements pursuant to the Ralph M. Brown Act requirements were complied with).

PUBLIC COMMENTS

There were no public comments.

ITEMS RECEIVED TOO LATE TO BE AGENDIZED

No items were received.

ITEMS DISTRIBUTED TO THE BOARD LESS THAN 72 HOURS PRIOR TO THE MEETING

President Dick inquired as to whether there were any items distributed to the Board of Directors (Board) less than 72 hours prior to the meeting.

District Secretary Crespi advised that the draft agendas for the month of May were distributed to the Board and made available to the public.

1. EXECUTIVE COMMITTEE REVIEW OF FUTURE AGENDAS

The Board reviewed and discussed the draft agendas for each meeting and made no changes.

a. Joint Planning Committee

No new items were added to the Agenda.

b. Planning & Operations Committee

President Dick requested that staff agendize an item for a future meeting on how the Geographic Information System (GIS) is employed.

No new items were added to the Agenda.

c. Administration & Finance Committee

No new items were added to the Agenda.

2. DISCUSSION REGARDING UPCOMING ACTIVITIES OF SIGNIFICANCE

Assistant General Manager Melissa Baum-Haley announced that there will be no Joint Workshop Board meeting in May due to the Association of California Water Agencies (ACWA) Spring Conference, which will be held May 5 – May 7 in Sacramento. She informed the Board that State Water Contractors General Manager Jennifer Pierre invited MWDOC's state lobbyist, West Coast Advisors' Beth Olhasso, along with Director Crane and Director of Government Affairs Heather Baez to participate in their lobby outreach efforts on April 21. She also reported that staff is coordinating with Metropolitan Water District of Southern California (Metropolitan) to host Contractor Academy Workshops at Mesa Water's Education Center on May 6 and May 27, and that the Southern California Water Coalition Quarterly meeting will be held on May 15 at Temecula's Wilson Creek Winery.

3. MEMBER AGENCY RELATIONS

General Manager Harvey De La Torre reported that he and Director Seckel are scheduled to meet on April 20 with Upper San Gabriel Valley Municipal Water District Director Tony Fellows and General Manager Tom Love, as well as Main San Gabriel Basin Watermaster Executive Officer Kelly Garden. The purpose of the meeting is to gain a better understanding of their basin management and operations, Metropolitan's replenishment delivery challenges, and their perspectives on how the Pure Water Project will address their needs.

4. GENERAL MANAGER'S REPORTS

General Manager Harvey De La Torre informed the Board that Metropolitan is hosting a Member Agency General Managers' Retreat at Gene Camp, scheduled for April 30 and May 1 to discuss upcoming policy and projects. He also announced that Records Specialist Pari Francisco will be retiring effective June 4.

5. REVIEW AND DISCUSS DISTRICT AND BOARD ACTIVITIES

General Manager Harvey De La Torre reported that the Water Emergency Response Organization of Orange County (WEROC) will be hosting a Cybersecurity Working Group on May 19.

Director of Public Affairs Damon Micalizzi informed the Board that staff are at the Orange County Water District's Children's Water Education Festival at Oak Canyon Park. The WEROC Mobile Command Vehicle is on display, and the Public Affairs team is hosting two booths featuring hands-on educational activities for students.

He also reported that it is a busy Earth Month for the Public Affairs team, as they are participating in several events: the Earth Day Cleanup with Orange County Coastkeeper at Huntington State Beach and Garden Tour on April 18; the University of California, Irvine Health Earth Day on April 21; and Earth Fest on April 23.

ADJOURNMENT

There being no further business, President Dick adjourned the meeting at 8:52 a.m.

_____
Angela Crespi
District Secretary

MINUTES OF THE MEETING OF THE JOINT PLANNING COMMITTEE WITH BOARD OF DIRECTORS* MUNICIPAL WATER DISTRICT OF ORANGE COUNTY AND ORANGE COUNTY WATER DISTRICT
April 22, 2026, 8:30 a.m. – 9:40 a.m.

The meeting was in-person at the Municipal Water District of Orange County's Conference (MWDOC) Room 101 and included attendance via the Zoom Webinar application.

MWDOC Directors
Bob McVicker
Karl W. Seckel
Randall Crane
Al Nederhood
Larry Dick
Jeffery Thomas
Megan Yoo Schneider

MWDOC MET Directors
Linda Ackerman

MWDOC Staff
Melissa Baum-Haley, Assistant General Manager
Angela Crespi, District Secretary
Charles Busslinger, Director of Engineering/ District Engineer
Hilary Chumpitazi, Director of Finance/IT
Damon Micalizzi, Director of Public Affairs
Jennifer Wicks, Communications Manager
Rachel Davis, Water Loss Control Programs Supervisor
Kathy Pham, Assistant Board Secretary
Sarina Sriboonlue, Principal Engineer
Kevin Hostert, Senior Water Resources Analyst
Jared Dawson, Water Resources Analyst
Rachel Waite-Harvey, Water Use Efficiency Programs Supervisor

OCWD Directors
Denis Bilodeau
Van Tran
Erik Weigand
Cathy Green
Roger Yoh (absent)
Stephen Sheldon
Fred Jung
Valerie Amezcua
Dina Nguyen (absent)
Natalie Meeks (absent)

OCWD Staff
John Kennedy, General Manager
Chris Olsen, Executive Director of Engineering and Water Resources
Leticia Villarreal, Assistant District Secretary
Alicia Dunkin, Legislative Affairs Liaison

Also Present

Dick Ackerman	Ackerman Consulting
Noelani Leal	City of Westminster
Doug Davert	East Orange County Water District
Dennis Cafferty	El Toro Water District
Mike Gaskins	El Toro Water District
Mark Monin	El Toro Water District
Peer Swan	Irvine Ranch Water District
Paul Weghorst	Irvine Ranch Water District

Keith Van Der Maaten	Laguna Beach County Water District
Jim Atkinson	Mesa Water District
Paul Shoenberger	Mesa Water District
Donald Froelich	Moulton Niguel Water District
Emily Novak	San Diego County Water Authority
Saundra Jacobs	Santa Margarita Water District
Frank Ury	Santa Margarita Water District
Greg Mills	Serrano Water District
Brad Reese	Serrano Water District
Brett R. Barbre	Yorba Linda Water District
Trudi DesRoches	Yorba Linda Water District
Mark Toy	Yorba Linda Water District
Richard Bell	
Chuck Gibson	

MWDOC Director Seckel called the meeting to order at 8:30 a.m., and MWDOC Water Resources Administrative Assistant Beth Fahl led the Pledge of Allegiance.

ROLL CALL

MWDOC District Secretary Angela Crespi conducted a roll call attendance of the MWDOC Board of Directors (Board or Director). All MWDOC Directors were present. Assistant District Secretary Leticia Villarreal conducted a roll call attendance of the Orange County Water District (OCWD) Board. OCWD Directors Bilodeau, Tran, Weigand, Green, Sheldon, Jung, and Amezcua were present.

TELECONFERENCE SITES

MWDOC Directors McVicker and Yoo Schneider as well as OCWD Directors Bilodeau, Tran, Weigand, Sheldon, Jung, and Amezcua participated via teleconference locations (all agenda requirements pursuant to the Ralph M. Brown Act requirements were complied with).

PUBLIC COMMENTS

MWDOC Director Seckel asked whether any member of the public had any comments on items that were not on the agenda.

There were no public comments.

ITEMS RECEIVED TOO LATE TO BE AGENDIZED

No items were received.

ITEMS DISTRIBUTED TO THE BOARD LESS THAN 72 HOURS PRIOR TO THE MEETING

MWDOC Director Seckel inquired as to whether there were any items distributed to the Board less than 72 hours prior to the meeting.

No items were distributed to the Board less than 72 hours prior to the meeting.

1. IMPORTED WATER SUPPLY UPDATE

MWDOC Senior Water Resources Analyst Kevin Hostert provided a presentation on Water Supply Conditions.

Following a brief discussion and question/answer period, the Joint Planning Committee thanked Mr. Hostert for his presentation.

2. METROPOLITAN BUDGET AND RATES

MWDOC Water Resources Analyst Jared Dawson provided a presentation highlighting the budget development process, key budget proposal components, adopted rates and charges, and ten-year financial forecast.

The Joint Planning Committee discussed the accuracy of the ten-year financial forecast, Pure Water Southern California, the Local Resources Program, staffing levels, overtime, water rates, and revenues.

The Joint Planning Committee thanked Mr. Dawson for his presentation.

3. GROUNDWATER BASIN UPDATE

OCWD Executive Director of Engineering and Water Resources Chris Olsen provided a presentation highlighting Current and Cumulative Field Headquarters Rainfall, Accumulated Overdraft Since 1969, Fiscal Year 2026-27 Groundwater Basin Water Balance and Accumulated Overdraft Protection, new Daily Water Supply Dashboard, and the Santiago Basin.

The Joint Planning Committee discussed the large valve manufacturer, opportunities to expand as a water supplier beyond current basin limitations, Groundwater Replenishment System (GWRS) levels, infrastructure, and well rehabilitation.

The Joint Planning Committee thanked Mr. Olsen for his presentation.

4. ANY FUTURE AGENDA ITEMS

The Joint Planning Committee asked staff to consider ways MWDOC and OCWD can collaborate.

5. NEXT MEETING DATE

The next meeting dates are July 22 and October 28.

ADJOURNMENT

There being no further business, MWDOC Director Seckel adjourned the meeting at 9:40 a.m.

_____
Angela Crespi
District Secretary

Municipal Water District of Orange County
REVENUE / CASH RECEIPT REPORT
April 2026

WATER REVENUES

Date	From	Description		Amount
4/02/2026	City of Westminster	February 2026 Water deliveries	$	3,066.31
4/03/2026	City of Brea	February 2026 Water deliveries		16,667.00
4/03/2026	Irvine Ranch Water District	February 2026 Water deliveries		882,439.91
4/03/2026	Santa Margarita Water District (ID9)	February 2026 Water deliveries		379,245.44
4/03/2026	Santa Margarita Water District	February 2026 Water deliveries		1,223,987.06
4/03/2026	Trabuco Canyon Water District	February 2026 Water deliveries		28,132.45
4/06/2026	El Toro Water District	February 2026 Water deliveries		507,844.91
4/07/2026	City of La Palma	February 2026 Water deliveries		952.14
4/07/2026	Laguna Beach County Water District	February 2026 Water deliveries		339,724.41
4/08/2026	City of Garden Grove	February 2026 Water deliveries		57,920.20
4/10/2026	South Coast Water District	February 2026 Water deliveries		233,128.35
4/13/2026	City of Orange	February 2026 Water deliveries		403,299.74
4/14/2026	East Orange Co Water District	February 2026 Water deliveries		181,220.30
4/14/2026	Yorba Linda Water District	February 2026 Water deliveries		198,981.35
4/15/2026	Golden State Water Company	February 2026 Water deliveries		519,718.93
4/15/2026	Moulton Niguel Water District	February 2026 Water deliveries		1,801,139.45
4/15/2026	Orange County Water District	February 2026 Water deliveries		113,622.99
4/28/2026	Mesa Water District	February 2026 Water deliveries		186.23
4/24/2026	City of Huntington Beach	March 2026 Water deliveries		453,881.79
4/28/2026	City of Newport Beach	March 2026 Water deliveries		41,412.97
4/30/2026	City of Westminster	March 2026 Water deliveries		3,066.31
		TOTAL WATER REVENUES	**$**	**7,389,638.24**

Municipal Water District of Orange County
REVENUE / CASH RECEIPT REPORT
March 2026

MISCELLANEOUS REVENUES

Date	From	Description		Amount
4/07/2026	Water Concern	1/26/2026 Water Policy dinner registration	$	160.00
4/28/2026	Rancho California Water District	1/26/2026 Water Policy dinner registration		160.00
4/02/2026	Steve Hedges	April 2026 Retiree Health insurance		57.17
4/07/2026	Joseph Berg	April 2026 Retiree Health insurance		420.74
4/07/2026	Maribeth Goldsby	April 2026 Retiree Health insurance		245.65
4/07/2026	Judy Pfister	April 2026 Retiree Health insurance		39.85
4/24/2026	Karl Seckel	May 2026 Retiree Health insurance		245.65
4/28/2026	Stan Sprague	May 2026 Retiree Health insurance		245.65
4/07/2026	Igoe and Company Inc	Refund for FSA		15.00
4/10/2026	Array	Subpoena records request		15.00
4/13/2026	Spectrum Business	Refund for account cancellation		103.40
4/20/2026	Susanne Roux	Business expense reimbursement for Jeffery Thomas		196.67
4/20/2026	Dennis Erdman	Business expense reimbursement		43.90
4/30/2026	US Bank Custodial Account	Leaders Credit Union Interest payment		849.33
4/03/2026	Santa Margarita Water District	February 2026 Smartimer rebate program		56.06
4/07/2026	City of La Habra	February 2026 Turf Removal rebate program		208.00
4/03/2026	City of Seal Beach	February 2026 Spray to Drip rebate program		343.73
4/15/2026	City of Fountain Valley	February 2026 Spray to Drip rebate program		208.85
4/07/2026	Laguna Beach County Water District	February 2026 Clothes Washers rebate program		65.00
4/28/2026	Mesa Water District	February 2026 Smartimer and Spray to Drip rebate program		435.18
4/28/2026	Moulton Niguel Water District	February 2026 Smartimer and Clothes Washers rebate program		1,819.00
4/10/2026	City of Tustin	February 2026 Turf Removal and Spray to Drip rebate program		312.00
4/03/2026	City of San Clemente	February 2026 Spray to Drip and Clothes Washers rebate program		1,955.56
4/10/2026	Irvine Ranch Water District	February 2026 Smartimer, Spray to Drip and Ice Machine rebate program		5,263.50
4/28/2026	Moulton Niguel Water District	December 2025 Smartimer, Rotating Nozzles and Clothes Washers rebate program		2,372.12
4/28/2026	City of Fountain Valley	FY 2025-26 Meter Area Measurements Program		8,552.00
4/28/2026	City of Fountain Valley	FY 2025-26 Conservation Framework Technical Assistance Program		20,552.35
4/13/2026	Department of Water Resources	Jan 2024 - Dec 2025 Prop 1 Round 2 South		218,070.03
4/02/2026	City of Westminster	Addition to the Choice School Program FY 2025-26		8,359.88
4/20/2026	City of Anaheim	Jul-Dec 2025 School Billing		26,466.00
4/07/2026	City of Anaheim	Water Loss Control Technical Assistance CY 2025		880.00
4/28/2026	City of Orange	FY 2024-25 O& M Costs of the EOCF #2		22,067.94
4/13/2026	City of La Habra	AWIA Emergency Response Plan		17,250.00

TOTAL MISCELLANEOUS REVENUES $ 338,035.21
TOTAL REVENUES $ 7,727,673.45

Harvey De La Torre, General Manager

Hilary Chumpitazi, Treasurer

Municipal Water District of Orange County
Disbursement Approval Report
For the month of May 2026

Vendor/ Invoice	Description	Amount to Pay
Core Expenditures:		
ACCO Engineered Systems Inc		
20809260	March 2026 HVAC preventative maintenance for filters	888.00
Total		**888.00**
Ackerman Consulting-Richard C Ackerman		
1469	April 2026 Legal and regulatory specialized consulting services	3,500.00
Total		**3,500.00**
ACWA Joint Powers Ins Auth		
1245	04/01/26-03/31/27 Annual Excess Crime Program renewal	1,992.00
745	04/01/26-03/31/27 Property insurance renewal	14,723.02
Total		**16,715.02**
Alta FoodCraft		
12617272	April 2026 Coffee and tea supplies	156.91
Total		**156.91**
Best Best and Krieger LLP		
55401-MAR26	March 2026 Legal services	20,746.80
Total		**20,746.80**
California Data Collaborative-SEE Inc		
353	April 2026 Water Use Efficiency Database Modernization Initiative - Phase 2	10,000.00
Total		**10,000.00**
Carollo Engineers Inc		
FB81646	March 2026 Urban Water Management Plan Development services	101,662.85
Total		**101,662.85**
Consultadd Inc		
42070	April 2026 Enterprise Resource Planning (ERP) Implementation services - Solution Design phase	8,100.00
42070R	April 2026 10% Retention for Enterprise Resource Planning (ERP) Implementation services - Solution Design phase	(810.00)
Total		**7,290.00**
CSU Fullerton ASC		
AR176647	04/01/26-06/30/26 Center for Demographic Research Support	18,162.13
Total		**18,162.13**
E Source Companies LLC-WSO		
14896	March 2026 Technical Assistance Program services for Water Loss Control	10,923.98
Total		**10,923.98**
Green Thumb (Indoor Plant Care) LLC-Dedo Verde Interior		
20260380	May 2026 Indoor Plant service	350.50
Total		**350.50**

Municipal Water District of Orange County
Disbursement Approval Report
For the month of May 2026

Vendor/ Invoice	Description	Amount to Pay
Core Expenditures (continued):		
Dopudja & Wells Consulting Inc		
2703	March 2026 Consulting services on MET Strategic Issues and Priorities	9,190.77
2704	March 2026 Senior Advisory Consulting services for State and Federal Legislative and Policy Matters	2,212.50
Total		**11,403.27**
Environmental Incentives Inc		
MWDOC TAP-13C	March 2026 Frameworks Technical Assistance Program services	5,824.45
Total		**5,824.45**
GovConnection Inc		
77514393	April 2026 Monthly charge for 1.25TB of SharePoint storage	262.50
Total		**262.50**
Hashtag Pinpoint Corporation		
2048	April 2026 Social Media consultation and services	7,913.00
Total		**7,913.00**
Steve Hedges		
40726	January-March 2026 Retiree medical premium	608.70
Total		**608.70**
Jill Promotions		
12881	04/06/26 Name badges for new hires	122.74
12904	Promotional item - Highlighter pens	1,663.88
12905	Promotional item - LED fan	2,588.16
12909	Promotional item - Branded flower pens	1,038.83
12910	Promotional item - Branded self-watering globe	763.86
12911	Promotional item - Branded popper balls	737.36
12912	Promotional item - Branded highlighters	843.65
12919	Promotional item - Branded measuring tape	617.92
12925	Promotional item - Branded maze pens	506.63
Total		**8,883.03**
Lawnscape Systems Inc		
459172	April 2026 Landscape maintenance for Atrium	495.00
Total		**495.00**
Fiduciary Consulting Group		
11434726096	April-June 2026 Investment Advisor services for 401a and 457b plans	5,000.00
Total		**5,000.00**
Natural Resource Results LLC		
5893	April 2026 Federal Advocacy Agreement services	8,000.00
Total		**8,000.00**

Municipal Water District of Orange County
Disbursement Approval Report
For the month of May 2026

Vendor/ Invoice	Description	Amount to Pay
Core Expenditures (continued):		
NDS		
866191	04/03/26 Board packet delivery service	171.39
866275	04/10/26 Board packet delivery service	171.39
867142	05/01/26 Board packet delivery service	171.39
Total		**514.17**
ODP Business Solutions LLC		
464593419001	04/14/26 Office supplies	163.73
468274336001	05/04/26 Office supplies	152.90
Total		**316.63**
Office Solutions		
I-20037825	04/03/26 Office supplies	21.57
I-20039980	04/13/26 Office supplies	35.62
I-20043759	04/23/26 Office supplies	429.12
I-20043958	04/24/26 Tabs for board packets	450.82
I-20044082	04/24/26 Office supplies	84.17
I-20047075	05/04/26 Office supplies	221.96
Total		**1,243.26**
Orange County Water District		
28330	March 2026 Postage, shared office & maintenance expense	9,994.13
Total		**9,994.13**
Karl Seckel		
40526	January-March 2026 Retiree medical premium	1,704.60
Total		**1,704.60**
Soto Resources-Joey Soto		
GA-APR-114	April 2026 Grants Training Workshop	1,856.25
GA-APR-113	April 2026 Grant Research and Acquisition	3,250.00
Total		**5,106.25**
South OC Economic Coalition		
25M-325	FY 2025-26 Annual membership - Bronze level	2,500.00
Total		**2,500.00**
Water Education Foundation		
040926ORANGE	Project WET Facilitated Workshop travel expenses	1,708.47
Total		**1,708.47**
West Coast Advisors		
14566	April 2026 State Legislative Advocacy services	8,500.00
14575	March-April 2026 State Legislative Advocacy travel expenses	1,837.96
Total		**10,337.96**

Municipal Water District of Orange County
Disbursement Approval Report
For the month of May 2026

Vendor/ Invoice	Description	Amount to Pay
Core Expenditures (continued):		
Whittingham Public Affairs Advisors-WPAA		
3441	May 2026 Strategic guidance on local & regional issues	5,000.00
Total		**5,000.00**
Total Core Expenditures		**277,211.61**

Choice Expenditures:

ACWA Joint Powers Ins Auth		
745	04/01/26-03/31/27 Property insurance renewal	855.99
Total		**855.99**
Building Block Entertainment		
4007-3	April 2026 Choice Elementary School Program K-2	14,924.00
Total		**14,924.00**
Mission RCD		
3565	April 2026 Field inspection and verification for Water Use Efficiency rebate programs	6,830.22
Total		**6,830.22**
Office Solutions		
I-20036832	04/01/26 Supplies for Water Loss Control Shared Services	100.77
I-20036957	04/01/26 Supplies for Water Loss Control Shared Services	27.21
I-20042061	04/17/26 Supplies for Water Loss Control Shared Services	57.47
Total		**185.45**
Orange County Water District		
28330	March 2026 Postage for Water Use Efficiency rebate programs	20.72
Total		**20.72**
Lane M Matsuno		
18094	April 2026 Meter Accuracy Testing for Brea	3,000.00
18099	April 2026 Meter Accuracy Testing for Fountain Valley	3,400.00
Total		**6,400.00**
Total Choice Expenditures		**29,216.38**

Other Funds Expenditures:

ACWA Joint Powers Ins Auth		
745	04/01/26-03/31/27 Property insurance renewal	5,054.07
Total		**5,054.07**

Municipal Water District of Orange County
Disbursement Approval Report
For the month of May 2026

Vendor/ Invoice	Description	Amount to Pay
Other Funds Expenditures (continued):		
Environmental Incentives Inc		
MWDOC TAP-13C	March 2026 Frameworks Technical Assistance Program services	42,938.23
Total		**42,938.23**
Herndon Solutions Group LLC		
INV-0000011864	March 2026 services to assist with AWIA compliance (RRA) - Brea	12,750.00
INV-0000011865	March 2026 services to assist with AWIA compliance (ERP) - Buena Park	8,625.00
INV-0000011866	March 2026 services to assist with AWIA compliance (ERP) - ETWD	8,625.00
INV-0000011867	March 2026 services to assist with AWIA compliance (ERP) - Fountain Valley	8,625.00
INV-0000011868	March 2026 services to assist with AWIA compliance (RRA) - LBCWD	14,231.00
INV-0000011869	March 2026 services to assist with AWIA compliance (ERP) - La Habra	8,625.00
INV-0000011870	March 2026 services to assist with AWIA compliance (ERP) - Newport Beach	8,625.00
INV-0000011871	March 2026 services to assist with AWIA compliance (RRA) - Seal Beach	12,750.00
INV-0000011872	March 2026 services to assist with AWIA compliance (RRA) - SWD	12,750.00
INV-0000011873	March 2026 services to assist with AWIA compliance (ERP) - San Clemente	8,625.00
INV-0000011874	March 2026 services to assist with AWIA compliance (RRA) - TCWD	12,750.00
INV-0000011875	March 2026 services to assist with AWIA compliance (ERP) - Tustin	8,625.00
INV-0000011876	March 2026 services to assist with AWIA compliance (ERP) - Westminister	8,625.00
Total		**134,231.00**
Mission RCD		
3565	April 2026 Field inspection and verification for Water Use Efficiency rebate programs	19,139.18
Total		**19,139.18**
NV5 Geospatial		
511680	April 2026 Dedicated Irrigation Meter Measurement services (Newport Beach)	54,711.25
Total		**54,711.25**
County of Orange		
STCS003852	04/01/26-06/30/26 WEROC Radio System operations and maintenance costs	957.87
Total		**957.87**
Total Other Funds Expenditures		**257,031.60**
Total Expenditures		**563,459.59**

Municipal Water District of Orange County
Disbursement Ratification Report
For the Month of April 2026

Name/ Date	Check/ EFT	Invoice	Description	Amount
Core Disbursements:				
Tiffany Baca				
4/30/2026	EFT	32426	March 2026 Business expense	486.25
Total				**486.25**
Heather Baez				
4/30/2026	EFT	33126	March 2026 Business expense	241.73
Total				**241.73**
Corodata Records Management Inc				
4/30/2026	EFT	RS7164971	March 2026 Records Storage Fees	74.15
Total				**74.15**
Jared Dawson				
4/30/2026	EFT	32826	March 2026 Business expense	182.65
Total				**182.65**
Larry Dick				
4/30/2026	EFT	32426	March 2026 Business expense	211.73
Total				**211.73**
Dennis Erdman				
4/30/2026	144602	21826	February 2026 Business expense	75.40
4/30/2026	144602	33026	March 2026 Business expense	136.31
Total				**211.71**
Frontier Communications Holdings LLC				
4/15/2026	144584	120125-5-APR26	April 2026 Internet expense	675.00
Total				**675.00**
Independent Special Dist of OC-ISDOC				
4/15/2026	EFT	32326	Reimburse ISDOC for Stripe payments received from Quarterly Luncheon Registrations	1,381.28
Total				**1,381.28**
Al Nederhood				
4/30/2026	EFT	31826	March 2026 Business expense	130.52
Total				**130.52**
Jasmine Orozco				
4/30/2026	EFT	31926	March 2026 Business expense	68.46
Total				**68.46**
Megan Schneider				
4/30/2026	EFT	33126	March 2026 Business expense	105.87
Total				**105.87**
Karl Seckel				
4/30/2026	EFT	31826	March 2026 Business expense	37.72
Total				**37.72**
Jeffery Thomas				
4/30/2026	EFT	31926	March 2026 Business expense	108.75
Total				**108.75**
US Bank				
4/30/2026	144606	1189/4192/7973/8910-MAR26	02/24/26-03/23/26 Cal Card Charges	25,046.81
Total				**25,046.81**

Municipal Water District of Orange County
Disbursement Ratification Report
For the Month of April 2026

Name/ Date	Check/ EFT	Invoice	Description	Amount
Verizon Wireless				
4/08/2026	144569	6139337349	March 2026 4G Mobile broadband unlimited service	80.02
Total				**80.02**
Total Core Disbursements				**29,042.65**

Choice Disbursements:

Hugo Escamilla				
4/30/2026	EFT	31026	March 2026 Business expense	68.17
Total				**68.17**
US Bank				
4/30/2026	144606	8910-MAR26	02/24/26-03/23/26 Cal Card Charges	6,096.68
Total				**6,096.68**
US Bank Voyager Fleet Systems				
4/15/2026	EFT	8694349932613	02/25/26-03/24/26 Fuel for Water Loss Control Shared Services Vehicles	852.30
Total				**852.30**
Total Choice Disbursements				**7,017.15**

Other Funds Disbursements:

AT&T				
4/08/2026	144567	25032889	March 2026 Telephone expense for WEROC N. EOC	40.78
Total				**40.78**
Metropolitan Water District				
4/30/2026	EFT04302026	12135	February 2026 Water deliveries	7,971,082.47
Total				**7,971,082.47**
Santiago Aqueduct Commission				
4/30/2026	144605	22026	February 2026 SAC Pipeline Operation Surcharge	2,556.47
Total				**2,556.47**
Santa Margarita Water District				
4/30/2026	EFT	22026	February 2026 SCP Operation Surcharge	20,547.00
Total				**20,547.00**
Spray to Drip Rebate				
4/15/2026	144572	S2D-C-SOCO-54902-23780	Dana Bluffs Homeowners Association	8,468.00
4/15/2026	144575	S2D7-C-FV-54399-23867	Icm-Jae Investments	13,537.00
4/15/2026	144573	S2D7-C-HB-44331-23650	Huntington Landmark Association	50,000.00
4/15/2026	144576	S2D7-C-MESA-54399-23856	Icm-Jae Investments	13,500.00
4/30/2026	144600	S2D7-R-GSWC-55066-23909	B. Tam	710.00
4/30/2026	144594	S2D7-R-HB-55146-23923	D. Murray	1,171.00
4/30/2026	144592	S2D7-R-IRWD-54878-23818	C. Calabrese	239.00
4/30/2026	144596	S2D7-R-IRWD-54934-23987	B. Schultz	3,026.00
Total				**90,651.00**
Turf Rebate				
4/15/2026	144571	TR17-C-HB-42600-53693	Cherrywood Village HOA	157,775.00
4/15/2026	144574	TR17-C-HB-44331-53392	Huntington Landmark Association	250,000.00
4/15/2026	144580	TR17-C-IRWD-4332-53726	San Simeon Maintenance Association	55,495.00
4/15/2026	144581	TR17-C-IRWD-51143-53871	Turtle Rock Crest Maintenance Association	3,059.00

Municipal Water District of Orange County
Disbursement Ratification Report
For the Month of April 2026

Name/ Date	Check/ EFT	Invoice	Description	Amount
Turf Rebate (continued)				
4/15/2026	144578	TR17-C-IRWD-51783-53678	Northwood Park Apartments	17,155.00
4/15/2026	144570	TR17-C-IRWD-54591-53763	Arborlake Maintenence Association Inc	3,910.00
4/15/2026	144577	TR17-C-MESA-55055-53737	Koll-Irvine Community Association	103,375.00
4/15/2026	144579	TR17-C-MNT-54611-53687	SPM-Grey Wolf, LLC Mission Commercial Properties Inc	73,360.00
4/15/2026	144582	TR17-C-SOCO-54611-53750	Villas At Monarch Beach HOA	77,645.00
4/30/2026	144601	TR17-R-GSWC-55066-53752	B. Tam	2,537.00
4/30/2026	144595	TR17-R-HB-55142-53865	D. Murray	3,065.00
4/30/2026	144597	TR17-R-IRWD-54934-53646	B. Schultz	9,550.00
4/30/2026	144593	TR17-R-LH-55157-53891	D. De La Hoya	8,514.00
4/30/2026	144599	TR17-R-MNT-54303-52797	J. Talstad	788.00
4/30/2026	144598	TR17-R-O-55040-53723	J. Smith	3,333.98
4/30/2026	144591	TR17-R-TUST-55121-53833	K. Akhundov	3,558.00
Total				**773,119.98**
US Bank				
4/30/2026	144606	3115-MAR26	02/24/26-03/23/26 Cal Card Charges - WEROC	1,498.80
Total				**1,498.80**
Verizon Wireless				
4/08/2026	144569	6139337349	March 2026 4G Mobile broadband unlimited service	200.09
Total				**200.09**
Total Other Funds Disbursements				**8,859,696.59**
Total Disbursements				**8,895,756.39**

Harvey De La Torre, General Manager

Hilary Chumpitazi, Treasurer

Cal Card Charges
Statement Date: March 23, 2026
Payment Date: April 30, 2026

Date	Description	Amount
General Manager Card:		
2/24/2026	OCBC 2026 Sacramento Advocacy Trip in Sacramento, CA from 03/23/26-03/24/26 - Accommodations for an additional night on 03/22/26 for L. Dick	327.00
2/24/2026	OCBC 2026 Sacramento Advocacy Trip in Sacramento, CA from 03/23/26-03/24/26 - Airfare for L. Dick	518.81
2/25/2026	February 2026 H. De La Torre's business expense	13.39
2/25/2026	Urban Water Institute 2026 Spring Conference in Indian Wells, CA from 02/25/26-02/27/26 - Meals for H. De La Torre, D. Micalizzi, J. Dawson, J. Thomas, R. Crane, and A. Nederhood	529.19
2/25/2026	Lunch for Supervisor Training on 02/24/26	750.00
2/28/2026	Urban Water Institute 2026 Spring Conference in Indian Wells, CA from 02/25/26-2/27/26 - Accommodations for H. De La Torre, D. Micalizzi, and J. Dawson including meal for R. Crane.	2,299.35
2/28/2026	Urban Water Institute 2026 Spring Conference in Indian Wells, CA from 02/25/26-2/27/26 - Accommodations for R. Crane, J. Thomas, and A. Nederhood	2,429.73
3/03/2026	AWWA Water Conference of the West in San Diego, CA from 04/06/26-04/09/26 - Accommodation deposit for R. Davis and K. Vo	1,276.32
3/03/2026	CAPIO Annual Conference 2026 in San Diego from 05/11/26-05/14/26 - Registrations for T. Baca, S. Wilson, K. Vincent, and M. Buendia	2,950.00
3/05/2026	AWWA CA-NV Section - Water Audit Validator Renewal Workshop Webinar from 09/15/26-09/16/26 - Registration for R. Davis	250.00
3/05/2026	WUE Workgroup Meeting lunch on 03/05/26	777.50
3/09/2026	ACWA Spring Conference in Sacramento, CA from 05/05/26-05/07/26 - Registration for D. Micalizzi	999.00
3/11/2026	CSMFO Orange County Chapter Meeting in Irvine, CA on 03/18/26 - Registration for S. Hung and L. Gunawan	110.00
3/14/2026	OCWA - Owning the Kilowatt - Understanding the Value of Microgrids in Irvine, CA on 03/18/26 - Registration for S. Sriboonlue	60.00
3/17/2026	South Orange County Economic Coalition Meet the Mayors Breakfast in Laguna Niguel, CA on 04/02/26 - Registration for D. Erdman	50.00
3/17/2026	Public Sector Excellence - Improving Employee Performance Webinar on 04/14/26 - Registration for R. Waite-Harvey	115.00
3/18/2026	March 2026 Meals for H. De La Torre's meetings	92.69
3/18/2026	Lunch for staff retirement party on 03/25/26	931.92
3/19/2026	CalWEP Peer to Peer Conference 2026 in Napa, CA from 05/27/26-05/28/26 - Airfare for R. Davis	433.50
3/20/2026	CSDA Legislative Committee Meeting in Sacramento, CA on 10/22/26 - Airfare for H. Baez	714.80
Total:		**15,628.20**
Assistant General Manager Card:		
3/05/2026	OC Water Loss Control Workgroup Lunch on 03/05/26	835.06

Cal Card Charges
Statement Date: March 23, 2026
Payment Date: April 30, 2026

Date	Description	Amount
Assistant General Manager Card (continued):		
3/12/2026	March 2026 M. Baum-Haley's business expense	125.10
Total:		**960.16**
Public Affairs Card:		
2/26/2026	Urban Water Institute 2026 Spring Conference in Indian Wells, CA from 02/25/26-02/27/26 - Dinner for D. Micalizzi and guest	88.82
2/28/2026	March 2026 Open AI monthly subscription, language processing tool	20.00
3/03/2026	March 2026 Monthly Public Storage Unit for Public Affairs	840.00
3/12/2026	Apple iPads for Poster Contest Winners	1,534.15
3/18/2026	Lunch for Team Planning Activities meeting	73.85
3/19/2026	Lunch for School Program RFP Proposal Review and Interviews on 03/13/26 and on 03/19/26 for S. Wilson, T. Baca, and 2 guests	141.12
3/20/2026	WEEA Branded Stickers for events	150.28
Total:		**2,848.22**
Administration Card:		
2/23/2026	Breakfast for Supervisor training on 02/24/26	66.49
2/24/2026	Office supplies	226.25
2/24/2026	Two Windows 11 Home to Pro License upgrades for IT	198.00
2/25/2026	Office supplies	31.38
2/25/2026	February 2026 web hosting and database charges for MWDOC website	152.99
2/26/2026	QLED display for Assistant General Manager's office - Refund	(315.00)
3/01/2026	March 2026 Monthly subscription for email services to support the secure delivery of email from AccuFund	25.00
3/02/2026	Management staff lunch on 03/02/26	213.47
3/02/2026	WaterGuard Classic mat for employee entrance door	236.76
3/03/2026	Best, Best, and Kreiger LLP: SB 827 Compliance - Essential Fiscal and Financial Oversight for Public Agency Officials Training for C. Harris, H. De La Torre, C. Busslinger, S. Hung, D. Micalizzi, T. Plaganas, A. Crespi, and L. Gunawan	600.00
3/03/2026	Monthly charge for redundant/backup internet services serving MWDOC office	65.00
3/04/2026	Tire and steering assembly replacement services for Water Loss Control Shared Services truck	5,998.71
3/05/2026	Office supplies	95.45
3/09/2026	February 2026 monthly charges for Azure storage, networking, compute, and database	1,483.39
3/09/2026	Best, Best, and Kreiger LLP: SB 827 Compliance - Essential Fiscal and Financial Oversight for Public Agency Officials Training for M. Baum-Haley	75.00
3/10/2026	Best, Best, and Kreiger LLP: SB 827 Compliance - Essential Fiscal and Financial Oversight for Public Agency Officials Training for V. Osborn and T. Baca	150.00

Cal Card Charges
Statement Date: March 23, 2026
Payment Date: April 30, 2026

Date	Description	Amount

Administration Card (continued):

3/10/2026	Lunch for Supervisor Training on 03/09/26	780.00
3/10/2026	Office supplies	10.85
3/12/2026	Tanaka Farms fruit and veggie baskets	234.00
3/13/2026	Three port USB camera switch for Conference Room 101	887.13
3/14/2026	Office supplies	31.96
3/16/2026	Ergonomic mouse for staff	19.56
3/16/2026	Best, Best, and Kreiger LLP: SB 827 Compliance - Essential Fiscal and Financial Oversight for Public Agency Officials Training for M. Quintana	75.00
3/17/2026	UPS shipping fee for Water Loss Control Shared Services of leak detection equipment for repair	97.97
3/17/2026	Cake for staff retirement party on 03/25/26	171.55
3/17/2026	March 2026 Wireless Internet Backup	45.00
3/17/2026	March 2026 cloud storage fee to archive Laserfiche documents for compliance/immutability	16.82
3/19/2026	April 2026 eFax service charge	10.00
3/22/2026	March 2026 cloud storage fee to archive servers and data	24.18
Total:		**11,706.91**

WEROC Card:

2/24/2026	Animal Pest Management rodent 10-day trapping service at Peters Canyon Logistics base from 02/02/26-02/13/26	350.00
3/01/2026	March 2026 Starlink Standby Mode fees for WEROC's Mobile Command Vehicle	5.00
3/03/2026	March 2026 Iridium Standby Plan service charge for WEROC's three satellite phones	67.17
3/12/2026	Purchase of certificates from CSTI/OES - ICS/EOC Interface (G-191) offered to OC Sanitation District personnel	1,076.63
Total:		**1,498.80**

Municipal Water District of Orange County
GM Approved Disbursement Report
For the Month of April 2026

Name/ Date	Check/ EFT	Invoice	Description	Amount
Core Disbursements:				
Keith Lyon				
4/30/2026	EFT	40226	January-March 2026 Retiree medical premium	1,217.40
Total				**1,217.40**
Petra Sosa				
4/28/2026	144590	542621	Lunch for MWDOC All Staff Meeting on 04/28/26	490.00
Total				**490.00**
Soto Resources-Joey Soto				
4/30/2026	EFT	GT-MAR-112	March 2026 Grants Training Workshop Preparation	2,516.25
Total				**2,516.25**
Total Core Disbursements				**4,223.65**
Choice Disbursements:				
Total Choice Disbursements				**-**
Other Funds Disbursements:				
Total Other Funds Disbursements				**-**
Total Disbursements				**4,223.65**

Harvey De La Torre, General Manager

Hilary Chumpitazi, Treasurer

(1) For disbursements that did not make the cut-off of previous month's Disbursement Approval report. Disbursements are approved by GM for payment and need A & F Committee ratification.

Address:
18700 Ward Street, Unit B
Fountain Valley, California 92708

(714) 963-3058
Fax: (714) 964-9389
www.mwdoc.com

Larry D. Dick
President

Jeffery M. Thomas
Vice President

Randall Crane, Ph.D.
Director

Bob McVicker, P.E.
Director

Al Nederhood
Director

Karl W. Seckel, P.E.
Director

Megan Yoo Schneider, Ed.D., P.E.
Director

Harvey F. De La Torre
General Manager

MEMBER AGENCIES

City of Brea
City of Buena Park
East Orange County Water District
El Toro Water District
Emerald Bay Service District
City of Fountain Valley
City of Garden Grove
Golden State Water Co.
City of Huntington Beach
Irvine Ranch Water District
Laguna Beach County Water District
City of La Habra
City of La Palma
Mesa Water District
Moulton Niguel Water District
City of Newport Beach
City of Orange
Orange County Water District
City of San Clemente
Santa Margarita Water District
City of Seal Beach
Serrano Water District
South Coast Water District
Trabuco Canyon Water District
City of Tustin
City of Westminster
Yorba Linda Water District

Municipal Water District of Orange County
Consolidated Summary of Cash and Investments
March 31, 2026

District investments and cash balances are held in various funds designated for certain purposes as follows:

Fund	Book Value	% of Portfolio
Restricted Reserves		
WEROC Operating Fund	$ 660,222	3.27%
Pension 115 Trust	2,404,382	11.91%
Total Restricted Reserves	$3,064,604	15.18%
Designated Reserves		
Operating Reserves	$4,241,768	21.02%
Election Reserve	1,569,152	7.77%
OPEB Reserve	219,815	1.09%
Total Designated Reserves	$6,030,735	29.88%
General Operations Fund	$9,947,034	49.28%
Water Purchase Payments Fund	907,658	4.50%
Conservation Fund	214,840	1.06%
Trustee Activities – AMP	19,210	0.10%
Total Other Funds	$11,088,742	54.94%
Total	**$20,184,081**	**100.00%**

The funds are invested as follows:

Term of Investment	% of Portfolio	Book Value	Market Value
Cash	0.84%	$ 169,709	$ 169,709
Pension 115 Trust	11.91%	2,404,382	2,404,382
Short-term investment			
• LAIF	48.89%	9,867,357	9,867,357
• CAMP	23.00%	4,642,633	4,642,633
Long-term investment			
• US Government Issues	1.24%	250,000	245,837
• Corporate Bond	5.95%	1,200,000	1,184,600
• Certificates of Deposit	8.17%	1,650,000	1,655,885
Total	**100.00%**	**$20,184,081**	**$20,170,403**

The average number of days to maturity/call as of March 31, 2026, equaled 94, and the average yield to maturity is 3.847%. During the month of March 2026, the District's average daily balance was $22,452,838.13. Funds were invested in US Bank, Pension 115 Trust, Negotiable Certificate of Deposits, Corporate Bonds, US Government Issues, Local Agency Investment Funds (LAIF), and California Asset Management Program (CAMP).

The ($13,678) difference between the book value and the market value as of March 31, 2026, represents the exchange difference that would have resulted if all investments had been liquidated on that date. Since it is the District's practice to "buy and hold" investments until maturity, the market values are a point of reference, not an indication of actual loss or gain. There are no current plans or near-term cash flow requirements that would require the sale of these securities prior to maturity.

Harvey De La Torre
General Manager

Hilary Chumpitazi
Treasurer

MUNICIPAL WATER DISTRICT OF ORANGE COUNTY

Portfolio Management - Portfolio Summary

March 31, 2026

3/31/2026	Par Value	Market Value	Book Value	% of Portfolio	Days to Mat/Call	YTM @ Cost
Negotiable Certificate Of Deposit	1,650,000.00	1,655,885.00	1,650,000.00	9.37	785	3.679
Corporate Bond	1,200,000.00	1,184,599.50	1,200,000.00	6.82	220	4.458
US Government Issues	250,000.00	245,837.50	250,000.00	1.42	332	3.750
Local Agency Investment Funds	9,867,356.69	9,867,356.69	9,867,356.69	56.03	1	3.826
California Asset Management Program	4,642,633.32	4,642,633.32	4,642,633.32	26.36	1	3.800
Total Investments	**17,609,990.01**	**17,596,312.01**	**17,609,990.01**	**100.00**	**94**	**3.847**
Cash						
Cash	169,708.48	169,708.48	169,708.48		1	0.00
Pension 115 Trust	2,404,382.02	2,404,382.02	2,404,382.02		1	0.00
Total Cash and Investments	**20,184,080.51**	**20,170,402.51**	**20,184,080.51**		**94**	**3.847**

Total Earnings	Month Ending March	Fiscal Year to Date
Current Year	**74,139.69**	**827,118.85**
Average Daily Balance	**22,452,838.13**	
Effective Rate of Return	**3.847%**	

We certify that this report reflects the cash and investments of the Municipal Water District of Orange County and is in conformity with the Government Code requirements and the District Investment Policy and Guidelines in effect at the time of investment. The Investment Program herein shown provides sufficient cash flow liquidity to meet the next six month's estimated expenditure. The source for the market values are from U.S. Bank. Per Resolution 2059 there are no compliance exceptions to report.

Harvey De La Torre, General Manager — Date: 05/07/2026

Hilary Chumpitazi, Treasurer — Date: 05/07/2026

MUNICIPAL WATER DISTRICT OF ORANGE COUNTY
Portfolio Management
Long-Term Portfolio Details - Investments
March 31, 2026

Issuer	CUSIP/Ticker	Settlement Date	Par Value	Market Value	Book Value	Coupon Rate	YTM @ Cost	Days To Call/Maturity	Maturity Date
Negotiable Certificate Of Deposit									
American Express Bank	02589ADE9	7/20/2022	200,000.00	198,622.00	200,000.00	3.350	3.350	476	7/20/2027
Discover Bank	2546736R2	7/26/2023	250,000.00	253,252.50	250,000.00	4.500	4.500	846	7/24/2028
Leaders Credit Union	52171MAN5	8/30/2024	250,000.00	250,330.00	250,000.00	4.000	4.000	1,248	8/30/2029
Magyar Bank	55977RCD3	7/30/2024	250,000.00	251,065.00	250,000.00	4.100	4.100	1,217	7/30/2029
Sallie Mae Bank	7954507A7	7/14/2021	200,000.00	198,338.00	200,000.00	1.000	1.000	105	7/14/2026
State Bank of India	8562852Q3	8/10/2023	250,000.00	255,230.00	250,000.00	4.550	4.550	863	8/10/2028
Toyota Financial SGS Bank	89235MPD7	9/27/2022	250,000.00	249,047.50	250,000.00	3.650	3.650	540	9/22/2027
Sub Total			**1,650,000.00**	**1,655,885.00**	**1,650,000.00**	**3.679**	**3.679**	**785**	
US Government Issues									
FHLMC	3134HCVR7	2/26/2026	250,000.00	245,837.50	250,000.00	3.750	3.750	332	2/26/2031
Sub Total			**250,000.00**	**245,837.50**	**250,000.00**	**3.750**	**3.750**	**332**	
Corporate Bond									
Barclays Bank	06746CSC4	8/20/2025	250,000.00	244,277.50	250,000.00	4.500	4.500	142	8/20/2030
Citigroup Inc	17292GAL9	9/18/2025	250,000.00	248,532.50	250,000.00	4.500	4.500	171	9/18/2030
Goldman Sachs	38151FQL0	11/28/2025	250,000.00	244,925.00	250,000.00	4.250	4.250	242	11/12/2030
Morgan Stanley Fin LLC	61766YKH3	6/29/2022	200,000.00	200,062.00	200,000.00	4.500	4.500	455	6/29/2027
Wells Fargo	95001DLD0	8/18/2025	250,000.00	246,802.50	250,000.00	4.550	4.550	137	8/15/2030
Sub Total			**1,200,000.00**	**1,184,599.50**	**1,200,000.00**	**4.458**	**4.458**	**220**	
Total Investments			**3,100,000.00**	**3,086,322.00**	**3,100,000.00**	**3.986**	**3.986**	**530**	

Total Earnings	**Month Ending March**	**Fiscal Year To Date**
Current Year	10,925.05	80,725.28

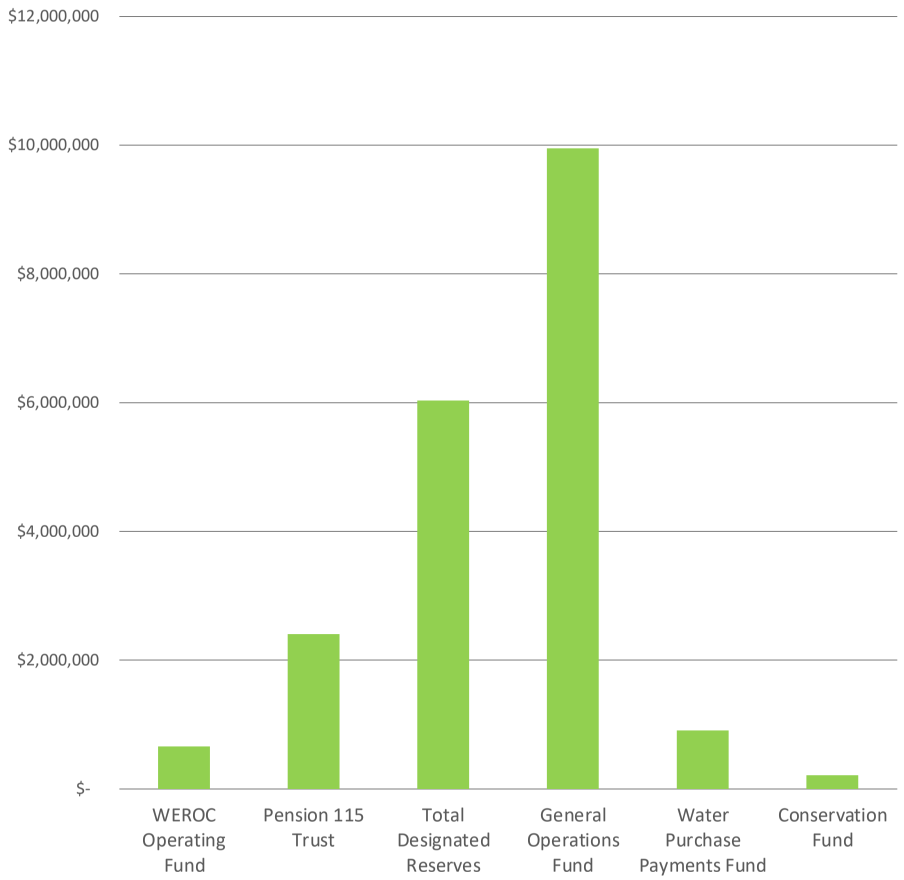
MUNICIPAL WATER DISTRICT OF ORANGE COUNTY
Portfolio Management
Short-Term Portfolio Details - Cash and Investments
March 31, 2026

Investments	CUSIP/Ticker	Settlement Date	Par Value	Market Value	Book Value	Coupon Rate	YTM @ Cost	Days To Call/Maturity	Maturity Date
Local Agency Investment Funds									
LAIF LGIP	LAIF	6/30/2010	9,867,356.69	9,867,356.69	9,867,356.69	3.826	3.826	1	N/A
Sub Total			**9,867,356.69**	**9,867,356.69**	**9,867,356.69**	**3.826**	**3.826**	**1**	
California Asset Management Program									
CAMP LGIP	CAMP6269	4/1/2025	4,642,633.32	4,642,633.32	4,642,633.32	3.800	3.800	1	N/A
Sub Total			**4,642,633.32**	**4,642,633.32**	**4,642,633.32**	**3.800**	**3.800**	**1**	
Total Investments			**14,509,990.01**	**14,509,990.01**	**14,509,990.01**	**3.818**	**3.818**	**1**	
Cash									
Petty Cash Cash	CASH	7/1/2010	500.00	500.00	500.00	0.000	0.000	1	N/A
US Bank Cash	CASHUSBANK	7/25/2018	169,208.48	169,208.48	169,208.48	0.000	0.000	1	N/A
Pension 115 Trust	PENSION115TRUST	7/31/2018	2,404,382.02	2,404,382.02	2,404,382.02	0.000	0.000	1	N/A
Total Cash			**2,574,090.50**	**2,574,090.50**	**2,574,090.50**	**0.000**	**0.000**	**1**	
Total Cash and Investments			**17,084,080.51**	**17,084,080.51**	**17,084,080.51**	**3.818**	**3.818**	**1**	

Total Earnings	Month Ending March	Fiscal Year To Date
Current Year	63,214.64	746,393.57

Municipal Water District of Orange County
Cash and Investments at March 31, 2026

ALLOCATION	AMOUNT	%
MWDOC		
Restricted Reserves		
WEROC Operating Fund	$ 660,222	3.27%
Pension 115 Trust	2,404,382	11.91%
Total Restricted Reserves	$ 3,064,604	15.18%
Designated Reserves		
Operating Reserve	$ 4,241,768	21.02%
Election Reserve	1,569,152	7.77%
OPEB Reserve	219,815	1.09%
Total Designated Reserves	$ 6,030,735	29.88%
General Operations Fund	$ 9,947,034	49.28%
Water Purchase Payments Fund	907,658	4.50%
Conservation Fund	214,840	1.06%
Total Other Funds	$ 11,069,532	54.84%
TOTAL MWDOC	$ 20,164,871	99.90%
TRUSTEE ACTIVITIES		
AMP Sales Admin	$ 19,210	0.10%
TOTAL TRUSTEE ACTIVITIES	$ 19,210	0.10%
TOTAL CASH & INVESTMENTS	**$ 20,184,081**	**100.00%**



PARS PUBLIC AGENCY RETIREMENT SERVICES

MUNICIPAL WATER DIST OF ORANGE COUNTY
PARS Post-Employment Benefits Trust

Account Report for the Period
3/1/2026 to 3/31/2026

Hilary Chumpitazi
Accounting Manager
Municipal Water Dist of Orange County
18700 Ward Street, Unit B
Fountain Valley, CA 92708

Account Summary

Source	Balance as of 3/1/2026	Contributions	Earnings	Expenses	Distributions	Transfers	Balance as of 3/31/2026
OPEB	$3,430,130.93	$0.00	-$136,087.82	$1,627.01	$0.00	$0.00	$3,292,416.10
PENSION	$2,854,016.31	$0.00	-$113,230.92	$1,353.75	$0.00	$0.00	$2,739,431.64
Totals	$6,284,147.24	$0.00	-$249,318.74	$2,980.76	$0.00	$0.00	$6,031,847.74

Investment Selection

Source	
OPEB	Moderate - Strategic Blend
PENSION	Moderate - Strategic Blend

Investment Objective

Source	
OPEB	The dual goals of the Moderate Strategy are growth of principal and income. It is expected that dividend and interest income will comprise a significant portion of total return, although growth through capital appreciation is equally important. The portfolio will be allocated between equity and fixed income investments.
PENSION	The dual goals of the Moderate Strategy are growth of principal and income. It is expected that dividend and interest income will comprise a significant portion of total return, although growth through capital appreciation is equally important. The portfolio will be allocated between equity and fixed income investments.

Investment Return

Source	1-Month	3-Months	1-Year	Annualized Return 3-Years	5-Years	10-Years	Plan's Inception Date
OPEB	-3.97%	-0.89%	11.47%	10.23%	4.99%	7.11%	10/26/2011
PENSION	-3.97%	-0.89%	11.45%	10.24%	4.99%	-	7/31/2018

Information as provided by US Bank, Trustee for PARS; Not FDIC Insured; No Bank Guarantee; May Lose Value

Past performance does not guarantee future results. Performance returns may not reflect the deduction of applicable fees, which could reduce returns. Information is deemed reliable but may be subject to change.
Investment Return: Annualized rate of return is the return on an investment over a period other than one year multiplied or divided to give a comparable one-year return.
Account balances are inclusive of Trust Administration, Trustee and Investment Management fees

MUNICIPAL WATER DISTRICT OF ORANGE COUNTY

COMBINED FINANCIAL STATEMENTS

AND

BUDGET COMPARATIVE

JULY 1, 2025 THRU MARCH 31, 2026

Municipal Water District of Orange County
Combined Balance Sheet
As of March 31, 2026

	Amount
ASSETS	
Cash in Bank	169,708.48
Investments	20,014,372.03
Accounts Receivable	19,120,691.61
Accounts Receivable - Other	615,209.98
Accrued Interest Receivable	174,554.29
Water Inventory	622,976.00
Prepaids/Deposits	336,697.19
Leasehold Improvements	7,119,285.04
Furniture, Fixtures & Equipment	1,053,854.50
Less: Accumulated Depreciation	(4,496,420.61)
TOTAL ASSETS	**44,730,928.51**
LIABILITIES AND FUND BALANCES	
LIABILITIES	
Accounts Payable	20,623,647.78
Accrued Salaries and Benefits Payable	1,000,804.91
Other Liabilities	1,743,320.79
Unearned Revenue	1,079,205.35
TOTAL LIABILITIES	**24,446,978.83**
FUND BALANCES	
Restricted Fund Balances	
WEROC Reserve	581,898.34
Pension 115 Trust	2,404,382.02
Total Restricted Fund Balances	2,986,280.36
Unrestricted Fund Balances	
Designated Reserves	
General Operations	4,241,768.00
Election Expense	1,569,152.00
OPEB	219,815.00
Total Designated Reserves	6,030,735.00
General Fund	7,044,312.19
General Fund Capital	246,408.19
Total Unrestricted Fund Balances	13,321,455.38
Excess Revenue over Expenditure	
Operating Fund	4,100,282.56
Other Funds	(124,068.62)
TOTAL FUND BALANCES	**20,283,949.68**
TOTAL LIABILITIES AND FUND BALANCES	**44,730,928.51**

Municipal Water District of Orange County
Revenues and Expenditures Budget Comparative Report
General Fund
July 1, 2025 thru March 31, 2026

	Month to Date	Year to Date	Annual Budget	% Used	Encumbrance	Budget Remaining
REVENUES						
Retail Connection Charge	0.00	9,939,370.50	9,939,371.00	100.00%	0.00	0.50
Ground Water Customer Charge	0.00	414,371.00	414,371.00	100.00%	0.00	0.00
Water Rate Revenues	**0.00**	**10,353,741.50**	**10,353,742.00**	**100.00%**	**0.00**	**0.50**
Interest Revenue	74,430.68	854,519.00	916,000.00	93.29%	0.00	61,481.00
Subtotal	**74,430.68**	**11,208,260.50**	**11,269,742.00**	**99.45%**	**0.00**	**61,481.50**
Choice Programs	48,362.50	1,306,321.50	1,534,798.00	85.11%	0.00	228,476.50
MWD Revenue - Shared Services	3,000.00	149,409.90	297,079.00	50.29%	0.00	147,669.10
Miscellaneous Income	1,219.43	3,333.81	5,000.00	66.68%	0.00	1,666.19
School Contracts	18,865.40	514,244.19	511,211.00	100.59%	0.00	(3,033.19)
Delinquent Payment Penalty	0.00	6,682.51	0.00	0.00%	0.00	(6,682.51)
Transfer-In from Reserve	0.00	0.00	123,869.00	0.00%	0.00	123,869.00
Subtotal	**71,447.33**	**1,979,991.91**	**2,471,957.00**	**80.10%**	**0.00**	**491,965.09**
TOTAL REVENUES	**145,878.01**	**13,188,252.41**	**13,741,699.00**	**95.97%**	**0.00**	**553,446.59**

Municipal Water District of Orange County
Revenues and Expenditures Budget Comparative Report
General Fund
July 1, 2025 thru March 31, 2026

	Month to Date	Year to Date	Annual Budget	% Used	Encumbrance	Budget Remaining
EXPENSES						
Salaries & Wages	484,639.75	4,239,607.75	5,841,489.00	72.58%	0.00	1,601,881.25
Salaries & Wages - Grant Recovery	0.00	(7,636.00)	(48,000.00)	(15.91)%	0.00	(40,364.00)
Director's Compensation	22,150.92	193,652.74	281,917.00	68.69%	0.00	88,264.26
MWD Representation	12,417.94	106,055.92	161,096.00	65.83%	0.00	55,040.08
Employee Benefits	154,801.47	1,313,738.96	1,774,275.00	74.04%	0.00	460,536.04
Employee Benefits - Grant Recovery	0.00	(1,155.14)	0.00	0.00%	0.00	1,155.14
CalPers Unfunded Liability Contribution	0.00	207,000.00	207,000.00	100.00%	0.00	0.00
Director's Benefits	10,726.37	93,078.72	158,371.00	58.77%	0.00	65,292.28
Health Insurance for Retirees	13,442.80	82,008.36	122,517.00	66.94%	0.00	40,508.64
Training Expense	1,815.00	36,798.93	84,445.00	43.58%	0.00	47,646.07
Tuition Reimbursement	0.00	4,757.00	6,500.00	73.18%	0.00	1,743.00
Temporary Help Expense	0.00	0.00	5,000.00	0.00%	0.00	5,000.00
Personnel Expenses	**699,994.25**	**6,267,907.24**	**8,594,610.00**	**72.93%**	**0.00**	**2,326,702.76**
Engineering Expense	9,190.77	248,379.38	570,000.00	43.58%	76,667.30	244,953.32
Legal Expense	20,746.80	180,709.04	260,000.00	69.50%	79,385.36	(94.40)
Audit Expense	4,635.00	32,445.00	37,445.00	86.65%	0.00	5,000.00
Professional Services	84,811.13	913,067.14	1,597,790.00	57.15%	840,648.07	(155,925.21)
Professional Fees	**119,383.70**	**1,374,600.56**	**2,465,235.00**	**55.76%**	**996,700.73**	**93,933.71**
Conference - Staff	4,119.00	26,506.00	42,497.00	62.37%	0.00	15,991.00
Conference - Directors	50.00	16,520.19	17,155.00	96.30%	0.00	634.81
Travel & Accom. - Staff	4,404.84	40,308.82	85,900.00	46.93%	0.00	45,591.18
Travel & Accom. - Directors	3,568.76	18,217.22	36,625.00	49.74%	0.00	18,407.78
Travel & Conference	**12,142.60**	**101,552.23**	**182,177.00**	**55.74%**	**0.00**	**80,624.77**
Membership/Sponsorship	525.00	210,772.07	221,386.00	95.21%	0.00	10,613.93
CDR Support	0.00	54,486.39	72,650.00	75.00%	18,162.15	1.46
Dues & Memberships	**525.00**	**265,258.46**	**294,036.00**	**90.21%**	**18,162.15**	**10,615.39**
Business Expense	231.18	3,362.80	5,500.00	61.14%	0.00	2,137.20
Office Maintenance	10,707.32	105,216.47	156,000.00	67.45%	44,513.70	6,269.83
Building Repair & Maintenance	1,218.81	55,506.08	57,200.00	97.04%	6,062.20	(4,368.28)
Storage Rental & Equipment Lease	74.15	667.35	1,125.00	59.32%	457.65	0.00
Office Supplies	1,384.60	15,977.79	28,000.00	57.06%	1,914.86	10,107.35
Supplies - Water Loss Control	238.99	1,791.01	4,000.00	44.78%	0.00	2,208.99
Postage/Mail Delivery	573.15	5,858.38	9,450.00	61.99%	481.85	3,109.77
Subscriptions & Books	0.00	7,456.35	10,000.00	74.56%	0.00	2,543.65
Reproduction Expense	5,590.65	84,801.85	108,500.00	78.16%	3,553.97	20,144.18
Maintenance - Computers	19.56	6,957.53	15,850.00	43.90%	0.00	8,892.47
Software Purchase	20,413.28	113,448.33	271,731.00	41.75%	142,482.00	15,800.67
Software Support	0.00	1,462.50	20,000.00	7.31%	0.00	18,537.50
Computers and Equipment	3,072.13	29,436.71	45,250.00	65.05%	0.00	15,813.29
Automotive Expense	894.70	8,788.93	11,600.00	75.77%	0.00	2,811.07
Vehicle Expense	6,851.01	12,955.10	10,000.00	129.55%	0.00	(2,955.10)
Toll Road Charges	17.45	813.64	950.00	85.65%	0.00	136.36
Insurance Expense	22,679.11	166,673.18	234,150.00	71.18%	0.00	67,476.82
Utilities - Telephone	4,878.75	37,597.72	49,586.00	75.82%	219.54	11,768.74
Bank Fees	0.00	167.79	2,400.00	6.99%	0.00	2,232.21
Miscellaneous Expense	9,406.24	84,563.45	181,200.00	46.67%	2,520.00	94,116.55
MWDOC's Contrb. to WEROC	29,429.04	264,861.40	353,149.00	75.00%	0.00	88,287.60
Depreciation Expense	6,321.92	56,896.46	0.00	0.00%	0.00	(56,896.46)
Other Expenses	**124,002.04**	**1,065,260.82**	**1,575,641.00**	**67.61%**	**202,205.77**	**308,174.41**
Election Expense	0.00	0.00	605,000.00	0.00%	0.00	605,000.00
Capital Aquisition	0.00	11,402.03	25,000.00	45.61%	0.00	13,597.97
Building Expense	0.00	1,988.51	0.00	0.00%	0.00	(1,988.51)
TOTAL EXPENSES	**956,047.59**	**9,087,969.85**	**13,741,699.00**	**66.13%**	**1,217,068.65**	**3,436,660.50**
NET INCOME (LOSS)	**(810,169.58)**	**4,100,282.56**	**0.00**	**0.00%**	**(1,217,068.65)**	**(2,883,213.91)**

Municipal Water District of Orange County
Revenues and Expenditures Budget Comparative Report
Water Fund
July 1, 2025 thru March 31, 2026

	Month to Date	Year to Date	Annual Budget	% Used	Budget Remaining
WATER REVENUES					
Water Sales	9,346,186.60	105,289,558.20	175,492,249.00	60.00%	70,202,690.80
Readiness to Serve Charge	1,501,996.00	13,187,212.45	16,934,350.00	77.87%	3,747,137.55
Capacity Charge CCF	340,750.00	3,208,200.00	4,624,125.00	69.38%	1,415,925.00
SCP/SAC Pipeline Surcharge	31,396.17	261,235.56	443,000.00	58.97%	181,764.44
TOTAL WATER REVENUES	**11,220,328.77**	**121,946,206.21**	**197,493,724.00**	**61.75%**	**75,547,517.79**
WATER PURCHASES					
Water Sales	9,346,186.60	105,289,558.20	175,492,249.00	60.00%	70,202,690.80
Readiness to Serve Charge	1,501,996.00	13,187,212.45	16,934,350.00	77.87%	3,747,137.55
Capacity Charge CCF	340,750.00	3,208,200.00	4,624,125.00	69.38%	1,415,925.00
SCP/SAC Pipeline Surcharge	31,396.17	261,235.56	443,000.00	58.97%	181,764.44
TOTAL WATER PURCHASES	**11,220,328.77**	**121,946,206.21**	**197,493,724.00**	**61.75%**	**75,547,517.79**
EXCESS OF REVENUE OVER EXPENDITURE	**0.00**	**0.00**	**0.00**	**0.00%**	**0.00**

Municipal Water District of Orange County
Revenues and Expenditures Budget Comparative Report
Water Use Efficiency
July 1, 2025 thru March 31, 2026

	Year to Date Actual	Annual Budget	% Used
HECW Rebate Program(3411)			
Revenues	30,571.12	49,236.00	62.09%
Expenses	28,825.00	49,236.00	58.54%
Excess of Revenues over Expenditures	1,746.12	0.00	
CII Rebate Program(3416)			
Revenues	250.00	1,000.00	25.00%
Expenses	250.00	1,000.00	25.00%
Excess of Revenues over Expenditures	0.00	0.00	
Turf Removal Program(3418)			
Revenues	6,257,701.04	5,501,750.00	113.74%
Expenses	6,278,513.36	5,501,750.00	114.12%
Excess of Revenues over Expenditures	(20,812.32)	0.00	
Tree Incentive Program(3420)			
Revenues	29,800.00	50,000.00	59.60%
Expenses	30,400.00	50,000.00	60.80%
Excess of Revenues over Expenditures	(600.00)	0.00	
Spray To Drip Conversion(3423)			
Revenues	1,328,311.68	995,000.00	133.50%
Expenses	1,333,108.32	995,000.00	133.98%
Excess of Revenues over Expenditures	(4,796.64)	0.00	
Member Agency Administered Pass-Thru(3425)			
Revenues	0.00	75,000.00	0.00%
Expenses	0.00	75,000.00	0.00%
Excess of Revenues over Expenditures	0.00	0.00	
Comprehensive Landscape (CLWUE) (3427)			
Revenues	128,004.93	226,882.88	56.42%
Expenses	128,586.93	226,882.88	56.68%
Excess of Revenues over Expenditures	(582.00)	0.00	
Framework TAP(3429)			
Revenues	404,533.12	1,222,638.40	33.09%
Expenses	429,324.51	1,222,638.40	35.11%
Excess of Revenues over Expenditures	(24,791.39)	0.00	
Land Design Program(3431)			
Revenues	31,349.00	59,000.00	53.13%
Expenses	31,349.00	59,000.00	53.13%
Excess of Revenues over Expenditures	0.00	0.00	

Municipal Water District of Orange County
Revenues and Expenditures Budget Comparative Report
Water Use Efficiency
July 1, 2025 thru March 31, 2026

	Year to Date Actual	Annual Budget	% Used
WSIP - Industrial Program(3432)			
Revenues	19,323.72	36,250.10	53.31%
Expenses	19,323.72	36,250.10	53.31%
Excess of Revenues over Expenditures	0.00	0.00	
Recycled Water Program(3433)			
Revenues	2,479.75	62,640.50	3.96%
Expenses	2,479.75	62,640.50	3.96%
Excess of Revenues over Expenditures	0.00	0.00	
Dedicated Irrigation Meters Measurement Project (DIMM)(3439)			
Revenues	18,330.00	70,000.00	26.19%
Expenses	36,424.53	70,000.00	52.04%
Excess of Revenues over Expenditures	(18,094.53)	0.00	
SAWPA-USBR LAM(3440)			
Revenues	0.00	100.00	0.00%
Expenses	0.00	100.00	0.00%
Excess of Revenues over Expenditures	0.00	0.00	
Total WUE Projects			
Revenues	8,250,654.36	8,349,497.88	98.82%
Expenses	8,318,585.12	8,349,497.88	99.63%
Excess of Revenues over Expenditures	(67,930.76)	0.00	
WEROC			
Revenues	618,009.93	710,997.00	86.92%
Expenses	633,337.68	710,997.00	89.08%
Excess of Revenues over Expenditures	(15,327.75)	0.00	

Item No. 4

CONSENT CALENDAR
May 20, 2026

TO: **Board of Directors**

FROM: **Planning & Operations Committee**

Harvey De La Torre, General Manager

Staff Contact: Rachel Waite-Harvey, WUE Programs Supervisor

SUBJECT: **NV5 GEOSPATIAL LANDSCAPE CLASSIFICATION AND MAPPING CONTRACT CHANGE ORDER**

STAFF RECOMMENDATION

Staff recommends the Board of Directors approve a contract change order with NV5 Geospatial in the amount of $200,000, for a total revised not to exceed amount of $1.6 million, to provide landscape classification and mapping requirements and to extend the contract term for an additional two years through June 30, 2028 and authorize the General Manager to execute the contract.

COMMITTEE RECOMMENDATION

The committee concurred with staff recommendation.

REPORT

Purpose

This item requests the Municipal Water District of Orange County (MWDOC or District) Board of Directors (Board) approve a contract change order with NV5 Geospatial (NV5G, previously known as Quantum Spatial) for landscape classification and mapping requirements technical assistance through the Choice Program Shared Services to help Orange County Urban Water Suppliers comply with the Making Conservation a California Way of Life Framework (Way of Life Framework).

Background

At the April 21, 2021 meeting, the Board awarded a contract to Quantum Spatial in an

amount not to exceed $1.4 million to provide landscape classification and mapping requirements technical assistance. The contract was established to support Assembly Bill (AB) 1668 and Senate Bill (SB) 606, known as the Way of Life Framework, which requires each Urban Water Supplier to calculate and report its Urban Water Use Objective (UWUO) and remain within its calculated annual water budget. Additionally, the Framework contains commercial, industrial, and institutional (CII) non-volumetric Performance Measures, including thresholds for converting mixed-use CII meters (MUMs) that irrigate more than one-half acre of landscape to dedicated meters or in-lieu technologies.

Urban Water Suppliers are responsible for classifying and measuring landscapes irrigated by dedicated meters by July 2028 and for identifying landscapes irrigated by MUMs larger than one-half acre by July 2027.

Discussion

MWDOC offers technical assistance for landscape classification and mapping requirements through Choice Program Shared Services to help Orange County Urban Water Suppliers comply with the Way of Life Framework. Expenses are paid by participating retailers, and cost-share is provided by MWDOC, sourced through Metropolitan Water District of Southern California (Metropolitan) Member Agency-administered funds and MWDOC-procured state and federal grants.

Completing landscape classification and mapping efforts is essential for Orange County Urban Water Suppliers' compliance with the Way of Life Framework. Accessing these technical assistance services as a Shared Service provides Orange County Urban Water Suppliers with cost savings through economies of scale and MWDOC-provided cost share. There are no direct MWDOC costs associated with this Choice Program Shared Services. The extension of the contract term and the increase in the contract not-to-exceed limit will ensure that all participating agencies can complete their mapping project with NV5G.

As of April 2026, services totaling $1.24 million have been completed for 20 of the 26 Urban Water Suppliers in Orange County, including the cities of Anaheim, Fullerton, and Santa Ana. Technical assistance for 16 retailers is ongoing and is anticipated to exceed the current contract limit of $1.4 million and the term ending June 30, 2026.

Next Steps

To facilitate the projected additional $360,000 in technical support, staff recommends the Board of Directors select Option # 1 and approve a contract change order with NV5G in the amount of $200,000, for a total revised not to exceed amount of $1.6 million, to provide landscape classification and mapping requirements and to extend the contract term for an additional two years through June 30, 2028 and authorize the General Manager to execute the contract.

If approved, staff will work with NV5G to execute the change order and continue project planning and implementation with participating Orange County Urban Water Suppliers.

ALIGNMENT WITH BOARD STRATEGIC PRIORITIES

☒ *Clarifying MWDOC's mission and role; defining functions and actions.*
☐ *Balance support for Metropolitan's regional mission and OC values and interests.*
☒ *Strengthen communication and coordination of messaging.*
☒ *Work with member agencies to develop water supply and demand objectives.*
☐ *Solicit input and feedback from member agencies.*
☐ *Invest in workforce development and succession planning.*

BOARD OPTIONS

Option #1: Approve a contract change order with NV5G in the amount of $200,000, for a total revised not to exceed amount of $1.6 million, to provide landscape classification and mapping requirements and to extend the contract term for an additional two years through June 30, 2028 and authorize the General Manager to execute the contract.

Fiscal Impact: There are no direct MWDOC costs associated with this Choice Program Shared Services. MWDOC will provide staff time and cost-share sourced from external funding.

Option #2: Do not approve the contract change order with NV5G to provide landscape classification and mapping requirements.

Fiscal Impact: Orange County Urban Water Suppliers will experience higher costs to complete mapping requirements independently.

Budgeted: ☐ Yes ☐ No ☒ N/A		Budgeted amount:
Core: ☐	Choice: ☒	Movement between Cost Centers: ☐ Yes ☒ No
Action item amount: $200,000		

Attachments/Links:
N/A

Item No. 5

CONSENT CALENDAR
May 20, 2026

TO: **Board of Directors**

FROM: **Planning & Operations Committee**

Harvey De La Torre, General Manager

Staff Contact: Charles Busslinger, Dir. of Engineering/District Engineer

SUBJECT: **AWARD OF CONTRACT FOR GEOGRAPHIC INFORMATION SYSTEM (GIS) IMPLEMENTATION ASSISTANCE**

STAFF RECOMMENDATION

Staff recommends the Board of Directors award Hazen and Sawyer a 1-year contract, for $144,260 plus a 10% contingency for a total not to exceed amount of $158,686, to provide Geographic Information System implementation assistance and authorize the General Manager to execute the contract, with the option for an additional 1-year renewal.

COMMITTEE RECOMMENDATION

The committee concurred with staff recommendation.

REPORT

Purpose

This item requests the Municipal Water District of Orange County (MWDOC or District) Board of Directors (Board) award a contract for Geographic Information System (GIS) implementation assistance to Hazen and Sawyer.

Background

MWDOC and its consultant, FLO Analytics, completed its GIS Needs Assessment in August 2025 to evaluate the District's current GIS environment, determine organizational and departmental GIS needs, and provide a prioritized roadmap for future implementation.

The assessment confirmed that MWDOC operates in an inherently spatial environment but is currently underutilizing GIS capabilities across its programs, planning functions, emergency response coordination, and shared services. The GIS Needs Assessment recommended establishing an enterprise-level GIS program supported by strong governance, standardized data management practices, and software architecture built on Environmental Systems Research Institute. Inc. (Esri) Enterprise and ArcGIS Online. It further recognized that external consultant support would be required in the initial phases to implement the system, migrate data, configure tools, and train staff, ensuring MWDOC can progressively assume day-to-day GIS administration over time.

The recommended GIS Implementation Assistance contract represents the next phase of MWDOC's multi-year GIS initiative and is a direct continuation of the Needs Assessment recommendations. While the Needs Assessment defined the organizational requirements, technical direction, and broad implementation strategy, this next phase focuses on executing that strategy, establishing GIS governance frameworks, configuring the Esri system architecture, and delivering initial applications that provide operational value and demonstrate early wins.

Awarding this contract will enable MWDOC to build the foundational GIS capabilities necessary to improve cross-departmental efficiency, enhance collaboration with member agencies and WEROC partners, and support long-term data-driven decision-making across the District.

How MWDOC Utilizes GIS

As a regional wholesale water agency and administrator of multiple Shared Services Programs, MWDOC employs GIS as a foundational tool for data integration, spatial analysis, and cross-agency coordination across its core operational areas. GIS applications span several departments with the following functions:

- **Reliability Planning and Engineering** — GIS enhances the work of MWDOC Engineering by providing spatial and temporal tools for recurring projects and ongoing operations (e.g., water quality platform and dashboard, Shared Services programs, pipeline shutdown coordination), helping improve analysis, communication, and coordination between MWDOC, Metropolitan, and member agencies.

- **Water Loss Control** — While GIS is already the backbone of MWDOC's Water Loss Control Program, providing data, the reporting platform, and field assignment workflows, the current process could be improved and optimized with help from GIS architecture expertise.

- **Water Use Efficiency** — GIS capabilities will significantly enhance the work of MWDOC's Water Use Efficiency Programs, specifically in managing two broad categories of data: rebate program data, and Conservation as a Way of Life Framework compliance data.

- **Water Emergency Response of Orange County (WEROC)** — GIS capabilities are increasingly critical to WEROC's function. GIS will provide WEROC with new tools and resources to better manage larger emergency incidents, enhance situational awareness, quickly and more effectively improve damage assessment, and identify appropriate stakeholders as incidents arise.

Discussion

Pursuant to Section 8000 of the Administrative Code, "It is MWDOC's policy that purchasing and contracting shall be conducted in a fair, open, and transparent manner so as to maximize benefits to MWDOC. All contracts should be reviewed and rebid at least every five years, except in situations with documented significant benefits to MWDOC." The GIS implementation assistance contract has not previously been competitively bid; therefore, a competitive Request for Proposals (RFP) process was implemented.

Staff prepared and issued an RFP for GIS implementation assistance under the schedule below:

RFP PROJECT TIMELINE	
Task Item	**Completion Date**
1. MWDOC completion of draft in-house RFP	November 11, 2025
2. RFP release	November 21, 2025
3. Closing date for submittal of questions	December 18, 2025
4. Proposals due	January 20, 2026
5. Convene a review panel to review proposals and select candidates for interviews	February 25, 2026
6. Interviews with firms and review panel rankings	March 20, 2026
7. Recommendation to the P&O Committee	May 4, 2026
8. Authorization by MWDOC Board	May 20, 2026
9. Contract starts	June 15, 2026

Proposal Evaluation Process

On November 21, 2025, staff released an RFP seeking a qualified firm to provide GIS implementation assistance. The goal is to establish a robust foundation for MWDOC's GIS program, encompassing internal GIS governance and standards, GIS software planning and licensing review, implementation of an ESRI GIS system incorporating ArcGIS Online for emergency response and member collaboration opportunities, and data migration.

The RFP was posted on the MWDOC website and distributed to firms known to have GIS expertise. A total of three proposals were received by the closing date. All three proposals met the initial qualifying criteria and were reviewed by the internal review panel consisting of MWDOC staff from the following departments: Reliability Planning and Engineering, Water Emergency Response of Orange County (WEROC), Water Loss Control, Water Resources, and Water Use Efficiency.

The review panel met twice to review, rank, and discuss the proposals. Two firms were shortlisted for selection. Panel members independently ranked the firms and then met to discuss the results. Proposals were evaluated based on the following: the proposal cover letter (executive summary), firm experience, qualifications, and record of performance, project understanding and approach, interview performance, and willingness to accept standard agreement terms. Based on the combined rankings, Hazen and Sawyer was unanimously selected.

Selected Firm Overview

Hazen and Sawyer is a civil/environmental engineering firm founded in 1951 that specializes in water, wastewater, and stormwater infrastructure solutions from planning to construction. Hazen and Sawyer has successfully delivered several projects for MWDOC and water agencies in Orange County. Most recently, these include the Orange County 2025 Demand Projection Model and the Lead and Copper Rule Revisions Service Line Inventory Assistance, both of which required GIS expertise and interface.

Hazen and Sawyer's GIS expertise includes a resource pool of 400 GIS users and 29 GIS Analysts. Specific to MWDOC's GIS Implementation Assistance, Hazen and Sawyer's National Director of Geospatial Services will serve as the Technical Advisor, and their Principal GIS Analyst will serve as the Implementation Lead for this project. Hazen and Sawyer was unanimously selected based on their qualifications and approach, which focuses on implementing a foundational, maintainable ArcGIS Online–based system that delivers early wins while building the long-term GIS governance, data standards, and architecture recommended in MWDOC's GIS Needs Assessment. Their proposal emphasizes a secure and scalable platform for interagency data sharing, particularly valuable for WEROC, and minimizes administrative burden on MWDOC by leveraging Esri's Software-as-a-Service (SaaS) environment and Hazen and Sawyer's in-house expertise in enterprise GIS design, data modeling, and multi-agency data integration.

Next Steps

Staff recommends the Board of Directors select Option #1 to award Hazen and Sawyer a 1-year contract, for an amount of $144,260 plus a 10% contingency for a total not to exceed amount of $158,686, to provide GIS implementation assistance and authorize the General Manager to execute the contract with the option for an additional 1-year renewal.

ALIGNMENT WITH BOARD STRATEGIC PRIORITIES

☒ *Clarifying MWDOC's mission and role; defining functions and actions.*
☐ *Balance support for Metropolitan's regional mission and OC values and interests.*
☐ *Strengthen communication and coordination of messaging.*
☐ *Work with member agencies to develop water supply and demand objectives.*
☐ *Solicit input and feedback from member agencies.*
☒ *Invest in workforce development and succession planning.*

BOARD OPTIONS

Option #1: Staff recommends the Board of Directors award Hazen and Sawyer a 1-year contract, for $144,260 plus a 10% contingency for a total not to exceed amount of $158,686, to provide GIS implementation assistance and authorize the General Manager to execute the contract, with the option for an additional 1-year renewal.

Fiscal Impact: The GIS Implementation Project has been budgeted at $130,0000 and $150,000 for FYs 2025-26 and 2026-27, respectively. Funds are budgeted and available for the additional 1-year renewal.

Option #2: Do not award Hazen and Sawyer a contract, which will delay MWDOC's GIS Implementation.

Fiscal Impact: None.

Budgeted: ☒ Yes ☐ No ☐ N/A		Budgeted amount: $130,000 for FY 2025-26; $150,000 for FY 2026-27
Core: ☒	Choice: ☐	Movement between Cost Centers: ☐ Yes ☒ No
Action item amount: $158,686		

Attachments/Links:
Attachment 1: Hazen and Sawyer Proposal
Link 1: MWDOC GIS Implementation Assistance RFP: https://go.mwdoc.com/sz8iLS

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

April 3, 2026

Sarina Sriboonlue
Principal Engineer
Municipal Water District of Orange County
18700 Ward Street, Unit B
Fountain Valley, CA 92708

Re: Geographic Information System (GIS) Implementation Assistance RFP ENG. 2005-03

Dear Ms. Sriboonlue:

Hazen and Sawyer appreciates the opportunity to respond to this RFP and looks forward to supporting the Municipal Water District of Orange County (MWDOC) in development of a foundational GIS. Hazen understands the need to complete an initial implementation, with early wins, that also lays the building blocks of a robust GIS.

Hazen will follow the steps shown in the figure to the right, making sure to develop important data management and standard operating procedure documentation. Ultimately, for the implemented GIS to be successful, it will provide the following to MWDOC:

- A **secure platform for spatial data sharing** between member agencies and within agency groups such as WEROC.
- A **maintainable system** that minimizes the need for MWDOC support during initial phases of work.
- **Flexibility for future growth** as MWDOC matures in spatial data management and staff capabilities.

Having worked with other water utilities performing transboundary planning and wholesale water, as well as MWDOC and its 27 member agencies, Hazen is uniquely situated to assist in the creation of a successful GIS.



Sincerely,

Kirsten Plonka, PE
Senior Associate

Cindy Miller, PE
Vice President

Hazen Acknowledges:
- Receipt of Addendum 1 and Addendum 2.
- Review of MWDOC's professional services agreement (Attachment B in the RFP). See comments in Appendix B.

1016-143

Geographic Information Systems (GIS) Implementation Assistance

*Hazen and Sawyer is a civil engineering firm **focused on water**. This concentration means we are dedicated to delivering GIS solutions in the water sector and are ready to support MWDOC in development of a comprehensive GIS that sets a foundation for future enhancement and provides a quick start for MWDOC staff to harness the power of geospatial intelligence.*

B. Experience and Qualification

B.a Hazen's Specific Experience

With over 400 Geographic Information System (GIS) users and 29 GIS Analysts, Hazen has a significant resource pool of water focused GIS practitioners ready to support the Municipal Water District of Orange County (MWDOC). The Geospatial Services Group, led by Technical Advisor Ryan O'Banion, specializes in the development of critical components to this RFP:

- Data model development and management
- Extract, Transform, and Loading (ETL) between data models and systems
- Enterprise and ArcGIS Online deployments
- Web application development

esri Partner Network Gold

As an Esri Gold Partner, Hazen has demonstrated our skill and commitment to GIS. This partnership allows Hazen to have close contact with Esri developers and staff so we can better support MWDOC when making GIS decisions.

Hazen also has a long history of working with MWDOC, understanding the unique challenges faced by a wholesale water provider and resource agency with 27 different member agencies. Through projects like the recently completed Water Demand Forecast and Lead and Copper Rule tasks, Hazen has interfaced with MWDOC member agencies and has a direct understanding of the varied needs of each member agency. Based on this directly relevant experience with MWDOC and its member agencies, coupled with national experience in working with regional water agencies, Hazen is well prepared to deliver a comprehensive and maintainable GIS. The following projects highlight our approach to foundational GIS development, integration of multi-agency sourced data management, and local Southern California projects.

Enterprise GIS Development – Nantucket, MA

Hazen is responsible for the design and implementation of an Enterprise GIS solution to collect, manage, analyze, and visualize spatial data for the Town of Nantucket. The Nantucket GIS includes an Esri geodatabase based on Hazen's Water Data Model and customized to meet town needs and future uses.

Working from Nantucket's existing sewer, stormwater, and water GIS data, Hazen collaborated with the Town to draft and migrate data to the new comprehensive water data model that supports fieldwork and modeling. The Towns GIS enterprise database is hosted in an ArcGIS Portal, and the project teams use Portal-based Esri web applications to review, edit and generate reports.
Project Relevance: Enterprise System Administration, Data Modeling, Web Applications

Enterprise ArcGIS System – Passaic Valley Sewerage Commission (PVSC), NJ

Hazen implemented a cloud-based Enterprise ArcGIS system for PVSC, designed to enhance the Commission's GIS capabilities for asset management, data analysis, and operations. Hazen worked with PVSC and Esri to design and implement Enterprise ArcGIS in the PVSC Azure cloud with integrations to SCADA, Autodesk (Innovyze) ICM Live modeling data, and other PVSC data sources. Hazen worked with PVSC to implement the Hazen GIS Data Model for Water that helps standardize data format and improve data quality for water-related assets by using PACP and other industry standards as foundations. Hazen translated and loaded the existing PVSC GIS data to the new PVSC ArcGIS Enterprise Geodatabase in Azure and helped PVSC establish editing workflows for ArcGIS Pro (Desktop), web, and mobile users.
Project Relevance: Enterprise System Administration, Data Modeling, Web Applications

Linear Asset Management Plan – El Torro Water District, CA

Hazen supported the El Toro Water District in developing a comprehensive Linear Asset Management Plan (AMP) by leading the creation of a digital, data-driven framework for prioritizing rehabilitation and replacement of water distribution assets. GIS played a central role in this effort: the team utilized GIS-based tools to build, integrate, and visualize asset risk, enabling the District to review, validate, and adjust results in real time based on system knowledge and field feedback. The final GIS outputs—supporting spatial analysis, consolidated datasets, and risk visualization—were incorporated into the District's asset register, forming a defensible foundation for capital planning and long-term asset sustainability.
Project Relevance: ArcGIS Online, Data Modeling, Web Applications

LCRR Lead Service Line Inventory – Western Municipal Water District, CA

Hazen supported the Western Municipal Water District by leading the development of a comprehensive LSL inventory. The team conducted extensive data gathering, records review, and GIS-based inventory development, integrating potable meters, service lines, water mains, and parcel data through a multi-stage ArcGIS ModelBuilder workflow to produce an accurate, traceable, and regulatory-ready inventory. Advanced GIS techniques were central to building Western's preliminary and final inventory layers. Hazen's GIS-enabled approach allowed Western to efficiently compile and validate its baseline inventory for submission to DDW by the October 2024 deadline.
Project Relevance: ArcGIS Online, Web Application, Data Modeling

B.b Key Personnel

Hazen has carefully chosen a team of GIS professionals and engineers with national expertise and local experience required to understand the needs of MWDOC while delivering a comprehensive water GIS.

Hazen is committed to keeping the staff included in this proposal committed to MWDOC for the duration of the tasks. Please refer to the appendix to see full resumes of staff in the following table.

		Multi-Jurisdiction Data Management	Comprehensive Data Model	ArcGIS Enterprise	ArcGIS Online	ArcGIS Web Applications	Communications
Cindy Miller, PE	Project Director	●					●
Kirsten Plonka, PE*	Project Manager	●	●				●
Ryan O'Banion, GISP*	Technical Advisor	●	●	●	●	●	●
Ken Camacho, GISP*	Implementation Lead	●	●	●	●	●	
Claire Waller	GIS Analyst	●	●	●	●	●	
Zack Webb	GIS Analyst	●	●		●	●	
Nicklaus Nielsen	GIS Analyst	●		●	●	●	
Megan Drummey	Communications Advisor						●

*Key personnel assigned to this project

B.c Proposed Subcontract Arrangements

Given Hazen's local staff expertise and national support structure, Hazen will complete this scope of work entirely with in-house staff, streamlining coordination and quality of delivery.

B.d Assurance of Firm's Ability to Complete Work

Hazen is a private employee-owned engineering firm celebrating our 75th anniversary this year. Our longevity is tied to Hazen's proven ability to deliver high quality work and complete it within allotted timelines. One way we ensure efficient and timely delivery is our structure as a single profit center. This means that regardless of the staff member's location, if they are best suited for the project, they will be assigned to the task. Senior leadership for this project, including Project Director Cindy Miller and Project Manager Kirsten Plonka, can pull resources as needed to meet MWDOC's project demands.

B.d.i Completion of Reports, Analyses, and Documentation

Hazen is prepared and able to deliver the completion of all reports, analyses, and supporting documentation for software and hardware purchasing recommendations by November 20, 2026, for MWDOC Board consideration. Intrinsic to meeting this deadline is the prompt review of draft deliverables and support in coordination of meetings with member agencies and stakeholders as seen in Section E. Project Schedule. If these critical path items are delayed due to MWDOC availability limitations, the deadline may be at risk.

B.d.ii Implementation of Software/Hardware

Implementation of ArcGIS Online organization SaaS solution will be completed within 90 days of notification of MWDOC receipt. Prior to the 90-day window, it will be necessary for Hazen staff, identified at project kickoff, to have security credentials and access to mutually agreed upon MWDOC IT systems.

C. Record of Performance

As highlighted in Section B, the Hazen team has worked together to successfully deliver projects across the United States. This record of performance ranges from multi-agency data modeling of water systems to ArcGIS Online and full ArcGIS Enterprise deployments. As seen in the projects discussed below, the Hazen team has direct experience supporting MWDOC, ArcGIS Online deployments, and GIS delivery to agencies with large consitutiencies.

C.a Project Team's Past Performance

Assistance with Completion of Lead and Copper Rule Revisions – MWDOC, CA

Hazen supported MWDOC by conducting a comprehensive assessment of member agency service areas and developing the materials, processes, and GIS tools needed to complete and submit lead service line inventories. As part of this project, Hazen's team developed and implemented a field assessment program including design of a GIS based inventory database, along with a phone app and dashboards to facilitate data collection and QA/QC. Hazen also facilitated virtual meetings, coordinated data requests, and provided structured guidance to help water systems determine levels of effort, meet regulatory deadlines, and move efficiently toward full LCRR compliance.

Project Team
Cindy Miller
Kirsten Plonka
Ryan O'Banion
Claire Waller

Project Relevance: ArcGIS Online, Multi-Agency Data ETL, Web Application

Water GIS Development - Beulah, AL

The small town of Beulah, AL has limited staff but major asset renewal and management needs. As a water distributor, the Town required a way to better understand their system through hydraulic modeling and tracking of assets. Hazen worked with Beulah to develop an ArcGIS Online-based GIS deployment and provide spatial awareness of their water distribution system. Leveraging the ArcGIS Online SaaS solution, Hazen deployed our Hazen Water Data model as a basis for web-based GIS, without the need for on-premise servers or Town expertise in systems administration. Hazen is continuing to provide the town with administration and training services.

Project Team
Ryan O'Banion
Ken Camacho

Project Relevance: ArcGIS Online, Data Modeling, System Administration, Web Applications

District-Wide Stormwater Management Infrastructure Mapping - Metropolitan North Georgia Water Planning District (MNGWPD)

Project Team
Ryan O'Banion
Ken Camacho

As a regional water planning district, MNGWPD, needed a way to see and analyze the spatial data associated with their 117 member agencies. Hazen is currently working with MNGWPD to develop a comprehensive stormwater schema and Python-based data loading tool to integrate stormwater GIS from 23 pilot agencies. The GIS schema, based on Hazen's Water Data Model as a starting point, is being managed within ArcGIS Online to promote secure inter-agency sharing and limit MNGWPD staff administration tasks. Hazen is working with a technical advisory working group, consisting of agency stakeholders, to develop consensus on the chosen approach.
Project Relevance: ArcGIS Online, Multi-Agency Data ETL, Data Modeling, Web Applications

Public Water System LSL Inventory – New Hampshire Department of Environmental Services (NHDES)

Project Team
Ryan O'Banion
Ken Camacho
Megan Drummy

Hazen worked with NHDES to compile and deliver lead service line inventories for 213 small communities using a single ArcGIS Online deployed data model. The data model, combined with an Esri Hub Site and dashboards, leveraged table views and group-based access for sharing. This structure allowed NHDES to see comprehensive data while limiting potentially sensitive information to individual small system data owners. Additionally, a Python-based export script was developed to automate the creation of inventories, compatible with New Hampshire's strict reporting requirements.
Project Relevance: ArcGIS Online, Multi-Agency Data ETL, Data Modeling, Web Applications

C.b References

Katherin Atteberry **Metro North Georgia Planning District** Stormwater Planning Mgr. 470-378-1572 KAtteberry@atlantaregional.org	***Dominador Elefante*** **Passaic Valley Sewerage Commission** Geographic Information Systems 973-466-2928 DElefante@pvsc.com	***Lyndy Lewis*** **Western Municipal Water District** Environmental and Regulatory Compliance Manager 951-571-7288 llewis@wmwd.com	***Hannah Ford*** **El Toro Water District** Director of Engineering 949-837-7050 x247 hford@etwd.com

D. Project Work Plan

Creating a successful GIS from scratch requires careful consideration of user needs, IT/OT requirements, and long-term administration and staffing. **Based on Hazen's review of provided documentation and our knowledge of MWDOC and member agencies, we believe that developing GIS architecture in ArcGIS Online is the best approach.** Deployed as a scalable Software-as-a-Service (SaaS), ArcGIS Online relies on servers and applications managed by Esri on Amazon Web Services. This allows for minimal maintenance of systems and administration by MWDOC staff while supporting the sharing of web services and applications to member organizations or the public (as necessary). Starting with an ArcGIS Online environment will also allow for future investment into ArcGIS Enterprise if needs change

and the GIS team at MWDOC matures. Therefore, Hazen's workplan is focused on the implementation of ArcGIS Online.



Developing an understanding of MWDOC user needs is essential to delivering a comprehensive and successful GIS. Hazen will review the existing needs assessment with careful consideration to the following updates:

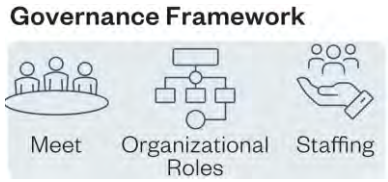
- The Water Use Efficiency Department no longer needs to host large imagery datasets.
- The Water Emergency Response Organization of Orange County (WEROC), administered by MWDOC, has specific needs for a Common Operating Procedure (COP) that captures live data and provides a flexible platform for sharing.

After review, Hazen will update the MWDOC planned system architecture, hardware, and software. This revised architecture, leveraging ArcGIS Online, will provide secure group sharing capabilities while limiting system administration and maintenance requirements.

By default, ArcGIS Online allows 20 partnered collaborations. However, through correspondence with Esri, more than 50 can be permitted without performance impacts. This will enable simple coordination with MWDOC's member agencies through web GIS.

Deliverables:

- Draft and final technical memorandum documenting a modified plan leveraging ArcGIS Online.



Building consensus between MWDOC's seven (7) departments and member associations on GIS data governance is a key component to the long-term success of its GIS implementation. Fortunately, MWDOC has already completed a number of interviews and outreach as part of the original needs assessment. Hazen will use this report to:

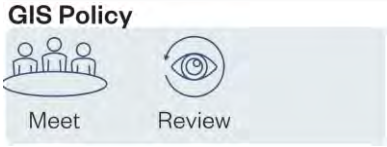
- Meet with the MWDOC project manager to obtain any recent updates from member organizations.
- Create an organizational structure for GIS at MWDOC. The structure will be documented in the form of a chart and associated text describing roles.
- Define governance for the key domains of Strategy, Platform, Data, Workforce, Delivery, and Investment. Across these domains, highlight:
    - Alignment with organizational goals
    - Roles and responsibilities
    - Policy and standards
    - Policy review cadence
    - Member agency engagement
    - Key decision points from planning phase
- Propose recommendations for future GIS staffing by MWDOC.

As an alternative to 12 initial stakeholder meetings, Hazen proposes the development of a Stakeholder Advisory Committee. This committee, composed of agencies and MWDOC staff, will meet quarterly.

Hazen will lead these virtual quarterly meetings and provide progress updates and obtain feedback from stakeholders on goals, end use requirements, next steps, and sharing requirements/limitations. For each meeting, Hazen will provide an agenda one week in advance of the meeting date, develop meeting minutes, and roll key decisions into the governance framework. Through these sessions, Hazen will gather the information and consensus needed to recommend governance structure and processes that are flexible to the needs of stakeholders while aligning with MWDOC's mission and internal needs.

Deliverables

- GIS Governance Framework Document. In draft and final, incorporating two rounds of stakeholder review and feedback.
- Quarterly stakeholder meetings to build governance consensus.



Guiding principles and rules for data quality, retention, availability, security, and user access will help MWDOC's GIS become a secure, trusted data source and integral component of organizational operations. To develop the policy document, Hazen will rely on information gathered from the Stakeholder Advisory Committee, our previous experience developing GIS and data governance policy, and the following activities:

- Review written organization policies for IT security and data management (as provided to Hazen by MWDOC).
- Interview up to three (3) key users and decision makers during 1-hour virtual meetings to document existing workflows and specific policy needs.

When considering documentation, setting standards for data hosted in GIS is vital to ensuring appropriate use. Hazen has found that going beyond basic metadata, and into details such as naming conventions, usage level, tags, and even standardization of **thumbnails** is crucial to a well-structured and manageable organization.



Deliverables

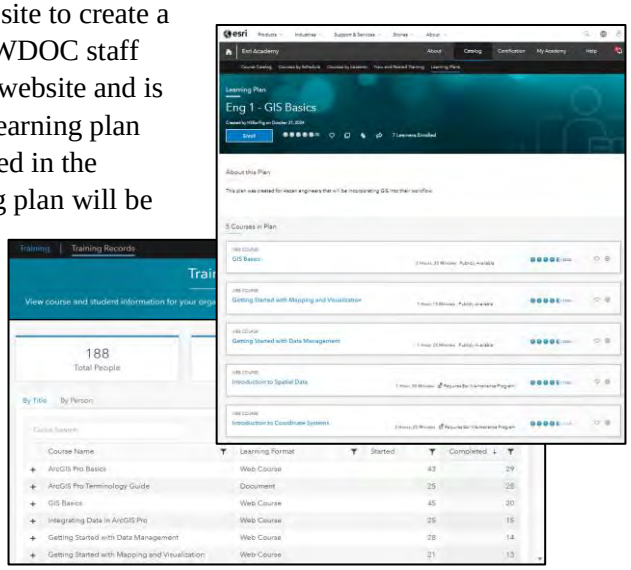
- Draft and final GIS Policy document based on one round of review by stakeholders. The policy will address key concerns such as security, data management, documentation requirements, and archiving.



The development of a three-year implementation plan will provide a path forward for MWDOC as it grows an established GIS within the organization. Key components of the roadmap will include prioritized tasks, timelines, milestones, and forward-thinking pathways.

As part of the Implementation Plan, Hazen will also develop a three-year budget, to match traditional Esri licensing windows, estimating costs of software and training. Given the implementation of ArcGIS Online, MWDOC will not need to purchase additional server hardware.

Hazen will leverage Esri Academy, Esri's e-learning site to create a custom leaning plan for MWDOC staff. Licensed MWDOC staff will be able to take lessons on demand from the Esri website and is expected to take between 8 to 12 hours to take. The learning plan will be documented in the e-learning site and described in the Implementation plan. Courses selected in the learning plan will be chosen based on user needs at MWDOC. Hazen expects up to three learning plans to be developed based on Publisher, Viewer, and Admin user roles. No customized training will be developed under this scope of work. To track progress towards training, MWDOC can leverage the MyEsri training records. This approach will allow MWDOC managers to see key performance indices (KPIs) for staff who started and finished the learning plans.



As an **optional task**, Hazen can create an ArcGIS Dashboard that is fed by exports of Esri Training records to allow simple KPI tracking and progress updates of staff training.

Deliverables

- Draft and final GIS Implementation Plan, incorporating one round of comments from MWDOC.
- *OPTIONAL DELIVERABLE* – ArcGIS Online dashboard to show training by MWDOC staff.



When licensing Esri software, MWDOC has the option to buy a-la-carte or enter into an Enterprise Agreement. Hazen will work with MWDOC to explain the difference between approaches and associated cost implications.

A major part of the licensing equation is understanding the number of users associated with different roles. Hazen will coordinate with MWDOC to identify the number of core team members requiring ArcGIS Pro (Creator, Professional, Professional Plus), Mobile Workers, and Viewers.

Depending on named user needs, and organizational qualification criteria for Esri's licensing models, an Esri Programmatic Enterprise Agreement such as the Small Utility Cloud-Based EA Program may be the best approach for MWDOC. This licensing provides savings compared to purchasing individual licenses and includes uncapped self-paced e-Learning training as well as further discounts for additional licensing. If MWDOC's licensing needs fall outside of programmatic agreements, individually negotiated licenses are also possible. Hazen's Gold Partner status allows Hazen to act as a third-party advisor and assist with the evaluation of best options. However, Hazen will not negotiate or actively participate in negotiation meetings between Esri and MWDOC under this scope of work.

Hazen will also include the cost of licensing GEO Jobe's Backup My Org software. This backup utility will allow for efficient and restorable backups of ArcGIS Online content.

Deliverables

- A short Technical Memorandum outlining an approach to Esri Licensing to be used as a reference for MWDOC's Board of directors for purchasing approvals.

Hardware, Server, and Network Requirements



As a SaaS solution, ArcGIS Online will remove the need for server hardware associated with Enterprise Portal. With the elimination of physical or cloud-based server configuration, the hardware requirements for MWDOC's initial GIS will be greatly reduced.

Desktop computer hardware considerations include minimum computing requirements to run ArcGIS Pro. Beyond the recommended requirements shown here, Esri also provides optimal computing hardware for heavy GIS processing. Hazen will work with MWDOC to determine if obtaining a few of these workstations will be beneficial to power desktop GIS users.

Recommended Desktop Requirements
CPU – 4 Cores
Platform – x64
Memory – 32GB

One concern for MWDOC is where to store local files, such as file geodatabases. Currently Esri does not recommend the use of cloud storage (SharePoint or OneDrive) to support geospatial data. However, they do provide a workaround and direct connection to cloud storage is in the Esri roadmap. Hazen will discuss options with MWDOC IT and make a recommendation.

Finally, mobile hardware is expected to be iPad/iPhone or Android tablets/phones. Since MWDOC is a bring your own device organization, devices will need to meet the minimum requirements listed here. If needs are identified requiring more accurate GPS data collection, a low-cost option for improving reception is the Garmin GLO-2 devices. If centimeter-level accuracy is required, RTK GNSS devices such as EOS Skadi series of handheld devices are recommended to integrate with mobile devices and ArcGIS Field Maps.

Minimum Mobile Device Requirements
Android
- Android 10.0 or later
- Processor ARMv7 or later
- OpenGL ES 2.0 support

iOS
- iOS 18 or later
- iPhone, iPad

Hazen will not implement the purchase of any hardware under this scope of work but will make recommendations and provide contacts to device sellers such as EOS. Additionally, the configuration of purchased devices and training on the development of field maps and use of data collection tools is excluded from this scope of work.

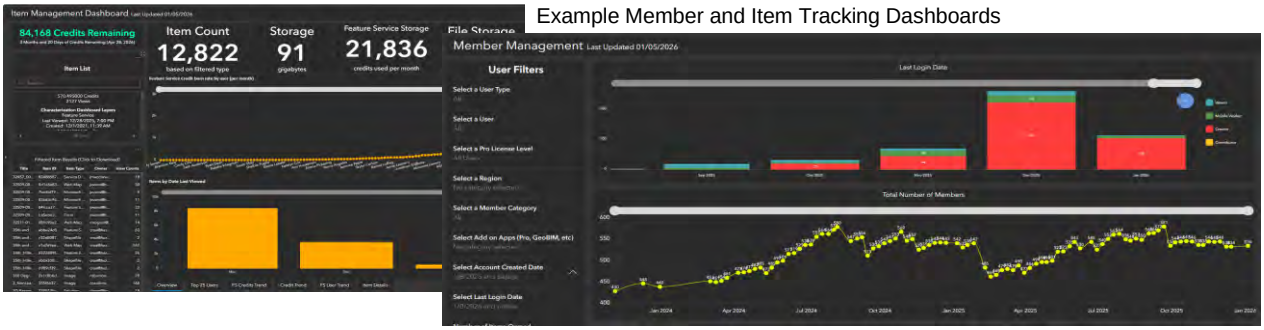
Deliverables

- Recommendations documented in a short Technical Memorandum.



Hazen will act in a system administrator role for the configuration of MWDOC's ArcGIS Online. As an administrator, Hazen will use MWDOC's existing Security Assertion Markup Language (SAML) logins for sign-in. Additionally, custom user roles will be developed and created to support MWDOC's unique user needs. A feature class will be chosen as initial testing data to publish into the ArcGIS Online organization. This will allow Hazen to:

- Configure the landing page of the ArcGIS Online organization to display MWDOC names, logos, and color scheme.
- Deploy and test Backup My Org for backup and archiving of hosted data.
- As proof of configuration, create two dashboards: a member management dashboard and an item tracking dashboard. These dashboards will provide Hazen and MWDOC with an understanding of user licensing and credit consumption for the duration of the contract.



Example Member and Item Tracking Dashboards

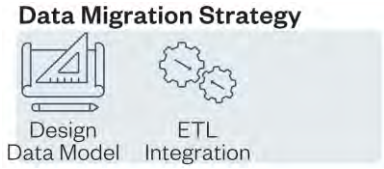
Because ArcGIS Online does not use registered data from a SQL database, integrations with on-prem software solutions like Microsoft Power BI are handled through other means, such as data replication or the ArcGIS for Power BI data visualization tool. Once signed in with ArcGIS Online accounts, users will be able to add content from ArcGIS Online groups to BI for visualization and data manipulation. Hazen will add the test hosted feature layer to a BI for demonstration purposes. Hazen is not responsible for configuration of Power BI software and infrastructure. This scope of work covers using previously established Power BI and demonstrating the integration of ArcGIS Online content.

Hazen will not develop a data hub under this scope of work, but this can be deployed under future development tasks. Additionally, integrations are limited to testing ArcGIS for Power BI data visualization. Other integrations, via REST services or APIs can be completed with additional efforts. Hazen assumes that MWDOC IT maintains and will provide a password manager, such as NordPass, to allow for the secure saving and sharing of key passwords associated with the ArcGIS Online organization. If a password manager is not deployed by MWDOC, Hazen will follow MWDOC IT standard operating procedures for the secure sharing of passwords.

Deliverables

- Configured ArcGIS Online organization

- Member Management and Credit Consumption ArcGIS Online dashboards
- Documentation of organization in a short Technical Memorandum.



Hazen understands the importance of the proofing out the data governance requirements developed in previous tasks under this scope of work using real data implementation in the ArcGIS Online organization. Migrating data into ArcGIS Online is the best way to demonstrate its potential and show early wins to stakeholders and users. For this task, Hazen has allotted 20 hours of GIS analyst time to:

- Complete a review of existing data using Hazen custom Data Reviewer tool to identify compliance with basic data quality standards such as attribute completeness and adherence to domains. Results of this tool, in HTML format, will be shared with MWDOC.
- Meet with MWDOC to determine the best "early win" dataset for publishing.
- Provide feedback and recommendations on the existing data model.

Hazen expects that the effort to complete these activities for all of the Water Use Efficiency, Water Loss Control, and WEROC data to be significantly greater than the level of effort available under this scope of work. Therefore, Hazen will complete the review of existing data for up to three data sources and meet with MWDOC to agree on the best dataset to update and publish within the hour allocation.

The development of a detailed plan, outlining all processes for ETL, quality control, and testing can be completed with additional funding if required. Hazen proposes to track ETL through Esri Model Builder, FME, and/or Python scripts and leverage populated metadata for tracking.

Deliverables

- HTML documentation of Water Use Efficiency, Water Loss Control, and WEROC data.
- Documented data model and migration strategy.

5.9 Optional Project: WEROC Information-Sharing Platforms

The scope and fee for the optional project to develop WEROC Information Sharing Platform will be informed by tasks 5.1 through 5.8. The scope and fee for 5.9 is non-binding and for planning purposes only. The final scope will be negotiated separately as a new task order.

ArcGIS Velocity, Esri's solution for IoT and real-time data ranges in price from $20,600 to $46,350 per year based on the number of real-time feeds required. Based on discussions with MWDOC, true real-time feeds are not necessary at this time. Therefore, the use of Velocity is not included in cost estimates.

5.9.1 Discovery and Requirements Gathering

- Hazen will conduct up to four meetings with WEROC stakeholders.
- Focus will be on the types and sources of data required as part of this platform.

5.9.2 Group Sharing Architectural Design

- Development of a group-based architecture in ArcGIS Online for the WEROC Information Sharing Platform. We will consider Experience Builder and ArcGIS Hub Site as the front-end for access, applications, and data views.
- Hazen will develop a visual diagram of the proposed architecture, in the form of a swim lane diagram, that shows connectivity of feature services and applications.

5.9.3 Data Sharing Schema Development and Documentation

- Hosted data sources will generally take the form of shared feature layers from internal and external sources. Hazen will develop up one web map to facilitate their inclusion into the platform.
- Hazen will develop a data collection application with Survey123 or Field Maps to assess emergency damage assessment.
- Hazen will develop up to two custom data integrations to pull contextual data such as fire perimeters and evacuation data using web APIs to source data and feature layers to store data.

5.9.4 Platform Configuration and Development

- Develop up to two web applications such as Experience Builder, Dashboard, or Instant App.
- All applications will be developed in the MWDOC ArcGIS Online platform.

5.9.5 Testing and QA

- Up to 20 hours to test functionality of the WEROC Information Sharing Platform.
- Implementation of one round of feedback from WEROC user acceptance testing.

5.9.6 Training

- Hazen will develop and conduct up to two training sessions to show access and survey population. The sessions will be recorded.
- Creation of documentation in the form of User Guide for the access of data and population of forms.

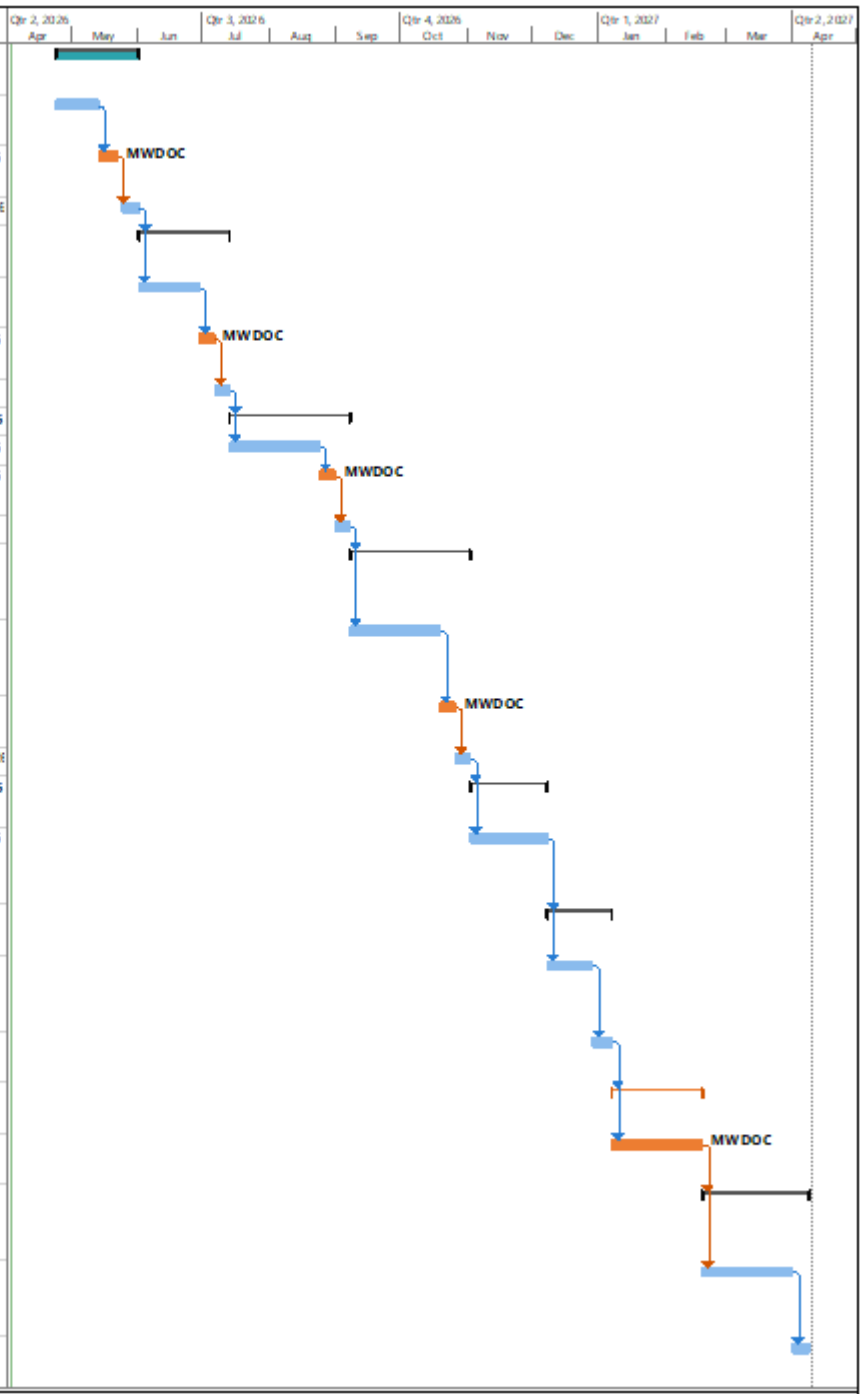
5.9.7 Deployment and Ongoing Support

- Up to 16 hours of GIS Analyst time to support the go-live and address needs as identified.

Project Schedule

A detailed schedule for tasks 5.1 through 5.8 and a planning level schedule for optional task 5.9 is seen on the following pages.

ID	Task Name	Duration	Start
1	**5.1 Review of MWDOC GIS Needs**	**27 days**	**Fri 4/24/26**
2	Review of Needs Assessment	14 days	Fri 4/24/26
3	MWDOC Review of Draft TM	7 days	Thu 5/14/26
4	Final TM	6 days	Mon 5/25/26
5	**5.2 Governance Framework**	**30 days**	**Tue 6/2/26**
6	Governance Framework	20 days	Tue 6/2/26
7	MWDOC Review of Draft TM	5 days	Tue 6/30/26
8	Final TM	5 days	Tue 7/7/26
9	**5.3 GIS Policy**	**40 days**	**Tue 7/14/26**
10	GIS Policy	30 days	Tue 7/14/26
11	MWDOC Review of Draft	5 days	Tue 8/25/26
12	Final TM	5 days	Tue 9/1/26
13	**5.4 GIS Implemenatalon Plan**	**40 days**	**Tue 9/8/26**
14	GIS Implementation Plan	30 days	Tue 9/8/26
15	MWDOC Review of Draft	5 days	Tue 10/20/26
16	Final TM	5 days	Tue 10/27/26
17	**5.5 Software License Procurement**	**26 days**	**Tue 11/3/26**
18	Software License Review and Procurement	26 days	Tue 11/3/26
19	**5.6 Software Requirements**	**22 days**	**Wed 12/9/26**
20	Hardware, Server, and Network Requirements	15 days	Wed 12/9/26
21	Final Documentation	7 days	Wed 12/30/26
22	**MWDOC PROCUREMENT**	**30 days**	**Fri 1/8/27**
23	MWDOC Procurement	30 days	Fri 1/8/27
24	**5.7 Esri Software Installation and Configuration**	**36 days**	**Fri 2/19/27**
25	Esri Software Installation and Configuration	30 days	Fri 2/19/27
26	Admin Dashboards	6 days	Fri 4/2/27



	Months									
Optional Task: WEROC	1	2	3	4	5	6	7	8	9	10
Task 5.9.1 - Discover and Requirements Gathering	■	■								
Task 5.9.2 - Group Sharing Architectural Design		■								
Task 5.9.3 - Data Sharing Schema Development and Documentation			■							
Task 5.9.4 - Platform Configuration and Development				■	■	■				
Task 5.9.5 - Testing and QA						■	■			
Task 5.9.6 - Training								■		
Task 5.9.7 - Deployment and Ongoing Support									■	■

E. Project Fee Schedule

A detailed project fee schedule as well as rates for each staff member associated with the project are seen below. These rates are good through April 2027.

Title	Rate
Vice President	$395
Senior Associate II	$345
Principal GIS Analyst II	$180
Principal GIS Analyst I	$170
Senior GIS Analyst	$150
GIS Analyst	$145
Communications Manager	$215

Hazen MWDOC GIS Governance		Project Director Cindy Miller	Project Manager Kirsten Plonka	Technical Advisor /QAQC Ryan O'Banion	Implementation Lead Ken Camacho	GIS Analyst Zach Webb	GIS Analyst Nicklaus Nielsen	Communications Advisor Megan Drummey				
Task	Description	$395	$345	$345	$180	$150	$150	$215	Labor Hours	Labor	Expenses	Total
1	Project Management and Coordination	2	16	0	0	0	0	0	18	$ 6,310	$ 300	$ 6,610
2	Review of the MWDOC GIS Needs Assessment Hardware and Software Recommendations	0	1	4	5	0	16	0	26	$ 5,025	$ -	$ 5,025
3	GIS Governance Framework Design	1	12	26	34	0	64	16	153	$ 32,665	$ -	$ 32,665
4	GIS Policy Document	0	4	8	8	8	24	0	52	$ 10,380	$ -	$ 10,380
5	GIS Implementation Plan	0	1	8	8	0	24	0	41	$ 8,145	$ -	$ 8,145
6	Software License Review and Procurement Recommendations	0	1	4	2	0	16	0	23	$ 4,485	$ -	$ 4,485
7	Hardware, Server, and Network Requriements	0	1	1	2	0	20	0	24	$ 4,050	$ -	$ 4,050
8	Esri Software Installation and Configuration	0	1	2	8	8	32	0	51	$ 8,475	$ -	$ 8,475
	Total	3	37	53	67	16	196	16	388	$ 79,535	$ 300	$ 79,835
OT 1	Dashboard for Tracking Education	1	0	2	0	8	16	0	27	$ 4,685	$ -	$ 4,685
	Total with Optional Tasks	4	37	55	67	24	212	16	415	$84,220	$300	$84,520

Hazen WEROC Information-Sharing Platform		Project Director Cindy Miller	Project Manager Kirsten Plonka	Technical Advisor /QAQC Ryan O'Banion	Implementation Lead Ken Camacho	GIS Analyst Nicklaus Nielsen	GIS Analyst Claire Waller	GIS Analyst Zack Webb				
Task	Description	$395	$345	$345	$180	$150	$145	$170	Labor Hours	Labor	Expenses	Total
1	Project Management and Coordination	2	12	0	0	0	0	0	14	$ 4,930	$ 300	$ 5,230
2	Discovery and Requirements Gathering	0	0	12	12	4	0	6	34	$ 7,920	$ -	$ 7,920
3	Group Sharing Architectural Design	0	0	4	4	4	0	8	40	$ 4,060	$ -	$ 4,060
4	Data Sharing Schema Development and Documentation	0	0	4	12	4	4	16	40	$ 7,440	$ -	$ 7,440
5	Platform Configuration and Development (up to 2 Apps)	0	0	4	16	4	50	20	94	$15,510	$ -	$15,510
6	Testing and QA	0	4	4	4	2	12	14	40	$ 7,900	$ -	$ 7,900
7	Training	0	0	2	0	0	28	12	42	$ 6,790	$ -	$ 6,790
8	Deployment and On-Going Support		2	4	0	2	8	8	24	$ 4,890	$ -	$ 4,890
	Total	2	18	34	48	20	102	84	328	$59,440	$ 300	$59,740

Appendix A: Resumes

Full resumes for key staff and all potential staff to work under this project are included in the following pages.



Cindy Miller, PE

Vice President and Operations Manager

Cindy is an experienced Project Manager with a long resume of leading the most challenging water supply projects to successful completion.

Education

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

Certification/License

Professional Engineer: CA

Areas of Expertise

- Project Management
- Program Management
- Groundwater Supply
- Well Equipping Planning and Design
- Pipeline Planning and Design

Water Master Plan Update and GIS Conversion Project, City of Chino, Chino, San Bernardino County, CA

Principal in Charge. The City of Chino serves over 12 million gallons per day of potable water to a population of approximately 74,000. Key components of this project include the creation of a GIS geodatabase of the City's potable water distribution system, preparation of a Water Master Plan Report, and completion of a Risk and Resiliency Assessment for compliance with America's Water Infrastructure Act requirements. The Water Master Plan effort includes hydraulic model development and calibration; comprehensive hydraulic analysis of the City's conveyance, pumping, and storage facilities; and development of a prioritized Capital Improvement Program for the planning horizon including preliminary cost estimates.

Chino Hills Water and Recycled Water Master Plan, Chino Hills, CA

Principal in Charge. Hazen and Sawyer is currently delivering the City's Water and Recycled Water Master Plan Update. In July 2008, the City of Chino Hills approved and adopted the October 2005 Water, Recycled Water, and Sewer Master Plan. Since 2008, the City has evolved into a more fully developed and almost "built-out" community. Several of the CIP and recommended actions identified in the 2005 Master Plan have been implemented. The City's goal is to create a comprehensive updated Citywide water and recycled water master plan complete with a new GIS-based hydraulic model and mapping tools.

Ridgeline Booster Pump Station, Trabuco Canyon Water District, Lake Forest, CA

Principal in Charge. The Ridgeline Booster Pump Station (RBPS) is a critical facility within Trabuco Canyon Water District's system. The RBPS is the primary means of delivering water from Dimension Water Treatment Plant (DWTP) to the Harris Grade pressure zone and tanks. The project includes preliminary design, final design, and construction support services for the RBPS Project. The project includes complete replacement of the pumps, piping, valving, pump station site improvements, security, and electrical and controls, and additionally, a building analysis and associated structural and architectural upgrades to accommodate the mechanical and electrical improvements at the site.



Kirsten Plonka, PE

Project Manager

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

Education

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

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

Certification/License

Professional Engineer: CA

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 Activities

American Society of Engineers

American Public Works Association

Engineers without Borders (former Southern California State Representative)

Lead and Copper Rule Revisions, Western Municipal Water District, Riverside, CA

Deputy Project Manager. Responsible for identifying lead service lines, including collaborating with the March Air Force Base. She led a team that reviewed historical codes, utilized GIS technology, and employed geo-spatial statistical analysis to compile an accurate inventory of lead lines. Kirsten also worked closely with the Division of Drinking Water (DDW) to ensure compliance and provided regulatory advice. Additionally, she developed educational materials and played a key role in evaluating project costs to maintain transparency and public health standards.

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

Project Manager. Lead for master plan and asset management program that guided SAWCo's annual planning and rate structure. Key focus areas included: assessing the current supply portfolio under multiple risk and resilience scenarios; developing recommendations to reinforce current supplies or develop alternative emergency supply sources; delivering a new, calibrated, hydraulic model of the system in conjunction with GIS datasets to improve system operations and CIP development.

Assistance with Water Demand Forecasts, Metropolitan Water District of Orange County, Fountain Valley, CA

Project Manager. Development of long-range water demand forecasts and forecast updates for 30 member agencies across Orange County, in support of the Agency's periodic development of its Urban Water Management Plan. Efforts involved the development of econometric models of M&I water demands, 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.



Ryan O'Banion, GISP

Senior Associate

Ryan serves as Hazen's Director of Geospatial Services. He is an experienced environmental scientist who leverages GIS for spatial analysis, field data collection, and program management to help clients make informed decisions about their water resources.

Education

MEM, Water Resources, Duke University - Nicholas School of the Environment

BS, Environmental Studies, Bates College

Certification/License

Geographic Information System Professional

Areas of Expertise

- Geographic Information Systems (GIS)
- Geospatial Data Analysis
- ArcGIS Online
- ArcGIS Enterprise

District-Wide Stormwater GIS Development, Metropolitan North Georgia Water Planning District, GA

GIS Technical Advisor. Collaborated with a regional district encompassing over 100 jurisdictions to design and implement a comprehensive stormwater schema in ArcGIS Online (AGO). Developed an ETL process to standardize and convert jurisdictional data into a unified district schema. Delivered a pilot dashboard that supports district-wide visualization and decision-making, laying the foundation for scalable stormwater management solutions.

Water System GIS Development, Beulah, AL

Technical Advisor. Implemented Hazen's water data model for the Town of Beulah, creating a robust GIS framework and deploying it in ArcGIS Online. Built interactive dashboards and web maps to streamline water distribution management and improve operational visibility. Designed the solution to minimize staffing requirements, enabling efficient maintenance for a resource-limited team.

LCRR, MWDOC, Orange County, CA

QA/QC. MWDOC's lead service line inventory project encompasses a partnership of 12 individual water agencies. The project includes development of LSL inventory in GIS, web applications for field collection, and alternative verification methods (geospatial statistical analysis and interpolation). Reviewed ArcGIS sites to test data access across multiple jurisdictions.

LADWP LCRR, Los Angeles Department of Water and Power, Los Angeles, CA

QA/QC. Supported with compliance with LCRR including the service line inventory development in GIS, collaborating with engineers for QC of service line identification, and the use of alternative verification methods (predictive modeling and geospatial statistical analysis).



Ken Camacho, GISP

Principal GIS Analyst

Ken specializes in architecting and developing technology solutions blending commercial off-the-shelf and custom-developed tools.

Education

MS, Geography, Michigan State University

BS, Environmental Science, Colby-Sawyer College

Certification/License

Geographic Information Systems Professional

Areas of Expertise

- Technology solutions development
- Data collection and storage
- Cloud services
- ArcGIS Enterprise
- Python

Public Water System LCRR Compliance Support, New Hampshire Department of Environmental Services, Manchester NH
GIS Administrator/Developer. Set up new ArcGIS Online subscription dedicated to managing service line inventories and providing guidance to 213 public water systems of varying size in New Hampshire. Created data management plan for collecting, updating, and templatizing disparate data from these water systems. Deployed service line inventories with known data and developed mobile and web-based GIS applications for facilitating service line updates. Developed scripts to create applications tailored to each community, manage users, and control access to different content on the platform. Worked with graphics team to develop hub website front-end for users to access their LCRR content.

CMOM Program, Town of Nantucket, MA
GIS Databse Administrator. Worked closely with the Hazen GIS and Technical Applications team in an effort to reconcile versions of Nantucket's GIS system, creating a unified, single database. Also contributed by committing field-based GIS revisions to the GIS database replica, which the Town will be able to incorporate into their geodatabase.

Enterprise GIS Deployment, Passaic Valley Sewerage Commission, Newark NJ
GIS Administrator/Developer. Worked closely with client to assess needs for the configuration and upgrade of an Enterprise GIS system hosted on Azure client. Wrote python code and developed the digital infrastructure to integrate live sensor data with Enterprise GIS environment. Used GeoEvent server with python to detect, log, and send email alerts in response to changing system conditions.

Enterprise GIS Deployment, Lowell Regional Wastewater Utility, Lowell MA
GIS Administrator. Worked with client to develop Enterprise GIS infrastructure architecture plan and coordinated with Esri to perform implementation. Provided training and support services following implementation on desktop and field workflows, GIS administration, security best practices, and GIS tool development. Performed data cleaning and mi-



Claire Waller

GIS Analyst

Claire serves as a GIS Analyst in the San Francisco. She is committed to providing essential support in data analysis and GIS for water and wastewater projects, contributing to Hazen's digital strategies and solutions.

Education

BS, Anthropology and Geography, Concentration in Environmental Studies and Sustainability, California Polytechnic State University

Areas of Expertise

- Geographic Information Systems
- Data Analysis
- Asset Management

CRR Support, Arizona Department of Environmental Quality, Arizona

GIS Analyst. Developed LSL inventories for over 50 small jurisdictions using GIS models. Collaborated with a large team to gather records, collect data, and qc model and inventory development. Ensured the development of inventories in line with national and state level regulations

Long-Term Water Demand Forecasts, Municipal Water District of Orange County, Fountain Valley, CA

GIS Analyst. Supported development of water demand forecasts for Orange County water agencies in coordination with the Municipal Water District of Orange County (MWDOC). Contributions included developing demographic projections for member agencies, analyzing historical water consumption trends at the individual agency level, and providing technical support during forecast development and review.

CMOM Program, Town of Nantucket, MA

GIS Analyst. Assisted the Town of Nantucket with a stormwater drainage system assessment. Supported Hazen in the continued maintenance of a CMMS within ArcGIS Enterprise Portal, used by both contractors and City staff during field assessments. Ensured QA/QC by reviewing and validating contractor-submitted updates to stormwater assets (e.g., pipes, manholes, inlets), incorporating approved changes into the City's GIS. Successfully synchronized verified updates to Nantucket's SQL-based enterprise data source.



Zack Webb

Principal GIS Analyst

Zach has experience developing static and web solutions across the ESRI suite of products including ArcGIS Pro, ArcMap, ArcGIS Online, Field Maps, and Survey123.

Education

BS, Environmental Resource Management with minor in GIS
Pennsylvania State University

BS, Computer Science, Oregon State University

Areas of Expertise

- Desktop GIS
- Field Data Collection
- Web Based GIS
- Computer Science

District-Wide Asset Management Plan, El Toro Water District, Lake Forest, CA

GIS Analyst. Extended a pumping asset management program to the force main system, including the implementation of a GIS script tool for risk assessment. This information was used to identify and prioritize the District's capital improvement program. Deliverables of the work included an updated asset register, written asset management plan, ArcGIS Online web applications, and a Power BI dashboard.

Botanical Surveys and Jurisdictional Delineation, Redonda/Bajada/ Savira Solar Project, Riverside County, CA

Supported botanical surveys and delineations for jurisdictional wetland/ waters of the U.S. for construction of a proposed solar project on BLM and private land in Riverside California, to support the application for an individual permit under Sections 404 and 401 of the CWA, and to determine the presence of ephemeral washes, desert dry wash woodlands, and other high quality and sensitive resources present within the project boundary to inform mitigation and conservation measures. Identified and mapped ordinary high-water mark (OHWM) along waters, laterals, and ephemeral drainages. Evaluated area for federally listed, state listed, and BLM sensitive species habitat, including populations of several BLM sensitive plant species. Exceptionally high amounts of Eriastrum harwoodii was found and dramatically changed the potential project boundary. Additionally, a detailed sand transport dataset was created using 3 other sand transport datasets.

Botanical and Wildlife Surveys and Permitting Support, Nivloc Solar Project Proposed Development, Esmeralda County, NV

Zack worked with the GIS team to develop a data management plan for use on the project. Additionally, a data sharing group in ArcGIS online was established with teaming partners to facilitate the ease of sharing data and deliverables. Leveraging a suite of field data collection methods using Esri software Survey123 and Field Maps along with other remote sensing equipment including Bat acoustic surveys. Data analysis will fulfill all applicable permits required on BLM land.



Nick Nielsen

Senior GIS Analyst

Nick delivers enterprise-level systems administration support and leverages GIS technology to streamline workflows and address complex technical challenges.

Education

BS, Geography and Geospatial Science, Oregon State University

Areas of Expertise

- Esri's ArcGIS Enterprise
- ArcGIS Online
- ArcGIS Pro
- ArcGIS Server Manager
- SQL Server Management Studio

Production Data Maintenance State of Colorado DOT, Denver, CO
Senior GIS Analyst. Provided consulting services on annual processes and reporting requirements for publication workflows including management of ArcGIS Enterprise for Portal (Test, Dev, and Prod), ArcGIS Server, and SQL databases via SSMS. Formalized documentation for training on developed processes to internal users. Performed the client's migration from ArcMap to ArcGIS Pro, leveraging ModelBuilder and Python to create custom tools essential for maintaining data integrity within Enterprise feature service environments. Created various Python script tools for validations and workflow streamlining during editing processes, improving process times for editor workflows to meet reporting requirements and timelines.

RAISI Project for New South Wales, Sydney, NSW
Senior GIS Consultant. Managed ETL functionality and logic accuracy for asset data migration to GIS. Managed LRS processes and accuracy, providing workflow documentation to the GIS team, and documentation for test script scenarios. Created a provisioning document required for architecture and design of UAT and Production environments. Acted as a subject matter expert on a required statewide datum transformation, providing the client with guidance on implementation timelines.

Crash Handler Development State of Kansas DOT, Topeka, KS
GIS Analyst. A custom developer tool was requested to leverage ArcGIS APIs that would consume live data via ArcGIS Portal. This tool identifies changes in emergency response data on a nightly basis to help pinpoint areas of concern based on spatial location and type. Activities involved providing QA/QC to developers, documenting bugs and their potential solutions. Created a custom QA/QC tool using ModelBuilder and provided supporting workflow documentation to the client that communicated proper tool functionality and outputs for client-level verification.



Megan Drummy

Communications Manager

Megan has experience leading public outreach and engagement for water, wastewater, and water reuse infrastructure projects. She specializes in developing strategic communication plans, translating technical content for public audiences, and fostering community support for complex infrastructure initiatives.

Education

B.A., Literary Journalism, University of California

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

Drought Response Planning; Santa Clara Valley Water District
Outreach Lead. 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.

Alvarado 2nd Pipeline Extension Project; City of San Diego, CA
Outreach Lead. 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.

Regional Recycled Water Program (now Pure Water Southern California), Metropolitan Water District of Southern California; Los Angeles, CA
Outreach Lead. Megan advised communications staff about the design of their water purification demonstration facility, including developing the facility tour pathway and 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.

Item No. 6

CONSENT CALENDAR
May 20, 2026

TO: **Board of Directors**

FROM: **Administration & Finance Committee**

Harvey De La Torre, General Manager

Staff Contact: Angela Crespi, District Secretary

SUBJECT: **ELECTION INFORMATION FOR SPECIAL DISTRICT – CANDIDATE'S STATEMENT OF QUALIFICATIONS**

STAFF RECOMMENDATION

Staff recommends the Board of Directors:

a. Determine whether the Candidate's Statement of Qualifications shall be limited to either 200 or 400 words;
b. Determine whether the District will or will not pay for the Candidate's Statement of Qualifications; and
c. Authorize staff to submit the Transmittal of Election Information form to the Orange County Registrar of Voters.

COMMITTEE RECOMMENDATION

The committee recommended the Board of Directors authorize staff to submit the Transmittal of Election Information form to the Orange County Registrar of Voters, indicating that the Candidate's Statement of Qualifications will be limited to 200 words and that the District will not pay for the statements.

REPORT

Purpose

This item requests the Municipal Water District of Orange County (MWDOC or District) Board of Directors (Board) provide direction supporting the Transmittal of Election Information form for the November 3, 2026 General Election.

Discussion

The Orange County Registrar of Voters (Registrar of Voters) provides election services for the citizens of Orange County to ensure equal access to the election process, protect the integrity of votes, and maintain a transparent, accurate and fair process. The District works collaboratively with the Registrar of Voters to facilitate the election process every two years. In the November 2026 General Election, Orange County voters will elect MWDOC Board Representatives for Divisions 1, 2, and 5.

As of the writing of this report, the District has not received the Transmittal of Election Information form or the cost for the Candidate's Statement of Qualifications. The Registrar of Voters' office will be providing the District with this information via email by mid-May. The completed form must then be returned to the Registrar of Voters' office by May 29, 2026.

As in years past, the Registrar of Voters requests the District determine the following:

- Whether to authorize a 200 or 400 word Candidate's Statement of Qualifications
- Whether the District will or will not pay for the statements

Historically, the Board has:

- Limited the Candidate's Statement of Qualifications to 200 words
- Elected not to pay for the statements

While the exact costs have yet to be received, a 200 word statement is estimated at $1,500-$2,500 each. Candidate's Statements range in price depending on length and number of candidates.

Next Steps

Upon receipt of the Transmittal of Election Information form, staff will complete the form based on Board direction and submit to the Registrar of Voters' office by the May 29, 2026 deadline.

ALIGNMENT WITH BOARD STRATEGIC PRIORITIES

☒ *Clarifying MWDOC's mission and role; defining functions and actions.*
☐ *Balance support for Metropolitan's regional mission and OC values and interests.*
☐ *Strengthen communication and coordination of messaging.*
☐ *Work with member agencies to develop water supply and demand objectives.*
☐ *Solicit input and feedback from member agencies.*
☐ *Invest in workforce development and succession planning.*

BOARD OPTIONS

Option #1: Determine whether the Candidate's Statement of Qualifications shall be limited to either 200 or 400 words; determine whether the District will or will not pay for the Candidate's Statement of Qualifications; and authorize staff to submit the Transmittal of Election Information form to the Orange County Registrar of Voters.

Fiscal Impact: There is no direct fiscal impact to the District by choosing either 200 or 400 words as a limit for the statements. Should the Board decide to pay for the statements, the exact fiscal impact will be determined by the authorized word limit and the cost estimates provided by the Registrar of Voters. Funds to pay for Candidate's Statement of Qualifications will come from reserves.

Option #2: Take no action.

Fiscal Impact: While there is no direct fiscal impact associated with not submitting the form Transmittal of Election Information form to the Orange County Registrar of Voters' office by the deadline, the Candidate's Statement of Qualifications would not be printed in the Voter Information Guide or published on the election official website.

Budgeted: ☐ Yes ☒ No ☐ N/A		Budgeted amount:
Core: ☒	Choice: ☐	Movement between Cost Centers: ☐ Yes ☐ No
Action item amount: Candidate's Statements range in price depending on length and number of candidates. A 200 word statement is estimated at $1,500-$2,500 each.		

Attachments/Links:
N/A

Item No. 7

ACTION ITEM
May 20, 2026

TO: **Board of Directors**

FROM: **Planning & Operations Committee**

Harvey De La Torre, General Manager

Staff Contact: Rachel Waite-Harvey, WUE Programs Supervisor

SUBJECT: **ADOPT A RESOLUTION TO SUPPORT A BUREAU OF RECLAMATION 2026 WATERSMART SMALL-SCALE WATER EFFICIENCY PROJECTS GRANT APPLICATION**

STAFF RECOMMENDATION

Staff recommends the Board of Directors adopt a resolution supporting a Bureau of Reclamation 2026 WaterSMART Small-Scale Water Efficiency Projects Grant Application.

COMMITTEE RECOMMENDATION

The committee concurred with staff recommendation.

REPORT

Purpose

This item requests the Municipal Water District of Orange County (MWDOC or District) Board of Directors (Board) adopt a resolution supporting a Bureau of Reclamation 2026 WaterSMART Small-Scale Water Efficiency Projects Grant Application. The potential grant funding supports MWDOC's mission to promote water efficiency and helps MWDOC Member Agencies comply with the Making Conservation a California Way of Life Framework (Way of Life Framework).

Discussion

In March 2026, the Bureau of Reclamation released its WaterSMART Small-Scale Water Efficiency Funding Opportunity No. R25AS00279, which requires all applicants to include

an official Board resolution supporting the grant application. Staff is prepared to submit a grant proposal for the Orange County Irrigation Efficiency Program (IE Program) by the June 2 deadline. This proposal seeks the maximum award of $125,000 and requires a 50% grantee cost-share requirement. MWDOC's $125,000 cost-share will be met by outside funding from Metropolitan Water District of Southern California's (Metropolitan) Conservation Credits Program and MWDOC staff time.

The proposed IE Program will facilitate the conversion to drip irrigation at residential, commercial, and public properties across Orange County. Using MWDOC's Spray-to-Drip Rebate Program infrastructure, federal funds will help incentivize property owners and managers to convert from traditional spray irrigation to an efficient drip system.

The primary benefit of the proposed IE Program is a reduction in outdoor water consumption, contributing to overall water supply reliability. Additionally, increased landscape water efficiency and the program availability will support MWDOC Member Agencies in meeting their Urban Water Use Objective (UWUO) and performance measure requirements, as mandated by the Way of Life Framework.

If awarded, staff is well prepared to work with the Bureau of Reclamation to implement and manage grant funds, as demonstrated by MWDOC's successful federal awards of $6.2 million over the last ten years.

Next Steps

Staff recommends the Board of Directors adopt a resolution supporting a Bureau of Reclamation 2026 WaterSMART Small-Scale Water Efficiency Projects Grant Application.

If approved, staff will include the resolution in the application package and submit it to the Bureau of Reclamation on or before the June 2 deadline. Notice of award is anticipated in December 2026. If the project is selected for an award, the anticipated project start date is June 2027.

ALIGNMENT WITH BOARD STRATEGIC PRIORITIES

- ☐ *Clarifying MWDOC's mission and role; defining functions and actions.*
- ☐ *Balance support for Metropolitan's regional mission and OC values and interests.*
- ☒ *Strengthen communication and coordination of messaging.*
- ☒ *Work with member agencies to develop water supply and demand objectives.*
- ☒ *Solicit input and feedback from member agencies.*
- ☐ *Invest in workforce development and succession planning.*

BOARD OPTIONS

Option #1: Adopt a resolution supporting a Bureau of Reclamation 2026 WaterSMART Small-Scale Water Efficiency Projects Grant Application.

Fiscal Impact: The grant proposal may result in an award of $125,000 in federal funds. Required match funding of $125,000 will be sourced from outside funding from Metropolitan's Conservation Credits Program.

Option #2: Do not adopt a Resolution supporting a Bureau of Reclamation 2026 WaterSMART Small-Scale Water Efficiency Projects Grant Application.

Fiscal Impact: A loss of potential federal grant funds totaling $125,000.

Budgeted: ☐ Yes ☐ No ☒ N/A		Budgeted amount:
Core: ☐	Choice: ☐	Movement between Cost Centers: ☐ Yes ☐ No
Action item amount:		

Attachments/Links:
Attachment 1: Draft resolution supporting a Bureau of Reclamation 2026 WaterSMART Small-Scale Water Efficiency Projects Grant Application

RESOLUTION NO. ____

RESOLUTION OF THE BOARD OF DIRECTORS OF MUNICIPAL WATER DISTRICT OF ORANGE COUNTY SUPPORTING A BUREAU OF RECLAMATION 2026 WATERSMART SMALL-SCALE WATER EFFICIENCY PROJECTS GRANT APPLICATION

WHEREAS, the Municipal Water District of Orange County (MWDOC) will submit an application to the Bureau of Reclamation requesting funding for the Orange County Irrigation Efficiency Program to promote water conservation in the MWDOC service area through the conversion from traditional spray to drip irrigation; and

WHEREAS, MWDOC is committed to developing and implementing an irrigation efficiency program designed to meet our local water supply reliability goals, Making Conservation a California Way of Life, and meet water efficiency standards as established by SB 606 and AB 1668; and

NOW, THEREFORE**,** BE IT RESOLVED, that the MWDOC Board of Directors designates the General Manager as the official who has reviewed and supports the application submittal and the legal authority to enter into an agreement on behalf of the District, and designates the Water Use Efficiency Programs Supervisor, as the District's representative to sign the progress reports and approve reimbursement claims; and

NOW, THEREFORE, BE IT FURTHER RESOLVED, that the MWDOC Board of Directors assures its capability to provide the amount of funding and in-kind contributions specified in the funding plan; and

NOW, THEREFORE, BE IT FURTHER RESOLVED, that MWDOC will work with the Bureau of Reclamation to meet established deadlines for entering into a cooperative agreement.

PASSED AND ADOPTED by the Board of Directors of the Municipal Water District of Orange County at its regular meeting held on May 20, 2026, by the following roll call vote:

AYES:
NOES:
ABSTAIN:
ABSENT:

_____

Angela Crespi
District Secretary
Municipal Water District of Orange County

Item No. 8

ACTION ITEM
May 20, 2026

TO: **Board of Directors**

FROM: **Planning & Operations Committee**

Harvey De La Torre, General Manager

Staff Contact: Sarina Sriboonlue, Principal Engineer
Charles Busslinger, Dir. of Engineering/Dist. Engineer

SUBJECT: **ADOPT RESOLUTIONS TO APPROVE THE 2025 WATER SHORTAGE CONTINGENCY PLAN AND 2025 URBAN WATER MANAGEMENT PLAN AND**

STAFF RECOMMENDATION

Staff recommends the Board of Directors:

a. Open the public hearing (as noticed) regarding the proposed 2025 Water Shortage Contingency Plan and proposed 2025 Urban Water Management Plan to receive input from the public;
b. Discuss and consider the proposed plans and resolutions;
c. Adopt a resolution Approving the Adoption of the 2025 Water Shortage Contingency Plan; and
d. Adopt a resolution Approving the Adoption of the 2025 Urban Water Management Plan.

COMMITTEE RECOMMENDATION

The committee directed staff to proceed with scheduling a public hearing for the May 20 Regular Board meeting to receive input from the public and consider adoption of the proposed plans.

REPORT

Purpose

This item requests the Municipal Water District of Orange County (MWDOC or District) Board of Directors (Board) conduct a public hearing to receive public input and allow the

Board to discuss and consider the proposed 2025 Water Shortage Contingency Plan (WSCP), proposed 2025 Urban Water Management Plan (UWMP) and their respective resolutions.

Background

The State of California requires all water suppliers (including wholesalers, either publicly or privately owned) that provide water for municipal purposes to more than 3,000 customers or supply more than 3,000 acre-feet annually to submit an updated UWMP to the Department of Water Resources (DWR) at least once every five years, in years ending in six and one. To meet the requirements of the California Urban Water Management Planning Action (Act), MWDOC must adopt and submit its 2025 UWMP and 2025 WSCP to DWR by July 1.

Discussion

MWDOC has completed its 2025 UWMP, fulfilling state requirements under the Act. The UWMP evaluates long-term projected demands, water supply reliability, and preparedness for water shortages for the 2025-2050 planning horizon.

Findings confirm that MWDOC is projected to meet water demands within its service area under normal, single-dry, and multiple-dry year conditions through 2050, supported by Metropolitan Water District of Southern California's (Metropolitan) regional portfolio for imported water, robust local groundwater production, and expanded recycled water programs.

The key technical elements of the 2025 UWMP encompass long-term projections of regional water demands and supplies through 2050, a comprehensive assessment of supply reliability under varying hydrologic conditions, a near-term drought risk evaluation for 2026–2030, documentation of regional wholesaler implementation of demand management measures, and an updated WSCP.

Water Demand and Supply Outlook (2025-2050)

- A modest population growth of 2.6% is projected for the MWDOC service area from 2.36 million in 2025 to ~2.43 million by 2050. Housing units are projected to increase from ~911,000 in 2025 to ~1,017,000 in 2050 with densification and Accessory Dwelling Units (ADU) growth reflected in demand projections.
- Average annual total water use within the MWDOC service area over the past five years is 406,563 acre-feet (AF) (FY 2020-2021 to 2024-25). Total water demand is projected to 414,936 AF by 2050.
- Imported water demand is projected to decrease by 7.7% from 123,753 AF (2025) to 114,275 AF (2050).
- Groundwater remains the backbone of regional local supply in north-central Orange County, supported by the Orange County Water District's expanded Groundwater Replenishment System (GWRS) to 130 million gallons per day (MGD). The Orange County Groundwater Basin's (OC Basin) Basin Production

Percentage (BPP) is projected to remain at 85% through 2050. Overall, local groundwater is expected to provide ~51% of total supplies by 2050 within the MWDOC service area.

- Recycled water use is projected to remain stable countywide, with moderate increases in South Orange County.

Water Supply Reliability

- MWDOC is projected to meet all imported water demands under normal, single-dry, and five-consecutive-dry year scenarios through 2050, based on Metropolitan's 2025 UWMP reliability assessment.
- Metropolitan's reliability is supported by diversified supplies, including the Colorado River Aqueduct, State Water Project, strong storage reserves (>3.8 million AF), as well as groundwater banking and transfer programs.
- Metropolitan's supply augmentation (e.g. storage withdrawals) closes any dry-year gaps to avoid shortages.
- Local reliability is enhanced by OC Basin management, increased recycled water, and new local supply projects, such as Doheny Ocean Desalination (5,600 AFY beginning 2030).

Water Shortage Contingency Plan

- The 2025 WSCP contains minor updates from the 2020 WSCP to reference updated resources, such as the MWDOC 2024 Multijurisdictional Hazard Mitigation Plan.
- The WSCP still maintains DWR's six standardized shortage levels (up to >50% reduction). The demand reduction and supply augmentation actions by shortage level in the 2025 WSCP remain consistent with the 2020 WSCP.
- Procedures for the Annual Water Supply and Demand Assessment (due to DWR every July 1), communication protocols, and emergency response also remain consistent.

Demand Management Measures

- MWDOC continues to support and implement a comprehensive suite of Demand Management Measures (DMMs) that help reduce potable water use, improve water system efficiency, reduce system losses, and help retail agencies meet state water conservation and water loss standards.
- As the regional wholesaler, MWDOC facilitates the implementation of DMMs throughout Orange County. MWDOC's efforts focus on three areas: Regional Program Implementation, Local Program Assistance, and Research and Evaluation.

Next Steps

Staff recommends the Board of Directors select Option #1 to open the public hearing (as noticed) regarding the proposed 2025 WSCP and proposed 2025 UWMP to receive input from the public; discuss and consider the proposed plans and resolutions; adopt a resolution Approving the Adoption of the 2025 WSCP; and adopt a resolution Approving the Adoption of the 2025 UWMP.

If approved, staff will carry out the following to fulfill the requirements of the Act:

- Finalize and submit the 2025 UWMP and 2025 WSCP to DWR by July 1;
- Provide copies to the California State Library and to any city or county within which MWDOC provides water supplies; and
- Make the 2025 WSCP and 2025 UWMP available for public review at MWDOC's offices and on its website.

ALIGNMENT WITH BOARD STRATEGIC PRIORITIES

☒ *Clarifying MWDOC's mission and role; defining functions and actions.*
☒ *Balance support for Metropolitan's regional mission and OC values and interests.*
☐ *Strengthen communication and coordination of messaging.*
☒ *Work with member agencies to develop water supply and demand objectives.*
☐ *Solicit input and feedback from member agencies.*
☐ *Invest in workforce development and succession planning.*

BOARD OPTIONS

Option #1: Open the public hearing (as noticed) regarding the proposed 2025 WSCP and proposed 2025 UWMP to receive input from the public; discuss and consider the proposed plans and resolutions; adopt a resolution Approving the Adoption of the 2025 WSCP; and adopt a resolution Approving the Adoption of the 2025 UWMP.

Fiscal Impact: None.

Option #2: Defer the Public Hearing and Adoption of the 2025 WSCP and 2025 UWMP to the June 17 Regular Board meeting.

Fiscal Impact: Depending on the reason for deferral, there could be additional funds needed to have MWDOC's consultants revise the documents. In addition, there could be fiscal impacts to MWDOC's Member Agencies, depending on the revisions.

Budgeted: ☐ Yes ☐ No ☒ N/A		Budgeted amount:
Core: ☐	Choice: ☐	Movement between Cost Centers: ☐ Yes ☐ No
Action item amount:		

Attachments/Links:
Attachment 1: Resolution No. 2174 Adopting the 2025 WSCP
Attachment 2: Resolution No. 2175 Adopting the 2025 UWMP
Attachment 3: Member Agency Comments
Attachment 4: 2025 UWMP & 2025 WSCP Presentation
Link 1: MWDOC 2025 UWMP Webpage https://www.mwdoc.com/your-water/urban-water-management-plan/

RESOLUTION NO. ____

**RESOLUTION OF THE
MUNICIPAL WATER DISTRICT OF ORANGE COUNTY
BOARD OF DIRECTORS
ADOPTING THE
WATER SHORTAGE CONTINGENCY PLAN**

WHEREAS, The California Urban Water Management Planning Act, (Water Code §10610, et seq.) (Act), requires urban water suppliers providing water for municipal purposes to more than 3,000 customers or supplying more than 3,000 acre feet of water annually to prepare and adopt, in accordance with prescribed requirements and procedures, a Water Shortage Contingency Plan (WSCP) as part of its Urban Water Management Plan (UWMP); and

WHEREAS, the Municipal Water District of Orange County (MWDOC) is an urban water supplier; and

WHEREAS, urban water suppliers are required to update, adopt and submit their WSCP to the California Department of Water Resources (DWR) by July 1, 2026; and

WHEREAS, in accordance with the Act, MWDOC has prepared its WSCP with its own staff, with the assistance of consulting professionals, and in cooperation with other governmental agencies, and has utilized and relied upon industry standards and the expertise of industry professionals in preparing its WSCP, and has also utilized DWR's 2025 UWMP Guidebook, including its related appendices, in preparing its WSCP; and

WHEREAS, in accordance with Water Code section 10621(b), a Notice of Plan Preparation was sent to the county and cities within which MWDOC provides water supplies at least 60 days before the required public hearing on its WSCP; and

WHEREAS, in accordance with applicable law, including but not limited to Water Code section 10642 and Government Code section 6066, a properly noticed public hearing was held on May 20, 2026, in order to provide members of the public and other interested entities with the opportunity to be heard in connection with proposed adoption of the WSCP and issues related thereto; and

WHEREAS, the Board of Directors has reviewed and considered the purposes and requirements of the Act, the contents of the WSCP, and the administrative record in support of the WSCP, and has determined that the factual analyses and conclusions set forth in the WSCP are legally sufficient; and

WHEREAS, the Board of Directors desires to adopt the WSCP and to incorporate it as part of its 2025 UWMP prior to July 1, 2026, in order to comply with the Act.

NOW THEREFORE BE IT RESOLVED, the Board of Directors of the Municipal Water District of Orange County resolves as follows:

Section 1. That the above recitals are true and correct.

Section 2. The Board of Directors hereby adopts the WSCP, as part of the UWMP, which the WSCP is incorporated herein by this reference, and will implement the WSCP in accordance with the terms set forth therein.

Section 3. Staff is hereby authorized and directed, in accordance with Water Code sections 10621(d) and 10644(a)(2), to submit a copy of the WSCP as part of its 2025 UWMP, to DWR no later than July 1, 2026.

Section 4. Staff is hereby authorized and directed, in accordance with Water Code section 10644(a)(1), to submit a copy of the WSCP, as part of its 2025 UWMP, to the California State Library, and to any city or county within which MWDOC provides water supplies no later than 30 days after this adoption date.

Section 5. Staff is hereby authorized and directed, in accordance with Water Code sections 10632(c) and 10645(b), to make the WSCP available to MWDOC's customers and to the county and cities within which MWDOC provides water supplies no later than 30 days after adoption, and further to make the WSCP available for public review at MWDOC's offices during normal business hours and on its website at www.mwdoc.com no later than 30 days after submitting the WSCP, as part of its 2025 UWMP, to DWR.

Section 6. The General Manager is hereby authorized and directed to implement the WSCP in accordance with the Act and to provide recommendations to the Board of Directors regarding the necessary budgets, procedures, rules, regulations, or further actions to carry out the effective and equitable implementation of the WSCP.

Section 7. The Board of Directors finds and determines that this resolution is not subject to the California Environmental Quality Act (CEQA) pursuant to Water Code Section 10652 because CEQA does not apply to the preparation and adoption of a WSCP or to the implementation of the actions taken pursuant to a WSCP. Because this resolution comprises Board of Director's adoption of its WSCP and involves its implementation, no CEQA review is required.

PASSED AND ADOPTED by the Board of Directors of the Municipal Water District of Orange County at its regular meeting held on May 20, 2026, by the following roll call vote:

AYES:
NOES:
ABSTAIN:
ABSENT:

_____

Angela Crespi
District Secretary
Municipal Water District of Orange County

Exhibit A

2025 Water Shortage Contingency Plan

Final Draft | April 2026



MWDOC 75 YEARS OF SERVICE

carollo

CDM Smith

Maddaus Water Management Inc.

MUNICIPAL WATER DISTRICT OF ORANGE COUNTY



2025 Water Shortage Contingency Plan

April 2026 / DRAFT

MUNICIPAL WATER DISTRICT OF ORANGE COUNTY

2025 Water Shortage Contingency Plan

April 2026 / DRAFT

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In collaboration with:

CDM Smith
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Abbreviations

%	Percent
AWSDA	Annual Water Supply and Demand Assessment
BPP	Basin Production Percentage
CAMP4W	MET's Climate Adaptation Master Plan for Water
CRA	Colorado River Aqueduct
DRA	Drought Risk Assessment
DVL	Diamond Valley Lake
DWR	California Department of Water Resources
EAP	Emergency Operations Center Action Plan
EBSD	Emerald Bay Services District
EOC	Emergency Operations Center
EOCWD	East Orange County Water District
EOP	Emergency Operations Plan
ETWD	El Toro Water District
FY	Fiscal Year
GRP	Groundwater Resilience Plan
GSP	Groundwater Sustainability Plan
GSWC	Golden State Water Company
IRP	Integrated Water Resource Plan
IRWD	Irvine Ranch Water District
KPI	Key Performance Indicator
LBCWD	Laguna Beach County Water District
M&I	Municipal and Industrial
Mesa Water	Mesa Water District
MET	Metropolitan Water District of Southern California
MJHMP	Multi-Jurisdictional Hazard Mitigation Plan
MNWD	Moulton Niguel Water District
MWDOC	Municipal Water District of Orange County
NIMS	National Incident Management System
OC Basin	Orange County Groundwater Basin
OC San	Orange County Sanitation District
OCWD	Orange County Water District
SCWD	South Coast Water District
SEMS	Standardized Emergency Management System
Serrano	Serrano Water District
SMWD	Santa Margarita Water District
SOCWA	South Orange County Water Authority

Supplier	Urban Water Supplier
SWP	State Water Project
TCWD	Trabuco Canyon Water District
UWMP	Urban Water Management Plan
Water Code	California Water Code
WEROC	Water Emergency Response Organization of Orange County
WSAP	Water Supply Allocation Plan
WSCP	Water Shortage Contingency Plan
WSDM	Water Surplus and Drought Management
WUE	Water Use Efficiency
YLWD	Yorba Linda Water District

SECTION 1 INTRODUCTION AND WSCP OVERVIEW

The Water Shortage Contingency Plan (WSCP) is a strategic planning document designed to prepare for and respond to water shortages. This WSCP complies with California Water Code (Water Code) Section 10632, which requires that every Urban Water Supplier (Supplier) shall prepare and adopt a WSCP as part of its Urban Water Management Plan (UWMP). This level of detailed planning and preparation is intended to help maintain reliable supplies and reduce the impacts of supply interruptions.

The WSCP is the Municipal Water District of Orange County's (MWDOC's) operating manual that is used to prevent catastrophic service disruptions through proactive, rather than reactive, management. A water shortage, when the water supply available is insufficient to meet the normally expected customer water use at a given point in time, may occur due to a number of reasons, such as population and land use growth, climate change, drought, and catastrophic events. This Plan provides a structured guide for MWDOC to deal with water shortages, incorporating prescriptive information and standardized action levels, along with implementation actions in the event of a catastrophic supply interruption. This way, if and when shortage conditions arise, MWDOC's governing body, its staff, and retail agencies can easily identify and efficiently implement pre-determined steps to manage a water shortage. A well-structured WSCP allows real-time water supply availability assessment and structured steps designed to respond to actual conditions, enabling efficient management of any shortage with predictability and accountability.

The WSCP also describes MWDOC's procedures for conducting an Annual Water Supply and Demand Assessment (AWSDA) that is required by Water Code Section 10632.1 and is to be submitted to the California Department of Water Resources (DWR) on or before July 1 of each year, or within 14 days of receiving final allocations from the State Water Project (SWP), whichever is later. MWDOC's 2025 WSCP is included as an appendix to its 2025 UWMP, which will be submitted to DWR by July 1, 2026. However, while developed in conjunction with the UWMP, this WSCP is a standalone document and can be amended, as needed, without amending the UWMP. Furthermore, the Water Code does not prohibit a Supplier from taking actions not specified in its WSCP, if needed, without having to formally amend its UWMP or WSCP.

1.1 WSCP Requirements and Organization

The WSCP provides the steps and water shortage response actions to be taken in times of water shortage conditions. WSCP has prescriptive elements, such as: an analysis of water supply reliability; the water shortage response actions for each of the six standard water shortage levels that correspond to water shortage percentages ranging from 10 percent (%) to greater than 50%; an estimate of potential to close supply gap for each measure; protocols and procedures to communicate identified actions for any current or predicted water shortage conditions; procedures for an AWSDA; and reevaluation and improvement procedures for evaluating the WSCP.

This WSCP is organized into three main sections, with Section 3 aligned with the Water Code Section 16032 requirements.

Section 1 Introduction and WSCP Overview gives an overview of the WSCP fundamentals.

Section 2 Background Information provides a background on MWDOC's water service area.

Section 3 Water Shortage Contingency Preparedness and Response Planning

Section 3.1 Water Supply Reliability Analysis provides a summary of the water supply analysis and water reliability findings from the 2025 UWMP.

Section 3.2 Annual Water Supply and Demand Assessment Procedures provides a description of procedures to conduct and approve the AWSDA.

Section 3.3 Six Standard Water Shortage Levels explains the WSCP's six standard water shortage levels corresponding to progressive ranges of up to 10, 20, 30, 40, 50, and more than 50% shortages.

Section 3.4 Shortage Response Actions describes the WSCP's shortage response actions that align with the defined shortage levels.

Section 3.5 Communication Protocols addresses communication protocols and procedures to inform customers, the public, interested parties, and local, regional, and state governments, regarding any current or predicted shortages and any resulting shortage response actions.

Section 3.6 Compliance and Enforcement is not required by wholesale water providers.

Section 3.7 Legal Authorities describes the legal authorities that enable MWDOC to implement and enforce its shortage response actions.

Section 3.8 Financial Consequences of WSCP provides a description of the financial consequences of and responses for drought conditions.

Section 3.9 Monitoring and Reporting is not required by wholesale water providers.

Section 3.10 WSCP Refinement Procedures addresses reevaluation and improvement procedures for monitoring and evaluating the functionality of the WSCP.

Section 3.11 Special Water Feature Distinction provides a required definition per the Water Code for retail water agencies, not applicable to MWDOC as a wholesale water supplier.

Section 3.12 Plan Adoption, Submittal, and Availability describes the process MWDOC followed to adopt its WSCP.

1.2 Integration With Other Planning Efforts

As a retail water supplier in Orange County, MWDOC considered other key entities in the development of this WSCP, including the Metropolitan Water District of Southern California (MET) (regional wholesaler for Southern California and the direct supplier of imported water to MWDOC), and Orange County Water District (OCWD) (Orange County Groundwater Basin [OC Basin] manager and provider of recycled water in North Orange County). As a wholesale water provider, MWDOC also worked with its retail agencies to align WSCP strategies to ensure robust water shortage planning and response across the District's service area. The DWR Submittal tables for MWDOC's WSCP can be found in Appendix A.

Some of the key planning and reporting documents that were used to develop this WSCP are:

- **MET's 2025 UWMP** uses assumptions that fall within the plausible futures contemplated in MET's Integrated Water Resources Plan to evaluate MET's future imported water supply reliability.
- **MET's 2025 WSCP** provides a water supply assessment and guide for MET's intended actions during water shortage conditions.

- **MWDOC's 2025 UWMP** provides the basis for the projections of the imported supply availability over the next 25 years for MWDOC's service area.
- **MWDOC's 2018 and 2023 Orange County Water Reliability Studies are** planning documents to help guide planning for future water supply reliability for water providers in Orange County and provide input on regional water supply issues for MET.
- **2025 Orange County Water Demand Projection Model Technical Memorandum** is a collaborative effort amongst MWDOC, OCWD, and all retail water suppliers in Orange County that developed water demand projections to produce regionally consistent forecasts across all Orange County water agencies.
- **OCWD's 2025 Groundwater Resilience Plan (GRP)** completed in February 2025 is an adaptive strategies management plan outlining strategic projects to secure reliable future water supplies in the OC Basin.
- **OCWD's 2023-24 Engineer's Report** provides information on the groundwater conditions, water supply, and basin utilization of the OC Basin.
- **OCWD's 2022 Basin 8-1 Alternative Plan** is an alternative to the Groundwater Sustainability Plan (GSP) for the OC Basin, provides significant information related to sustainable management of the basin in the past and hydrogeology of the basin, including groundwater quality and basin characteristics, and addresses DWR's recommendations to ensure long-term basin sustainability.
- **Groundwater Management Plans** provide the groundwater sustainability goals for the basins that supply groundwater to MWDOC's service area and the programs, actions, and strategies activities that support those goals.

  Orange County Water & Wastewater 2024 Multi-Jurisdictional Hazard Mitigation Plan (MJHMP) provides the basis for the seismic and other natural and natural disaster risk analysis of the water system facilities.

SECTION 2 BACKGROUND INFORMATION

MWDOC was formed by Orange County voters in 1951 under the Municipal Water District Act of 1911 to provide imported water to inland areas of Orange County. Governed by an elected seven-member Board of Directors, MWDOC is MET's third largest member agency based on assessed valuation.

MWDOC is a regional water wholesaler and resource planning agency, managing all of Orange County's imported water supply except for water imported to the cities of Anaheim, Fullerton, and Santa Ana. MWDOC is committed to ensuring water reliability for 27 water entities and retail water agencies in its 600-square-mile service area. To that end, MWDOC focuses on sound planning and appropriate investments in water supply, water use efficiency, regional delivery infrastructure, and emergency preparedness.

MWDOC's service area is characterized by southern California's "Mediterranean" climate with mild winters, warm summers, and moderate rainfall. In terms of land use, the northern part of MWDOC's service area is almost built out with predominantly residential units with pockets dedicated to commercial, institutional, governmental uses and open space and parks. The vacant lots in the southern portion of Orange County are gradually being developed into residential and commercial mixed-use areas.

MWDOC is led by service-driven working to secure Orange County's water future. MWDOC's seven-member Board of Directors, elected by the public, guides MWDOC's policies and programs. Each board member is elected from a specific area of the County and elected to a four-year term by voters who reside within that part of the MWDOC service area.

2.1 MWDOC Service Area

MWDOC serves more than 2.36 million residents in a 600-square-mile service area (Figure 1). Although MWDOC does not have its own water facilities and does not have jurisdiction over local supplies, it works to ensure the delivery of reliable water supplies to the region.

MWDOC serves imported water in Orange County to 27 water agencies, consisting of 13 cities and 13 water districts, along with one groundwater wholesale agency. In alphabetical order, MWDOC water retail agencies include the following:

- City of Brea
- City of Buena Park
- City of Fountain Valley
- City of Garden Grove
- City of Huntington Beach
- City of La Habra
- City of La Palma
- City of Newport Beach
- City of Orange
- City of San Clemente
- City of Seal Beach
- City of Tustin
- City of Westminster
- East Orange County Water District (EOCWD)
- El Toro Water District (ETWD)
- Emerald Bay Services District (EBSD)
- Irvine Ranch Water District (IRWD)
- Golden State Water Company (GSWC)
- Laguna Beach County Water District (LBCWD)
- Mesa Water District (Mesa Water)
- Moulton Niguel Water District (MNWD)
- Orange County Water District (OCWD)
- Santa Margarita Water District (SMWD)
- Serrano Water District (Serrano)
- South Coast Water District (SCWD)
- Trabuco Canyon Water District (TCWD)
- Yorba Linda Water District (YLWD)

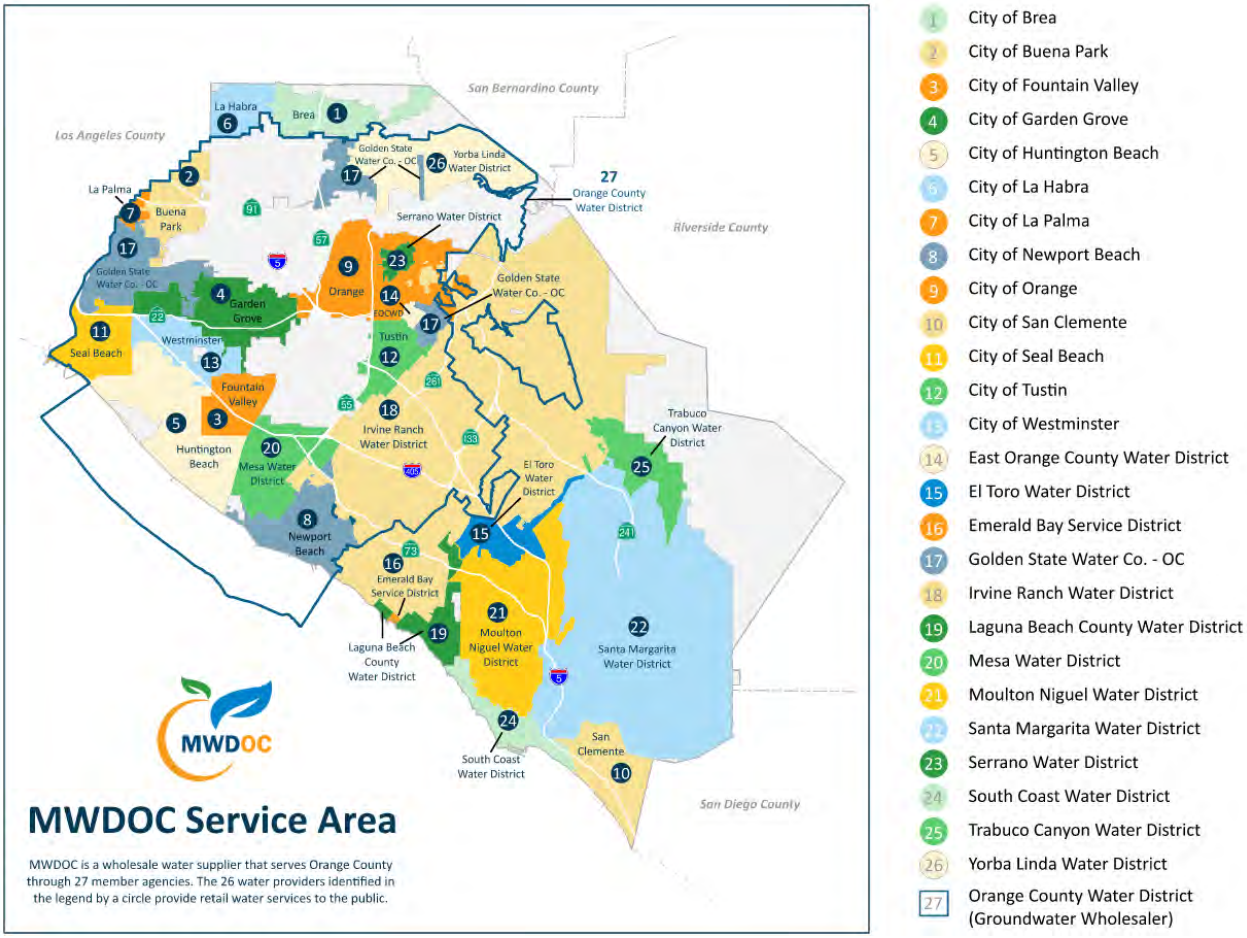


Figure 1 MWDOC Service Area

2.2 Relationship to MET

MWDOC became a member agency of MET in 1951 to bring supplemental imported water supplies to parts of Orange County. MET is the largest water wholesaler for domestic and municipal uses in California, serving approximately 19 million customers. MET's service area covers the southern California coastal plain, extending approximately 200 miles along the Pacific Ocean from the City of Oxnard in the north to the international boundary with Mexico in the south. This encompasses 5,200 square miles and includes portions of Los Angeles, Orange, Riverside, San Bernardino, San Diego, and Ventura counties. The regional locations of MET's member agencies are shown in Figure 2. Approximately 85% of the population from the aforementioned counties reside within MET's boundaries.

MET is governed by a Board of Directors comprised of 38 appointed individuals with a minimum of one representative from each of MET's 26 member agencies. The allocation of directors and voting rights are determined by each agency's assessed valuation. Each member of the Board shall be entitled to cast one vote for each ten million dollars ($10,000,000) of assessed valuation of property taxable for district purposes, in accordance with Section 55 of the Metropolitan Water District Act. Directors can be appointed through the chief executive officer of the member agency or by a majority vote of the governing board of the agency. Directors are not compensated by MET for their service.

MET is responsible for importing water into the region through its operation of the Colorado River Aqueduct (CRA) and its contract with the State of California for SWP supplies. MWDOC receives water from MET through various delivery points and pay for service through a rate structure made up of volumetric rates, capacity charges and readiness to serve charges. MWDOC provides estimates of imported water demand to MET annually in April regarding the amount of water they anticipate they will need to meet their demands for the next five years.

In Orange County, MWDOC and the cities of Anaheim, Fullerton, and Santa Ana are MET member agencies that purchase imported water directly from MET. Furthermore, MWDOC purchases both treated potable and untreated water from MET to supplement its retail agencies' local supplies.

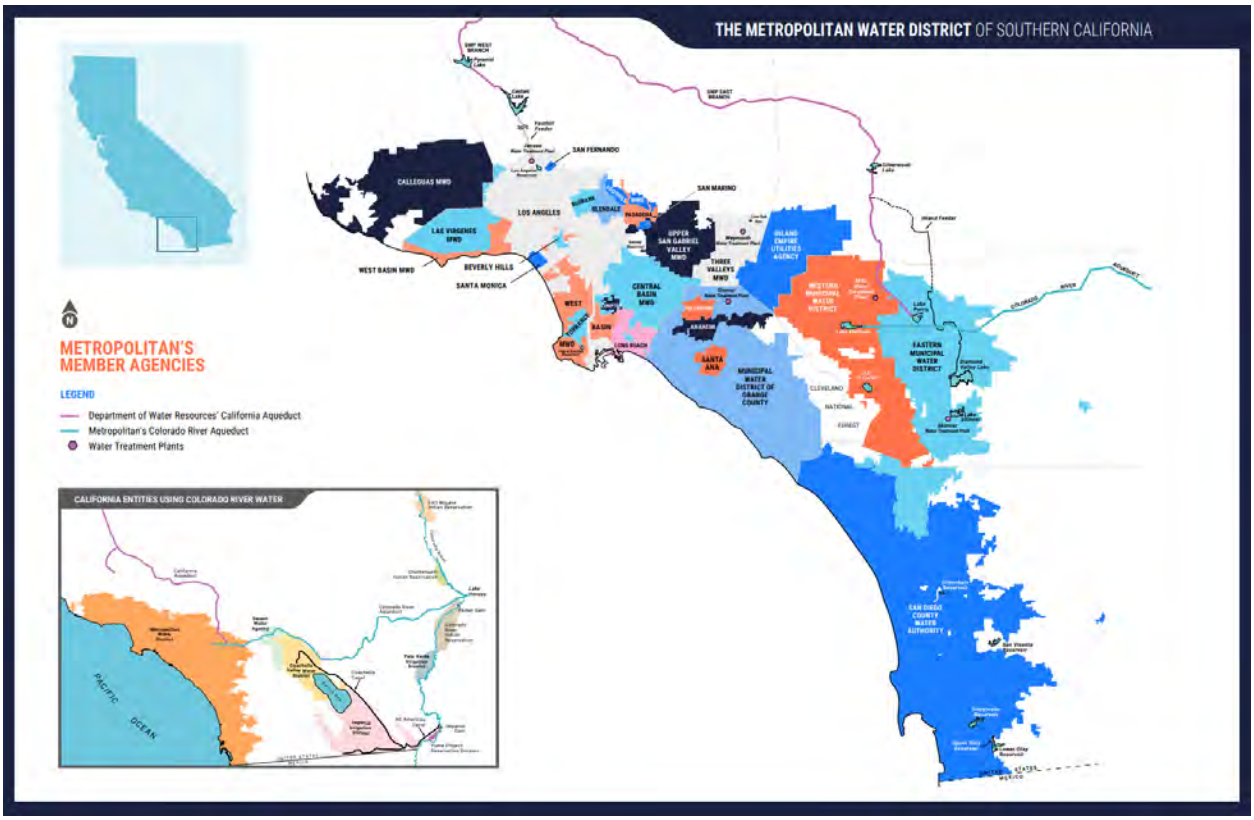


Figure 2 Regional Location of MET's Member Agencies

2.3 Relationship with MET Water Shortage Planning

The MWDOC WSCP is designed to be consistent with MET's WSCP, MET's Water Surplus and Drought Management (WSDM) Plan, MET's Water Supply Allocation Plan (WSAP), MWDOC's WSAP, and other emergency planning efforts as described below. MET and MWDOC's WSAPs are integral to the WSCP's shortage response strategy. In the event that MET determines that supply augmentation (including dedicated drought storage supply) and demand reduction measures would not be sufficient to meet projected supply needs, MET will determine shortage conditions exist and assign a water shortage level required for MWDOC's service area to meet a reduction in demands. In turn, MWDOC will need to further assess the shortage conditions within their service area to meet member agencies' demands and as required activate MWDOC's WSAP. If applicable, MWDOC will also need to invoke water shortage level

conditions appropriate to meet projected member agencies' demands as described further in Section 2.3.3 below.

2.3.1 MET Water Surplus and Drought Management Plan

MET evaluates the level of supplies available and existing levels of water in storage to determine the appropriate management stage annually. Each stage is associated with specific resource management actions to avoid extreme shortages to the extent possible and minimize adverse impacts to retail customers should an extreme shortage occur. The sequencing outlined in the WSDM Plan reflects anticipated responses towards MET's existing and expected resource mix.

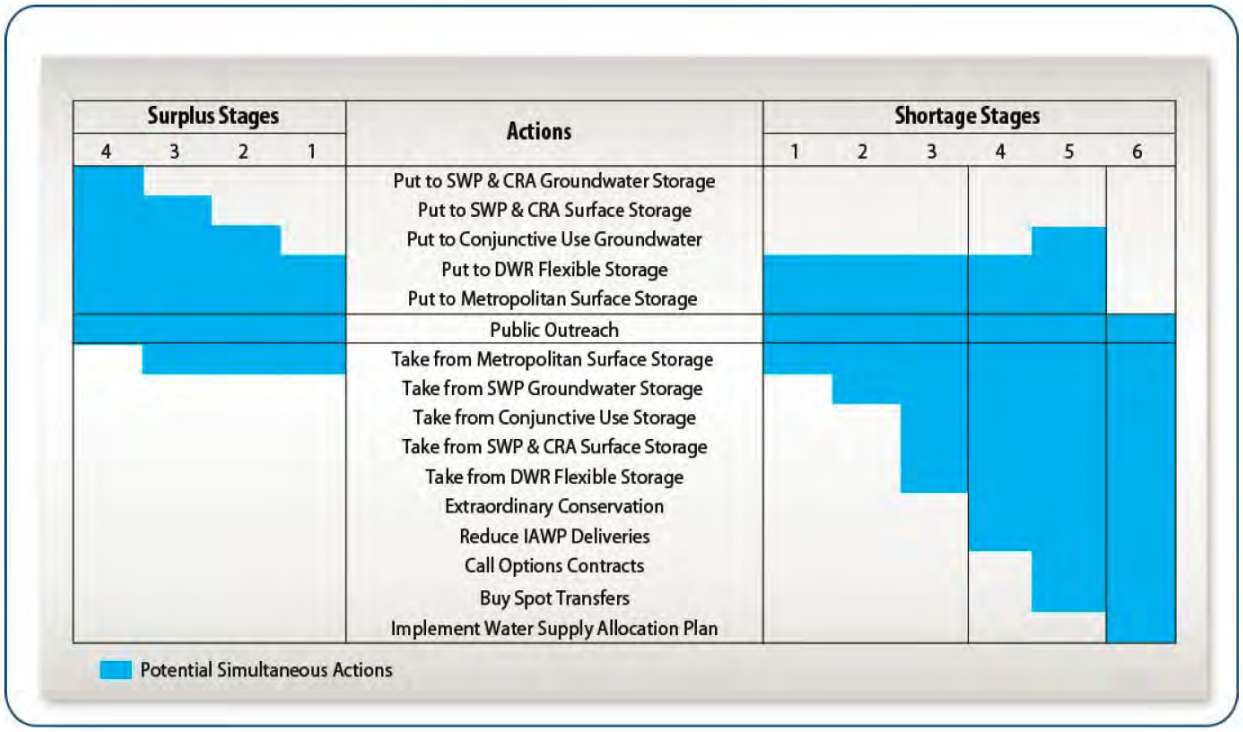
Surplus stages occur when net annual deliveries can be made to water storage programs. Under the WSDM Plan, there are four surplus management stages that provides a framework for actions to take for surplus supplies. Deliveries in Diamond Valley Lake (DVL) and in SWP terminal reservoirs continue through each surplus stage provided there is available storage capacity. Withdrawals from DVL for regulatory purposes or to meet seasonal demands may occur in any stage.

The WSDM Plan distinguishes between shortages, severe shortages, and extreme shortages. The differences between each term are listed below:

- **Shortage:** MET can meet full-service demands and partially meet or fully meet interruptible demands using stored water or water transfers, as necessary (Stages 1-3).
- **Severe Shortage:** MET can meet full-service demands only by making withdrawals from storage, calling on its water transfers, and possibly calling for extraordinary conservation and reducing deliveries under the Interim Agricultural Water Program (Stages 4-5).
- **Extreme Shortage:** MET must allocate available imported supplies to full-service customers (Stage 6).

There are six shortage management stages to guide resource management activities. These stages are defined by shortfalls in imported supply and water balances in MET's storage programs. When MET must make net withdrawals from storage to meet demands, it is considered to be in a shortage condition.

Figure 3 gives a summary of actions under each surplus and shortage stages when an allocation plan is necessary to enforce mandatory cutbacks. The goal of the WSDM Plan is to avoid Stage 6, an extreme shortage (MET, 2026b).



Source: MET's 2025 UWMP .

Figure 3 Resource Stages, Anticipated Actions, and Supply Declarations

MET's Board of Directors adopted a Water Supply Condition Framework in June 2008 to communicate the urgency of the region's water supply situation and the need for further water conservation practices. The framework has four conditions, each calling increasing levels of conservation. Descriptions for each of the four conditions are listed below:

- **Baseline Water Use Efficiency**: Ongoing conservation, outreach, and recycling programs to achieve permanent reductions in water use and build storage reserves.
- **Condition 1 Water Supply Watch**: Local agency voluntary dry-year conservation measures and use of regional storage reserves.
- **Condition 2 Water Supply Alert:** Regional call for cities, counties, member agencies, and retail water agencies to implement extraordinary conservation through drought ordinances and other measures to mitigate use of storage reserves.
- **Condition 3 Water Supply Allocation**: Implement MET's WSAP.

As noted in Condition 3, should supplies become limited to the point where imported water demands cannot be met, MET will allocate water through the WSAP (MET, 2026a).

2.3.2 MET Water Supply Allocation Plan

MET's imported supplies have been impacted by a number of water supply challenges as noted earlier. In case of extreme water shortage within the MET service area is the implementation of its WSAP.

MET's Board of Directors adopted the WSAP in February 2008 to fairly distribute a limited amount of water supply and applies it through a detailed methodology to reflect a range of local conditions and needs of the region's retail water consumers (MET, 2026b).

The WSAP includes the specific formula for calculating member agency supply allocations and the key implementation elements needed for administering an allocation. MET's WSAP is the foundation for the urban water shortage contingency analysis required under Water Code Section 10632 and is part of MET's 2025 UWMP.

MET's WSAP was developed in consideration of the principles and guidelines in MET's 1999 WSDM Plan with the core objective of creating an equitable "needs-based allocation". The WSAP's formula seeks to balance the impacts of a shortage at the retail level while maintaining equity on the wholesale level for shortages of MET supplies of greater than 50%. The formula takes into account a number of factors, such as the impact on retail customers, growth in population, changes in supply conditions, investments in local resources, demand hardening aspects of water conservation savings, recycled water, extraordinary storage and transfer actions, and groundwater imported water needs.

The formula is calculated in three steps: 1) base period calculations, 2) allocation year calculations, and 3) supply allocation calculations. The first two steps involve standard computations, while the third step contains specific methodology developed for the WSAP.

Step 1: Base Period Calculations – The first step in calculating a member agency's water supply allocation is to estimate their water supply and demand using a historical based period with established water supply and delivery data. The base period for each of the different categories of supply and demand is calculated using data from the two most recent non-shortage years.

Step 2: Allocation Year Calculations – The next step in calculating the member agency's water supply allocation is estimating water needs in the allocation year. This is done by adjusting the base period estimates of retail demand for population growth and changes in local supplies.

Step 3: Supply Allocation Calculations – The final step is calculating the water supply allocation for each member agency based on the allocation year water needs identified in Step 2.

In order to implement the WSAP, MET's Board of Directors makes a determination on the level of the regional shortage, based on specific criteria, typically in April. The criteria used by MET includes, current levels of storage, estimated water supplies conditions, and projected imported water demands. The allocations, if deemed necessary, go into effect in July of the same year and remain in effect for a 12-month period. The schedule is made at the discretion of the Board of Directors (MET, 2026b).

As demonstrated by the findings in MET's 2025 UWMP, both the Water Reliability Assessment and the Drought Risk Assessment (DRA) demonstrate that MET is projecting to be able to mitigate the challenges posed by hydrologic variability, potential climate change, and regulatory risk on its imported supply sources through the significant storage capabilities it has developed over the last two decades, both dry-year and emergency storage (MET, 2026b).

Although MET's 2025 UWMP forecasts that MET will be able to meet projected imported demands throughout the projected period from 2026 to 2050, uncertainty in supply conditions can result in MET needing to implement its WSAP to preserve dry-year storage and curtail demands (MET, 2026b).

2.3.3 MWDOC Water Supply Allocation Plan

To prepare for the potential allocation of imported water supplies from MET, MWDOC worked collaboratively with its 27 retail agencies to develop its own WSAP that was adopted in January 2009 and amended in 2020. The MWDOC WSAP outlines how MWDOC will determine and implement each of its retail agencies' allocation during a time of shortage.

The MWDOC WSAP uses a similar method and approach, when reasonable, as that of the MET's WSAP. However, MWDOC's plan remains flexible to use an alternative approach when MET's method produces a significant unintended result for the member agencies. The MWDOC WSAP model follows five basic steps to determine a retail agency's imported supply allocation:

Step 1: Determine Baseline Information – The first step in calculating a water supply allocation is to estimate water supply and demand using a historical base period with established water supply and delivery data. The base period for each of the different categories of demand and supply is calculated using data from the last two non-shortage years.

Step 2: Establish Allocation Year Information – In this step, the model adjusts for each retail agency's water need in the allocation year. This is done by adjusting the base period estimates for increased retail water demand based on population growth and changes in local supplies.

Step 3: Calculate Initial Minimum Allocation Based on MET's Declared Shortage Level – This step sets the initial water supply allocation for each retail agency. After a regional shortage level is established, MWDOC will calculate the initial allocation as a percentage of adjusted base period imported water needs within the model for each retail agency.

Step 4: Apply Allocation Adjustments and Credits in the Areas of Retail Impacts and Conservation– In this step, the model assigns additional water to address disparate impacts at the retail level caused by an across-the-board cut of imported supplies. It also applies a conservation credit given to those agencies that have achieved additional water savings at the retail level as a result of successful implementation of water conservation devices, programs, and rate structures.

Step 5: Sum Total Allocations and Determine Retail Reliability – This is the final step in calculating a retail agency's total allocation for imported supplies. The model sums an agency's total imported allocation with all of the adjustments and credits and then calculates each agency's retail reliability compared to its Allocation Year Retail Demand.

The MWDOC WSAP includes additional measures for plan implementation, including the following (MWDOC, 2016):

- **Appeal Process** – An appeals process to provide retail agencies the opportunity to request a change to their allocation based on new or corrected information. MWDOC anticipates that under most circumstances, a retail agency's appeal will be the basis for an appeal to MET by MWDOC.
- **Melded Allocation Surcharge Structure** – At the end of the allocation year, MWDOC would only charge an allocation surcharge to each retail agency that exceeded their allocation if MWDOC exceeds its total allocation and is required to pay a surcharge to MET. MET enforces allocations to retail agencies through an allocation surcharge to a retail agency that exceeds its total annual allocation at the end of the 12-month allocation period. MWDOC's surcharge would be assessed according to the retail agency's prorated share (acre-feet over usage) of MWDOC amount with MET.

Surcharge funds collected by MET will be invested in its Water Management Fund, which is used in part to fund expenditures in dry-year conservation and local resource development.

- **Tracking and Reporting Water Usage** – MWDOC will provide each retail agency with water use monthly reports that will compare each retail agency's current cumulative retail usage to their allocation baseline. MWDOC will also provide quarterly reports on its cumulative retail usage versus its allocation baseline.
- **Timeline and Option to Revisit the Plan** – The allocation period will cover 12 consecutive months and the Regional Shortage Level will be set for the entire allocation period. MWDOC only anticipates calling for allocation when MET declares a shortage; and no later than 30 days from MET's declaration will MWDOC announce allocation to its retail agencies.

SECTION 3 WATER SHORTAGE CONTINGENCY PREPAREDNESS AND RESPONSE PLANNING

MWDOC's WSCP is a detailed guide of how MWDOC intends to act in the case of an actual water shortage condition. The WSCP anticipates a water supply shortage and provides pre-planned guidance for managing and mitigating a shortage. Regardless of the reason for the shortage, the WSCP is based on adequate details of demand reduction and supply augmentation measures that are structured to match varying degrees of shortage to ensure the relevant stakeholders understand what to expect during a water shortage situation.

3.1 Water Supply Reliability Analysis

Per Water Code Section 10632 (a)(1), the WSCP shall provide an analysis of water supply reliability conducted pursuant to Water Code Section 10635, and the key issues that may create a shortage condition when looking at MWDOC's water asset portfolio.

Understanding water supply reliability, factors that could contribute to water supply constraints, availability of alternative supplies, and what effect these have on meeting customer demands provides MWDOC with a solid basis on which to develop appropriate and feasible response actions in the event of a water shortage. For the 2025 UWMP, MWDOC conducted a Water Reliability Assessment to compare the total water supply sources available to the Supplier with long-term projected water use over the next 25 years, in five-year increments, for each agency (MWDOC, 2025, 2023).

MWDOC also conducted a DRA to evaluate a drought period that lasts five consecutive water years starting from the year following when the assessment is conducted (2026-2030). An analysis of both assessments determined that MWDOC is capable of meeting all of its member agencies' imported water demands from 2026 through 2050 for a normal year, a single dry year, and a drought lasting five consecutive dry years with significant supplemental dedicated drought supplies from MET and ongoing water use efficiency program efforts from its member agencies. MET's projections take into account the imported demands from Orange County and as so, MET's water reliability assessments determine that demands within MWDOC can be met, and the development of numerous local sources further augments the reliability of the imported water system. As a result, there is no projected shortage condition due to

drought that will trigger agency demand reductions until MET notifies MWDOC of its implementation of its WSAP. More information is available in MWDOC's 2025 UWMP Section 6 and 7 (MWDOC, 2026).

3.2 Annual Water Supply and Demand Assessment Procedures

Per Water Code Section 10632.1, MWDOC will conduct an annual water supply and demand assessment pursuant to subdivision (a) of Section 10632 and by July 1 of each year, beginning in 2022, submit an AWSDA with information for anticipated shortage, triggered shortage response actions, compliance and enforcement actions, and communication actions consistent with the Supplier's WSCP.

MWDOC must include in its WSCP the procedures used for conducting an AWSDA. The AWSDA is a determination of the near-term outlook for supplies and demands and how a perceived shortage may relate to WSCP shortage stage response actions in the current calendar year. This determination is based on information available to MWDOC at the time of the analysis. Starting in 2022, the AWSDA is due by July 1 of every year.

This section documents the decision-making process required for formal approval of MWDOC's AWSDA determination of water supply reliability each year, the key data inputs, and the methodologies used to evaluate the water system reliability for the coming year, while considering that the year to follow would be considered dry.

3.2.1 Decision-Making Process

The following decision-making process describes the functional steps that MWDOC will take to formally approve the AWSDA determination of water supply reliability each year.

3.2.1.1 MWDOC Steps to Approve the AWSDA Determination

The MWDOC AWSDA will be predicated on MET's WSDM supply demand tracking, which is reported monthly to their Board of Directors. MET WSDM planning involves the examination of developing demand and supply conditions for the calendar year, as well as considerations of potential actions consistent with the WSDM Plan. Additionally, MWDOC staff simultaneously provides water supplies and demand reports to its Board of Directors to inform them of emerging demand and supply conditions. These monthly analyses provide key information for MWDOC and MET to manage resources to meet a range of estimated demands and adjust to changing conditions throughout the year.

For many of MWDOC's member agencies, their primary source of water is produced locally from groundwater basins, recycle water projects, surface reservoirs, and groundwater recovery projects. Their remaining source to meet retail demands comes from the purchase of imported water from MWDOC. However, some member agencies, particularly in South Orange County, rely heavily on imported water due to limited local supplies. As described below, MWDOC surveys each member agency to project near term and long-term consumptive and replenishment imported water demands.

Annually, MWDOC surveys its member agencies for anticipated water demands and supplies for the upcoming year. MWDOC utilizes this information to plan for the anticipated imported water supplies for the MWDOC service area. This information is then shared and coordinated with MET and is incorporated into their analysis of their service area's annual imported water needs. Based on the year's supply

conditions and WSDM actions, MET will present a completed AWSDA for its member agencies' review from which they will then seek Board approval in April of each year.

Additionally, MET expects that any triggers or specific shortage response actions that result from the AWSDA would be approved by their Board at that time. Based upon MET's Assessment and taking into consideration information provided to MWDOC through the annual survey, MWDOC will provide each member agency with an anticipated estimate of imported supplies by member agency to be incorporated into each agency's annual supply and demand assessment. MWDOC will then approve its completed AWSDA prior to the July 1 deadline, so MWDOC's member agencies will be able to submit their AWSDA by the July 1 DWR deadline. Figure 4 provides a breakdown of the decision-making process.

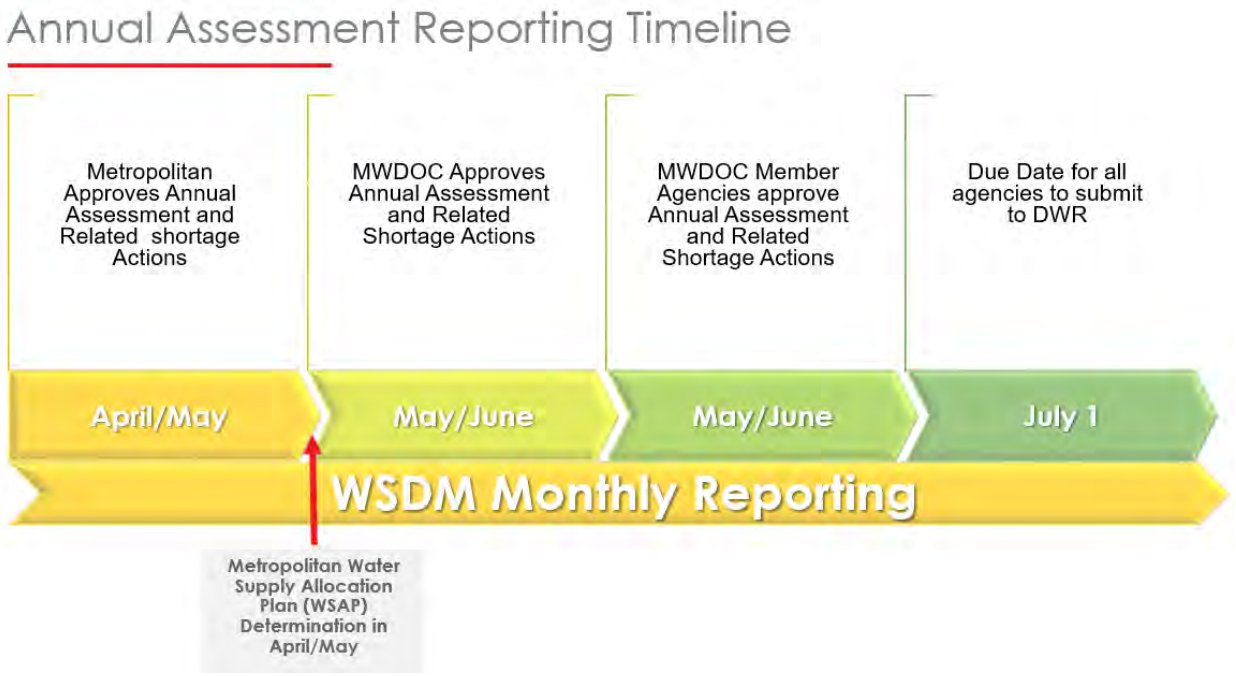


Figure 4 Sample AWSDA Reporting Timeline

3.2.2 Data and Methodologies

The following paragraphs document the key data inputs and methodologies that are used to evaluate MWDOC's water system reliability for the coming year, while considering that the year to follow would be considered dry.

3.2.2.1 Assessment Methodology

MWDOC will evaluate water supply reliability for the current year and one dry year for the purpose of the AWSDA. The AWSDA determination will be based on considerations of unconstrained water demand, local water supplies, MET imported water supplies, planned water use, and infrastructure considerations. The balance between projected in-service area supplies, coupled with MET imported supplies, and anticipated unconstrained demand will be used to determine what, if any, shortage level is expected under the WSCP framework as presented in Figure 5. The WSCP's standard shortage levels are defined in terms of shortage percentages. Shortage percentages will be calculated by dividing the difference

between water supplies and unconstrained demand by total unconstrained demand. This calculation will be performed separately for anticipated current year conditions and for assumed dry year conditions. More information on the basis of this calculation is available in MWDOC's 2025 UWMP Section 6 and 7.

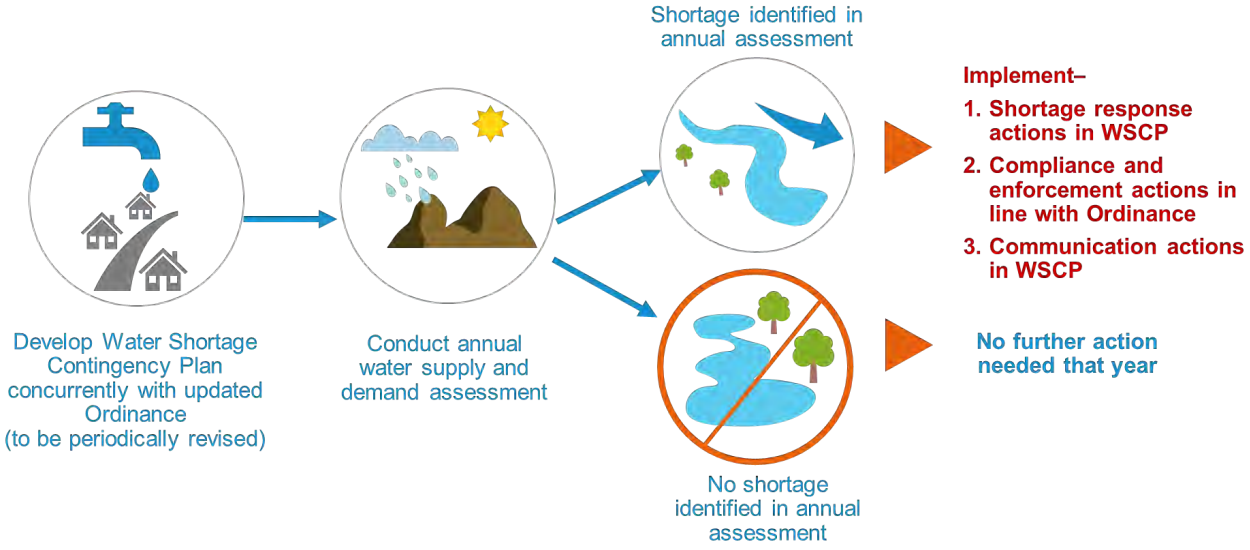


Figure 5 Water Shortage Contingency AWSDA Framework

3.2.2.2 Locally Applicable Evaluation Criteria

The information and analyses that comprise the AWSDA are based on ongoing planning processes that include the monthly WSDM supply-demand reporting. The AWSDA represents a mid-year evaluation at a given point in time; even after formal approval and submittal of the AWSDA determination by July 1, MWDOC will continue to monitor emerging supply and demand conditions and take appropriate actions consistent with the flexibility and adaptiveness inherent to the WSCP. Some conditions that affect MWDOC's wholesale supply and demand, such as groundwater replenishment, surface water and local supply production, can differ significantly from earlier projections throughout the year.

Within Orange County, there are no significant local applicable criteria that directly affect reliability. Through the years, the water agencies in Orange County have made tremendous efforts to integrate their systems to provide flexibility to interchange with different sources of supplies. There are emergency agreements in place to ensure all parts of the County have an adequate supply of water. In the northern part of the County, agencies have the ability to meet a majority of their demands through groundwater with very little limitation, except for the OCWD Basin Production Percentage (BPP) as provided to each agency. For the agencies in southern Orange County, most of their demands are met with imported water where their limitation is based on the capacity of their system, which is considered sufficient to meet anticipated demands.

However, if a major earthquake on the San Andreas Fault occurs, it has the potential to damage all three key regional water aqueducts and disrupt imported supplies for up to six months. The region would likely impose a water use reduction ranging from 25-35% until the system is repaired. However, MET has taken proactive steps to handle such disruption, such as constructing DVL, and prepositioning necessary reconstruction resources to quickly recover from such a seismic event, which mitigates potential impacts.

DVL, along with other local reservoirs, can store a six to twelve-month supply of emergency water (MET, 2026a).

3.2.2.3 Water Supply

MWDOC is the regional wholesaler of imported water that provides treated and untreated water purchased from MET for Municipal and Industrial (M&I) (direct) and non-M&I (indirect) uses within its service area. In Fiscal Year (FY) 2024-25, imported water represented 31 percent of total water supply in the MWDOC service area. However, imported water volume varies year to year; over the last 10 years, it has represented approximately 30 percent of total M&I water supply for MWDOC. As detailed in MWDOC's 2025 UWMP, water supplies within MWDOC's service area are from local and imported sources. Local supplies developed by other entities and retail agencies include groundwater, recycled water, and surface water. Local sources presently account for 69% of the MWDOC service area's water supplies, whereby groundwater is the major source of local supply.

3.2.2.4 Unconstrained Customer Demand

The WSCP and AWSDA define unconstrained demand as expected water use prior to any projected shortage response actions that may be taken under the WSCP. Unconstrained demand is distinguished from observed demand, which may be constrained by preceding, ongoing, or future actions, such as emergency supply allocations during a multi-year drought. WSCP shortage response actions to constrain demand are inherently extraordinary; routine activities such as ongoing conservation programs and regular operational adjustments are not considered as constraints on demands.

MWDOC's DRA reveals that its supply capabilities are expected to balance anticipated total water use and supply, assuming a five-year consecutive drought from fiscal year 2025-2026 through 2029-2030. This is based on the water demand projection model, which shows that in a single dry year, demand is expected to increase by five percent above a normal year (MWDOC, 2025).

For MWDOC, the five consecutive dry year demand scenario is based on the demand model's multiple dry year methodology. In accordance with the econometric demand model approach used to develop UWMP demand projections, a single hot/dry year was first identified based on weather conditions that produced the greatest demand response. Consecutive dry years were then represented by applying incremental scaling factors to this single hot/dry year demand to account for the compounding effects of persistent warm and dry conditions over time. These scaling factors show long-term relationships between regional water use and multi-year temperature and precipitation deficits and are applied sequentially to simulate second through fifth consecutive dry years. This approach is consistent with the demand modeling framework summarized in Chapter 7 of MWDOC's UWMP.

3.2.2.5 Planned Water Use for Current Year Considering Dry Subsequent Year

Water Code Section 10632(a)(2)(B)(ii) requires the AWSDA to determine "current year available supply, considering hydrological and regulatory conditions in the current year and one dry year".

The AWSDA will include two separate estimates of MWDOC's annual water supply and unconstrained demand using: 1) current year conditions, and 2) assumed dry year conditions. Accordingly, the AWSDA's shortage analysis will present separate sets of findings for the current year and dry year scenarios. The Water Code does not specify the characteristics of a dry year, allowing discretion to the Supplier. MWDOC

will use its discretion to refine and update its assumptions for a dry year scenario in each AWSDA as information becomes available and in accordance with best management practices.

In MWDOC's 2025 UWMP, the "single dry year" is characterized to resemble conditions as a year in which conditions reflect the lowest water supply available to the Supplier. Supply and demand analyses for the single-dry year case were based on conditions affecting the SWP as this supply availability fluctuates the most among MET's, and therefore MWDOC's, sources of supply. Severe drought conditions in 2021-2022 affected most of the Western United States, including the Colorado River system, which caused its water supply to decrease. As conditions worsened, Lake Mead and Lake Powell (the largest storage units in the system), had a combined total storage capacity of 25% in 2022, a significant decrease from 39% in 2021 (MWDOC, 2026).

The Orange County Water Demand Projection Model isolated the impacts that weather and future climate can have on water demand through the use of a statistical model. The impacts of hot/dry weather conditions are reflected as a percentage increase in water demands from the normal year condition. For a single dry year condition (FY 2013-14), the model projects a 5% increase in demand for the OC Basin area (MWDOC, 2025). Detailed information of the model is included in MWDOC's 2025 UWMP.

3.2.2.6 Infrastructure Considerations

With the sale of the Allen-McColloch Pipeline to MET in 1995, MWDOC no longer owns or operates a distribution system. However, as the regional wholesale agency of imported water, MWDOC closely coordinates with MET and its own member agencies on any planned infrastructure work that may impact water supply availability. The AWSDA will include consideration of any infrastructure issues that may pertain to near-term water supply reliability, including repairs, construction, and environmental mitigation measures that may temporarily constrain capabilities, as well as any new projects that may add to system capacity. Throughout each year, MET regularly carries out preventive and corrective maintenance of its facilities within the MWDOC service area that may require shutdowns. MET plans and performs shutdowns to inspect and repair pipelines and facilities and support capital improvement projects. These shutdowns involve a high level of planning and coordination between MWDOC, MWDOC's Member Agencies, and MET. These shutdowns are scheduled to ensure that major portions of the distribution system are not out of service at the same time. Operational flexibility within MET's system and the cooperation of member agencies allow shutdowns to be successfully completed while continuing to meet all system demands.

3.3 Six Standard Water Shortage Levels

Per Water Code Section 10632 (a)(3)(A), Suppliers must include the six standard water shortage levels that represent shortages from the normal reliability as determined in the AWSDA or cross-reference their shortage levels to the standard levels. The shortage levels have been standardized to provide a consistent regional and statewide approach to conveying the relative severity of water supply shortage conditions. This is an outgrowth of the severe statewide drought of 2012-2016, and the widely recognized public communication and state policy uncertainty associated with the many different local definitions of water shortage levels.

The six standard water shortage levels correspond to progressively increasing estimated shortage conditions (up to 10%, 20%, 30%, 40%, 50%, and greater than 50% shortage compared to the normal

reliability condition) and align with the response actions MWDOC would implement to meet the severity of the impending shortages (Table 1).

Table 1 Cross-Reference for Standard vs Supplier Shortage Levels

Submittal Table 8-1: Cross-reference for Standard vs Supplier Shortage Levels Water Code Section 10632(a)(3)(B)			
☑	Check the box if the Supplier uses the Standard six levels of water shortage. Proceed to the next table.		
Standard Shortage Levels	**Percent Shortage Range**	**Suppliers Shortage Levels**	**Percent Shortage Range**
1	Up to 10%		
2	Up to 20%		
3	Up to 30%		
4	Up to 40%		
5	Up to 50%		
6	>50%		
NOTES:			

3.4 Shortage Response Actions

Water Code Section 10632 (a)(4) requires the WSCP to specify shortage response actions that align with the defined shortage levels. MWDOC has defined specific shortage response actions that align with the defined shortage levels in DWR Tables 8-2 and 8-3 (Appendix A). These shortage response actions were developed with consideration of the system infrastructure and operations changes, supply augmentation responses, customer-class or water use-specific demand reduction initiatives, and increasingly stringent water use prohibitions.

3.4.1 Supply Augmentation

Supply Augmentation actions for MWDOC represent short-term management objectives triggered by the MET's WSDM Plan and do not overlap with the long-term new water supply development or supply reliability enhancement projects. Supply Augmentation is made available to MWDOC through MET. MWDOC, as a MET member agency, relies on MET's reliability portfolio of water supply programs, including existing water transfers, storage, and exchange agreements, to address supply/demand imbalances. MET has developed significant storage capacity (over 5 million acre-feet) in reservoirs and groundwater banking programs both within and outside of the Southern California region. Additionally, MET can pursue additional water transfer and exchange programs with other water agencies to help mitigate supply/demand imbalances and provide additional dry-year supply sources.

MWDOC will work in close coordination with MET on their supply augmentation projects during normal conditions and Shortage Levels 1 through 6 to ensure reliability of imported water for the service area. MWDOC's supply augmentation actions are described in DWR Table 8-2 (Appendix A).

3.4.2 Demand Reduction

The demand reduction measures that would be implemented to address shortage levels are described in DWR Table 8-3 (Appendix A). This table indicates which actions align with specific defined shortage levels and estimates the extent to which that action will reduce the gap between supplies and demands. This table also identifies the enforcement action, if any, associated with each demand reduction measure.

MWDOC's demand reduction actions correspond to shortage Levels 0 through 6, with coordination with the Water Emergency Response Organization of Orange County (WEROC) anticipated to begin at Level 4 or greater (i.e. when the supply shortage exceeds 30 percent). At Level 0, MWDOC has ongoing long-term water use efficiency savings measures, including providing rebates for landscape irrigation efficiency, plumbing fixtures and devices, and turf replacement, and providing programmatic support to retail agencies to reduce system water loss. For Shortage Levels 1 through 6, MWDOC will continuously expand public awareness campaigns to encourage consumers to reduce their water usage and implement voluntary demand reduction and its WSAP to further reduce the imported water shortage gap at each level, reaching up to greater than 50% of the shortage gap at Level 6.

3.4.3 Operational Changes

During shortage conditions, water operations in Orange County may be affected depending on the specific condition or situation. MWDOC does not own any infrastructure, nor does it direct the operations of infrastructure in Orange County. MWDOC will coordinate with MET and with its member agencies to facilitate operational changes that may result from shortage conditions or arise from an emergency situation.

3.4.4 Additional Mandatory Restrictions

Water Code Section 10632(a)(4)(D) calls for "additional, mandatory prohibitions against specific water use practices that are in addition to state-mandated prohibitions and appropriate to the local conditions" to be included among the WSCP's shortage response actions. These prohibitions are in addition to the proposed State Board regulation in California Code of Regulations, title 23, division 3, a new chapter 3.5 on Conservation and the Prevention of Waste and Unreasonable Use; and within chapter 3.5, a new article 2 pertaining to Wasteful and Unreasonable Uses. Mandatory prohibitions include:

- Hosing off sidewalks, driveways, and other hardscapes.
- Washing automobiles with hoses not equipped with a shut-off nozzle.
- Using non-recirculated water in a fountain or other decorative water feature.
- Watering lawns in a manner that causes runoff, or within 48 hours after measurable precipitation.
- Irrigating ornamental turf on public street medians.

These additional restrictions above the Statewide Mandatory prohibitions are applicable at the retail water supplier level. State law gives substantial discretion to wholesale and retail water agencies to promulgate regulations and restrictions to conserve and allocate water in the event of a water shortage.

3.4.5 Emergency Response Plan (Hazard Mitigation Plan)

A catastrophic water shortage would be addressed according to the appropriate water shortage level and response actions. It is likely that a catastrophic shortage would immediately trigger a shortage level of up to Level 6 in the impacted area, and response actions have been put in place to mitigate a catastrophic shortage. In addition, there are several Plans that address catastrophic failures and align with the WSCP, including MET's WSDM Plan and WSAP, the Orange County Water & Wastewater MJHMP, and the Water Emergency Response Organization of Orange County (WEROC)'s Emergency Operations Plan (EOP).

3.4.5.1 MET's Water Surplus and Drought Management and Water Supply Allocation Plans

MET has comprehensive plans for stages of actions it would undertake to address a catastrophic interruption in water supplies through its WSDM Plan and WSAP. MET also developed an Emergency Storage Requirement to mitigate against potential interruption in water supplies resulting from catastrophic occurrences within the southern California region, including seismic events along the San Andreas Fault. In addition, MET is working with the state to implement a comprehensive improvement plan to address catastrophic occurrences outside of the southern California region, such as a maximum probable seismic event in the Sacramento-San Joaquin River Delta that would cause levee failure and disruption of SWP deliveries.

3.4.5.2 Water Emergency Response Organization of Orange County Emergency Operations Plan

In 1983, the Orange County water community identified a need to develop a plan on how agencies would respond effectively to disasters impacting the regional water distribution system. The collective efforts of these agencies resulted in the formation of WEROC to coordinate emergency response on behalf of all Orange County water and wastewater agencies, develop an emergency plan to respond to disasters, and conduct disaster training exercises for the Orange County water community. WEROC, administered by MWDOC, was established through the creation of an indemnification agreement among its member agencies to protect each other against civil liabilities and to facilitate the exchange of resources. WEROC is unique in its ability to provide a single point of contact for the representation of all water and wastewater utilities in Orange County during a disaster. This representation is to the county, state, and federal disaster coordination agencies. Within the Orange County Operational Area, WEROC is the recognized contact for emergency response for the water community, including MWDOC.

As a member of WEROC, MWDOC will follow WEROC's EOP in the event of an emergency and coordinate with WEROC to assess damage, initiate repairs, and request and coordinate mutual aid resources for MWDOC's service area.

The EOP defines the actions to be taken by WEROC Emergency Operations Center (EOC) staff to reduce the loss of water and wastewater infrastructure; to respond effectively to a disaster; and to coordinate recovery operations in the aftermath of any emergency involving extensive damage to Orange County water and wastewater utilities. The EOP includes activation notification protocol that will be used to contact partner agencies to inform them of the situation, activation status of the EOC, known damage or impacts, or resource needs. The EOP is a standalone document that is reviewed annually and approved by the MWDOC Board every three years.

WEROC administered by MWDOC is responsible for managing the response effort within the service area in the event of an emergency. In order to avoid duplicating requests and efforts, MWDOC can use the California Standardized Emergency Management System (SEMS) and the National Incident Management System (NIMS). SEMS and NIMS implement an organized system of information flow to ensure a timely and coordinated effort in response to any sort of disaster to meet specific emergency needs within its service area.

The WEROC EOC is responsible for assessing the overall condition and status of the Orange County regional water distribution and wastewater collection systems, including MET facilities that serve Orange County. The EOC can be activated during an emergency situation resulting from both natural and man-made causes, and can be activated through automatic, manual, or standby for activation.

WEROC recognizes four primary phases of emergency management, which include:

- **Preparedness:** Planning, training, and exercises that are conducted prior to an emergency to support and enhance response to an emergency or disaster.
- **Response:** Activities and programs designed to address the immediate and short-term effects of the onset of an emergency or disaster that help to reduce effects on water infrastructure and speed recovery. This includes alert and notification, EOC activation, direction and control, and mutual aid.
- **Recovery:** This phase involved restoring systems to normal, in which short-term recovery actions are taken to assess the damage and return vital life-support systems to minimum operating standards, while long-term recovery actions have the potential to continue for many years.
- **Mitigation/Prevention:** These actions prevent the occurrence of an emergency or reduce the area's vulnerability in ways that minimize the adverse impacts of a disaster or emergency. Orange County's MJHMP outlines threats and identifies mitigation projects.

The EOC Action Plans (EAP) provide frameworks for EOC staff to respond to different situations with the objectives and steps required to complete them, which will in turn serve the WEROC member agencies. In the event of an emergency that results in a catastrophic water shortage, MWDOC will declare a water shortage condition of up to Level 6 for the impacted area, depending on the severity of the event, and coordination with WEROC is anticipated to begin at Level 4 or greater (WEROC, 2021).

3.4.6 Seismic Risk Assessment and Mitigation Plan

Per Water Code Section 10632.5, Suppliers are required to assess seismic risk to water supplies as part of their WSCP. The plan also must include the mitigation plan for the seismic risk(s). Given the great distances that imported supplies travel to reach Orange County, the region is vulnerable to interruptions along hundreds of miles of aqueducts, pipelines, and other facilities associated with delivering the supplies to the region. Additionally, the infrastructure in place to deliver supplies is susceptible to damage from earthquakes and other disasters.

In lieu of conducting a seismic risk assessment specific to its 2025 UWMP, MWDOC, as the regional imported water wholesaler, has included the most recent regional MJHMP for the Orange County region, that is required under the federal Disaster Mitigation Act of 2000 (Public Law 106-390).

MWDOC's MJHMP identifies that the overarching goals of the Hazard Mitigation Plan were the same for all of its member agencies, which include:

- Goal 1: Minimize vulnerabilities of critical infrastructure to minimize damages and loss of life and injury to human life caused by hazards.
- Goal 2: Minimize security risks to water and wastewater infrastructure.
- Goal 3: Minimize interruption to water and wastewater utilities.
- Goal 4: Improve public outreach, awareness, education, and preparedness for hazards in order to increase community resilience.
- Goal 5: Eliminate or minimize wastewater spills and overflows.
- Goal 6: Protect water quality and supply, critical aquatic resources, and habitat to ensure a safe water supply.
- Goal 7: Strengthen Emergency Response Services to ensure preparedness, response, and recovery during any major or multi-hazard event.

MWDOC's MJHMP evaluates hazards applicable to all jurisdictions in its entire planning area, prioritized based on probability, location, maximum probable extent, and secondary impacts. Earthquake fault rupture and seismic hazards, including ground shaking and liquefaction, are among the highest ranked hazards to the region as a whole because of its long history of earthquakes, with some resulting in considerable damage. A significant earthquake along one of the major faults could cause substantial casualties, extensive damage to infrastructure, fires, damages and outages of water and wastewater facilities, and other threats to life and property.

Nearly all of Orange County is at risk of moderate to extreme ground shaking, with liquefaction possible throughout much of Orange County, but the most extensive liquefaction zones occur in coastal areas. Given the region's seismic activity, there is no doubt that communities within Orange County will continue to experience future earthquake events, and it is a reasonable assumption that a major event will occur within a 30-year timeframe.

MWDOC's mitigation actions per the MJHMP identify the hazard, proposed mitigation action, location/facility, local planning mechanism, risk, cost, timeframe, possible funding sources, status, and status rationale, as applicable. It is envisioned that the mitigation actions will be implemented primarily on a jurisdiction-by-jurisdiction basis; however, MWDOC will provide facilitation to spearhead coordination of initiatives on a regional level. This includes acting as a lead on water related hazard mitigation projects that are regional in nature, such as projects that cross several jurisdictional boundaries and work planned on behalf of MET, while Orange County Sanitation District (OC San) and South Orange County Water Authority (SOCWA) will take the lead on wastewater related hazard mitigation projects that are regional and within their service areas (MWDOC, 2024).

Additionally, MWDOC's 2018 Reliability Study developed the guidance that its member agencies should plan for a 100 percent interruption of MET supplies for up to 60 days with a concurrent power grid outage for a minimum of seven days. MET concurred that this guidance was appropriate for Orange County, based on the likely time to restore regional import or treatment facilities to partial operations, based on the location of earthquake faults in Orange County, and the potential maximum considered earthquakes. (MWDOC, 2018).

3.4.7 Shortage Response Action Effectiveness

For each specific Shortage Response Action identified in the plan, the WSCP also estimates the extent to which that action will reduce the gap between supplies and demands identified in DWR Tables 8-2 and 8-3 (Appendix A). To the extent feasible, MWDOC has estimated percentage savings for the chosen suite of shortage response actions, which can be anticipated to deliver the expected outcomes necessary to meet the requirements of a given shortage level.

3.5 Communication Protocols

Timely and effective communication is a critical element of the WSCP implementation. Per Water Code Section 10632 (a)(5), MWDOC has established communication protocols and procedures to inform the public, stakeholders, and local, regional, and state governments regarding any current or predicted water supply shortages as determined by the annual water supply and demand assessment described pursuant to Section 10632.1; any water shortage response actions triggered or anticipated to be triggered by the annual water supply and demand assessment described pursuant to Section 10632.1; and any other relevant communications.

This section includes specific communications protocols to address each water shortage level and response action that can be derived from the results of the AWSDA. This element would likely be triggered based upon the decision-making process in Section 3.2 and/or emergency communications protocols to address earthquakes, fires, infrastructure failures, civil unrest, and other catastrophic events.

Strategic communication is an ongoing activity where the purpose, audience, message, tools, and channels may change at any given moment. In the context of water shortage response, the purpose may be an emergency water shortage like what may result from the impacts of an earthquake or a longer-term, non-emergency shortage condition like drought. In an emergency, MWDOC will activate the communication protocol detailed in the WEROC EOP. In a non-emergency water shortage situation, MWDOC will implement the procedures identified in the Strategic Communications Program and Plan.

3.5.1 WEROC Emergency Operations Plan Communication

The WEROC EOP defines the actions to be taken by WEROC EOC staff to reduce the loss of water and wastewater infrastructure; to respond effectively to a disaster; and to coordinate recovery operations in the aftermath of any emergency involving extensive damage to Orange County water and wastewater utilities. The EOP includes activation notification protocol that will be used to contact partner agencies to inform them of the situation, activation status of the EOC, known damage or impacts, or resource needs. The EOP is a standalone document that is reviewed annually and approved by the MWDOC Board every three years.

The WEROC EOC is responsible for assessing the overall condition and status of the Orange County regional water distribution and wastewater collection systems, including MET facilities that serve Orange County. The EOC can be activated during an emergency situation resulting from both natural and human-

made causes, and can be activated through automatic, manual, or standby for activation. The WEROC EOC activation decision steps include the following (WEROC, 2021):

- **Categorize incident:** Using information gathered from one or more sources, the WEROC primary contact will categorize the incident as a natural disaster, human-made disaster, terrorist threat, or terrorist physical attack.
- **Initial determination of situation:** WEROC and MWDOC management will make an initial determination of the situation based on scope and severity of the incident, damage to affected agencies, and potential impacts.
- **WEROC activation level:** WEROC and MWDOC management will determine the appropriate level of WEROC activation.
- **Groups that will be notified:** When the EOC is activated, at a minimum, WEROC EOC staff, affected water utilities, MET's EOC at Eagle Rock, the Operational Area EOC, the Division of Drinking Water, health care agency, and California Department of Public Health should be notified.

3.5.2 Strategic Communications Program and Plan

MWDOC presently develops, coordinates, and delivers a substantial number of programs and services to elevate stakeholders' awareness about water policy, efficient water use, and the District's role in advocating for water reliability investments that are in the best interest of Orange County. MWDOC's Strategic Communications Program and Plan serves as a blueprint for District communications, establishing a baseline understanding for how MWDOC's programs and activities provide information to the public, various stakeholders, partners, and employees during normal and non-emergency water shortage conditions.

The MWDOC Public Affairs Department elevates public awareness, garners support and works to establish confidence in the District's initiatives by providing transparent, accurate, and reliable information to the public, stakeholders, partners, and 27 member agencies. Serving Orange County residents and businesses in some fashion, MWDOC utilizes various communications tools and channels to reach and unify a vast and diverse group of audiences.

MWDOC stays up to date on water supply conditions and shortage actions through active participation in local, regional, and statewide meetings. Additionally, MWDOC Public Affairs continuously evaluates its programs and communications tools and channels to reach the District's identified goals and objectives, actively support its member agencies, and effectively inform the Orange County community. Upon declaration of a non-emergency, water shortage condition, MWDOC has the appropriate tools and systems to implement the communication protocols.

3.5.2.1 Goals & Objectives

MWDOC provides regional communications coordination to support the implementation of UWMP and WSCP requirements, including timely and consistent public information during water shortage stages, supply disruptions, and emergency conditions.

MWDOC Public Affairs serves as the lead for regional communication coordination and works in close collaboration with WEROC to align messaging during emergency incidents. Coordination efforts are

consistent with established emergency management frameworks to ensure the dissemination of accurate, coordinated, and actionable information to the public, media, and stakeholders.

3.5.2.2 Target Audiences

During declared water shortage conditions, MWDOC Public Affairs coordinates with MET and MWDOC's 27 member agencies to support regionally consistent messaging tied to WSCP shortage levels and corresponding response actions. This includes communication related to:

- Implementation of shortage response stages and associated demand reduction actions
- Changes in water supply conditions and reliability
- Mandatory and voluntary conservation measures
- Allocation-based or budget-based program requirements, if applicable
- Enforcement provisions and compliance expectations
- Available financial incentives, rebates, and customer assistance programs

In emergency situations involving system disruptions, infrastructure impacts, or water quality concerns, MWDOC, through WEROC, facilitates real-time information sharing and coordinated public messaging among water and wastewater agencies, emergency responders, and partner organizations. Communication efforts include situation updates, public advisories, and multi-channel outreach to ensure timely notification and protective actions, as appropriate.

3.5.2.3 Communications Tools and Channels

MWDOC Public Affairs develops and distributes regional communication toolkits, including template materials, key messages, and outreach resources, to assist member agencies in meeting state communication requirements while allowing for local customization. This coordinated approach supports compliance with California Water Code requirements for water shortage contingency planning. During a normal and non-emergency water shortage condition, MWDOC also uses these readily available communication tools and resources to successfully reach the District's target audience groups with intended messages.

3.5.2.4 Implementation, Assignments, and Schedules

MWDOC's regional communications framework emphasizes advance planning, message consistency, and operational coordination across all shortage stages and emergency conditions. These efforts enhance regional readiness, reduce duplication, and support clear, credible communication to maintain public awareness, encourage compliance with response actions, and promote efficient water use throughout Orange County.

A carefully developed and executed communications plan can establish trust and credibility for the public, stakeholders, partners, member agencies, and employees. A clearly outlined plan must be in place to effectively communicate water supply conditions and water shortage actions. Once described, all strategic targets should include an implementation plan which identifies tactics and logistics, and eventually, active monitoring, evaluation, and amending. This step is essential as the District's communications tools, resources, and messaging must adapt and evolve, sometimes rapidly, in the ever-changing landscape of water policy and regulation.

Assignments are essential to maintaining productivity and accountability as well as collectively accomplishing the goals of a project. MWDOC Public Affairs has developed a Programs and Responsibility flow chart which breaks down the Department's primary roles and assignments by team member. Additionally, the Department has developed a series of logistical checklists to efficiently plan, implement, and control the flow of information during a water shortage. It will continue to do so as the situation evolves.

3.5.2.5 Monitor, Evaluate, and Amend

The effectiveness of the MWDOC's communication during supply shortages depends on a large variety of factors, including technological advancements or changes, the rise and fall of audience engagement, current news or media concentration, political changes in leadership and focus, and even the weather. MWDOC Public Affairs utilizes a robust set of Key Performance Indicators (KPI), metrics, and measurements to track the effectiveness of MWDOC's programs, activities, and communication efforts. Through this process, the District's programs and activities are continuously shaped and refined to remain relevant and valuable to the public, stakeholders, partners, employees, and its 27 member agencies.

3.5.2.6 Water Shortage Communication

The type and degree of communication varies with each shortage level; thus, predefined and actionable communication protocols improve MWDOC's ability to message necessary events. These communication protocols and procedures are summarized in Table 2.

Table 2 Communication Procedures

Communications Procedures Matrix				
Level 0 Permanent Water Waste Prohibitions	Level 1 Up to 10% Voluntary Conservation	Level 2 Up to 20% Mandatory Conservation	Levels 3-4 Up to 30% or 40% Mandatory Conservation	Levels 5-6 Up to 50% or >50% Mandatory Conservation
Standard outreach efforts in effect (media relations, social media, websites, etc.)	Update message platform to reflect conditions and needed actions from the public	Update campaigns and messages to generate immediate actions and behaviors by the public	Update campaigns and messages to raise awareness for more severe water-saving actions and behaviors by the public	Update campaigns and messages to reflect extreme or emergency conditions, and likely need to focus water use on health and safety needs
Promote ongoing WUE programs, tools, partnerships designed to achieve long-term water management goals	Announce status change to the public, key stakeholders, partners, and employees (News release, social media, etc.)	Announce status change to the public, key stakeholders, partners, and employees (News release, social media, etc.)	Announce status change to the public, key stakeholders, partners, and employees (News release, social media, etc.)	Announce status change to the public, key stakeholders, partners, and employees (News release, social media, etc.)

Communications Procedures Matrix				
Level 0 Permanent Water Waste Prohibitions	Level 1 Up to 10% Voluntary Conservation	Level 2 Up to 20% Mandatory Conservation	Levels 3-4 Up to 30% or 40% Mandatory Conservation	Levels 5-6 Up to 50% or >50% Mandatory Conservation
Standard coordination with member agencies	Include increased conservation messages on MWDOC.com and in standard outreach efforts; provide regular condition updates to stakeholders and the media	Supplement Level 1 activities with additional tactics (mass media ads, partnerships, events, etc.) as needed; provide regular condition updates to Stakeholders and the media	Supplement Level 2 outreach with additional tactics (supplemental ads, etc.) as needed; provide regular updates to stakeholders and the media on conditions	Supplement Level 3-4 outreach with additional tactics as needed; provide regular condition updates to stakeholders and the media on conditions
As-needed Board reports on public communication and WUE outreach activities	Enhance promotion of ongoing WUE programs and tools; deploy targeted advertising	Conduct issue briefings with elected officials, and other key civic and business leaders	Conduct specialized outreach to reduce discretionary outdoor use while minimizing landscape damage	Suspend promotion of long-term WUE programs and tools to focus on imminent needs
	Increase coordination with member agencies	Continue promotion of ongoing WUE programs and tools	Promote available water assistance resources for vulnerable populations; specialized outreach to impacted industries	Continue enhanced coordination with member agencies as needed (daily or weekly briefings, email updates, etc.)
	Analyze water use and other data to determine any appropriate supplemental actions	Enhance coordination with member agencies as needed	Continue enhanced coordination with member agencies as needed	Analyze water use and other data to determine any appropriate supplemental actions
		Analyze water use and other data to determine any appropriate supplemental actions	Analyze water use and other data to determine any appropriate supplemental actions	

Notes:
WUE - Water Use Efficiency.

3.6 Compliance and Enforcement

Per the Water Code Section 10632 (a)(6), wholesale water providers are not subject to these requirements.

3.7 Legal Authorities

As a regional wholesaler, MWDOC does not have the legal authority to implement and enforce its shortage response in its service area; however, to comply with Water Code Section 10632 (a)(6), MWDOC

uses pricing to discourage their member agencies from purchasing greater amounts of water during a shortage.

Per Water Code Section 10632 (a)(7) (B), Suppliers shall declare a water shortage emergency condition to prevail within the area served by such wholesaler whenever it finds and determines that the ordinary demands and requirements of water consumers cannot be satisfied without depleting the water supply of the distributor to the extent that there would be insufficient water for human consumption, sanitation, and fire protection.

Per Water Code Section 10632 (a)(7)(C), Suppliers shall coordinate with any agency or county within which it provides water supply services for the possible proclamation of a local emergency under California Government Code, California Emergency Services Act (Article 2, Section 8558). Table 3 identifies the contacts for all cities or counties where MWDOC provides service in the WSCP, along with developed coordination protocols, which can facilitate compliance with this section of the Water Code in the event of a local emergency as defined in subpart (c) of Government Code Section 8558.

Table 3 Agency Contacts and Coordination Protocols

Contact	Agency	Coordination Protocols
Assistant General Manager, Water Services	Anaheim Public Utilities	Notification, Coordination, and provide supportive actions
Public Works Director	City of Brea	Notification, Coordination, and provide supportive actions
Director of Public Works/City Engineer	City of Buena Park	Notification, Coordination, and provide supportive actions
Director of Public Works/City Engineer	City of Fountain Valley	Notification, Coordination, and provide supportive actions
Director of Public Works	City of Fullerton	Notification, Coordination, and provide supportive actions
Director of Public Works	City of Garden Grove	Notification, Coordination, and provide supportive actions
Director of Public Works	City of Huntington Beach	Notification, Coordination, and provide supportive actions
Director of Public Works	City of La Habra	Notification, Coordination, and provide supportive actions
Public Works & Community Services Director	City of La Palma	Notification, Coordination, and provide supportive actions
Utilities Director	City of Newport Beach	Notification, Coordination, and provide supportive actions
Director of Public Works	City of Orange	Notification, Coordination, and provide supportive actions
Public Works Director	City of San Clemente	Notification, Coordination, and provide supportive actions
Acting Public Works Director	City of Santa Ana	Notification, Coordination, and provide supportive actions
Director of Public Works	City of Seal Beach	Notification, Coordination, and provide supportive actions
Director of Public Works	City of Tustin	Notification, Coordination, and provide supportive actions
Director of Public Works	City of Westminster	Notification, Coordination, and provide supportive actions
General Manager	East Orange County Water District	Notification, Coordination, and provide supportive actions
General Manager	El Toro Water District	Notification, Coordination, and provide supportive actions
General Manager	Emerald Bay Service District	Notification, Coordination, and provide supportive actions
General Manager, Orange County	Golden State Water Company	Notification, Coordination, and provide supportive actions

Contact	Agency	Coordination Protocols
General Manager	Irvine Ranch Water District	Notification, Coordination, and provide supportive actions
General Manager	Laguna Beach County Water District	Notification, Coordination, and provide supportive actions
General Manager	Mesa Water	Notification, Coordination, and provide supportive actions
General Manager	Moulton Niguel Water District	Notification, Coordination, and provide supportive actions
General Manager	Orange County Water District	Notification, Coordination, and provide supportive actions
General Manager	Santa Margarita Water District	Notification, Coordination, and provide supportive actions
General Manager	Serrano Water District	Notification, Coordination, and provide supportive actions
General Manager	South Coast Water District	Notification, Coordination, and provide supportive actions
General Manager	Trabuco Canyon Water District	Notification, Coordination, and provide supportive actions
General Manager	Yorba Linda Water District	Notification, Coordination, and provide supportive actions
Public Works Director	Orange County	Notification
Public Works Director	City of Aliso Viejo	Notification
Director of Public Services	City of Costa Mesa	Notification
Public Works Director	City of Cypress	Notification
Public Works Director	City of Dana Point	Notification
Public Works Director	City of Irvine	Notification
Public Works Director	City of Laguna Beach	Notification
Public Works Director	City of Laguna Hills	Notification
Public Works Director	City of Laguna Niguel	Notification
City Engineer	City of Laguna Woods	Notification
Public Works Director	City of Lake Forest	Notification
City Engineer	City of Los Alamitos	Notification
Public Works Director	City of Mission Viejo	Notification
Public Works Director	City of Placentia	Notification
Public Works Director	City of Rancho Santa Margarita	Notification
Public Works Director	City of Stanton	Notification
Public Works Director	City of Villa Park	Notification
Public Works Director	City of Yorba Linda	Notification

3.8 Financial Consequences of WSCP

Per Water Code Section 10632(a)(8), Suppliers must include a description of the overall anticipated financial consequences to the Supplier of implementing the WSCP. This description must include potential reductions in revenue and increased expenses associated with the implementation of the shortage

response actions. This should be coupled with an identification of the anticipated mitigation actions needed to address these financial impacts.

MWDOC's rates and fees fall into three general categories: (1) the pass-through of costs from MET for imported water rates and charges; (2) specific charges for MWDOC services contracted by our Member Agencies (Choice Budget); and (3) charges for MWDOC services that apply to all our member agencies (Core Budget). Below is a more detailed description of each category:

1. The pass-through rates and charges from MET are billed on a monthly basis to our member agencies with the majority of the cost allocation based on their volumetric purchases. MWDOC does not collect any revenue from these charges.
2. The Choice Budget fees are primarily associated with the water education school program and the water use efficiency program, including water use efficiency rebates. MWDOC member agencies elect to subscribe to specific programs and can opt-out of program participation. These fees are assessed to recover the entire cost of these "Choice" programs. Any additional revenue collected is either reimbursed to the participating agencies at the end of the year or credited to the following year. No additional revenue is collected for MWDOC.
3. MWDOC's Core Budget includes all other programs and functions provided to our member agencies. Among them are: Water Reliability Planning, MET Activities, Government Affairs, Public Affairs, WUE, Emergency Response, Board Functions, Finance, Information Technology, and Administration.

MWDOC's Core Budget is funded through a fixed charge assessed on each agency's retail meter and a fixed groundwater service charge, which are both collected at the beginning of each fiscal year. Because MWDOC's rate structure is completely fixed and does not fluctuate with volumetric sales, the implementation of the WSCP will not impact MWDOC's revenues. There may be an increase in MWDOC's expenditures as it relates to additional public and media outreach. However, as experienced in the last drought of 2014-2015, MWDOC coordinated such outreach efforts with its member agencies and most costs were shared among the participating agencies. Therefore, any additional expenditures are not anticipated to be significant and can be recovered by MWDOC reserves.

MWDOC's Choice Budget would also not be adversely impacted by the implementation of the WSCP. Although we anticipate during a shortage there will be an increase in funding to support the implementation of member agency WSCPs, as described above, MWDOC's Choice Budget are selected by our member agencies to participate and pay their share according to the service received.

Lastly, the pass-through rates and charges from MET do not have a financial impact on MWDOC and will not be adversely impacted by the implementation of the WSCPs.

3.9 Monitoring and Reporting

Per Water Code Section 10632(a)(9), water provider wholesalers are not subject to this requirement.

3.10 WSCP Refinement Procedures

Per Water Code Section 10632 (a)(10), MWDOC must provide reevaluation and improvement procedures for systematically monitoring and evaluating the functionality of the water shortage contingency plan in order to ensure shortage risk tolerance is adequate and appropriate water shortage mitigation strategies are implemented as needed.

MWDOC's WSCP is prepared and implemented as an adaptive management plan. In addition, if certain procedural refinements or new actions are identified by MWDOC staff, or suggested by customers or other interested parties, MWDOC will evaluate their effectiveness, incorporate them into the WSCP, and implement them quickly at the appropriate water shortage level.

It is envisioned that the WSCP will be periodically re-evaluated to ensure that its shortage risk tolerance is adequate, and the shortage response actions are effective and up to date based on lessons learned from implementing the WSCP. The WSCP will be revised and updated during the UWMP update cycle to incorporate updated and new information. For example, new supply augmentation actions will be added, and actions that are no longer applicable for reasons such as program expiration will be removed. However, if revisions to the WSCP are warranted before the UWMP is updated, the WSCP will be updated outside of the UWMP update cycle. In the course of preparing the AWSDA each year, MWDOC staff will routinely consider the functionality of the overall WSCP and will prepare recommendations for MWDOC Board of Directors if changes are found to be needed.

3.11 Special Water Feature Distinction

As a wholesaler, Water Code Section 10632 (b) is not applicable to MWDOC.

3.12 Plan Adoption, Submittal, and Availability

Per Water Code Section 10632 (a)(c), MWDOC provided notice of the availability of the draft 2025 UWMP and draft 2025 WSCP and notice of the public hearing to consider adoption of the WSCP. The public review drafts of the 2025 UWMP and the 2025 WSCP were posted prominently on MWDOC's website, in advance of the public hearing on May 20, 2026. Copies of the draft WSCP were also made available for public inspection at MWDOC Clerk's and Utilities Department offices and public hearing notifications were published in local newspapers. A copy of the published Notice of Public Hearing is included in Appendix C.

MWDOC held the public hearing for the draft 2025 UWMP and draft WSCP on May 20, 2026, at the Board meeting. MWDOC Board reviewed and approved the 2025 UWMP and the WSCP at its May 2026 meeting. See Appendix E for the resolution approving the WSCP.

By July 1, 2026, MWDOC's adopted 2025 UWMP and WSCP was filed with DWR, California State Library, and the County of Orange. MWDOC will make the WSCP available for public review on its website no later than 30 days after filing with DWR.

Based on DWR's review of the WSCP, MWDOC will make any amendments in its adopted WSCP, as required and directed by DWR.

If MWDOC revises its WSCP after UWMP is approved by DWR, then an electronic copy of the revised WSCP will be submitted to DWR within 30 days of its adoption.

SECTION 4 REFERENCES

Metropolitan Water District of Southern California (MET). (2016). *Water Supply Allocation Plan.*

Metropolitan Water District of Southern California (MET). (2026a). *2025 Water Shortage Contingency Plan*.

Metropolitan Water District of Southern California (MET). (2026b). *2025 Urban Water Management Plan*.

Municipal Water District of Orange County. (2018). *2018 Orange County Water Reliability Study*.

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Municipal Water District of Orange County. (2024). *Multi-Jurisdictional Hazard Mitigation Plan*.

Municipal Water District of Orange County. (2025, December 30). *Orange County Water Demand Projection Model Technical Memorandum*.

Municipal Water District of Orange County (MWDOC). (2026). *2025 Urban Water Management Plan*.

Water Emergency Response Organization of Orange County (WEROC). (2021, March). *WEROC Emergency Operations Plan (EOP)*.

APPENDIX A

DWR SUBMITTAL TABLES

Submittal Table 8-1: Cross Reference for Standard vs Supplier Shortage Level

Submittal Table 8-1: Cross-reference for Standard vs Supplier Shortage Levels Water Code Section 10632(a)(3)(B)			
☑	Check the box if the Supplier uses the Standard six levels of water shortage. Proceed to the next table.		
Standard Shortage Levels	**Percent Shortage Range**	**Suppliers Shortage Levels**	**Percent Shortage Range**
1	Up to 10%		
2	Up to 20%		
3	Up to 30%		
4	Up to 40%		
5	Up to 50%		
6	>50%		
NOTES:			

Submittal Table 8-2: Supply Augmentation Actions

Submittal Table 8-2 Wholesale: Supply Augmentation and Other Actions Water Code Section 10632(a)(4)(A),(C) and (E)				
Yes	Is the Supplier completing this table using the standard six levels? (yes/no)			
Shortage Level	Supply Augmentation Methods and Other Actions by Water Supplier **Drop down list** These are the only categories that will be accepted by the WUE data online submittal tool	How much is this going to reduce the shortage gap?		Additional Explanation or Reference (OPTIONAL)
		Volume or Percentage Drop down	Shortage Gap Reduction Value (May be a range) (AF)	
0 through 6	Other Actions (describe)		TBD	MWDOC will work in close coordination with MET on their supply augmentation projects during this time to ensure reliability for the service area.
DWR NOTES: Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Submittal Table 2-3.				

Submittal Table 8-3: Demand Reduction Actions

Submittal Table 8-3 Wholesale: Demand Reduction Actions **Water Code Section 10632(a)(4)(B) and (E)**				
Yes	Is the Supplier completing this table using the standard six levels? (yes/no)			
Shortage Level	Demand Reduction Actions **Drop down list** These are the only categories that will be accepted by the WUE data online submittal tool. Select those that apply.	How much is this going to reduce the shortage gap?		Additional Explanation or Reference (OPTIONAL)
		Volume or Percentage Drop down	Shortage Gap Reduction Value (May be a range) (AF)	
0	Provide Rebates for Landscape Irrigation Efficiency		On-going Long Term-Conservation Savings Measure. Not applicable to Water Shortage Contingency Plan quantifiable savings.	Base level of support to retail agencies and their customers through Landscape Irrigation Efficiency rebates.
0	Provide Rebates on Plumbing Fixtures and Devices		On-going Long Term-Conservation Savings Measure. Not applicable to Water Shortage Contingency Plan quantifiable savings.	Base level of support to retail agencies and their customers through water saving device rebates.
0	Provide Rebates for Turf Replacement		On-going Long Term-Conservation Savings Measure. Not applicable to Water Shortage Contingency Plan quantifiable savings.	Base level of support to retail agencies and their customers through MWDOC's Turf Removal Program.
0	Reduce System Water Loss		On-going Long Term-Conservation Savings Measure. Not applicable to Water Shortage Contingency Plan	Base level of programmatic support to retail agencies through MWDOC's Water Loss Program.

Submittal Table 8-3 Wholesale: Demand Reduction Actions Water Code Section 10632(a)(4)(B) and (E)				
			quantifiable savings.	
1	Expand Public Information Campaign	Percentage	0 - 5	Expand Public Awareness to encourage residents and industries to reduce their usage of water.
1	Other	Percentage	0 - 10	Implement Voluntary Demand Reduction
1	Other	Percentage	0 - 10	Implement Water Supply Allocation Plan
2	Expand Public Information Campaign	Percentage	0 - 20	Increase Public Awareness efforts to encourage residents and industries to reduce their usage of water.
2	Other	Percentage	0 - 20	Implement Voluntary Recommended Demand Reduction
2	Other	Percentage	0 - 20	Implement Water Supply Allocation Plan
3	Expand Public Information Campaign	Percentage	0 - 30	Pursue an aggressive Public Awareness Campaign to encourage residents and industries to reduce their usage of water.
3	Other	Percentage	0 - 30	Work with retail agencies to review and update as needed water waste prohibitions and ordinances to discourage unnecessary water usage.
3	Other	Percentage	0 - 30	Implement Voluntary Demand Reduction
3	Other	Percentage	0 - 30	Implement Water Supply Allocation Plan
4	Expand Public Information Campaign	Percentage	0 - 40	Pursue an aggressive Public Awareness Campaign to encourage residents and industries to reduce their usage of water.
4	Other	Percentage	0 - 40	Implement Voluntary Demand Reduction
4	Other	Percentage	0 - 40	Implement Water Supply Allocation Plan
5	Expand Public Information Campaign	Percentage	0 - 50	Pursue an aggressive Public Awareness Campaign to encourage residents and industries to reduce their usage of water.

Submittal Table 8-3 Wholesale: Demand Reduction Actions Water Code Section 10632(a)(4)(B) and (E)				
5	Other	Percentage	0 - 50	Implement Voluntary Demand Reduction
5	Other	Percentage	0 - 50	Implement Water Supply Allocation Plan
6	Other	Percentage	0 - 50	Implement Voluntary Demand Reduction
6	Other	Percentage	>50	Implement Water Supply Allocation Plan
DWR NOTES: Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Submittal Table 2-3.				
NOTES: Coordination with the Water Emergency Response Organization of Orange County (WEROC), administered by MWDOC is anticipated to begin at Level 4 or greater. In the event of a short or long-term emergency, MWDOC will utilize the WEROC Emergency Operations Plan and follow the detailed steps and process as specified.				

APPENDIX B

MWDOC WATER SUPPLY ALLOCATION PLAN

APPENDIX C

NOTICE OF PUBLIC HEARING (PENDING)

APPENDIX D

ADOPTED WSCP RESOLUTION (PENDING)

RESOLUTION NO. ____

RESOLUTION OF THE
MUNICIPAL WATER DISTRICT OF ORANGE COUNTY
BOARD OF DIRECTORS
ADOPTING THE
2025 URBAN WATER MANAGEMENT PLAN

WHEREAS, the California Urban Water Management Planning Act (Water Code §10610, et seq.) (Act), requires urban water suppliers providing water for municipal purposes to more than 3,000 customers or supplying more than 3,000 acre-feet of water annually to prepare and adopt, in accordance with prescribed requirements and procedures, an Urban Water Management Plan (UWMP) every five years; and

WHEREAS, the Municipal Water District of Orange County (MWDOC) is an urban water supplier; and

WHEREAS, urban water suppliers are required to update, adopt, and submit their UWMP to the California Department of Water Resources (DWR) by July 1, 2026; and

WHEREAS, in accordance with the Act, MWDOC has prepared its 2025 UWMP with its own staff, with the assistance of consulting professionals, and in cooperation with other governmental agencies, and has utilized and relied upon industry standards and the expertise of industry professionals in preparing its WSCP, and has also utilized DWR's 2025 UWMP Guidebook, including its related appendices, in preparing its WSCP; and

WHEREAS, in accordance with Water Code section 10621(b), a Notice of Plan Preparation was sent to the county and cities within which MWDOC provides water supplies at least 60 days before the required public hearing on its 2025 UWMP; and

WHEREAS, in accordance with applicable law, including but not limited to Water Code section 10642 and Government Code section 6066, a properly noticed public hearing was held on May 20, 2026, in order to provide members of the public and other interested entities with the opportunity to be heard in connection with the proposed adoption of its 2025 UWMP and issues related thereto; and

WHEREAS, the Board of Directors has reviewed and considered the purposes and requirements of the Act, the contents of its 2025 UWMP, and the administrative record in support of its 2025 UWMP, and has determined that the factual analyses and conclusions therein are legally sufficient and an accurate representation of the water resource plan for the MWDOC; and

WHEREAS, the Board of Directors desires to adopt its 2025 UWMP prior to July 1, 2026, in order to comply with the Act.

NOW THEREFORE BE IT RESOLVED, the Board of Directors of the Municipal Water District of Orange County resolves as follows:

Section 1. That the above recitals are true and correct.

Section 2. The Board of Directors hereby adopts its 2025 UWMP.

Section 3. Staff is hereby authorized and directed, in accordance with Water Code sections 10621(d) and 10644(a), to submit its 2025 UWMP to DWR no later than July 1, 2026.

Section 4. Staff is hereby authorized and directed, in accordance with Water Code section 10644(a)(1), to submit a copy of its 2025 UWMP to the California State Library, and to any city or county within which MWDOC provides water supplies no later than 30 days after this adoption date.

Section 5. Staff is hereby authorized and directed, in accordance with Water Code section 10645, to make the UWMP available for public review at MWDOC's offices during normal business hours and on its website www.mwdoc.com no later than thirty 30 days after submitting its 2025 UWMP to DWR.

Section 6. The Board of Directors finds and determines that this resolution is not subject to the California Environmental Quality Act (CEQA) pursuant to Water Code Section 10652 because CEQA does not apply to the preparation and adoption of a UWMP. Because this resolution comprises Board of Director's adoption of its UWMP, no CEQA review is required.

Section 7. Pursuant to CEQA, the Board of Directors directs staff to file a Notice of Exemption with the Orange County Clerk's office within five (5) working days of adoption of this resolution.

PASSED AND ADOPTED by the Board of Directors of the Municipal Water District of Orange County at its regular meeting held on May 20, 2026, by the following roll call vote:

AYES:
NOES:
ABSTAIN:
ABSENT:

_____

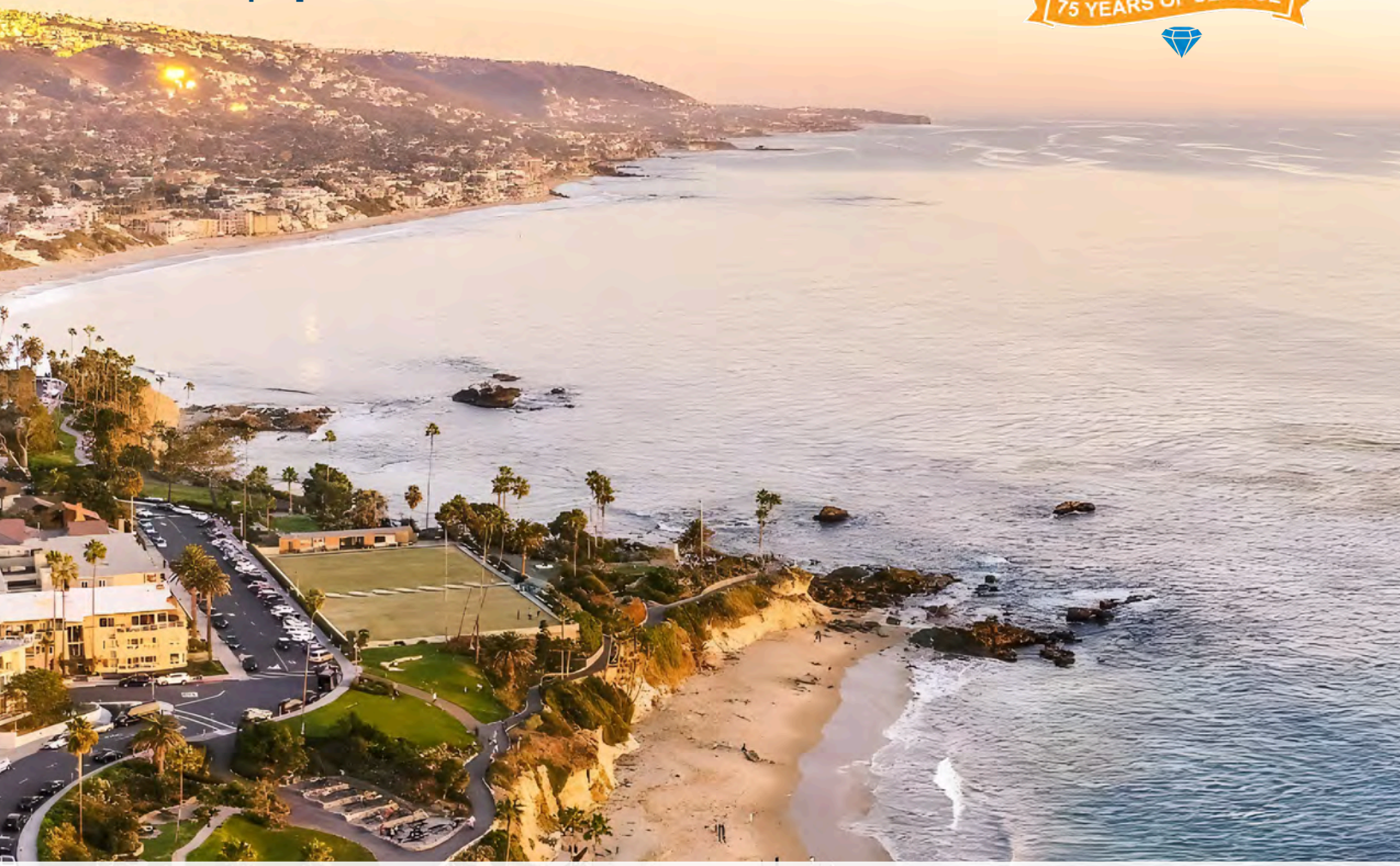
Angela Crespi
District Secretary
Municipal Water District of Orange County

Exhibit A

2025
URBAN WATER
Management Plan

Final Draft | April 2026

MWDOC
75 YEARS OF SERVICE









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CDM Smith

Maddaus Water Management Inc.

2025 Urban Water Management Plan

April 2026 / FINAL DRAFT

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Abbreviations

AB	Assembly Bill (California)
ACWA	Association of California Water Agencies
ACS	American Community Survey
ADU	Accessory Dwelling Unit
AF	Acre-Feet
AFY	Acre-Feet per Year
AMI	Advanced Metering Infrastructure
AMP	Allen McColloch Pipeline (MET)
AVEK	Antelope Valley–East Kern Water Agency
AWWA	American Water Works Association
BEA	Basin Equity Assessment
BiOps	Biological Opinions
BMP	Best Management Practice(s)
BPP	Basin Production Percentage
BSA	Boy Scouts of America
CAMP4W	Climate Adaptation Master Plan for Water
CCF	Hundred Cubic Feet
CDR	Center for Demographic Research
CEE	Consortium for Energy Efficiency
CFS	Cubic Feet per Second
CII	Commercial, Industrial, Institutional
CRA	Colorado River Aqueduct
CRSS	Colorado River Simulation System
CPTP	Coastal Pumping Transfer Program
CVP	Central Valley Project
CUWCC	California Urban Water Conservation Council
DDW	Division of Drinking Water (SWRCB)
DCP	Delta Conveyance Project
DCR	Delta planning reference
DIM	Dedicated Irrigation Meter
DOF	Department of Finance
DRA	Drought Risk Assessment
DVL	Diamond Valley Lake
DWR	Department of Water Resources
EIR	Environmental Impact Report
EO B-29-15	Executive Order mandating 25% reduction
EOCF #2	East Orange County Feeder No. 2

EOCWD	East Orange County Water District
EPA	Environmental Protection Agency
ESA	Endangered Species Act
ETo	Reference Evapotranspiration
FIRO	Forecast-Informed Reservoir Operations
FY	Fiscal Year
GAC	Granular Activated Carbon
GAP	Green Acres Project
GDP	Gross Domestic Product
GIS	Geographic Information System
gpcd	Gallons Per Capita Per Day
gpf	Gallons per flush
GRP	Groundwater Resilience Plan
GSP	Groundwater Sustainability Plan
GSWC	Golden State Water Company
GWRS	Groundwater Replenishment System
HDI	Hot-Dry Index
HECW	High-Efficiency Clothes Washer
HET	High-Efficiency Toilet
HRL	Healthy Rivers & Landscapes (Voluntary Agreements)
ICS	Intentionally Created Surplus
IPR	Indirect Potable Reuse
IRP	Integrated Resources Plan
IRWD	Irvine Ranch Water District
ITP	Incidental Take Permit
IWCM	Interim Water Control Manual
JADU	Junior Accessory Dwelling Unit
KWh	Kilowatt-hours
LAM	Landscape Area Measurement
LRP	Local Resources Program
LVL	Leo J. Vander Lans AWTF
MAF	Million Acre-Feet
MET	Metropolitan Water District of Southern California
MF	Microfiltration
MG	Million Gallons
MGD	Million Gallons per Day
M&I	Municipal & Industrial
MCL	Maximum Contaminant Level
MG/L	Milligrams per Liter

MUM	Mixed-Use CII Meter
MWDOC	Municipal Water District of Orange County
NPDES	National Pollutant Discharge Elimination System
OC Basin	Orange County Groundwater Basin
OC San	Orange County Sanitation District
OCWD	Orange County Water District
OCLAFCO	Orange County LAFCO
O&M	Operations and Maintenance
OWWD #8	Orange County Waterworks District No. 8
PFAS	Per- and Polyfluoroalkyl Substances
PPCP	Pharmaceuticals & Personal Care Products
ppt / ng/L	Parts per trillion / nanograms per liter
PRISM	Parameter-elevation Regressions on Independent Slopes Model
PRS	Pressure Reducing Station
QSA	Quantification Settlement Agreement
QWEL	Qualified Water Efficient Landscaper
RA	Replenishment Assessment
R-GPCD	Residential GPCD
RHNA	Regional Housing Needs Assessment
RO	Reverse Osmosis
RZ/WZ	Retail Zone / Wholesale Zone
SARCCUP	Santa Ana River Conservation & Conjunctive Use Program
SCAB	South Coast Air Basin
SCAG	Southern California Association of Governments
SDCWA	San Diego County Water Authority
SGMA	Sustainable Groundwater Management Act
SCE	Southern California Edison
SWP	State Water Project
SWRCB	State Water Resources Control Board
TAZ	Traffic Analysis Zone
TAP	Technical Assistance Program
TDS	Total Dissolved Solids
TM	Technical Memorandum
USACE	U.S. Army Corps of Engineers
USBR	U.S. Bureau of Reclamation
USGS	U.S. Geological Survey
UV	Ultraviolet
UWMP	Urban Water Management Plan
UWMP Act	Urban Water Management Planning Act

UWUO	Urban Water Use Objective
WEEA	Water Energy Education Alliance
WSAP	Water Supply Allocation Plan
WSCP	Water Shortage Contingency Plan
WUE / WUEdata	Water Use Efficiency / State submittal portal
WSIP	Water Savings Incentive Program

EXECUTIVE SUMMARY

Introduction and UWMP Overview

The Municipal Water District of Orange County (MWDOC) prepared this 2025 Urban Water Management Plan (UWMP) to submit to the California Department of Water Resources (DWR) to satisfy the UWMP Act of 1983 (UWMP Act or Act) and subsequent California Water Code (Water Code) requirements. MWDOC is a wholesale water supplier that provides water to 26 retail water suppliers and one groundwater wholesale agency in Orange County using imported water supplies obtained from its regional wholesaler, Metropolitan Water District of Southern California (MET).

UWMPs are comprehensive documents that present an evaluation of a water supplier's reliability over a long-term (20-25 year) horizon. This 2025 UWMP provides an assessment of the present and future water supply sources and demands within MWDOC's service area. It presents an update to the 2020 UWMP on MWDOC's water resource needs, water use efficiency programs, water reliability assessment, and strategies to mitigate water shortage conditions. It also presents MWDOC's updated 2025 Water Shortage Contingency Plan (WSCP), designed to prepare for and respond to water shortages. This 2025 UWMP contains all elements required by the UWMP Act.

UWMP Preparation

MWDOC coordinated the preparation of this 2025 UWMP with other key entities, including MET (regional wholesaler for Southern California and the direct supplier of imported water to MWDOC), Orange County Water District (OCWD) (Orange County Groundwater Basin [OC Basin] manager and provider of recycled water in north Orange County), and retail water suppliers in Orange County which include MWDOC's 27 member agencies and the three cities which are direct members of MET – Anaheim, Fullerton, and Santa Ana. MWDOC also coordinated with other entities, which provided valuable, regionally consistent data for the analyses prepared in this UWMP, such as population projections from the Center for Demographic Research (CDR) at California State University, Fullerton and the Orange County Water Demand Projection Model Technical Memorandum (TM).

System Description

MWDOC was formed by Orange County voters in 1951 under the Municipal Water District Act of 1911 to provide imported water to inland areas of Orange County. Governed by an elected seven-member Board of Directors, MWDOC is MET's third-largest member agency based on assessed valuation.

Today, MWDOC manages all of Orange County's imported water supply except for water imported to the cities of Anaheim, Fullerton, and Santa Ana. MWDOC is committed to ensuring water reliability for more than 2.36 million residents in its 600-square-mile service area. Although MWDOC does not own water facilities or have jurisdiction over local supplies, it works to ensure reliable water supplies to the region. MWDOC focuses on sound planning and appropriate investments in water supply, water use efficiency, regional delivery infrastructure, and emergency preparedness.

MWDOC's service area climate is characterized by Southern California's "Mediterranean" climate with mild winters, warm summers, and moderate rainfall. In terms of land use, the northern part of MWDOC's service area is largely built out with predominantly residential units, pockets dedicated to commercial, industrial, and institutional uses, and open space and parks. Land use development in southern Orange County is characterized by a "new phase" of growth that blends the expansion of remaining master-planned communities with the densification of existing suburban areas, often described as "live-work-play" developments.

Water Use Characterization

Water Use in the last Five Years

Total water use within MWDOC's service area has fluctuated in the past 5 years (FY 2021-25), with an annual average total water use of approximately 406,563 AF, with retail, municipal, and industrial water usage accounting for an average 97.3 percent over the past 5 years. Following one of the worst droughts in California history between 2017 and 2022, the significantly wet year in 2023 saw a dramatic decrease in overall water use from FY 2021-22 to FY 2022-23 in MWDOC's entire service area.

While total water usage of all water sources is important to understand, it is important to note that MWDOC is the wholesale provider only for treated and untreated imported water from MET for municipal and industrial (M&I) uses (i.e., direct uses) and non-M&I (indirect uses, e.g., groundwater recharge) within its service area. Water use in FY 2024-25 for MWDOC's wholesaler demands specifically included 123,753 AF of imported potable water.

Projected Water Use

The water use projection for this UWMP is based on the 2025 Orange County Water Demand Projection Model Technical Memorandum (TM). The methodology used in this demand forecast links water use statistically to a set of explanatory variables through a regression, or econometric, model.

By 2050, MWDOC's service area's total water demand is projected to be 414,936 AF, a 2.5 percent increase (as compared to 2025 actuals). Orange County groundwater is expected to continue providing a notable percentage of total water demand between 2025 and 2050 (roughly 51.1 percent in 2050).

Over the next 25 years, MWDOC's total imported water demands are projected to decrease by about 7.7 percent from approximately 123,753 AF in 2025 to approximately 114,275 AF by 2050. This demand projection represents all imported water purchased from MET and considers factors such as weather, water price, regional economic conditions, and housing density.

Conservation Target Compliance

MWDOC in collaboration with all its retail member agencies as well as the Cities of Anaheim, Fullerton, and Santa Ana, created the Orange County 20x2020 Regional Alliance to assist retail agencies in complying with the requirements of the Water Conservation Act of 2009, also known as SBx7-7 (Senate Bill 7 as part of the Seventh Extraordinary Session). Signed into law on February 3, 2010, it required the State of California to reduce urban water use by 20 percent by 2020.

Retail water suppliers are required to comply with SBx7-7 individually or as a region in collaboration with other retail water suppliers, to be eligible for water-related state grants and loans. As a wholesale water supplier, MWDOC is not required to establish a baseline or set targets for daily per capita water use itself. Orange County, as a region, achieved its 2020 target water use of 159 gallons per capita per day (GPCD) prior to 2020, indicative of the collective efforts of MWDOC and retail agencies in reducing water use in the region. Additionally, all Orange County water retailers, including all MWDOC's member agencies and the participating cities of Anaheim, Fullerton, and Santa Ana, achieved individual compliance prior to 2020.

Water Supply Characterization

Imported water from MET accounted for about 31 percent of MWDOC's service area water use in FY 2024-25. The other 69 percent is from various other sources, including groundwater from the Orange County Basin, groundwater from other smaller groundwater basins such as the Main San Gabriel Basin, and recycled water. The Orange County Sanitation District (OC San) and South Orange County Wastewater Authority (SOCWA) are the wastewater treatment providers of North County and South County agencies, respectively. A few MWDOC member agencies produce their own recycled water.

Water Service Reliability and Drought Risk Assessment

Every urban water supplier is required to assess the reliability of their water service to its customers under a normal year, a single dry year, and multiple dry years. The water service reliability assessment compares projected supply to projected demand for three long-term hydrological conditions. As an imported water provider, MWDOC relies on its wholesaler's reliability assessments, which concluded that imported water within its service area demands can be met under normal, single-dry, and 5-year consecutive dry conditions over the next 25 years (2026-2050).

Overall, MWDOC's service area depends on a combination of imported and local supplies to meet its water demands. MWDOC has taken numerous steps to ensure its member agencies have adequate supplies, including the development of local sources that augment the reliability of the imported water system. Based on MET's findings in its 2025 UWMP, available water supplies are projected to meet full-service demands from 2026 through 2050 under normal years, single dry year, and five consecutive dry year conditions.

Water Shortage Contingency Planning

The Water Shortage Contingency Plan (WSCP) is a standalone document adopted by MWDOC serving as the guidance document used to prevent catastrophic water supply service disruptions through proactive mitigation measures.

Water shortage contingency planning is a strategic planning process that MWDOC engages to prepare for and respond to water shortages. A water shortage, when water supply available is insufficient to meet the normally expected customer water use at a given point in time, may occur due to a number of reasons, such as water supply quality changes, climate change, drought, and catastrophic events (e.g., earthquake). MWDOC's WSCP provides a water supply availability assessment and structured steps designed to respond to actual conditions. This level of detailed planning and preparation will help maintain reliable supplies and reduce the impacts of supply interruptions.

The WSCP contains the processes and procedures that will be deployed when shortage conditions arise so that MWDOC's governing body, its staff, and its retail agencies can easily identify and efficiently implement pre-determined steps to mitigate a water shortage to the level appropriate to the degree of water shortfall anticipated.

Demand Management Measures

MWDOC has demonstrated its commitment to water use efficiency through multi-faceted and holistic water use efficiency programs. As a wholesaler, MWDOC facilitates the implementation of DMM throughout Orange County. MWDOC's efforts focus on the following three areas: Regional Program Implementation, Local Program Assistance, and Research and Evaluation. MWDOC develops, obtains funding for, and implements regional water savings programs on behalf of all retail water agencies in Orange County. This approach minimizes confusion to consumers by providing the same programs with the same participation guidelines, maintains a consistent message to the public to use water efficiently, and provides support to retail water agencies by acting as program administrators for the region. MWDOC provides assistance on a variety of local programs, including, but not limited to, Water Loss Control and Management Program, Public Outreach, and Choice K-12 School Programs.

Plan Adoption, Submittal, and Implementation

The Water Code requires both the UWMP and the WSCP to be adopted by the Supplier's governing body. Before the adoption of the UWMP, MWDOC notified the public and the cities and counties within its service area that MWDOC was in the process of preparing an UWMP and WSCP per the Water Code. MWDOC circulated the final draft of the UWMP and WSCP to facilitate public review and held a public hearing to receive input from the public on the UWMP and WSCP. Upon completion of the public hearing, MWDOC moved to adopt both the UWMP and WSCP. Post adoption, MWDOC submitted the UWMP to DWR and other key agencies and made the document available for public review no later than 30 days after filing with DWR.

The UWMP serves as a legal and technical water management foundation for MWDOC and can be referenced as needed, until its next required update cycle in 2030. With approval from DWR, MWDOC shall implement this plan into its public resources, providing MWDOC staff, the public, and elected officials with an understanding of past, current, and future water conditions and management. Furthermore, the WSCP serves as a strategic planning document designed to prepare for and respond to water shortages and service disruptions of water supplies.

CHAPTER 1 INTRODUCTION AND UWMP OVERVIEW

The Municipal Water District of Orange County (MWDOC) prepared this 2025 UWMP to submit to the California Department of Water Resources (DWR) to satisfy the UWMP Act of 1983 (UWMP Act or Act) and subsequent California Water Code (Water Code) requirements.

MWDOC is a wholesale water supplier that provides water to 26 retail water suppliers and 1 wholesale groundwater agency in Orange County using imported water supplies obtained from its regional wholesaler, Metropolitan Water District of Southern California (MET). MWDOC, as one of MET's 26 member agencies, has prepared this 2025 UWMP in collaboration with MET and its own member agencies.

UWMPs are comprehensive documents that present an evaluation of a water supplier's reliability over a long-term (20-25 year) horizon. In response to the changing climatic conditions since the 2020 UWMP, MWDOC has been assisting its member agencies and surrounding communities to manage both their water supplies and demands. The water loss audit program, water conservation measures, public outreach and education on conservation and efforts for increased self-reliance to reduce dependency on imported water from the Sacramento-San Joaquin Delta (the Delta) are some of the water management actions that MWDOC has taken to maintain the reliability of water supply for its service area.

This UWMP provides an assessment of the present and future water supply sources and demands within MWDOC's service area. It presents an update to the 2020 UWMP on MWDOC's water resource needs, water use efficiency programs, water reliability assessment and strategies to mitigate water shortage conditions. It also includes MWDOC's updated 2025 Water Shortage Contingency Plan (WSCP) designed to prepare for and respond to water shortages. This 2025 UWMP contains all elements required by the Act.

1.1 Overview of Urban Water Management Plan Requirements

The UWMP Act enacted by California legislature requires every urban water supplier (Supplier) providing water for municipal purposes to more than 3,000 customers or supplying more than 3,000 acre-feet (AF) of water annually to prepare, adopt, and file an UWMP with the DWR every five years in the years ending in six and one (e.g. 2026 and 2031).

For this 2025 UWMP cycle, DWR continues to place emphasis on achieving improvements for long term reliability and resilience to drought and climate change in California. Despite there being no new statutory requirements, Suppliers must now report progress on meeting their 2028 Water Loss Standards and continue to state their compliance with Senate Bill (SB) X7-7 2020 Targets. Additional guidance on stored water accounting and recommendations on identifying the need for future or proposed water supply projects are provided by DWR as well.

1.2 UWMP Organization

This UWMP is organized into 10 chapters aligned with the DWR Guidebook recommendations. The sections within each chapter are customized to include MWDOC's water supply reliability and future projections as well as plans to overcome any water shortages over a planning horizon for the next 25 years. The chapters for this UWMP are listed below:

Chapter 1 - Introduction and UWMP Overview gives an overview of the UWMP fundamentals and requirements for the 2025 UWMP.

Chapter 2 - UWMP Preparation identifies this UWMP as an individual planning effort of MWDOC, lists the type of year and units of measure used and introduces the coordination and outreach activities conducted by MWDOC to develop this UWMP.

Chapter 3 - System Description gives a background on MWDOC and its climate characteristics, population projections, demographics, socioeconomics, and predominant current and projected land uses of its service area.

Chapter 4 - Water Use Characterization provides historical, current, and projected water use by customer category for the next 25 years for MWDOC and the projection methodology used by MWDOC to develop the 25-year projections.

Chapter 5 - Conservation Target Compliance reiterates that the Orange County Regional Alliance, administered by MWDOC, met the SB X7-7 water use conservation target, both collectively as a region and individually by each retail agency in Orange County. The Orange County Regional Alliance is composed of MWDOC's member agencies along with the cities of Anaheim, Fullerton, and Santa Ana.

Chapter 6 - Water Supply Characterization describes the current water supply portfolio of MWDOC as well as the planned and potential water supply projects and water exchange and transfer opportunities.

Chapter 7 - Water Service Reliability and Drought Risk Assessment describes the assessment of the reliability of MWDOC's water supply service to its customers for a normal year, single dry year, and five consecutive dry years scenarios. This section also includes a drought risk assessment (DRA) of all the supply sources for a consecutive five-year drought period beginning 2026.

Chapter 8 - Water Shortage Contingency Planning is a brief summary of the standalone WSCP document which provides a structured guide for MWDOC to deal with water shortages, incorporating prescriptive information and standardized action levels, lists the appropriate actions and water use efficiency measures to be taken to ensure water supply reliability in times of water shortage conditions, along with implementation actions in the event of a catastrophic supply interruption.

Chapter 9 - Demand Management Measures provides a description of MWDOC's current and planned measures and programs to help the retail customers in its service area be water efficient and comply with their urban water use reduction targets.

Chapter 10 - Plan Adoption, Submittal, and Implementation provides a record of the process MWDOC followed to adopt and implement its UWMP.

CHAPTER 2 UWMP PREPARATION

The Municipal Water District of Orange County's (MWDOC) 2025 Urban Water Management Plan (UWMP) is prepared to meet the California Water Code (Water Code) compliance as a wholesale water supplier. The development of this UWMP involved close coordination with its member agencies, its wholesale supplier, the Metropolitan Water District of Southern California (MET), along with other key entities within the region.

2.1 Individual Planning and Compliance

MWDOC opted to prepare its own UWMP and comply with the Water Code individually, while closely coordinating with the Metropolitan Water District of Southern California (MET), Orange County Water District (OCWD), and its 26 retail member agencies to streamline regional integration. The UWMP Plan identification is presented in Table 2.1. As noted in Table 2.2, MWDOC has selected to report demands and supplies using the fiscal year as the basis in this UWMP.

The UWMP Checklist was completed to confirm the compliance of this UWMP with the Water Code, which is included in Appendix A. All Department of Water Resources (DWR) standardized tables are provided in Appendix B.

Table 2.1 Plan Identification

Submittal Table 2-2: Plan Identification		
Select One or Both	**Type of Plan**	**Name of Regional Alliance or RUWMP** (Drop Down List)
	Individual UWMP	
	If Water Supplier is also a member of a SB X7-7 Regional Alliance, select name from the drop-down.	Orange County 20x2020 Regional Alliance
☐	**Regional Urban Water Management Plan (RUWMP)**	
	If Supplier selected RUWMP, select name from the drop-down.	

Table 2.2 Supplier Identification

Submittal Table 2-3: Supplier Identification	
Type of Supplier (select one or both)	
☑	Supplier is a wholesale supplier
☐	Supplier is a retail supplier
Fiscal or Calendar Year (select one)	
☐	UWMP Tables are in calendar years
☑	UWMP Tables are in fiscal years
If using fiscal years provide month and date that the fiscal year begins (mm/dd)	
7/1	
Units of measure used in UWMP (select from drop down)	
Unit	AF
DWR NOTES: Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Submittal Table 2-3.	

2.2 Coordination and Outreach

2.2.1 Integration with Other Planning Efforts

MWDOC, as a wholesale water supplier, coordinated the preparation of this UWMP with its 26 retail member agencies, MET, OCWD, and with the cities of Anaheim, Fullerton, and Santa Ana.

MET is the regional wholesaler for Southern California and the supplier of imported water to its member agencies. MET has a total of 26 member agencies in Southern California, including the three cities (Anaheim, Fullerton, and Santa Ana) and MWDOC, which comprise the MET member agencies for Orange County. OCWD manages the Orange County Groundwater Basin (OC Basin or Basin 8-1) and provides treated groundwater to north and central Orange County.

MWDOC also developed this Plan in conjunction with other regionally consistent efforts, such as the population, housing, and employment projections from the Center for Demographic Research (CDR) at California State University, Fullerton. Key planning and reporting documents that were used to develop this UWMP are:

- **MET's 2025 UWMP** uses assumptions that fall within the plausible futures contemplated in MET's Integrated Water Resources Plan to evaluate MET's future imported water supply reliability.
- **MET's 2020 Integrated Water Resources Plan (IRP) Regional Needs Assessment** is a long-term, scenario-based planning document that guides Metropolitan's programs and investments to ensure reliable water supplies in Southern California and provides a basis for water supply reliability in Orange County.

- **MET's Climate Adaptation Master Plan for Water (CAMP4W)** is an ongoing planning and decision-making tool that accounts for the complexities and uncertainties of climate change. Part of the second phase of MET's long-term IRP planning process, CAMP4W incorporates the results and findings of MET's 2020 IRP Regional Needs Assessment into a collaborative process to identify and evaluate integrated regional solutions.
- **MET's 2025 Water Shortage Contingency Plan (WSCP)** provides a water supply availability assessment and guide for MET's intended actions during water shortage conditions.
- **MWDOC's 2025 WSCP** provides a water supply availability assessment and structured steps designed to respond to actual conditions that will help maintain reliable supplies and reduce the impacts of supply interruptions.
- **MWDOC's 2023 Orange County Water Reliability Study** is a planning document to evaluate the Orange County regional water system's ability to meet demands under a variety of stressors, such as drought, climate variability, or emergencies, to ensure long-term sustainability and future water supply reliability; while also providing insights for regional water supply issues for MET from an Orange County perspective.
- **2025 Orange County Water Demand Projection Model Technical Memorandum** is a collaborative effort amongst MWDOC, OCWD, and all retail water suppliers in Orange County that developed water demand projections to produce regionally consistent forecasts across all Orange County water agencies.
- **OCWD's 2025 Groundwater Resilience Plan** was completed in February 2025. The GRP is an adaptive strategies management plan outlining strategic projects to secure reliable future water supplies in the OC Basin.
- **OCWD's 2023-24 Engineer's Report** provides information on the groundwater conditions, water supply, and basin utilization of the OC Basin.
- **2022 Basin 8-1 Alternative** is an alternative to the Groundwater Sustainability Plan (GSP) for the OC Basin, provides significant information related to sustainable management of the basin in the past and hydrogeology of the basin, including groundwater quality and basin characteristics, and addresses DWR's recommendations to ensure long-term basin sustainability.
- **Groundwater Management Plans** provide the groundwater sustainability goals for the basins that supply groundwater to MWDOC's service area and the programs, actions, and strategic activities that support those goals.
- **Orange County Water & Wastewater Multi-Jurisdictional Hazard Mitigation Plan (2024)** provides the basis for the seismic and other natural and natural disaster risk analyses of the water system facilities.
- **Water Master Plans and Sewer Master Plans** of the cities and counties serving within the MWDOC's service area provide information on water infrastructure planning projects and plans to address any required water system improvements.

2.2.1.1 Statewide Water Planning

In addition to regional coordination with the various agencies described above, MWDOC is currently a part of MET's statewide planning effort to reduce reliance on the water imported from the Sacramento-San Joaquin Delta (Delta).

It is the policy of the State of California to reduce reliance on the Delta in meeting California's future water supply needs through a statewide strategy of investing in improved regional supplies, conservation, technology innovation, partner collaborations, and water use efficiency measures. This policy is codified through the Delta Stewardship Council's Delta Plan Policy WR P1 (Cal. Code Regs., tit. 23, § 5003), which requires state and local water suppliers to reduce reliance on the Sacramento-San Joaquin Delta by improving regional water self-reliance. It mandates that water exported from, transferred through, or used in the Delta must demonstrate efforts in water conservation, water recycling, and water supply diversification.

Progress towards achieving the goals of WR P1 is measured through Supplier reporting in each Urban Water Management Planning cycle. WR P1 is relevant to water suppliers that plan to participate in multi-year water transfers, conveyance facilities, or new diversions in the Delta. Additionally, with the recent amendments to the Bay Delta Plan, tributary flow objectives to the Delta are being updated to account for quality and habitat improvements for local environmental resources. This results in reduced reliance on Delta water supplies. Since 2022, the Bay-Delta Plan Amendment update has been in development. This effort considers additional tributaries from the southern San Joaquin Valley, triggering a re-evaluation of Delta flow requirements and conservation objectives, which ultimately may impact available supply to the State Water Project (SWP).

2.2.2 Wholesale and Retail Coordination

MWDOC developed its 2025 UWMP in conjunction with its retail member agencies. MWDOC facilitated the preparation of water demand projections for each retail agency and available imported water supply from MWDOC over the next 25 years. As indicated in Table 2.3, these retail water suppliers are listed in Chapter 3.

As the regional wholesale supplier of imported water, MWDOC administers various regional programs and measures to help retail customers meet various state requirements for all of MWDOC's retail member agencies, as well as for the Cities of Anaheim, Fullerton, and Santa Ana. Chapters 5 and 9 provide detailed information on these programs. While MWDOC assists retail member agencies in meeting requirements, the agencies also administer and operate their own programs to meet State requirement compliance, with more detail on these programs to be found in their respective UWMPs.

MWDOC developed its UWMP in conjunction with MET's 2025 UWMP. As one of MET's 26 member agencies, MWDOC provided data and feedback for refinement of analyses to assist with the preparation of the plan. MWDOC participated in MET Member Agency Managers meetings as well as the UWMP Coordination Meetings held with MET member agencies and other appropriate agencies. Additionally, regional issues and analysis methodologies were discussed during technical coordination workshops.

Table 2.3 Submittal Table 2-4 Wholesale: Water Supplier Information Exchange

Submittal Table 2-4 Wholesale: Water Supplier Information Exchange Water Code Section 10631(h)	
☑	Check the box if the Supplier has informed more than 10 other water suppliers of water supplies available. **Completion of the table below is optional. If not completed, include a list of the water suppliers that were informed.**
3-6	Provide page number for location of the list.
☐	Check the box if the Supplier has informed 10 or fewer other water suppliers of water supplies available. **Complete the table below.**
Water Supplier Name	
NOTES:	

2.2.3 Public Participation

For further coordination with other key agencies, and to encourage public participation in the review and update of this Plan, MWDOC held a public hearing on May 20, 2026, and notified key entities and the public per the Water Code requirements.

This 2025 UWMP was made available to the public on the MWDOC website (MWDOC - Municipal Water District of Orange County).

CHAPTER 3 SYSTEM DESCRIPTION

The Municipal Water District of Orange County (MWDOC) was formed by Orange County voters in 1951 under the Municipal Water District Act of 1911 to provide imported water to inland areas of Orange County. Governed by an elected seven-member Board of Directors, MWDOC is Metropolitan Water District of Southern California's (MET) third largest member agency based on assessed valuation.

MWDOC is a regional water wholesaler and resource planning agency, managing all of Orange County's imported water supply except for water imported to the cities of Anaheim, Fullerton, and Santa Ana. MWDOC is committed to delivering water to retail water suppliers who collectively serve more than 2.36 million residents in its 600-square-mile service area. To that end, MWDOC focuses on sound planning and appropriate investments in regional water supply planning, water use efficiency, regional delivery infrastructure, and emergency preparedness.

MWDOC's service area is characterized by southern California's "Mediterranean" climate with mild winters, warm summers, and moderate rainfall. In terms of land use, the northern part of MWDOC's service area is largely built out with predominantly residential units with pockets dedicated to commercial, institutional, governmental uses, and open space and parks. The vacant lots in the southern portion of Orange County are gradually being developed into residential and commercial mixed-use areas.

3.1 Agency Overview

This section provides information on the formation and history of MWDOC, its organizational structure, roles, and objectives.

3.1.1 Formation and Purpose

Orange County was settled around areas of surface water. San Juan Creek supplied the mission at San Juan Capistrano. The Santa Ana River supplied water to the development in the first two cities: Anaheim and Santa Ana. The Santa Ana River also provided water to recharge the large aquifer underlying the northern half of Orange County, enabling settlers to move away from the river's edge and still obtain water by drilling wells.

By the early 1900s, Orange County residents understood that their water supply was limited. The rivers and creeks did not flow all year long, and the aquifer would eventually be degraded or even dry up if the water was not replenished on a regular basis.

From 1928 to 1931, the Cities of Anaheim, Santa Ana, and Fullerton joined with 10 other cities in southern California to form MET. Their objective was to build an aqueduct from the Colorado River to provide the additional water necessary to sustain the growing southern California economy and its enviable lifestyle.

OCWD was formed in 1933 to protect the County's water rights on the Santa Ana River. Later that mission was expanded to manage the underlying groundwater aquifer by optimizing use of local supplies and augmenting those with imported supplies provided through the MET's member agencies in Orange County.

It was not long before other parts of Orange County also saw the need for supplemental supplies. A severe drought in the late 1940s further emphasized this need for coastal communities from Newport Beach to San Clemente. In 1948, coastal communities from Newport Beach south to the San Diego County line formed the Coastal Municipal Water District as a way to join in the benefits provided by MET. Three years later, MWDOC was formed by Orange County voters in 1951 under the Municipal Water District Act of 1911 to provide imported water to inland areas of Orange County. To improve services and reduce costs, the Coastal Municipal Water District became a part of MWDOC in January 2001.

Today, MWDOC is MET's third largest member agency based on property valuation, providing and managing imported water supplies as well as public outreach, education, emergency preparedness, and water-use efficiency programs that support a sustainable water future for the residents within its service area.

3.1.2 Board of Directors

MWDOC is led by service-driven Board working to secure Orange County's water future. MWDOC's seven-member Board of Directors, elected by the public, guides MWDOC's policies and programs. Each board member is elected from a specific area (Division) of the County and elected to a four-year term by voters who reside within that part of the MWDOC service area. The Board of Directors map is shown in Figure 3.1.

Each director is a member of at least one of the following standing committees: Planning and Operations; Administration and Finance; and Executive. Each committee meets monthly. The full Board convenes for its regular monthly meeting on the third Wednesday of the month and holds a Board workshop on MET issues the first Wednesday of the month. The current members of the Board of Directors are:

- Al Nederhood, Division 1.
- Larry D. Dick, Board President, Division 2.
- Robert R. McVicker, P.E., Division 3.
- Karl W. Seckel, P.E., Division 4.
- Randall Crane, Ph.D., Division 5.
- Jeffery M. Thomas, Board Vice President, Division 6.
- Megan Yoo Schneider, Ed.D., P.E., Division 7.

Additionally, MWDOC appoints four representatives to the MET Board (two are current MWDOC Board members, and two are 'outside' directors from within MWDOC's service area), who advocate for Orange County's interests among 34 other regional representatives. Together, these leaders shape the strategies that promote reliable, high-quality water for our communities.

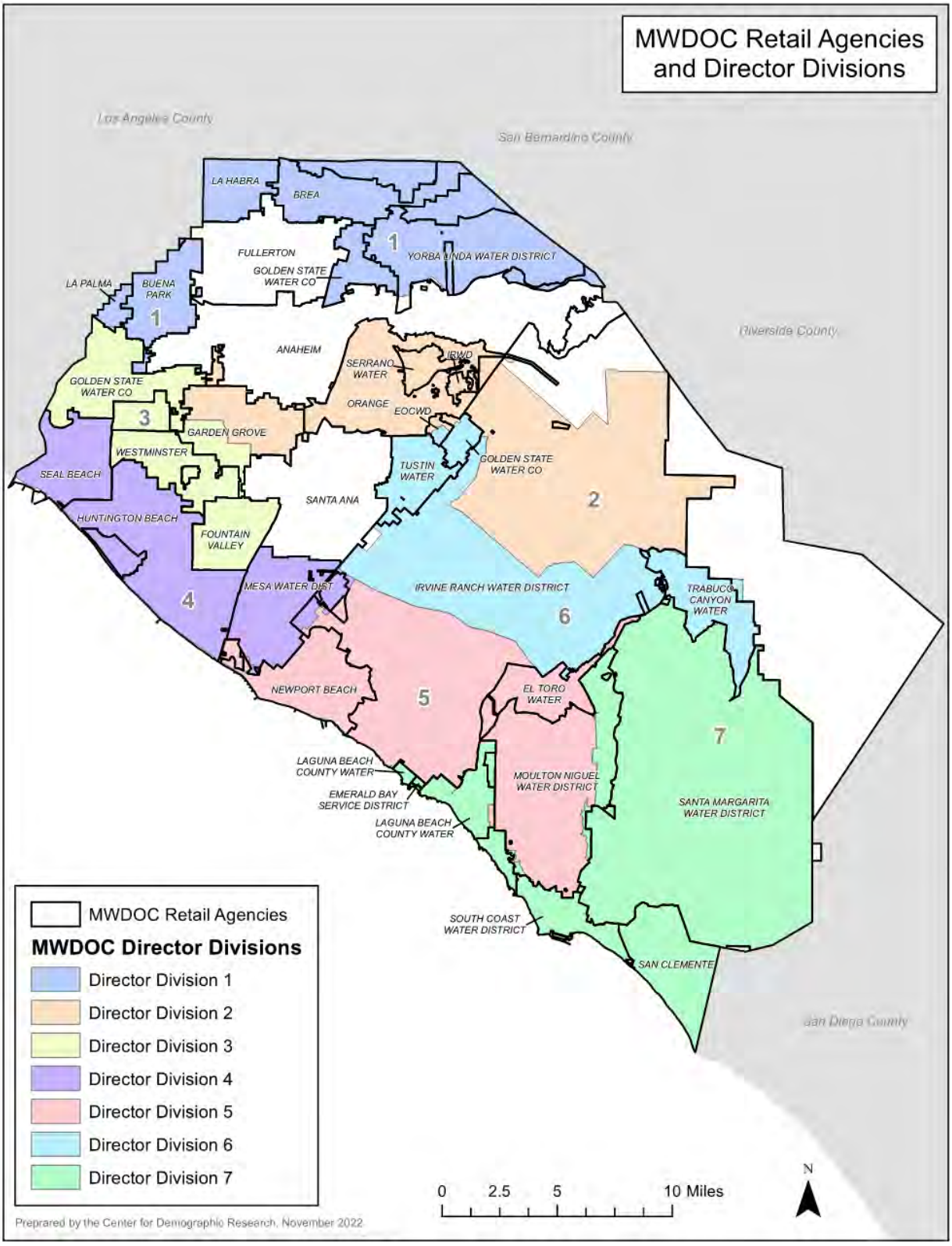


Figure 3.1 MWDOC Board of Directors Map, by Director Division

3.1.3 Relationship to MET

MWDOC became a member agency of MET in 1951 to bring supplemental imported water supplies to parts of Orange County. MET is a consortium of 26 cities and water agencies that provides supplemental water supplies to parts of Los Angeles, Orange, San Diego, Riverside, San Bernardino, and Ventura Counties. MET's two main sources of supply are the Colorado River and the Sacramento-San Joaquin River Delta. Supplies from these sources are delivered to Southern California via the Colorado River Aqueduct (CRA) and the State Water Project (SWP), respectively. MET is a major water rights holder on the Colorado River, and the largest State Water Contractor on the State Water Project. MWDOC purchases imported water from MET and distributes this water to its 27 member agencies, 26 retail water suppliers and one groundwater wholesale agency, which provide retail water services to the public.

3.1.4 Organizational Goals and Objectives

MWDOC's Mission Statement is as follows:

> "*To provide reliable, high-quality supplies from Metropolitan Water District of Southern California and other sources to meet present and future needs, at an equitable and economical cost, and to promote water use efficiency for all of Orange County.*"

In June 2023, MWDOC's Board of Directors identified seven Strategic Priorities that reflect MWDOC's mission, authority, and defined roles. These Strategic Priorities, organized by topic area, include:

- **MWDOC's Mission:** Clarify MWDOC's mission and roles by defining those functions and actions that help provide cost-effective, long-term water reliability and security for its member agencies and Orange County constituents.
- **MET Policy Positions:** Balance support for MET's regional mission and Orange County values and interests, with an emphasis on completing the Integrated Water Resources Plan and shaping a sustainable business model.
- **MET Director Consultation:** Ensure that MET Directors regularly reach out to and collaborate with MWDOC's member agencies to represent their interests and needs at MET.
- **Reliability Planning:** Work with member agencies to develop water supply and demand objectives that take a broad view of cost-effective options to increase supply and manage demand.
- **Member Agency Collaboration:** Solicit input and feedback from member agencies to support their needs and create opportunities that benefit Orange County's water future.
- **Communications:** Strengthen communications and coordination of messaging with member agencies, tailored to large and small agency needs.
- **Staff Development:** Invest in workforce development and succession planning to continuously strengthen and renew MWDOC's staff capabilities.

MWDOC is dedicated to providing a reliable, efficient, and sustainable water supply through forward-thinking planning, strategic advocacy, and community engagement. MWDOC's comprehensive programs empower local water agencies, businesses, and residents to navigate the complexities of water management with innovative solutions. These programs include the following:

- **Planning and Resource Development:** MWDOC supports the planning, design, and implementation of local water projects, enhancing Orange County's water reliability. By providing technical expertise, funding assistance, and regulatory guidance, MWDOC helps local water providers develop recycled water programs, groundwater recharge projects, and conservation initiatives for a sustainable water future.
- **Water Emergency Response Organization of Orange County (WEROC):** WEROC, administered by MWDOC, promotes emergency readiness for Orange County water and wastewater agencies. Through planning, training, and coordination, WEROC prepares for disasters like earthquakes and wildfires, facilitates resource sharing, and supports rapid responses to protect vital water services and public safety.
- **MET and Water Issues:** MWDOC advocates that Orange County's needs are represented in MET's regional policies, supply planning, and infrastructure projects. By advocating for local priorities and collaborating with Orange County water providers, MWDOC helps shape decisions that balance regional goals with the county's unique challenges and needs.
- **Communications:** MWDOC informs and educates Orange County residents and businesses on water supply issues, conservation, and policies through community partnerships, special events, and other outreach efforts. From educational forums, briefing papers, and digital campaigns to public workshops and tours, MWDOC engages people of all ages, promoting water awareness and informed action for a sustainable water future.
- **K-20 Water Education Initiatives:** Water education is vital for a sustainable future in Orange County. It promotes water use efficiency, public health, and environmental stewardship, and illuminates high-quality, meaningful careers. Beyond goodwill, it is a wise investment, equipping future generations to address local and global water challenges. MWDOC's education programs foster environmental literacy and responsible water use, building a community dedicated to protecting our essential water resources.
- **Water Use Efficiency:** MWDOC promotes water use efficiency through rebate programs and expert assistance, encouraging water-efficient behaviors and technologies like high-efficiency appliances, smart irrigation, and drought-tolerant landscaping. By partnering with local agencies to offer water-saving resources and incentives, MWDOC helps residents and businesses adopt sustainable practices, reduce water waste, and protect Orange County's water resources for the future.
- **Water Loss Control or Leak Detection:** MWDOC helps local water agencies throughout Orange County minimize water waste by analyzing system inefficiencies and introducing advanced leak detection strategies. Using tools like acoustic sensors and water-smart monitoring, MWDOC identifies, and addresses leaks early, preventing costly water loss, conserving resources, and enhancing Orange County's long-term water reliability.
- **Government Affairs:** MWDOC advocates Orange County's water needs at the local, state, and federal levels, ensuring policies support reliability, quality, and sustainability. By monitoring legislation and engaging with lawmakers, regulatory agencies, and stakeholders, MWDOC shapes decisions on critical

issues like supply reliability, infrastructure funding, and drought management. Through collaboration with member agencies, MWDOC amplifies Orange County's voice, and secures resources to address present and future water challenges.

- **Finance and Transparency:** MWDOC's budgeting, accounting, IT systems, and rebate programs ensure efficient, secure, reliable, and fiscally responsible operations. MWDOC supports Orange County's water needs and promotes sustainable financial practices by maintaining transparency, enhancing cybersecurity, and streamlining rebate facilitation.
- **Administrative Services:** MWDOC's Administrative Services ensure efficient agency operations by managing budgeting, financial planning, and human resources. They also oversee employee recruitment and training and provide publicly accessible, factual information to ensure sound and just governance. These foundational support services enable MWDOC to focus on delivering reliable and sustainable water solutions for Orange County.

From infrastructure development and emergency preparedness to education, conservation, and policy leadership, MWDOC plays a pivotal role in safeguarding Orange County's water resources.

3.2 Water Service Area

3.2.1 Water Service Area

As of 2025, MWDOC serves more than 2.36 million residents in a 600-square-mile service area (Figure 3.2). Although MWDOC does not have its own water facilities or jurisdiction over local supplies, it works to deliver reliable water supplies to the region.

MWDOC serves imported water in Orange County to 27 member agencies, consisting of 13 cities and 13 water districts, along with one groundwater wholesale agency. In alphabetical order, MWDOC water retail agencies include the following:

Cities	Special Districts
City of Brea	East Orange County Water District (EOCWD)
City of Buena Park	El Toro Water District (ETWD)
City of Fountain Valley	Emerald Bay Services District (EBSD)
City of Garden Grove	Irvine Ranch Water District (IRWD)
City of Huntington Beach	Golden State Water Company (GSWC)
City of La Habra	Laguna Beach County Water District (LBCWD)
City of La Palma	Mesa Water District (Mesa Water)
City of Newport Beach	Moulton Niguel Water District (MNWD)
City of Orange	Orange County Water District (OCWD)
City of San Clemente	Santa Margarita Water District (SMWD)
City of Seal Beach	Serrano Water District (Serrano)
City of Tustin	South Coast Water District (SCWD)
City of Westminster	Trabuco Canyon Water District (TCWD)
	Yorba Linda Water District (YLWD)

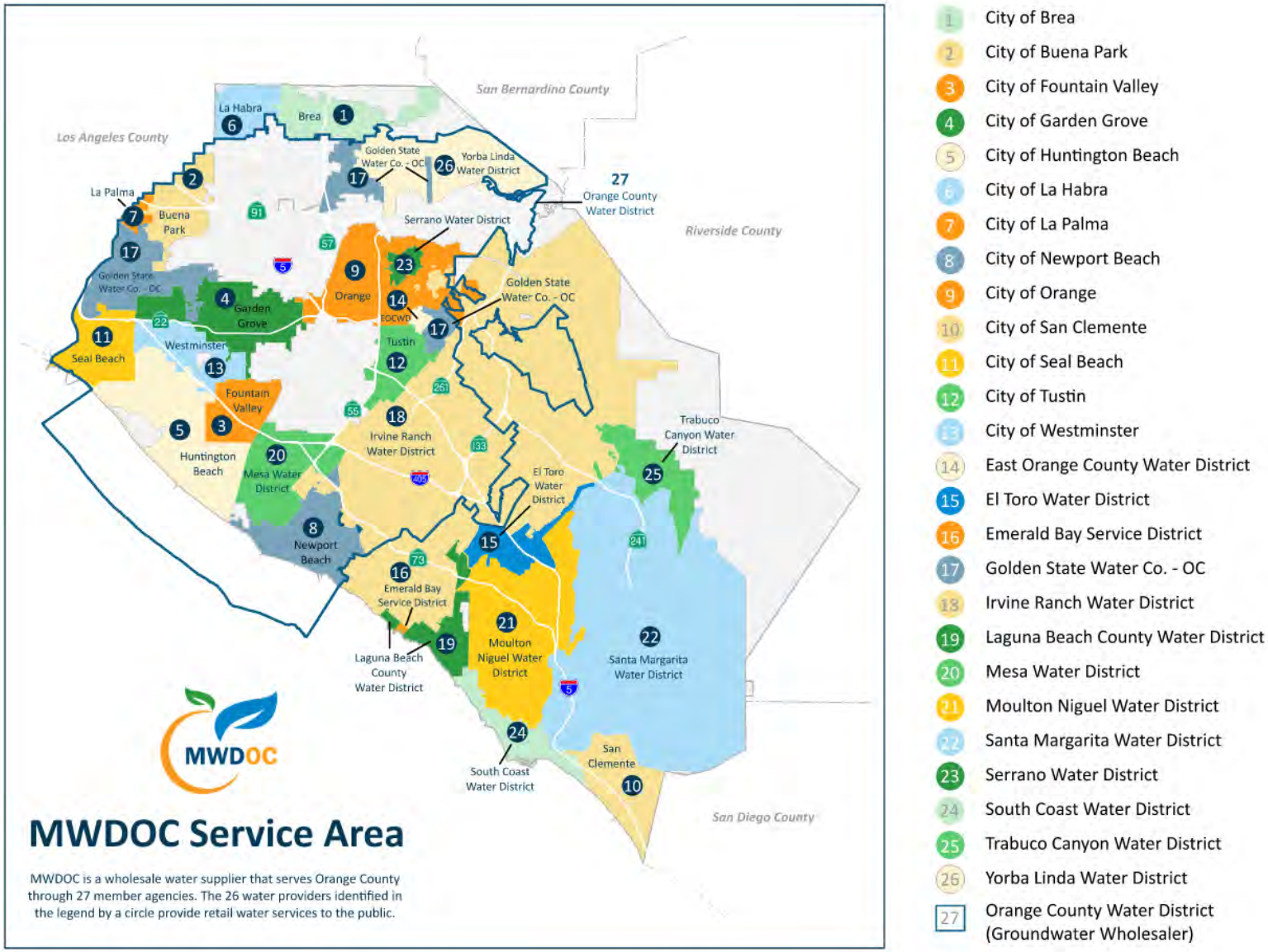


Figure 3.2 MWDOC's Water Service Area by Retail Agency

3.3 Climate

MWDOC's service area is located within the South Coast Air Basin (SCAB) that encompasses all of Orange County, and the urban areas of Los Angeles, San Bernardino, and Riverside counties. The climate in the SCAB area is characterized by Southern California's "Mediterranean" climate: a semi-arid environment with mild winters, warm summers, and moderate rainfall.

Local rainfall and temperature greatly influence water usage in the service area. The biggest variation in annual water demand is due to changes in rainfall and temperature. As shown in Table 3.1, the average daily temperatures in Orange County range from 58.5 ˚F in December and January to 75.6 ˚F in August. As shown in Table 3.2, the average annual precipitation is 11.6 inches, although the region is subject to significant annual precipitation variability, as Southern California has the most precipitation variability in the nation. The average evapotranspiration (ETo) is above 45 inches per year (Table 3.3), which is nearly four times the annual average rainfall.

The 30-year averages listed below do not reflect increasing intensity heat wave events or precipitation variability from year to year that Orange County has been experiencing. The increasing intensity and frequency of heat waves, precipitation variability, and altered climatic patterns contribute to the challenges associated with Southern California water management that call for continued investment in new and protection of existing supplies.

Table 3.1 Orange County 30-Year Average Temperature (1996-2025)

Orange County Temperature (°F)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Average Daily High Temperature	70.4	70.2	72.3	74.2	75.9	79.1	84.1	86.0	85.1	80.8	75.3	69.4	76.8
Average Daily Temperature	59.4	59.5	61.8	63.9	66.8	70.0	74.3	75.6	74.4	69.9	63.9	58.5	66.5
Average Daily Low Temperature	48.4	48.7	51.2	53.6	57.7	61.0	64.4	65.1	63.7	59.0	52.4	47.7	56.1

Notes:
Source: NOAA Weather Station (Santa Ana Fire Station, GHCND:USC00047888)

Table 3.2 Orange County 30-Year Average Precipitation (1996-2025)

Orange County Precipitation	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Average Precipitation	2.3	2.9	1.4	0.8	0.3	0.0	0.0	0.1	0.1	0.5	0.9	2.4	11.6

Notes:
Source: NOAA Weather Station (Santa Ana Fire Station, GHCND:USC00047888)

Table 3.3 Orange County Evapotranspiration

CIMIS Station ID and Name	Jan ETo (in)	Feb ETo (in)	Mar ETo (in)	Apr ETo (in)	May ETo (in)	Jun ETo (in)	Jul ETo (in)	Aug ETo (in)	Sep ETo (in)	Oct ETo (in)	Nov ETo (in)	Dec ETo (in)	Total ETo (in)
75, Irvine	2.37	2.59	3.84	4.8	5.08	5.8	6.52	6.27	4.79	3.68	2.67	2.05	50.46
241, San Clemente	2.16	2.88	3.88	4.72	4.78	5.34	6.16	5.72	4.59	3.78	2.76	1.98	48.75
245, Coto de Caza	2.23	2.87	3.83	4.77	4.72	6.17	7	6.7	4.94	3.98	2.82	2.03	52.06

Notes:
Stations within South Coast Valleys CIMIS Region.
Irvine station became active on 10/7/1987. San Clemente station became active on 7/28/2015. Coto de Caza station became active on 10/7/2015.
Source: California Irrigation Management Information System (CIMIS), California Department of Water Resources.

While MWDOC service area demands are influenced by local rainfall and temperature, the imported water supply from MET's core water supplies, i.e. the SWP and the CRA are largely influenced by climate conditions in northern California and the Colorado River Basin, respectively. Both regions have variable hydrologic conditions that can significantly affect MET's water supplies from year to year. This past decade has seen dramatic swings in annual precipitation, especially in the form of snowpack, which directly affects SWP supply allocations. In 2021 and 2022, California experienced near zero "Table A" State Project Water Allocation of contract supplies similar to conditions in 2014. However, in 2023, MWDOC received a 100 percent allocation for SWP imported water.

Similarly, the Colorado River Basin also experienced year-to-year swings in hydrology as well as the prolonged drought conditions that have persisted since around the year 2000. While the impacts of record low precipitation have been partially mitigated by the substantial volume of water that the Lower Basin States have stored in Lake Mead and Lake Powell to stabilize the system, the long-term drying trend remains severe. As of November 2025, Lake Mead storage was at 31 percent of capacity and Lake Powell storage was at 28 percent of capacity, providing less of a buffer for a future period of low precipitation (MET, 2025). Further challenges on the Colorado River include a significant reduction in the amount of runoff reaching the Colorado River from the Colorado River Watershed due to climate change, hotter temperatures, and drier soil conditions (CalMatters, 2025).

3.4 Population, Demographics, and Socioeconomics

3.4.1 Service Area Population

MWDOC serves a 2025 population of 2,362,565 through its 27 member agencies. Overall, the population is projected to increase by 63,478 or 2.6 percent by 2050. Table 3.4 shows the population projections in five-year increments out to the year 2050 within MWDOC's service area.

Table 3.4 Submittal Table 3-1 Wholesale: Population - Current and Projected

Submittal Table 3-1 Wholesale: Population - Current and Projected Water Code Section 10631(a)						
Population Served	2025	2030	2035	2040	2045	2050(opt)
	2,362,565	2,404,169	2,436,694	2,448,540	2,440,779	2,426,043
NOTES: Source: Center for Demographic Research at California State University, Fullerton, 2025						

3.4.2 Demographics and Socioeconomics

Generally, housing within MWDOC's service area is forecast to experience increasing densification with significant increases in multi-unit residential dwellings. This is evident in many cities in the northern and central areas of MWDOC's service area, where single-family dwellings are currently predominant. Whereas in the southeastern portion of MWDOC's service area, there remains open land suitable for further development and growth. As shown in Table 3.5, the total number of dwelling units in the MWDOC service area is expected to increase in the next 25 years from 911,494 in 2025 to 1,017,876 in 2050. This equates to a total increase of 106,876 dwelling units or by 10.5 percent.

Table 3.5 MWDOC Service Area Dwelling Units by Type

Dwelling Units	2025	2030	2035	2040	2045	2050
Single Family	457,308	463,030	467,262	469,648	471,799	474,401
All Other(1)	454,186	494,006	513,503	523,463	532,519	543,475
Total	911,494	957,036	980,765	993,111	1,004,318	1,017,876

Notes:
(1) Includes duplex, triplex, apartment, condo, townhouse, mobile home, etc. Yachts, houseboats, recreational vehicles, vans, etc. are included if is primary place of residence. Does not include group quartered units, cars, railroad box cars, etc.
Source: Center for Demographic Research at California State University, Fullerton, 2025.

In addition to the types and proportions of dwelling units, various socio-economic factors such as age distribution, education levels, general health status, income, and poverty levels affect MWDOC's water management and planning. Based on the U.S. Census Bureau's 2023 American Community Survey, Orange County has about 17 percent of its population aged 65 and over, 62 percent between the ages of 18 and 64, and 20 percent under the age of 18. Of the Orange County population over 25 years of age, 87.3 percent are at a minimum high school graduates, with 44.7 percent of this age group having at least a bachelor's degree.

3.4.3 Demographic Projection Methodology

CDR is a collaborative research center established in 1996 to provide accurate and timely demographic data on population, housing, and employment in Orange County. CDR serves as Orange County's authoritative source for demographic information. MWDOC contracts with CDR to update the 2010 population estimates through the current year and to provide an annual estimate of population served by each of its retail water suppliers within its service area. CDR uses geographic information system (GIS) mapping and data from the 2000, 2010, and 2020 U.S. Decennial Censuses, State Department of Finance (DOF) population estimates, and the CDR annual population estimates and Housing Inventory System (HIS). These annual estimates incorporate annual revisions to the DOF annual population estimates, often for every year back to the most recent Decennial Census. As a result, all previous estimates are set aside

and replaced with the most current set of annual estimates. Annexations and boundary changes for water suppliers are incorporated into these annual estimates.

Demographic projections used for this UWMP reflect the most recently available set of projections developed by CDR based on its 2022 Orange County Projections. Demographic projections for Orange County are updated every 4 years, with the next set of projections expected in the late fall of 2026. The 2022 Orange County Projections accounted for Draft RHNA rezone sites with jurisdictions including the number of dwelling units that are most likely to occur/get built by the end of 2050 under assumptions and trends existing at the time of the forecasting effort, including a parcel-level inventory of additional housing capacity from sites that were to be rezoned to accommodate the 6th RHNA cycle.

In the summer of 2025, projections by water supplier for population and dwelling units by type were estimated using the 2022 Orange County Projections dataset. Growth for each of the 5-year increments was allocated using GIS and a review of the traffic analysis zones (TAZ) data with a 2023 aerial photo. The growth was added to the 2025 estimates for each respective water supplier.

3.5 Land Uses

3.5.1 Current Land Uses

The two primary land uses within the service area of MWDOC are residential (30 percent) and open space and parks (33 percent). Based on the zoning designation collected and aggregated by the Southern California Association of Governments (SCAG) in 2018, the current land use within the MWDOC's service area can be categorized as follows:

- Single-family residential: 23 percent
- Multi-family residential: 7 percent
- Agriculture: 1 percent
- Commercial: 6 percent
- Industrial: 4 percent
- Institutional/Governmental: 7 percent
- Open space and parks: 33 percent
- Other: 17 percent (e.g., Undevelopable or Protected Land, Water, and Vacant)
- No land use designations: 1 percent

3.5.2 Projected Land Uses

Land uses in the northern and southern parts of Orange County are both predominantly residential. North Orange County is substantially built out, with a majority of residential land uses with some mixed-use areas dedicated to commercial, institutional, and governmental uses. Future developments planned in north Orange County are mainly redevelopment and infill projects. South Orange County has greater development potential, with vacant areas gradually transitioning to mixed-use residential and commercial areas.

The following requirements and changes in law will impact the MWDOC's service area future land use moving forward:

- **Regional Housing Needs Assessment (RHNA)** – State law requires jurisdictions to provide their share of the RHNA allocation, which is determined by the State Department of Housing and Community Development (HCD). The Southern California Association of Governments (SCAG) determines how those units are allocated among individual cities and counties. The cities will continue planning to meet their RHNA allocation requirements, as noted in their most recent, respective General Plan Housing Elements.
- **Accessory Dwelling Units (ADUs)** – ADUs are separate small dwellings embedded within residential properties. There has been an increase in the construction of ADUs in California in response to rising interest in providing affordable housing. Since 2020, several landmark laws have been passed by the State Legislature to update ADU law and simplify the construction, rental, and sale of ADUs in California. The most significant laws that have recently come into effect include:
  - » AB-1033 - Accessory dwelling units: local ordinances: separate sale or conveyance, which authorizes local governments to adopt ordinances permitting the sale of ADUs separately from the primary residence as condominiums.
  - » AB-976 - Accessory dwelling units: owner-occupancy requirements, which prohibits a local agency from requiring owner-occupancy for property owners to build and rent an ADU.
  - » AB-1154 - Junior accessory dwelling units, which no longer require owner-occupancy for Junior ADUs (JADUs) as long as they have their own bathroom.
  - » AB-1332 - Accessory dwelling units: preapproved plans, which require local agencies to develop a program for pre-approved ADU plans, with projects using these plans having to be approved or denied within 30 days.
  - » SB-543 - Accessory dwelling units and junior accessory dwelling units, which requires local agencies to determine if an ADU/JADU application is complete within 15 business days of submittal, revises ADU size to now be measured by "interior livable space", and redefines a JADU to be no more than 500 square feet of interior livable space.
  - » SB-1211 Land use: accessory dwelling units: ministerial approval, which authorizes multi-family property owners to build up to eight detached ADUs on a single lot, provided that the number of ADUs does not exceed the number of existing primary units.
  - » AB-2533 Accessory dwelling units: junior accessory dwelling units: unpermitted developments which prohibits local agencies from denying permits for unpermitted ADUs/JADUs constructed before January 1, 2020 based on code violations unless the structure is a health or safety hazard.

In 2024, a total of 6,162 new residential units were permitted in Orange County, including those for ADUs (CDR, 2025). CDR projects that by 2050, approximately 13,000 more ADUs will be built in Orange County, with 9,088 ADUs expected within MWDOC's service area. This equates to adding one ADU to 2 percent of MWDOC's existing single-family residential (SFR) units. The increase in ADUs is likely to result in an increase in number of people per dwelling unit. Depending on whether the addition of ADUs results in a net replacement of irrigated area (or other high water use features such as swimming pools), ADUs could increase or decrease water demands.

CHAPTER 4 WATER USE CHARACTERIZATION

One of the main objectives of an Urban Water Management Plan (UWMP) is to provide insight into the projected future water demands and supplies. This chapter describes the Municipal Water District of Orange County's (MWDOC) service area current and future water demands, factors that influence demands, and the methodology used to forecast future water demands over the next 25 years. For this 2025 UWMP, water demand projections span from planning year 2025 through planning year 2050.

Known for its suburban coastal communities and densely populated inland areas, Orange County has evolved greatly from its beginnings as an agricultural region. As some of the earliest cities in Orange County, from 1928 to 1931 the Cities of Anaheim, Fullerton, and Santa Ana all joined with 10 other southern California cities to form the Metropolitan Water District of Southern California (MET) with the ambitious dream to bring Colorado River water across the Mojave Desert. MWDOC later joined MET as a member agency in 1951, and with the merger with Coastal Municipal Water District in 2001, now represents the remainder of Orange County to provide and manage the imported water supplies within its service area. Orange County is now mostly comprised of residential, mixed-use, and commercial developments, with less industry in the region. Agriculture in the region has also declined significantly as Orange County has grown more suburban. Thus, modern-day water use within Orange County can be largely summarized by the following four demand sectors:

- Single-family Residential.
- Multifamily Residential.
- Commercial, Industrial, and Institutional (CII).
- Dedicated Irrigation (potable, recycled & raw water).

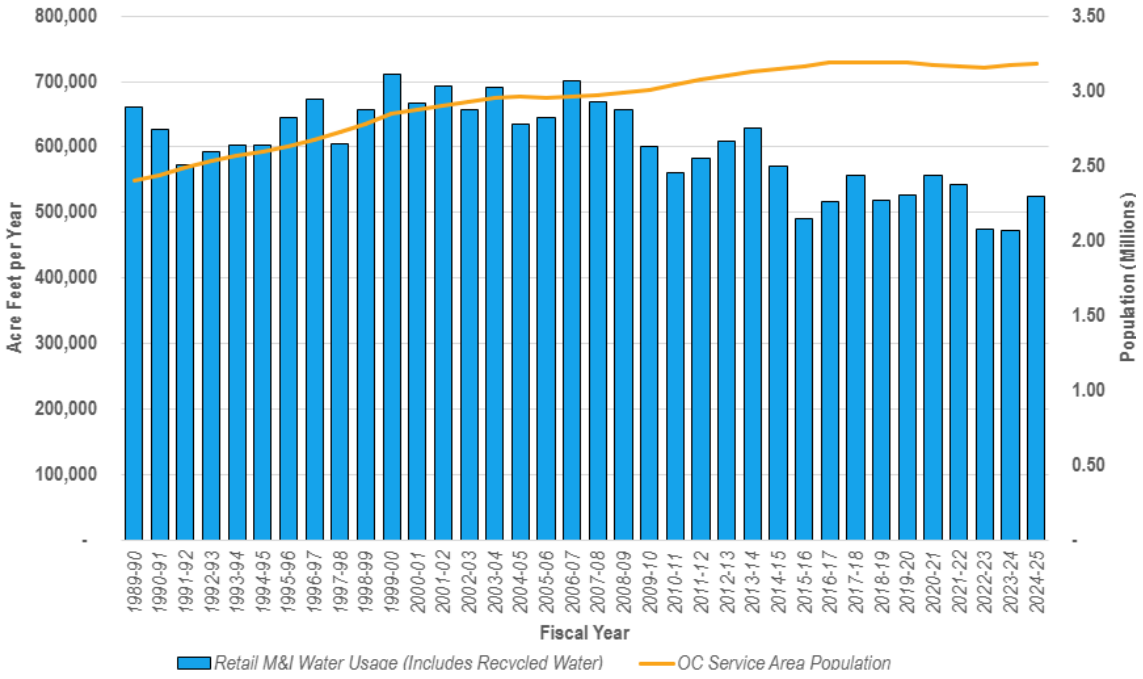


Figure 4.1 Historical Water Use and Population in Orange County

Figure 4.1 shows Orange County's overall historical water usage compared to population since 1990, when local water conservation programs were first established. As shown, from the early 1990s through the mid-2000s, Orange County's water usage increased as the population increased. Population figures slowed significantly in 2018 and began to decrease during the COVID-19 Pandemic in 2020-2021. Since 2007, retail, municipal, and industrial water use in Orange County has declined due to multiple contributing factors. Decades of sustained investments in water-use efficiency and public education have led to significant adoption of water-efficient appliances and fixtures and increased public awareness of the need to use water wisely. Furthermore, in response to recurring droughts, growing urban demand, and increasingly limited water supplies, multiple regulatory requirements to promote water conservation have evolved and been implemented over the past several years throughout California and Orange County.

Orange County's trending decline in water usage can most notably be attributed to Orange County water agencies' past efforts to achieve regional and individual compliance with Senate Bill (SB) X7-7, the Water Conservation Act of 2009, through the Orange County 20x2020 Regional Alliance and compliance with Executive Order (EO) B-29-15. EO B-29-15 mandated a 25 percent reduction in potable water use in response to the 2013-2014 drought. Furthermore, Orange County water agencies' ongoing progress towards achieving SB 606 and Assembly Bill (AB) 1668, the "*Making Conservation a Way of Life*" legislation water use objectives, continues to exemplify Orange County water agencies' commitment to water conservation, water use efficiency, and overall reduction in potable water usage in recent decades.

In 2025, MWDOC and Orange County Water District (OCWD), in collaboration with MWDOC's member agencies and the Cities of Anaheim, Fullerton, and Santa Ana, led the effort to develop the 2025 Orange County Water Demand Projection Model. The Orange County Water Demand Projection Model (MWDOC, 2025) was used to project long-term water demand under three hydrologic conditions (normal year, single dry year, and five consecutive dry years) over a 25-year horizon in 5-year increments, consistent with the 2025 UWMP requirements.

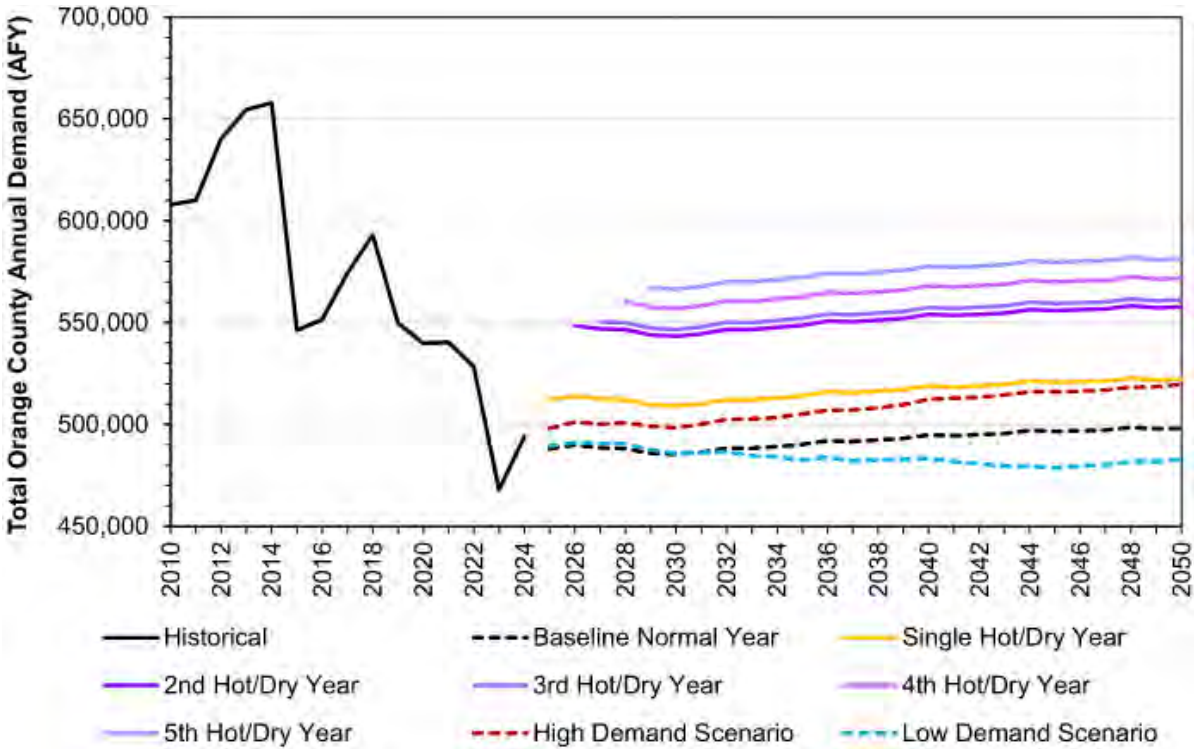


Figure 4.2 Projected Water Use Across All Orange County Water Agencies

Although Orange County demands are forecast to be relatively flat into the future, with water use efficiency efforts counterbalancing new growth, Figure 4.2 shows that annual variations in weather could cause high fluctuations. Some examples of this are described below:

- Single-family consumption is highly seasonal, and the model correlates well with seasonality and temperature by capturing fluctuations in single-family outdoor irrigation.
- Multifamily use is generally less responsive to weather than single-family demands, as much of multifamily outdoor irrigation has been shifted into the irrigation-specific water use sector (dedicated irrigation meters), and generally newer multifamily dwellings in Orange County have comparatively less landscaped area than generally older single-family dwellings due to Model Water Efficient Landscape Ordinances (MWELO) mandated since 1993. Seasonal price elasticity varies the least between months for the multifamily sector.
- Commercial, Industrial and Institutional use is positively correlated to each job proportion as well as gross domestic product throughout Orange County, which means a higher amount of CII jobs and production value trend in an increase in water demands.
- Irrigation is the most responsive to temperature and precipitation compared to the other sectors.

Total water use within MWDOC's service area has fluctuated in the past 5 years (FY 2021-25), with an annual average total water use of approximately 406,563 AF, with retail, municipal, and industrial water usage accounting for an average 97.3 percent over the past 5 years. Following one of the worst droughts in California history between 2017 and 2022, the significantly wet year in 2023 saw a dramatic decrease in overall water use from FY 2021-22 to FY 2022-23 in MWDOC's entire service area.

Water use in FY 2024-25 for MWDOC's wholesaler demands specifically included 123,753 AF of imported potable water. The use of imported water is projected to decrease to 114,275 AF or 7.7 percent in 2050. As shown in Table 4.2, this imported water amount includes both 94,275 acre-feet per year (AFY) of potable water and 20,000 AFY of non-potable water.

4.1 Water Use in the Last Five Years

The 5-year average total water use within MWDOC's service area is approximately 406,563 AF provided by potable and non-potable sources. Demand trends have remained flat due to water-use efficiency efforts and increased precipitation in recent wet years, such as FY 2023. As mentioned in Chapter 3, despite some parts of southern Orange County still exhibiting growth, infill development, and increased densification, population projections are expected to slightly decrease. However, total demand has remained relatively stable due to ongoing water-conservation programs and improved water-use efficiency efforts.

FY 2020-21 through FY 2021-22 saw the highest water use over the last 5 years due to region-wide drought conditions. Conversely, FY 2022-23 proved to be one of the wettest years on record in the State, and MWDOC's service area saw a general decrease in water demand following this wet year, as precipitation offsets landscape irrigation demands. These year-to-year fluctuations in precipitation will continue to influence MWDOC's annual demands. In general, MWDOC's service area saw a 6.8 percent decrease in total demand over the 5-year reporting period.

Direct water use in Orange County includes municipal, industrial, and agricultural use. Based on a 10-year average, it represents approximately 92.4 percent of the total MWDOC service area demand. Demand for direct use is met through imported water (treated and untreated), groundwater, local surface water, and recycled water. Municipal and Industrial (M&I) demands represent the full spectrum of water use within a region, including residential and commercial, industrial and institutional (CII) uses, and unmetered uses (e.g., hydrant flushing, firefighting). Agricultural demands account for less than 1 percent of total direct water use and have significantly decreased over the years due to urban growth within the service area.

MWDOC's total service area water usage in FY 2024-25 was 404,654 AF; direct (M&I) usage accounted for 404,563 AF of that total (almost 100 percent), while indirect (non-M&I) uses accounted for 91 AF of that total (less than 1 percent). The total usage was met through a combination of groundwater, imported water, surface water, and recycled water. In FY 2024-25, about 55.5 percent of total service area retail demand was met through Orange County Basin groundwater or other groundwater sources.

While total water usage of all water sources is important to understand, it is important to note that MWDOC is the wholesale provider only for imported (untreated & treated) water from MET. As shown in Table 4.1, a total of 123,753 AF of MWDOC's total water demand was supplied by water from MET that was used for either direct or indirect uses.

M&I treated and untreated imported water accounted for approximately 99.9 percent of MWDOC's service area's total water use in FY 2024-25. Non-M&I applications of MET water include groundwater replenishment, and, for Irvine Lake, which accounted for 0 percent and approximately 0.1 percent each in FY 2024-25.

Table 4.1 OPTIONAL Submittal Table 4-1 Wholesale: Total Uses for Potable and Non-Potable Water – Actual

OPTIONAL Submittal Table 4-1 Wholesale: Total Uses for Potable and Non-Potable Water – Actual Water Code Section 10631(d)(1)			
Use Type		2025 Actual Water Use	
Drop-down list May select each use multiple times These are the only use types that will be recognized by the WUEdata online submittal tool	Additional Description (as needed)	**Potable or Non-Potable** (OPTIONAL) Drop down list	Volume (AF)
Sales to other agencies	Treated & Untreated MWD Water[1]	Potable	123,753
		Subtotal Potable	123,753
		Subtotal Non-Potable	0
		Total	**123,753**
DWR NOTES: Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Submittal Table 2-3. This table identifies the unit of measure selected in Submittal Table 2-3.			
NOTES: 1. Includes water to fill Irvine Lake.			

4.1.1 Direct Municipal & Industrial Use

As of FY 2024-25, MWDOC provided wholesale water to 22 different retail agencies. Table 4.1 summarizes MWDOC's potable water demand for FY 2024-25; a total of 123,753 AF of potable water was used. This total includes both treated and untreated water from MET, with the untreated water from MET being treated at the Baker Water Treatment Plant in Yorba Linda. Of the 123,753 AF, treated water from MET accounts for 95,859 AF (or approximately 77.5 percent of total potable demands) while untreated water from MET accounts for 27,803 AF (or approximately 22.5 percent of total potable demands). Less than 0.1 percent of total potable water demand (91 AF) is used to fill Irvine Lake, an indirect use that is discussed in greater detail in Section 4.1.2.

4.1.2 Indirect Non-Municipal & Industrial Use

Indirect water use in Orange County includes water to 1) replenish groundwater basins, 2) serve as a barrier against seawater intrusion, and 3) replenish volumes for Irvine Lake. Based on a 10-year average, 7.6 percent of MWDOC's total demands are for indirect uses. Since 2020, approximately half of all the indirect water use delivered has been for managing and replenishing the Orange County Basin. This water is purchased by OCWD, a special district created by the state and governed by a 10-member Board of Directors to protect, manage, and replenish the Orange County Basin with purchased imported water, stormwater, and recycled water. OCWD further protects the groundwater basin from seawater intrusion by injecting imported and recycled water along the coast, known as the Talbert Injection Barrier.

Since the amount of water used for replenishment of the groundwater basin storage and seawater barriers is driven by the availability of local supplies to OCWD, the demand forecast for this type of use is based on the projection of the following supplies under normal year hydrologic conditions:

- Santa Ana River Flows (base flows and stormwater flows)
- Incidental Recharge
- Imported supplies from MET
- Recycled supplies for replenishment & seawater barrier use

In addition to Replenishment and Barrier demands, MWDOC also provides imported water to meet the needs of surface water demands to replenish Irvine Lake. The water delivered to Irvine Lake is used for both consumptive purposes and water storage. Imported water delivered to Irvine Lake can be held for short or long periods for later delivery for consumptive use. Based on a 10-year average, surface water supplies total almost 3,230 AFY in Irvine Lake.

Figure 4.3 shows the historical demand of imported water for indirect consumption in MWDOC's service area. Since 2011, groundwater replenishment comprised the majority of MWDOC's indirect water demands. MET has not stored water in its conjunctive use program (CUP) account with MWDOC since 2014 and has begun storing water in the alternative MET Cyclic storage account since 2015. More information on the details of the closure of MWDOC's CUP account with MET and the start of the Cyclic Storage Program can be found in Section 6.3.1.6.

In FY 2017-18, total demand for indirect imported water was higher than average due to an increase of in-lieu water deliveries because of the significant amount of imported water MET received due to the historic amounts of rainfall/snowfall in Northern California.

In FY 2019-20, MWDOC's indirect water demands were no longer majority comprised of groundwater replenishment, primarily due to concerns about PFAS contamination in the groundwater basin. This concern was triggered by the Department of Drinking Water (DDW) lowering its Response Levels (RLs) for various PFAS compounds in February 2020, and the DDW recommending that Basin Producers not serve any water exceeding the RLs. A number of wells in OCWD's service area were affected by the revised RLs and, in turn, were temporarily shut down until treatment systems could be constructed.

The need for imported groundwater replenishment water in OCWD's service area was significantly reduced until FY 2021-22, when PFAS treatment systems started to come online and groundwater production levels began returning to normal in the Orange County Basin. Following the significant wet year in FY 2022-23, OCWD had no need for imported groundwater replenishment water in FY 2023-24 and FY 2024-25.

In FY 2024-25, total demand for indirect imported water was comprised solely of 91 AF for replenishment of Irvine Lake, less than 0.1 percent of MWDOC's total potable water demand for the FY.

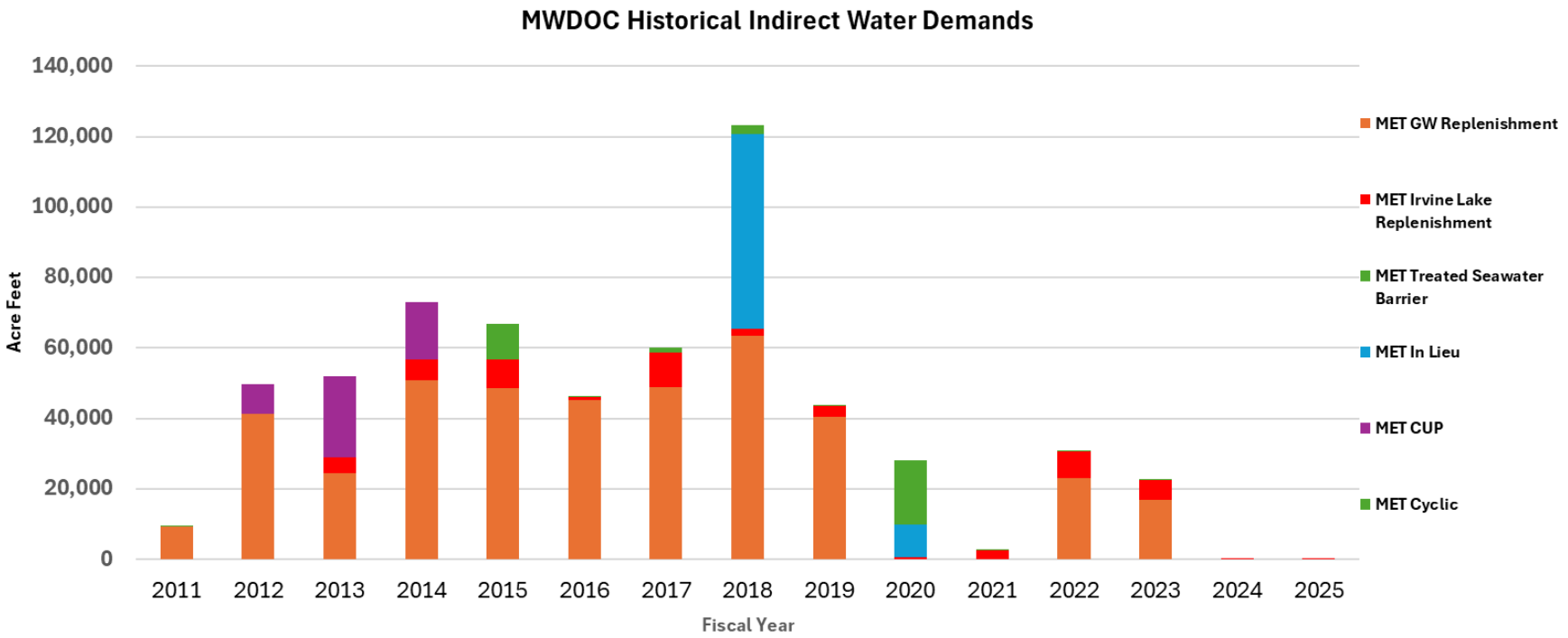


Figure 4.3 MWDOC's Historical Imported Water Use for Indirect Consumption

4.2 Projected Water Use

The water use projection for this UWMP is based on the 2025 Orange County Water Demand Projection Model Technical Memorandum (TM), which is included in Appendix H of this UWMP. The methodology used in this demand forecast links water use statistically to a set of explanatory variables through a regression, or econometric, model. Section 4.3 describes the methodology used to calculate both MWDOC's service area's total water demand projections and MWDOC's total imported water demand projections.

4.2.1 Water Use Projections for 2030-2050

Based on the Orange County Water Demand Projection Model methodology, MWDOC's service area's total water demands (by source) for the next 25 years are shown in Table 4.2. By 2050, total water demand is projected to be 414,936 AF, a 2.5 percent increase (as compared to 2025 actuals). Orange County groundwater is expected to continue providing a notable percentage of total water demand between 2025 and 2050 (roughly 51.1 percent in 2050).

Table 4.2 MWDOC's Service Area Future Water Use by Source

Water Source	2030	2035	2040	2045	2050
OCWD Basin GW	207,029	209,233	211,222	211,601	211,916
Non-OCWD GW (Potable)(1)	21,570	22,656	24,256	24,538	24,502
Non-OCWD GW (Non-potable)(2)	99	101	102	102	102
Recycled Water (Non-potable)	52,567	53,767	54,332	54,463	54,975
Surface Water (Irvine Lake)	5,000	5,000	5,000	5,000	5,000
Ocean Desalination	4,176	4,179	4,187	4,176	4,166
MET (Retail M&I)(3)	94,451	93,729	92,606	91,632	91,075
MET Irvine Lake Fill(3)	3,200	3,200	3,200	3,200	3,200
Total M&I Demand	388,092	391,865	394,905	394,712	394,936
MET GW Replenishment (Non-potable)(3,4)	10,000	10,000	20,000	20,000	20,000
Total non-M&I Demand	10,000	10,000	20,000	20,000	20,000
Total Water Demand	398,092	401,865	414,905	414,712	414,936

Notes:
(1) Includes San Juan Basin, La Habra Basin, and Main Basin.
(2) Includes non-potable supply from La Habra Basin for irrigation use.
(3) MWDOC is the wholesale provider of imported water that provides treated and untreated water from MET for M&I (direct) and non-M&I (indirect) uses within its service area. Irvine Lake fill is MET untreated water that is treated at Serrano, Baker, and TCWD water treatment plants (potable). A small portion is used for agriculture.
(4) Includes indirect use by OCWD for groundwater replenishment and seawater barrier water.

MWDOC's total imported water demand (by use type) for the next 25 years is shown in Table 4.3. As shown, the total direct and indirect water demands are projected to increase to 114,275 AF by the year 2050, an increase of about 17 percent between 2030 and 2050.

By 2050, total water demand is projected to be 114,275 AF, a 7.7 percent decrease from 2025 (123,753 AF) as listed in Table 4.2). The Orange County groundwater basin is expected to continue providing supplies for a notable percentage of total water demand between 2025 and 2050 (roughly 17.5 percent in 2050).

This demand projection represents both potable and non-potable water that is purchased from MET and sold by MWDOC to their retail agencies and OCWD. Projections for groundwater recharge are expected to remain constant at 10,000 AF until 2035 and increase to 20,000 AF thereafter. Projections for other potable uses (i.e., Irvine Lake fill) are expected to remain constant between 2030 and 2050. Sales to other agencies are expected to decrease by about 3.6 percent (from 2030 to 2050).

Table 4.3 OPTIONAL Submittal Table 4-2 Wholesale: Total Uses for Potable and Non-Potable Water – Projected

OPTIONAL Submittal Table 4-2 Wholesale: Total Uses for Potable and Non-Potable Water – Projected Water Code Section 10631(d)(1)							
Use Type		Projected Water Use (Report To the Extent that Records are Available)					
Drop down list May select each use multiple times These are the only Use Types that will be recognized by the WUE data online submittal tool.	Additional Description (as needed)	**Potable or Non-Potable** (OPTIONAL) Drop down list	**2030 (AF)**	**2035 (AF)**	**2040 (AF)**	**2045 (AF)**	**2050 opt (AF)**
Sales to other agencies	MWD (Retail M&I)	Potable	94,451	93,729	92,606	91,632	91,075
Sales to other agencies	MWD Irvine Lake Fill	Potable	3,200	3,200	3,200	3,200	3,200
Groundwater recharge	OCWD GW Replenishment	Non-Potable	10,000	10,000	20,000	20,000	20,000
		Subtotal Potable	97,651	96,929	95,806	94,832	94,275
		Subtotal Non-Potable	10,000	10,000	20,000	20,000	20,000
		Total	**107,651**	**106,929**	**115,806**	**114,832**	**114,275**
DWR NOTES: Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Submittal Table 2-3. This table identifies the unit of measure selected in Submittal Table 2-3.							
NOTES: Source – 2025 Orange County Water Demand Projection Model Forecast for MWDOC							

4.2.1.1 Direct Municipal & Industrial Use

Potable Municipal & Industrial Use

As shown in Table 4.3, the total potable water demands are projected to be 94,275 AF by the year 2050, a decrease of about 3.5 percent between 2030 and 2050. It is projected that potable water sales to MWDOC member agencies for Retail M&I use will account for 96.6 percent of total potable water use by 2050, while other potable uses (i.e., Irvine Lake fill) will account for the remaining 3.4 percent of total potable water use by 2050.

4.2.1.2 Indirect Non-Municipal & Industrial Use

As shown in Table 4.3, the total non-potable water demands are projected to increase from 0 AF in 2030 to 20,000 AF in 2050. It is projected that non-potable water use for groundwater recharge will account for 100 percent of total non-potable water use by 2050.

4.3 Water Demand Projection Methodology

In 2025, MWDOC and OCWD, in collaboration with MWDOC's member agencies and the Cities of Anaheim, Fullerton, and Santa Ana, led the effort to develop the 2025 Orange County Water Demand Projection Model (MWDOC, 2025). This effort developed a demand model by regressing historical water consumption data provided by each Orange County water agency against several explanatory variables known to influence water demand (including weather, water price, regional economic conditions, and housing density). The water demand projections were for the Orange County region as a whole and provided retail agency-specific demands, spanning the years of 2025-2050. The full TM can be found in Appendix H.

The demand projections created four econometric, or regression, demand models representing the following four water billing sectors for each Orange County retail agency:

- Single-family Residential
- Multifamily Residential
- Commercial, Industrial, and Institutional (CII)
- Dedicated Irrigation (potable, recycled & raw water)

Prior to developing the forecasts, model calibration and fine-tuning for each of the four demand sectors occurred at the individual retail agency level. The demand across all four models, plus other uses for each agency, is summed to a total forecast for each agency, the MWDOC service area, the OCWD service area, and total Orange County.

The demand projection methodology accounted for the entire population of each individual retail agency's service area (i.e., all income levels), thus accounting for the water demand projections for lower income households within retail agencies' service areas.

4.3.1 Econometric Approach, Data Acquisition, and Model Development

A regression, or econometric, approach to demand forecasting statistically links retail level water use to weather, economic, and socioeconomic factors (explanatory variables). The model relies on a comprehensive dataset of historical water-use data for almost 40 different billing sectors collected from Orange County retail agencies. MWDOC obtained explanatory variables from reputable sources, including weather databases and Census-based reports. The explanatory variables used in the regression were based on industry experience regarding what factors affect water use nationwide and Southern California.

By statistically linking water use to explanatory variables, the econometric models provide a robust foundation for understanding variability and projecting future consumption patterns. Modeled water use is the product of the driver count (e.g. number of accounts) and the rate of water use per driver:

$$Water\ Use = Driver\ Count \times Rate\ of\ Use\ per\ Driver$$

Each of the four demand sectors modeled (single family, multifamily, CII, and irrigation) has a separate equation. Driver units change into the future based on housing, employment, and population projections. The rate of water use per driver is based on the historical response of the use rate to explanatory variables (measured by coefficients) and the future values of those same explanatory variables.

Linear regression produces the coefficients for each explanatory variable to closely reproduce the historical rate of use per driver unit. The coefficients explain how (both in terms of magnitude and sign) water use responds to changes to explanatory variables.

MWDOC identified driver units based on data provided by agencies and the Center for Demographic Research at Cal State Fullerton (CDR) that can be easily projected into the future. The rate of water use per driver is based on agency provided billing sector uses from 2010 through 2024. Table 4.4 shows the driver units and rate of use for each of the four models.

Table 4.4 Summary of Demand Sectors

Sector	Driver Units	Rate of Use Definition
Single-family Residential	Accounts	Gallons/account/day
Multifamily Residential		Gallons/account/day
Commercial, Institutional, Industrial (CII)	Jobs	Gallons/job/day
Dedicated Irrigation (potable, recycled & raw water)	Accounts	Gallons/account/day

The rates of water use for each sector model are based on the historical responses to explanatory variables, and the future values of those explanatory variables. Addressing multiple influences on demand improves the accuracy and precision of all estimated parameters, and the modeling team identified a large range of explanatory variables based on past experience with demand modeling and available data. Table 4.5 displays the explanatory variables.

Table 4.5 Summary of Historical Data Collected for Model Development

Dataset	Data Source(s)
Observed weather (monthly precipitation, monthly maximum temperature)	Parameter-elevation Regressions on Independent Slopes Model (PRISM)
Water Price	Retail agency provided (2010 – 2024)
Drought Restrictions	State Water Resources Control Board
Gross Domestic Product (GDP)	Federal Reserve Bank of St. Louis Real Gross Domestic Product: All Industries in Orange County, CA
Median Income	US Census American Community Survey (ACS)
Housing Density	US Census American Community Survey (ACS), California State University Fullerton Center for Demographics Research (CDR), Southern California Association of Governments (SCAG) land use data
Persons Per Household	
Relative Sectoral Economic Activity	US Census LODES, CDR
Passive Efficiency Estimates	Analysis of trend indicators and MWDOC/FLUME insight
COVID Binary Indicator	Assumed active from March 2020 – May 2023

Notes:
PRISM - Parameter-elevation Regressions on Independent Slopes Model

The MWDOC Water Use Efficiency Group provided annual water savings achieved by various active conservation measures. To avoid potential errors in the classification of historical conservation data, total historical conservation was modeled in each sectoral regression model using a linear trend to capture steady change over time. While historical conservation is captured in a linear trend, projected passive conservation is based on best available data from the 2021 Orange County Residential Water Efficiency Potential and Opportunities Study and assumes a 1.9 percent decrease in annual residential demand from 2025 to 2030, at which point passive conservation is projected to remain constant. Future active conservation is not accounted for in baseline demand forecast, as water savings from active programs (programs that require customers to change behavior) are highly specific to retail agencies and to the formulation and timing of their implementation.

The process of identifying the explanatory variables to include in the regression equation and developing coefficients that accurately measure the response of water use to changes in these variables is the most time-intensive part of the demand forecasting process.

Prior to developing the forecasts, model calibration and fine-tuning for each of the four demand sectors occurred at the individual retail agency level. The modeling team worked with each retail agency to calibrate sectoral model equations and quantify other uses (those not included in the single-family, multifamily, irrigation, or CII demand sectors).

Figure 4.4 presents the iterative process undergone to develop the econometric demand forecasts.

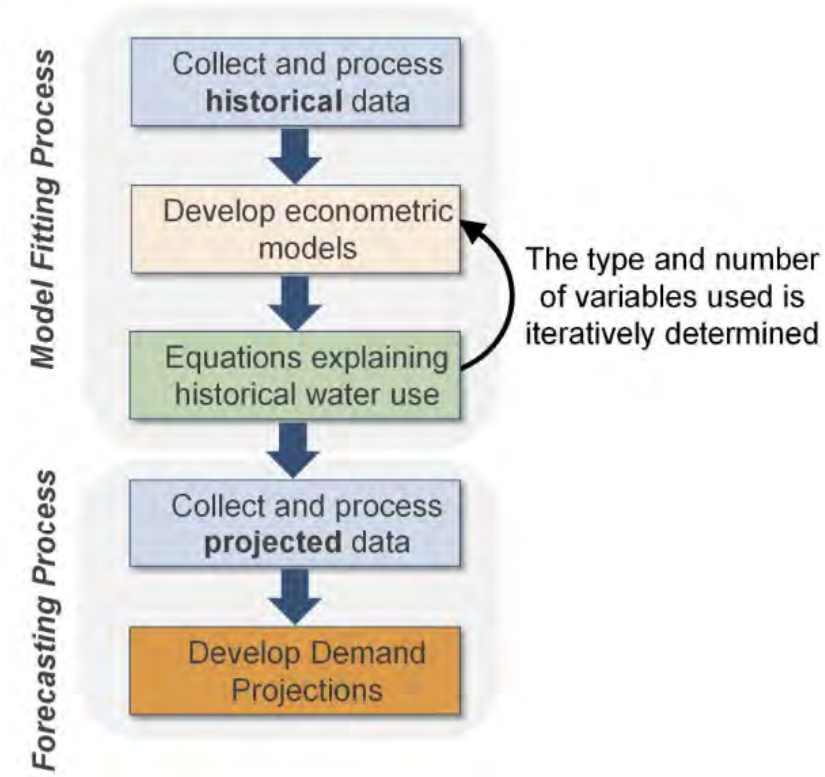


Figure 4.4 Econometric Demand Forecast Development Process

4.3.2 Forecasted Demands

Forecasted demand is a function of both the change in driver units into the future as well as the change in explanatory variables. Table 4.6 summarizes the future drivers, variables, and assumptions for the baseline forecast. It should be noted that the CDR demographic forecast accounts for both the RHNA allocations and projected increase in Accessory Dwelling Units (ADUs).The 2022 Orange County Projections accounted for Draft RHNA rezone sites[1] with jurisdictions including the number of dwelling units that are most likely to occur/get built by the end of 2050 under assumptions and trends existing at the time of the forecasting effort.

[1] For the 2022 Orange County Projections, CDR collected initial draft input from local jurisdictions in September 2021 on their anticipated jurisdiction-level housing growth for each projection year. In December 2021-February 2022, CDR reviewed and extracted data from jurisdictions' draft housing elements to create a parcel-level inventory of additional housing capacity from sites that were to be rezoned to accommodate the 6th RHNA cycle. These were reviewed by jurisdictions in spring 2022. Jurisdictions completed the rezoning of the final sites after their housing elements were certified by the State Housing and Community Development Department starting in 2022. The final adopted rezone sites will feed into CDR's 2026 Orange County Projections.

Table 4.6 Future Model Parameters

Data Category	Variable	Source	Assumptions
Driver Units	Single-family and multifamily accounts	CDR	Historical households per account; averages are multiplied by households projected by CDR
	Irrigation accounts	Agency Billing Data	Accounts are assumed to be constant into the future
	Sectoral Employment	CDR	Proportion of jobs within CII sectors projected by CDR
Explanatory Variables	Monthly Maximum Temperature and Total Precipitation	PRISM	30-year historical normal weather
	Water Price	Retail Agencies	Prices increase by 3% per year above inflation for 2025-2030 and keeps pace with inflation thereafter (zero difference from inflation trend)
	Water Use Restrictions	State and Local Restrictions	None
	Seasonality		Sine/cosine functions to capture monthly pattern
	Median Income	US Census	Constant income at 2022 value (real dollars)
	Housing Density	CDR	Derived from CDR housing unit projections, assuming residential area remains at 2024 levels
	Persons Per Household	CDR	CDR projected demographics
	Gross Domestic Product	Federal Reserve	Long-term GDP trend
	Relative Sectoral Employment	CDR	Calculated based on CDR projections
	Passive Efficiency Estimates	Flume Insight	Assumes a 2% decrease in residential demand due to conservation by 2030 (linearly extrapolated), then no change
	COVID Binary Indicator		None (occurred between March 2020 and May 2023)

The normal year scenario was provided by the baseline forecast. In this model, the single dry year scenario used a hot-dry index (HDI) to identify the year with the most weather-sensitive demand, with 2014 selected for most agencies. The multiple dry year was developed to describe the potential impact of consecutive dry years.

The MWDOC regional water demand projection was collaboratively developed between MWDOC and its member agencies. This collaboration involved the projection model developed by Hazen as well as specific assumptions provided by MWDOC's member agencies. There were also some specific retail agency projections that were utilized in the MWDOC regional demand projections. Each MWDOC Member Agency's water demand projections, analyses, methodologies, and assumptions can be found in their respective UWMPs.

4.4 Water Loss

MWDOC is a recognized industry leader in Water Loss programs and activities. While MWDOC does not own or operate any transmission or distribution system themselves, MWDOC helps member agencies evaluate and reduce their distribution systems' real and apparent losses through comprehensive Water Loss Control Programs. In 2015, the MWDOC Board of Directors authorized staff to begin implementing a Water Loss Control Technical Assistance Program (TAP) to support member agency compliance with Senate Bills 1420 and 555, both of which address distribution system Water Loss. The TAP program established a menu of technical assistance that water retailers can elect to participate in. These programs connect water retailers with industry experts who provide one on one technical assistance through data analysis, agency specific advising, and assessment. The TAP services offered by MWDOC include Water Balance Compilation, Component Analysis of Real and Apparent Losses, Source/Production Meter Accuracy Testing, Billing Data Chain Assessment, and Internal Water Loss Committee Planning. MWDOC's Water Loss Control TAP has a very positive impact on building knowledge of water loss recovery strategies by all retail water agencies in the County and implementation of those strategies. To date MWDOC has hosted 61 Water Loss Work Group Meetings with approximately 35 agency representatives attending each meeting. A total of 252 Annual Water Balances have been compiled and validated over the last 5 years, vastly improving water agency understanding of volumes of real and apparent losses, strategies to recover losses and value of losses.

Due to the success of the TAP program, MWDOC began to consider other services that would assist in controlling water loss. In 2019, the MWDOC Board authorized the implementation of a Water Loss Control Shared Services Business Plan (Business Plan) based on the needs outlined in the survey and the direction of the Water Loss Control Performance Standards currently in development. Services provided under the program available to MWDOC member agencies include Water Balance Validation, Customer Meter Accuracy Testing, Distribution System Pressure Surveys, Distribution System Leak Detection, and Suspected Leak Investigations. Since the start of the shared services program in August 2019, more than 7,164 miles of distribution system leak detection has been completed, which resulted in discovery of 3,842 hidden leaks that have been repaired. These leak repairs result in recovering more than 1,070 AF of water annually, valued at more than $908,111 per year. Over 2,700 customer meter accuracy tests have been completed by 10 agencies improving agency knowledge of meter performance and accuracy of water balance results. And lastly a total of 32 sites have been monitored during pressure surveys for three agencies that were used to calculate average system pressure, calibrate hydraulic models, and investigate pressure anomalies.

CHAPTER 5 CONSERVATION TARGET COMPLIANCE

The Water Conservation Act of 2009, also known as Senate Bill (SB) X7-7, mandated a 20 percent reduction in urban per-capita water use across California by 2020. To achieve this goal, the Act required each retail water supplier to establish an urban water-use target, contributing to the State's collective efforts. The Legislature stated that the combined reductions from all retail suppliers would fulfill the statewide legislative mandate.

The goal of this chapter is to allow the wholesale water supplier to report on their retail water suppliers' progress toward meeting their urban water-use targets in their individual UWMPs, pursuant to Water Code Section 10608.40. Suppliers that did not meet their 2020 target in 2020 are required to compare their 2025 water use to the 2020 target.

Retail water suppliers are required to comply with SB X7-7 individually or as a region in collaboration with other retail water suppliers or demonstrate they have a plan or have secured funding to comply, to be eligible for water-related state grants and loans.

When determining water use in an UWMP, two terms are often used interchangeably:

- **Daily Per-Capita Water Use.** The amount of water used per person per day. In the UWMP calculations, this is total water use within a service area, divided by population, and it is measured in gallons.
- **Gallons Per-Capita Per Day (gpcd).** This is the "daily per-capita water use" measured in gallons. Therefore, the term commonly used when referring to "daily per-capita water use" is "gallons per-capita per day" or gpcd[1].

5.1 Reporting Requirements

MWDOC's Water Use Efficiency (WUE) programs helped Orange County meet the state's 20x2020 mandate by coordinating conservation efforts across its member agencies, funding and implementing regionally cost-effective efficiency programs, and enabling compliance through the Orange County 20x2020 Regional Alliance. By aligning its WUE portfolio directly with SB X7-7 requirements, supporting high-impact measures (especially outdoor water savings), documenting eligible indirect potable reuse credits, and centrally handling regional target calculations and reporting, MWDOC allowed participating retailers to comply collectively rather than individually resulting in regional per-capita water use well below the required 2020 target.

[1] It is important to distinguish GPCD (as used in UWMPs) from the Residential Gallons Per Capita Per Day (R-GPCD) that is used in some reporting to the California State Water Resources Control Board (SWRCB). GPCD is the total water use from all sectors within a service area (residential, commercial, institutional, and any others) minus allowable exclusions (as defined in SB X7-7), then divided by the population. This is used in UWMPs. R-GPCD is only a part of the GPCD; it is the estimated residential water use in a service area divided by population.

As a result of MWDOC's WUE program, all Orange County water retailers, including all MWDOC's member agencies and the participating cities of Anaheim, Fullerton, and Santa Ana, achieved compliance prior to 2020. A discussion of programs implemented to support the achievement of the agency's per capita water reduction goals is covered in Section 9 – Demand Management Measures of this UWMP.

CHAPTER 6 WATER SUPPLY CHARACTERIZATION

Orange County has a water supply portfolio made up of a variety of local and imported sources. Local groundwater is produced from the Orange County Basin (OC Basin), San Juan Basin, and La Habra Basin. The vast amount of local groundwater is produced from the OC Basin, which is managed by the Orange County Water District (OCWD). To enhance the reliability of groundwater, OCWD has implemented projects and programs over the years that include: 1) the Groundwater Replenishment System (GWRS), which is the world's largest water purification system for indirect potable reuse; 2) increased stormwater capture for groundwater recharge; and 3) participation in the Santa Ana River Conservation and Conjunctive Use Program (SARCCUP), a collaborative, watershed-scale approach for groundwater basin management, replenishment, and water transfers.

Imported water that is provided by the Municipal Water District of Orange County (MWDOC) to Orange County retail water providers is purchased from the Metropolitan Water District of Southern California (MET), the wholesale water provider to 26 member agencies of which MWDOC belongs. MET's imported water sources are delivered through its own Colorado River Aqueduct (CRA) and the California Aqueduct, under contract with the State Water Project (SWP). To enhance the reliability of its imported water, MET has implemented many programs such as canal lining and transfers of agricultural water, land fallowing programs with irrigation districts, water banking programs, and use of its storage reservoirs. Groundwater from the Main San Gabriel Groundwater Basin (Main Basin) is also imported into the northern part of Orange County.

Local and imported water sources in Orange County are managed in such a way that they complement each other. For example, during wet and normal years, additional untreated MET water is purchased to replenish groundwater in the Orange County Basin. During dry and drought years, when imported water is more limited, more groundwater can be produced to meet Orange County's water demands. This coordinated management of water supplies has resulted in reliable water service even during multi-year droughts. Based on the water supply assessment described in this chapter and in Chapter 7, the Orange County region will continue to receive a reliable water supply through the next 25 years.

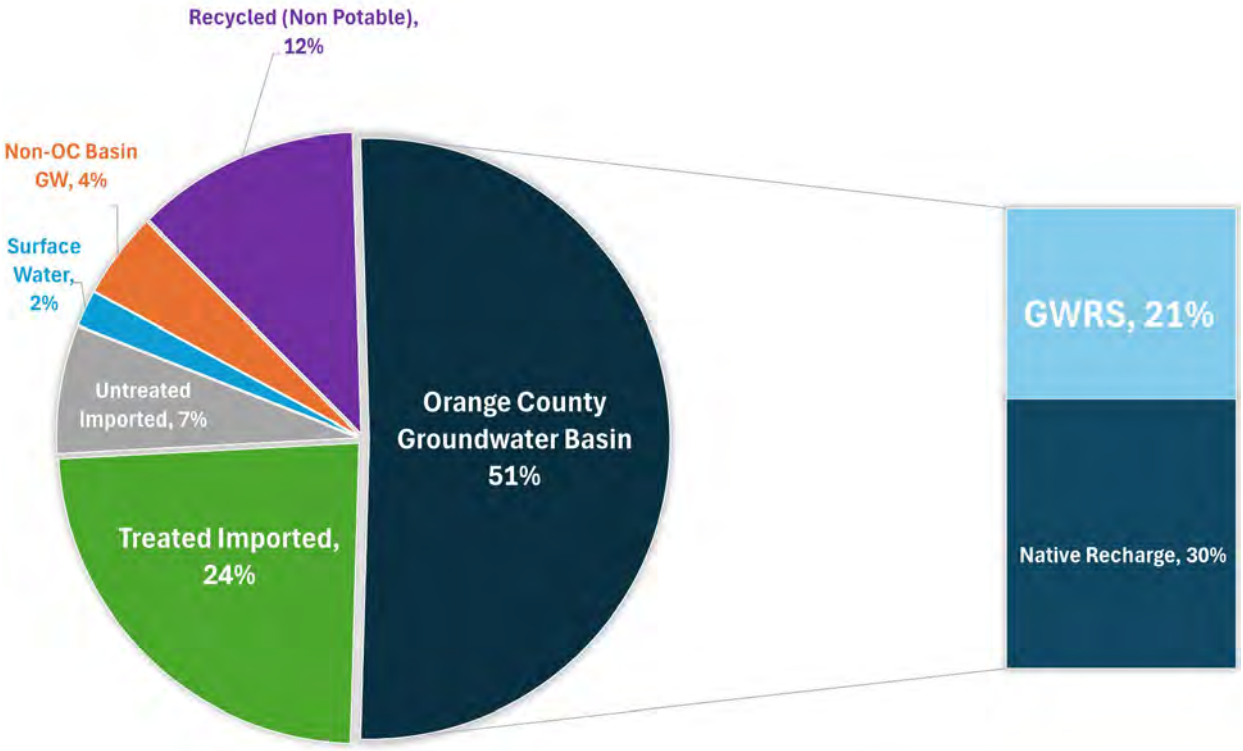
Specifically, this chapter includes: 1) descriptions of each water supply source and their management; 2) quantification of water supply sources through 2050 under normal, dry, and multi-dry weather conditions; 3) opportunities for exchanges and transfers; and 4) discussion regarding any planned or potential future water supply projects. This chapter also includes the energy intensity of the water service.

6.1 Water Supply Overview

Water supplies within MWDOC's service area are from local and imported sources. Within Orange County, MWDOC is the wholesaler of imported water purchased from MET. Local retail agencies and one local wholesale agency in Orange County purchase imported water through MWDOC to supplement their local supplies. In FY 2024-25, MWDOC supplied approximately 123,571 AFY of treated and untreated imported water to its retail agencies for M&I purposes and 91 AFY for MET Irvine Lake Replenishment. In FY 2024-25, imported water represented 31 percent of total water supply in the MWDOC service area. However, imported water volume varies year to year; over the last 10 years, it has represented approximately 30 percent of total M&I water supply for MWDOC.

Local supplies developed by other entities and retail agencies include groundwater, recycled water, and surface water. Local sources presently account for 69 percent of the MWDOC service area's water supplies, whereby groundwater is the major source of local supply. The primary source of groundwater originates from the OC Basin, which underlies the central portion of MWDOC's service area and is managed by OCWD. The GWRS is a joint project between OCWD and the Orange County Sanitation District (OC San). Using advanced treatment, recycled wastewater is purified into a high-quality water supply for groundwater replenishment. In South Orange County, local water supplies consist of non-potable recycled water through water reclamation plants, and groundwater recovered in the San Juan Basin, through desalination of surface water at the Groundwater Recovery Facility (GRF) for South Coast Water District, and the San Juan Capistrano Groundwater Recovery Plant for Santa Margarita Water District. In the northern part of MWDOC's service area, two member agencies obtain groundwater that is imported from the Main San Gabriel Basin and the La Habra Basin.

A breakdown of all sources within MWDOC's service area is graphically shown in Figure 6.1. Although MWDOC delivers imported water only to its retail agencies, other sources of water are obtained locally and are specific to each retail agency.

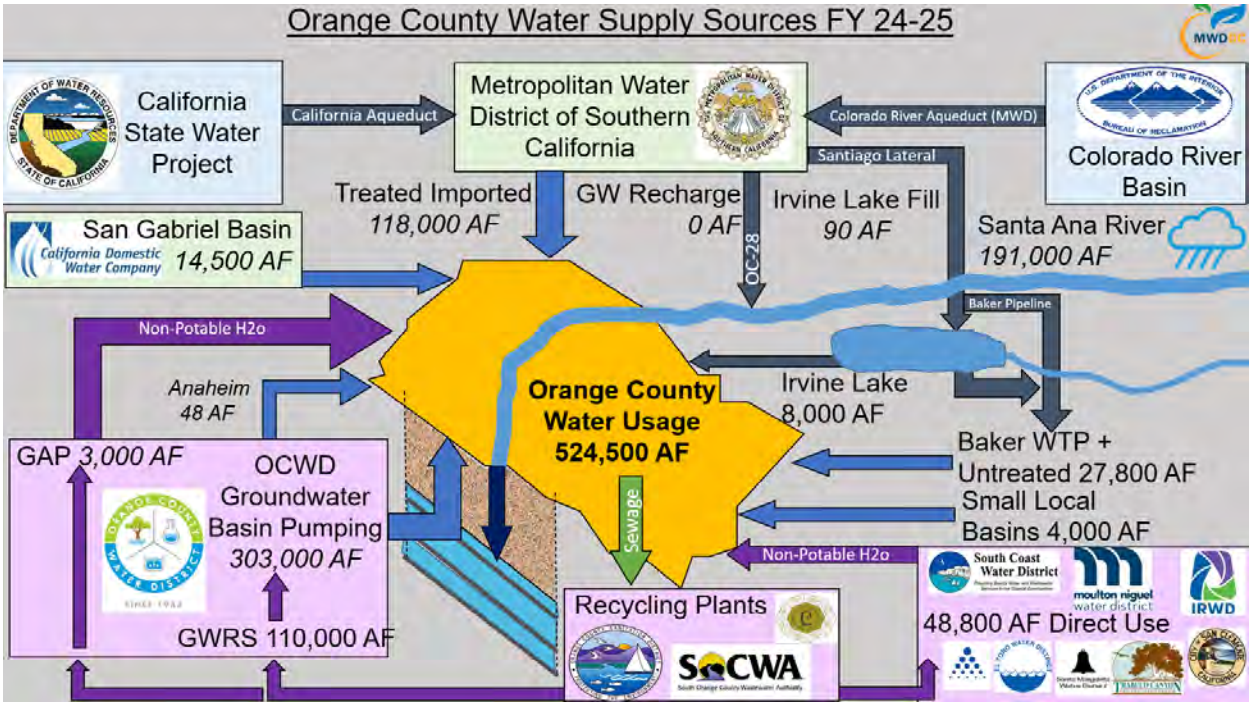


Note: Supplies are specific to the MWDOC Service Area. The Orange County Water Basin groundwater supply can be further broken down by the sources of supply on the right and add up to the total 51% of water supplies that the Orange County Groundwater Basin represents in the service area.

Figure 6.1 FY 2024-25 Water Supply Sources within MWDOC's Service Area

MWDOC and its retail agencies collectively work together to improve water reliability within the service area by developing additional local supplies, implementing water use efficiency efforts, and expanding local system projects. MWDOC also works in close collaboration with MET and OCWD to deliver safe and high-quality water supply to Orange County customers.

The different water sources in MWDOC's service area and for all of Orange County are illustrated in Figure 6.2.



Note: Supplies are for Orange County, which include MWDOC member agencies as well as the cities of Anaheim, Fullerton, and Santa Ana.

Figure 6.2 Orange County Water Supply Sources

Although MWDOC supports the various water supply sources for agencies within MWDOC's service area, MWDOC supplies only imported water. In FY 2024-25, the MWDOC service area used its imported water supplies for M&I uses, groundwater recharge, and surface storage replenishment as shown in Table 6.1.

Table 6.1 Water Supplies – 2025 Actual

Submittal Table 6-8 Wholesale: Water Supplies — 2025 Actual Water Code Section 10631(b)				
Water Supply		2025		
Drop down list May use each category multiple times. These are the only water supply categories that will be recognized by the WUE data online submittal tool	Additional Description (as needed)	**Water Type** (after treatment if treated) (OPTIONAL) **Drop Down list**	**Actual Volume**	**Total Entitlement** (OPTIONAL) See "DWR Notes" below
			(AF)	(AF)
Purchased or Imported Water	MET (Retail M&I)	Potable	123,753	
		Subtotal Potable	123,753	0
		Subtotal Non-Potable	0	0
		Total	**123,753**	**0**
NOTES: MWDOC, 2025				

Orange County receives treated imported water predominantly from MET's Robert B. Diemer Filtration Plant located in the City of Yorba Linda, located in the northern part of Orange County, with the ability to supplement supplies from MET's Weymouth Treatment Plant in La Verne, located in southeast Los Angeles County. Typically, the Diemer Filtration Plant receives a blend of Colorado River water from Lake Mathews through the MET Lower Feeder pipeline and SWP water through the Yorba Linda Feeder pipeline. Treated imported water is delivered through five major feeder pipelines: the East Orange County Feeder No. 2, Orange County Feeder, Second Lower Feeder, West Orange County Feeder, and Allen-McColloch Pipeline.

Untreated imported water from MET is used to recharge OC Basin groundwater through East Orange County Feeder No. 1, and supply Irvine Lake through the Santiago Lateral pipeline. Water from Irvine Lake is treated at the Baker Water Treatment Plant located in Irvine Ranch Water District's service area.

In 2025, MWDOC developed a water demand forecast model for its participating water agencies that statistically correlates municipal and industrial (M&I) water use with demographic, socioeconomic, conservation, and weather variables—as reported in the 2025 Orange County Water Demand Projection Model TM (MWDOC, 2025). Because the model isolates weather, future water demand projects can be estimated under single and multi-year droughts and under future climate change scenarios. As shown in Table 6.2. MWDOC's projected M&I water demands are expected to remain fairly consistent as current levels through 2050, with imported water for groundwater recharge expected to increase from 0 to 20,000 AFY by year 2050, The following subsections provide a detailed discussion of the current water supply sources in MWDOC's service area, and evaluation of MWDOC's projected supply for the next 25 years.

Table 6.2 Water Supplies – Projected

Submittal Table 6-9 Wholesale: Water Supplies — Projected Water Code Section 10631 (b)												
Water Supply			Projected Water Supply (Report to the Extent Practicable)									
			2030		2035		2040		2045		2050 (opt)	
	Additional Detail on Water Supply	Water Type (after treatment if treated) (OPTIONAL)	Reasonably Available Volume	Total Entitlement (OPTIONAL)	Reasonably Available Volume	Total Entitlement (OPTIONAL)	Reasonably Available Volume	Total Entitlement (OPTIONAL)	Reasonably Available Volume	Total Entitlement (OPTIONAL)	Reasonably Available Volume	Total Entitlement (OPTIONAL)
			(AF)	(AF)	(AF)	(AF)	(AF)	(AF)	(AF)	(AF)	(AF)	(AF)
Purchased or Imported Water	Retail M&I	Potable	97,651		96,929		95,806		94,832		94,275	
Purchased or Imported Water	GW Replenishment	Non-Potable	10,000		10,000		20,000		20,000		20,000	
Subtotal Potable			97,651	0	96,929	0	95,806	0	94,832	0	94,275	0
Subtotal Non-Potable			10,000	0	10,000	0	20,000	0	20,000	0	20,000	0
Total			107,651	0	106,929	0	115,806	0	114,832	0	114,275	0
NOTES: MWDOC, 2025												

6.2 Imported Water

MWDOC purchases imported water from MET and distributes this water to its 27 member agencies to supplement local supplies. In FY 2024-25, 31 percent of the water supply portfolio within the MWDOC service area was attributed to treated and untreated imported water.

MET's two principal sources of water are the Colorado River and the SWP. MET receives water from the Colorado River through the CRA and from the SWP through the California Aqueduct. For Orange County, the water obtained from these sources is treated at the Robert B. Diemer Filtration Plant located in the City of Yorba Linda, and the Baker Water Treatment Plant, located in Lake Forest. Typically, the Diemer Filtration Plant receives a blend of Colorado River water from Lake Mathews through the MET Lower Feeder and SWP water through the Yorba Linda Feeder, while the Baker Water Treatment Plant receives only Colorado River water from Lake Mathews.

6.2.1 Metropolitan Water District of Southern California

MET is the largest water wholesaler in the United States, serving approximately 19 million customers in a 5,200 square mile service area. MET wholesales imported water supplies to 26 member agencies located in the six Southern California counties of Los Angeles, Orange, Riverside, San Bernardino, San Diego, and Ventura.

MET is governed by a Board of Directors comprised of 38 appointed individuals with a minimum of one representative from each of MET's 26 member agencies. The allocation of directors and voting rights is determined by each agency's assessed valuation. Each member of the Board is entitled to cast one vote for each 10 million dollars of assessed property valuation that is taxable for district purposes, in accordance with Section 55 of the Metropolitan Water District Act. Directors may be appointed by the chief executive officer of the member agency or by a majority vote of the agency's governing board. Directors are not compensated by MET for their service (The Metropolitan Water District Act, 1969).

MET is responsible for importing water into the region through its operation of the CRA, which brings Colorado River supply to its service area, and its SWP contract, which brings water from northern California via the California Aqueduct. MET supplements its direct deliveries of imported supplies with its storage reservoirs, water transfers, agricultural irrigation water conservation, and water banking programs. Major imported water aqueducts bringing water to Southern California are shown in Figure 6.3. It should be noted that the Los Angeles Aqueduct is owned and operated by the Los Angeles Department of Water and Power (LADWP) and is not part of MET's imported water supplies.

Member agencies receive water from MET through various delivery points and pay for service through a rate structure comprising volumetric rates, capacity charges, and readiness-to-serve charges. Member agencies provide MET with estimates of imported water demand in April each year, indicating the amount of water they anticipate they will need to meet their demands over the next 5 years.

In Orange County, MWDOC and the cities of Anaheim, Fullerton, and Santa Ana are MET member agencies that purchase imported water directly from MET. MWDOC purchases both treated potable and untreated water from MET to supplement its retail agencies' local water supplies and for groundwater replenishment. Figure 6.4 illustrates the MET feeders and major transmission pipelines that deliver water within Orange County.



Figure 6.3 Major Aqueducts that Supply Imported Water to Southern California (MET, 2025)



Figure 6.4 MET Feeders and Transmission Mains that Serve Orange County (Source: OCWD 2022)

6.2.1.1 MET's 2025 Urban Water Management Plan

MET's 2025 UWMP reports on its water reliability and identifies projected supplies to meet the long-term demand within its service area. The MET 2025 UWMP discusses the current water supply conditions and long-term plans for supply implementation and continued development of a diversified resource mix. It describes the programs being implemented, such as the CRA, SWP, Central Valley storage/transfer programs, water use efficiency programs, local resource projects, and in-region storage that will enable the region to meet its water supply needs. MET's 2025 UWMP also presents MET's supply capacities from 2025 through 2050 for average year, single dry year, five consecutive dry years, and more frequent and severe droughts, as specified in the UWMP Act.

Information concerning MET's UWMP, including the background, associated challenges, and long-term development of programs for each of MET's supply sources and capacities have been summarized and included in the following subsections. Additional information on MET can be found directly in MET's 2025 UWMP.

6.2.2 Colorado River Aqueduct

6.2.2.1 Background

The Colorado River was MET's original source of water after MET's establishment in 1928. The original founding members created MET with the goal to build the CRA to bring water to Southern California. The CRA, which is owned and operated by MET, transports water from the Colorado River to its terminus Lake Mathews, in Riverside County. The actual amount of water per year that may be conveyed through the CRA to MET's member agencies is subject to the availability of Colorado River water. Approximately 40 million people rely on the Colorado River and its tributaries for potable water with 5.5 million acres of land using Colorado River water for irrigation. The CRA includes supplies from the implementation of the Quantification Settlement Agreement (QSA) and its related agreements to transfer water from agricultural agencies to urban uses. The 2003 QSA enabled California to implement major Colorado River water conservation and transfer programs to stabilize water supplies and reduce the state's demand on the river to its 4.4 million AF entitlement. Colorado River transactions are potentially available to supply additional water up to the CRA capacity of 1.25 million AFY on an as-needed basis. Water from the Colorado River or its tributaries is available to users in California, Arizona, Colorado, Nevada, New Mexico, Utah, Wyoming, and Mexico. California is apportioned the use of 4.4 million AF of water from the Colorado River each year, plus one-half of any surplus that may be available for use collectively in Arizona, California, and Nevada. In addition, California has historically been allowed to use Colorado River water apportioned to, but not used by, Arizona or Nevada. MET has fourth-priority rights, with a basic entitlement of 550,000 AFY of Colorado River water, plus surplus water up to an additional 662,000 AFY when the following conditions exist (MET, 2025):

- Water is unused by the California holders of priorities 1 through 3.
- Water is saved by the Palo Verde land management, crop rotation, and water supply program.
- When the U.S. Secretary of the Interior makes available either one or both of the following:
  - Surplus water
  - Colorado River water that is apportioned to be but is unused by Arizona and/or Nevada.

6.2.2.2 Current Conditions and Supply

The Colorado River supply faces current and future imbalances between water supply and demand in the Colorado River Basin primarily due to reductions in snowpack, long-term drought conditions, and climate change. The last 25-year period has been called a megadrought, with Lake Mead's elevation dropping from a high of 1,215 feet above mean sea level (ft msl) in 2000 to its lowest level of 1,040 ft msl in July 2022. While extreme wet conditions resulted in lake levels exceeding 1,077 ft msl in February 2024, levels have been persistently hovering around 1,057 ft msl since May 2025. The United States Bureau of Reclamation (USBR) projects that there is a 53 percent likelihood that Lake Mead elevation could fall below 1,035 ft msl in 2027 and 2029, which would trigger water shortages for MET under the current operating guidelines. As of August 2025, Lake Mead storage was approximately 31 percent of capacity per USBR's 24-Month Study, which also projected continued Lower Basin shortage conditions in 2026 (MET, 2025).

The current operating guidelines for the Colorado River expire at the end of 2026, and a new, long-term operating plan must be in place by November 2026 to manage the river's water supply. The ongoing Colorado River allocation negotiations are focused on creating a post-2026 operating plan, with states and the federal government aiming for consensus on how to manage the river's declining water supply due to the severe, prolonged drought in the Colorado River Basin. The drought on the Colorado River began around 2000 and has continued, in various degrees of severity, for over two decades, making it a historic megadrought that has significantly reduced water flow into the river and lowered water levels in reservoirs like Lake Powell and Lake Mead. Although some periods, like the wet winter of 2023, brought temporary relief with increased snowfall, there were not enough wet years to fully replenish the system or overcome the prolonged lack of water and effects of climate change, such as aridification and increased evaporation, according to the United States Geological Survey (USGS, 2024). Under the 2007 Interim Guidelines, together with the Lower Basin Drought Contingency Plan (2019), the Intentionally Created Surplus (ICS) program has allowed MET to store conserved water in Lake Mead for subsequent recovery; these frameworks sunset with the Guidelines at the end of 2026 and are expected to be addressed in the post-2026 rules (MET, 2025).

The USBR, which is part of the U.S. Department of the Interior, is the federal agency leading the negotiations and responsible for managing the river system. The ongoing Colorado River negotiations aim to find a fair and sustainable way to allocate available water supplies, which are significantly less than in the past. Talks are centering on a "natural flow" proposal that divides water based on current river conditions, rather than historical allocations. However, states remain at odds over how much water should be allocated to the Upper and Lower Basins. The federal government (USBR) is planning to impose its own plan if an agreement is not reached by the November 2026 deadline. Some key challenges that remain unresolved are the different interests of the Upper Basin states (Colorado, Utah, Wyoming, New Mexico) and the Lower Basin states (California, Arizona, Nevada) to reach consensus on how much water the Upper Basin should send downstream. In addition, Tribal nations are also seeking recognition of their rights and a role in the future management of the river. Given MET's junior priority status within California's Colorado River priority system, reductions to MET's supplies are a possibility under future operating criteria; MET's planning reflects this risk (MET, 2025).

Consistent with MET's 2025 UWMP, supply capability planning uses USBR's August 2023 Colorado River Simulation System (CRSS) assumptions, including a climate-adjusted flow reduction factor of approximately 9.3 percent per 1°C of warming over the planning horizon (2025-2050). MET continues to utilize supply, storage, transfer, and conservation programs, including ICS participation under the current Guidelines, to manage risk and buffer shortages. In addition, conserved QSA-related transfer water delivered at Lake Havasu (including Imperial Irrigation District and canal-lining exchanges) is categorized in MET's 2025 UWMP as Colorado River imported supply (previously treated as local supply), aligning accounting with current practice (MET, 2025).

6.2.2.3 MET Colorado River Current Programs

Over the years, MET has helped fund and implement various programs to improve Colorado River supply reliability and help resolve the imbalance between supply and demand. Implementation of such programs has contributed to achievements such as a record-low diversion of the Colorado River in 2019, a level not seen since the 1950s. Colorado River water management programs include:

- **Lower Colorado Water Supply Projects** – Authorized in the 1980s, this project provides up to 10,000 AFY of water to certain entities that do not have or have insufficient rights to use Colorado River water. A contract executed in 2007 allowed MET to receive project water left unused by the project contractors along the River – nearly 10,000 AF were received in recent years when unused supplies were available.
- **Imperial Irrigation District / MET Conservation Program** – Under agreements executed in 1988 and 1989, this program allows MET to fund water efficiency improvements within Imperial Irrigation District's service area in return for the right to divert the water conserved by those investments. An average of 105,000 AFY of water has been conserved since the program's implementation.
- **Management of MET-Owned Land in Palo Verde** – Since 2001, MET has acquired approximately 21,000 acres of irrigable farmland that are leased to growers, with incentives to grow low water-using crops and experiment with low water-consumption practices. MET continues to evaluate opportunities to formally account for verified long-term water savings associated with these lands as part of its Colorado River supply reliability strategy.
- **Palo Verde Land Management, Crop Rotation, and Water Supply Program** – Authorized in 2004, this 35-year program allows MET to pay participating farmers to reduce their water use, and for MET to receive the saved water. Over the life of the program, an average of 84,500 AFY has been saved and made available to MET.
- **Southern Nevada Water Authority (SNWA) and MET Storage and Interstate Release Agreement** – Entered in 2004, this agreement allows SNWA to store its unused, conserved water with MET, in exchange for MET to receive additional Colorado River water supply. MET has relied on the additional water during dry years, especially during the 2011-2016 California drought, and SNWA is not expected to call upon MET to return water until after 2026.
- **Lake Mead Storage Program** – Executed in 2006 and subsequently integrated with Lower Basin Drought Contingency Plan (DCP) operations, MET may intentionally leave conserved water in Lake Mead for exclusive future use. MET has significantly expanded its use of ICS storage in recent years, including record storage creation (450,000 AF) in 2023 under DCP-related conservation programs.

- **Quagga Mussel Control Program** – Developed in 2007, this program introduced surveillance activities and control measures to combat quagga mussels, an invasive species that impacts the Colorado River's water quality.
- **Bard Seasonal Fallowing Program** – Authorized in 2019, and subsequently expanded, this program allows MET to pay participating farmers in Bard to reduce their water use between the late spring and summer months of selected year. Under expanded program authorizations through 2026 (Quechan Seasonal Fallowing Program), this program can provide up to approximately 12,000 AFY in certain years.
- **Lower Basin Drought Contingency Plan** – Signed in 2019, this agreement incentivizes storage in Lake Mead through 2026 and overall, it increases MET's flexibility to fill the CRA as needed (MET, 2025).
- **Lower Basin Conservation and System Efficiency Programs** – In recent years, MET has participated in new, multi-agency conservation and system efficiency programs implemented between 2023 and 2026. These programs incentivize agricultural conservation, system efficiency improvements, urban conservation, and groundwater storage in the Lower Colorado River Basin, with the goal of reducing system demands and increasing storage in Lake Mead during critically dry conditions. This includes programs such as the Quechan Diversion Forbearance program.
- **Exchange Programs** – MET is involved in separate exchange programs with the USBR, which takes place at the Colorado River Intake and with San Diego County Water Authority (SDCWA), which exchanges conserved Colorado River water.

The Colorado River faces long-term challenges of water demands exceeding available supply with additional uncertainties due to climate change. Climate change impacts expected in the Colorado River Basin include the following:

- More frequent, more intense, and longer lasting droughts, which will result in water deficits.
- Continued dryness in the Colorado River Basin, which will increase the likelihood of triggering a first-ever shortage in the Lower Basin.
- Increased temperatures, which will affect the percentage of precipitation that falls as rain or snow, as well as the amount and timing of mountain snowpack (MET, 2025).

Given these uncertainties, MET plans to continue implementing and expanding Colorado River conservation, storage, exchange, and transfer programs, while also supporting increased water recycling and system efficiency improvements within the Colorado River Basin. MET continues to evaluate additional transfer and conservation opportunities to further enhance regional supply reliability through the 2025 UWMP planning horizon.

6.2.3 State Water Project

6.2.3.1 Background

The SWP consists of a series of pump stations, reservoirs, aqueducts, tunnels, and power plants operated by California Department of Water Resources (DWR) and is an integral part of the effort to deliver sufficient water to businesses and industry, urban and suburban residents, and farmers throughout much of California. Water from the SWP originates at Lake Oroville, which is located on the Feather River in Northern California. Much of the SWP water supply passes through the Sacramento-San Joaquin Delta (Delta). The SWP is the largest state-built, multipurpose, user-financed water project in the United States. Nearly two-thirds of residents in California receive at least part of their water from the SWP, with approximately 70 percent of SWP's contracted water supply going to urban users and 30 percent to agricultural users. The primary purpose of the SWP is to divert and store water during wet periods in Northern and Central California and distribute it to areas of need in Northern California, the San Francisco Bay area, the San Joaquin Valley, the Central Coast, and Southern California (MET, 2025).

The Delta is key to the SWP's ability to deliver water to its agricultural and urban contractors. All but five of the 29 SWP contractors receive water deliveries below the Delta (pumped via the Harvey O. Banks or Barker Slough pumping plants). However, the Delta faces many challenges concerning its long-term sustainability, such as climate change posing a threat of increased variability in floods and droughts. Sea level rise complicates efforts in managing salinity levels and preserving water quality in the Delta to ensure a suitable water supply for urban and agricultural use. Furthermore, other challenges include continued subsidence of Delta islands, many of which are already below sea level, and the related threat of catastrophic levee failure as water pressure increases or following a major seismic event.

In May 2019, DWR withdrew its permit for the two-tunnel WaterFix project in favor of a smaller one-tunnel project alternative. In July 2022, the draft Environmental Impact Report (EIR) for the recommended Delta Conveyance Project alternative was issued, with the project potentially operational by 2045 (Delta Conveyance Design and Construction Authority, 2024), though its implementation faces strong opposition by environmental organizations and other interests in the Delta. The maximum value of the Delta Conveyance Project, when coupled with 250,000 AF of new regional storage, is estimated to be 367,000 AFY for MET, and 63,000 AFY of that amount for Orange County. The Delta Conveyance Project also reduces the probability that any shortage occurs by about 10 percent, meaning a doubling of the time between shortage conditions from once every 5 years to once every decade (MWDOC, 2023).

6.2.3.2 Current Conditions and Supply

Just like the Colorado River, the amount of water that can be delivered from the SWP to its 29 contractors varies annually based on hydrology and reservoir storage along the SWP. DWR publishes the maximum entitlement of SWP water for each water contracting agency in "Table A" which is a reference to the original long-term water supply contracts developed in the 1960s between the California Department of Water Resources (DWR) and 29 local water agencies, that define the maximum annual water allocation a contractor can request from the State Water Project. DWR sets these allocations to balance the needs for human health and safety, agricultural, and municipal water, considering factors like reservoir storage, runoff forecasts, and Endangered Species Act (ESA) requirements. The primary drivers that influence allocations are hydrologic conditions (precipitation and snowmelt) along with storage levels, especially in Lake Oroville. Actual deliveries typically average less than 50 percent of Table A due to hydrologic and

regulatory constraints (MET, 2025). MET's actual annual allocations based on springtime Table A values for the past UWMP cycles are summarized in Table 6.3.

Table 6.3 MET SWP Program Capabilities

Year	Average Annual Table A Spring Allocation (million AF)
2015	0.38
2020	0.38
2025	0.96
Percent Change*	+252.6%

Notes:
(1) *Percent change is between the years 2020 and 2025. Source: SWP Allocations 1996-2026

SWP contractors may additionally receive Article 21 water on a short-term basis in addition to Table A water if requested. Article 21 of SWP contracts allows contractors to receive additional water deliveries only under specific conditions, generally during wet months of the year (December through March). Because a SWP contractor must have an immediate use for Article 21 supply, or a place to store the water outside of the SWP, there are few contractors like MET that can access these seasonal supplies (MET, 2025).

Carryover water is SWP water allocated to an SWP contractor and approved for delivery to the contractor in a given year but not used by the end of the year. The unused water is stored in the SWP's share of San Luis Reservoir, when space is available, for the contractor to use in the following year (MET, 2025).

Turnback pool water is Table A water that has been allocated to SWP contractors who have exceeded their demands. This water can then be purchased by another contractor depending on its availability (MET, 2025).

The following factors affect the ability to estimate existing and future water delivery reliability:

- **Water availability at the source:** Availability can be highly variable and depends on the amount and timing of rain and snow that fall in any given year. Generally, during a single dry year or two, surface and groundwater storage can supply most water deliveries, but multiple dry years can result in critically low water reserves. Fisheries issues can also restrict the operations of the export pumps even when water supplies are available.
- **Water rights with priority over the SWP:** Water users with prior water rights are assigned higher priority in DWR's modeling of the SWP's water delivery reliability, even ahead of SWP Table A water.
- **Climate change:** Mean temperatures are predicted to vary more significantly than previously expected. This change in climate is anticipated to bring warmer winter storms that result in less snowfall at lower elevations, reducing total snowpack. From historical data, DWR projects that by 2050, the Sierra snowpack will be reduced from its historical average by 25 percent to 40 percent. Increased precipitation as rain could result in a larger number of "rain-on-snow" events, causing snow to melt earlier in the year and over fewer days than historically, affecting the availability of water for pumping by the SWP during summer. Furthermore, water quality may be adversely affected due to the anticipated increase in wildfires. Rising sea levels may result in potential pumping cutbacks on the SWP and CVP. DWR's recent planning documents and the Draft 2025 DCR describe climate-adjusted "existing conditions" baselines and future scenarios used by agencies for UWMPs.

- **Regulatory restrictions on SWP Delta exports:** The Biological Opinions (BiOps) protect special-status species such as delta smelt and spring- and winter-run Chinook salmon and imposed substantial constraints on Delta water supply operations through requirements for Delta inflow and outflow and export pumping restrictions. Restrictions on SWP operations imposed by state and federal agencies contribute substantially to the challenge of accurately determining the SWP's water delivery reliability in any given year (DWR, 2020b).
- **Ongoing environmental and policy planning efforts:** Following the 2019 withdrawal of WaterFix, DWR certified the Delta Conveyance Project Final EIR and approved the Bethany alignment in December 2023, a key modernization initiative for the SWP. EcoRestore and related habitat efforts continue to advance.
- **Delta levee failure:** The levees are vulnerable to failure because most original levees were simply built with soils dredged from nearby channels and were not engineered. A breach of one or more levees and island flooding (as most islands have been farmed to the extent they are now below sea level) could affect Delta water quality and SWP operations for several months. When islands are flooded, DWR may need to drastically decrease or even cease SWP Delta exports to evaluate damage caused by salinity in the Delta.

It can be concluded that the federal regulatory framework affecting the Bay-Delta's ecosystem, species, and water supply are constantly evolving by adapting to new scientific information, changing climate conditions, and legal challenges. This dynamic and complex regulatory landscape, along with hydrologic and storage conditions along the SWP, continues to result in water supply uncertainties that impact all SWP contractors, including MET, MWDOC, and its member agencies (MET, 2025).

6.2.3.3 SWP Programs/Plans

In the past 5 years, MET has updated and implemented planning, regulatory, infrastructure, and operational programs to improve the reliability of the SWP supplies while addressing environmental, seismic, and climate-related risks in the Delta and along the California Aqueduct. Key SWP programs and planning efforts include:

- **SWP Biological Opinions and California Incidental Take Permit (ITP)** – Updated federal BiOps and a California ITP issued in 2024 provide a new operating framework intended to improve flexibility and species protection. The 2025 MET UWMP characterizes the net reliability benefit at approximately +60,000 AFY relative to prior permits, subject to hydrologic and regulatory conditions.
- **Healthy Rivers and Landscapes (HRL) Voluntary Agreements** – MET supports the State's proposed Healthy Rivers and Landscapes program, which establishes a voluntary framework for improving Delta ecosystem conditions through coordinated flow contributions and habitat restoration projects. The HRL approach is intended to provide regulatory stability while supporting environmental objectives consistent with SWP operations.

6.2.4 Storage, Transfers, and Conveyance Programs

Storage is a major component of MET's dry-year resource management strategy. MET's likelihood of having adequate supply capability to meet projected demands, without implementing its Water Supply Allocation Plan (WSAP) depends on its storage resources. Following a significant drawdown during the 2020-2022 drought, MET rebuilt storage as hydrologic conditions improved. By the end of 2023, MET had approximately 3.4 million AF of regional dry-year storage. Storage increased to 3.8 million AF by the end of 2024, with levels projected to reach approximately 3.9 million AF by the end of 2025. MET also maintains approximately 750,000 AF of emergency storage dedicated to catastrophic supply interruption conditions, including a major seismic failure of the Delta levees.

In its 2025 UWMP, MET evaluates storage based on median starting storage at the beginning of each 5-year increment, representing a 50 percent probability that actual storage will be higher or lower. This approach differs from earlier UWMPs, which relied on average storage assumptions, and provides a more conservative and realistic representation of storage availability. All storage capability values incorporate conveyance and recovery constraints associated with SWP terminal reservoirs, the CRA, and MET's in-region and out-of-region groundwater banking programs.

Lake Oroville continues to serve as the SWP's largest storage facility with a capacity of approximately 3.5 million AF. Water released from Oroville moves to the Feather River and then to the Sacramento River before being pumped south at the Harvey O. Banks pumping plant into the California Aqueduct. MET's storage portfolio includes surface reservoirs such as Diamond Valley Lake, Lake Mathews, and Lake Skinner; SWP terminal storage in San Luis Reservoir; groundwater banking programs including Semitropic, Arvin-Edison, the High Desert Water Bank, Kern Delta, and Mojave; and ICS storage in Lake Mead. These storage assets provide operational flexibility during dry years and help maintain supplies during extended droughts or emergency events.

MET endeavors to increase the reliability of water supplies through the development of flexible storage and transfer programs including groundwater storage (MET, 2025). These include:

- **Antelope Valley-East Kern (AVEK) Water Agency Exchange and Storage Program:** Under the exchange program, for every 2 AF MET receives, MET returns 1 AF back to AVEK, and MET will also be able to store up to 30,000 AF in the AVEK's groundwater basin, with a dry-year return capability of 10,000 AF.
- **Arvin-Edison Storage Program:** The storage program is estimated to deliver 75,000 AF, and the specific amount of water MET can expect to store in and subsequently receive from the program depends on hydrologic conditions and any regulatory requirements restricting MET's ability to export water for storage. During wet years, MET has the discretion to use the program to store portions of its SWP supplies that are in excess, and during dry years. The Arvin-Edison Water Storage District returns MET's previously stored water to MET by direct groundwater pump-in or by exchange of surface water supplies.
- **Diamond Valley Lake to Rialto Pipeline:** Planned for completion in 2028, this project creates new conveyance that improves the ability to move non-SWP supplies (120 cubic feet per second (cfs), including CRA and banked water) into areas historically dependent on SWP deliveries, increasing drought and seismic resilience.

- **High Desert Water Bank Program:** Developed in partnership with AVEK, this regional groundwater banking program allows MET to store up to 280,000 AF of SWP Table A or other available supplies in the Antelope Valley groundwater basin. The program provides a put-and-take capability of up to approximately 70,000 AFY, with infrastructure including monitoring and production wells, California Aqueduct turnouts, pipelines, recharge basins, and pump facilities. Phase 1 became operational in 2023, with full build-out expected by approximately 2030.
- **Kern-Delta Water District Storage Program:** This groundwater storage program has 250,000 AF of storage capacity, and water for storage can either be directly recharged into the groundwater basin or delivered to Kern-Delta Water District farmers in lieu of pumping groundwater. During dry years, the Kern-Delta Water District returns MET's previously stored water to MET by direct groundwater pump-in return or by exchange of surface water supplies.
- **Mojave Storage Program:** MET entered into a groundwater banking and exchange transfer agreement with Mojave Water Agency that allows for the cumulative storage of up to 390,000 AF. The agreement allows for MET to store water in an exchange account for later return.
- **Richvale & Western Canal Water Transfers:** These multi-year transfer options will provide supplemental dry-year supplies when available, with volumes up to approximately 54,000 AF (2025-2027).
- **San Bernardino Valley MWD Surplus SWP Program:** Programmatic access to surplus SWP supplies (approximately 13 TAF) will be available from SBVMWD under certain hydrologic and operational conditions.
- **Semitropic Storage Program:** The maximum storage capacity of the program is 350,000 AF, and the minimum and maximum annual yields available to MET are 34,700 AF and 236,200 AF, respectively. The specific amount of water MET can expect to store in and subsequently receive from the program depends on hydrologic conditions, any regulatory requirements restricting MET's ability to export water for storage and demands placed by other program participants. During wet years, MET has the discretion to use the program to store portions of its SWP supplies which are in excess, and during dry years, the Semitropic Water Storage District returns MET's previously stored water to MET by direct groundwater pump-in or by exchange of surface water supplies.
- **Sepulveda Feeder Pump Stations (Stage 1):** This program includes pumping improvements that expand westward movement of CRA/SWP/banked supplies across service areas to address localized system constraints. Pumping capacity is expected to be 30 cfs upon completion of Stage 1 in 2027.
- **Yuba Accord Extension:** This project is a continuation of an established dry-year transfer program from the Yuba watershed that can be accessed subject to hydrologic and regulatory conditions. As of 2025, the extension is under negotiation for approximately 250,000 AFY in supply.

6.2.5 Untreated Imported Water - Baker Treatment Plant

The Baker Treatment Plant has a treatment capacity of 28.1 mgd located at the site of the former Baker Filtration Plant in Lake Forest. The plant was a joint regional project by five South Orange County water districts: ETWD, IRWD, MNWD, SMWD, and TCWD, which have capacity rights of 3.2 mgd, 6.8 mgd, 8.4 mgd, 8.4 mgd, and 1.3 mgd, respectively. The project came online in early 2017 and is managed and operated by IRWD.

The plant has multiple water supply sources that increase water supply reliability, including imported untreated water from MET through the Santiago Lateral and local surface water from Irvine Lake. It provides a reliable local drinking water supply during emergencies or extended facility shutdowns on the MET delivery system (including Diemer Plant interruptions or AMP outages) and increases operational flexibility by creating redundancy within the water conveyance system.

6.2.6 Potential Future Water Projects

6.2.6.1 CAMP4W

In February 2023, the MET's Board directed its staff to integrate water resources planning, climate resilience planning, and financial planning into a *Climate Adaptation Master Plan for Water* (CAMP4W). Then a Joint Task Force of Board Members and Member Agency Managers was convened to facilitate the development of CAMP4W in a timely and transparent process. The main elements of CAMP4W include:

1. Identify climate and growth scenarios, building from analyses conducted for MET's *Integrated Resources Plan* (IRP).
2. Develop time-bound targets for new regional water supplies and system improvements.
3. Establish a framework for decision-making and annual reporting.
4. Form policies, initiatives, and partnerships.
5. Evaluate business models and funding strategies.

Because investments required for regional supply reliability and system resilience are significant, it is important that decisions are made through an adaptive management process to avoid the risks associated with over-investment or under-performance. Tracking signposts and progress towards time-bound targets is therefore critical for CAMP4's annual reporting. Currently, regional projects being explored by MET include Pure Water Southern California, new reservoir storage in Southern California of up to 155,000 AFY, regional seawater desalination, and participation in California's Delta Conveyance Project. These projects will be scored against the following CAMP4W criteria: 1) reliability; 2) resilience; 3) financial; 4) adaptability/flexibility; 5) equity; and 6) environmental co-benefits.

Pure Water Southern California – The potential Pure Water Southern California program, a partnership with the Sanitation Districts of Los Angeles County, would purify wastewater treatment effluent that currently flows to the ocean to produce high quality recycled water. The purified water would be delivered to Metropolitan's member agencies to meet their groundwater replenishment and storage requirements. It should be noted that the 2025 MET UWMP does not include Pure Water yield in projected supplies (MET, 2025).

Sites Reservoir – This potential project includes a water storage reservoir of 1.5 million AF and would require the construction of two large dams up to 310 feet high and nine smaller saddle dams. The water stored in the reservoir, located north of Sacramento, would be diverted from the Sacramento River during high flow events and returned to the Sacramento River during dry and critical years, thereby providing additional dry-year water for environmental flows and project partners including SWP agencies south of the Delta. The current operations model estimates the annual water yield of the Sites Reservoir Project at approximately 270,000 AFY by 2032, when the Sites Reservoir Project is scheduled to be operational

(MET, 2025). It should be noted that the 2025 MET UWMP does not include Sites Reservoir in projected supplies (MET, 2025).

Delta Conveyance Project – Following DWR's withdrawal and subsequent termination of the California WaterFix project, the State advanced a new single-tunnel Delta Conveyance Project to address seismic risk, sea level rise, extreme weather, and regulatory uncertainty while improving long-term SWP delivery reliability. The environmental review was completed in 2023 and DWR has approved the project. Potential yield used in planning analyses is on the order of approximately 400,000 AFY. It should be noted that the 2025 MET UWMP does not include Delta Conveyance Project yield in projected supplies pending future milestones and contracting decisions (MET, 2025).

6.2.7 Supply Reliability within MET

6.2.7.1 MET's Water Service Reliability Assessment Results

In MET's 2025 UWMP, MET evaluated supply reliability by projecting supply and demand under a normal year, single-dry year, and 5-year consecutive dry years, based on conditions affecting the SWP (MET's largest and most variable supply). For this supply source, the average of 100 historical years 1922-2021 most closely represents water supply conditions in a normal water year, the single driest year was 1977 and the 5-year dry period was 1988-1992. The analyses also include Colorado River supplies under the same hydrological variations.

MET also incorporated the SWP and Colorado River's reliability factors, such as water quality objectives set by the SWRCB, BiOps, and amendments to the Coordinated Operations Agreement for the SWP and Quantification Settlement Agreements for the Colorado River into their assessment.

MET has concluded that the region can provide reliable water supplies under normal, single-dry, and 5-year consecutive dry conditions as presented in Table 6.4, Table 6.5, and Table 6.6, respectively.

In each of the following tables, "Current Programs" supplies include:

- In-Region Supplies and Programs:
  - Metropolitan Surface Storage (Diamond Valley Lake, Lake Mathews, Lake Skinner).
  - Flexible Storage in Castaic Lake and Perris Lake.
  - Groundwater Storage for Conjunctive Use.
- California Aqueduct (SWP), including Central Valley transfers and storage program supplies conveyed by the aqueduct.
- Colorado River Aqueduct, including deliveries, programs, and exchanges with SDCWA.

These supplies are impacted - typically reduced - by the single dry year and multiple dry year scenarios. Though demands increase in these drought conditions, MET projects reliable supply, even surplus, through 2050. MWDOC is a MET member agency, and MET's projections take into account the imported demands from Orange County. As so, MET's water reliability assessments are used to determine that demands within MWDOC can be met for all three hydrological conditions.

Table 6.4 MET's Projected Supply Capability and Demands through 2050 for a Normal Year

Normal Year
Supply Capability[1] and Projected Demands
Average of 1922-2021 Hydrologies
(acre-feet per year)

Forecast Year	2030	2035	2040	2045	2050
Current Programs					
In-Region Supplies and Programs	789,000	776,000	746,000	733,000	827,000
California Aqueduct[2]	1,723,000	1,694,000	1,668,000	1,641,000	1,641,000
Colorado River Aqueduct					
Total Supply Available[3]	1,334,700	1,358,200	1,336,000	1,323,500	1,345,500
Aqueduct Capacity Limit[4]	*1,250,000*	*1,250,000*	*1,250,000*	*1,250,000*	*1,250,000*
Colorado River Aqueduct Capability	1,250,000	1,250,000	1,250,000	1,250,000	1,250,000
Capability of Current Programs	**3,762,000**	**3,720,000**	**3,664,000**	**3,624,000**	**3,718,000**
Demands					
Total Demands on Metropolitan	1,225,000	1,238,000	1,266,000	1,285,000	1,303,000
Exchange with SDCWA	278,000	278,000	278,000	278,000	278,000
Total Metropolitan Deliveries[5]	**1,503,000**	**1,516,000**	**1,544,000**	**1,563,000**	**1,581,000**
Surplus	**2,259,000**	**2,204,000**	**2,120,000**	**2,061,000**	**2,137,000**
Programs Under Development					
In-Region Supplies and Programs	0	0	0	0	0
California Aqueduct	0	0	0	0	0
Colorado River Aqueduct					
Total Supply Available[3]	0	0	0	0	0
Aqueduct Capacity Limit[4]	*0*	*0*	*0*	*0*	*0*
Colorado River Aqueduct Capability	0	0	0	0	0
Capability of Proposed Programs	**0**	**0**	**0**	**0**	**0**
Potential Surplus	**2,259,000**	**2,204,000**	**2,120,000**	**2,061,000**	**2,137,000**

Notes:

1. Represents Supply Capability for resource programs under listed year type.
2. California Aqueduct includes Central Valley transfers and storage program supplies conveyed by the aqueduct.
3. Colorado River Aqueduct includes programs and Exchange with SDCWA conveyed by the aqueduct.
4. Maximum CRA deliveries limited to 1.25 MAF including Exchange with SDCWA.
5. Total demands are adjusted to include Exchange with SDCWA.

Table 6.5 MET's Projected Supply Capability and Demands through 2050 for a Single Dry Year

Single Dry Year
Supply Capability[1] and Projected Demands
Repeat of 1977 Hydrology
(acre-feet per year)

Forecast Year	2030	2035	2040	2045	2050
Current Programs					
In-Region Supplies and Programs	789,000	776,000	746,000	733,000	827,000
California Aqueduct[2]	662,000	649,000	635,000	622,000	622,000
Colorado River Aqueduct					
Total Supply Available[3]	1,334,700	1,358,200	1,336,000	1,411,000	1,433,000
Aqueduct Capacity Limit[4]	*1,250,000*	*1,250,000*	*1,250,000*	*1,250,000*	1,250,000
Colorado River Aqueduct Capability	1,250,000	1,250,000	1,250,000	1,250,000	1,250,000
Capability of Current Programs	**2,701,000**	**2,675,000**	**2,631,000**	**2,605,000**	**2,699,000**
Demands					
Total Demands on Metropolitan	1,356,000	1,375,000	1,401,000	1,419,000	1,436,000
Exchange with SDCWA	278,000	278,000	278,000	278,000	278,000
Total Metropolitan Deliveries[5]	**1,634,000**	**1,653,000**	**1,679,000**	**1,697,000**	**1,714,000**
Surplus	**1,067,000**	**1,022,000**	**952,000**	**908,000**	**985,000**
Programs Under Development					
In-Region Supplies and Programs	0	0	0	0	0
California Aqueduct	0	0	0	0	0
Colorado River Aqueduct					
Total Supply Available[3]	0	0	0	0	0
Aqueduct Capacity Limit[4]	*0*	*0*	*0*	*0*	*0*
Colorado River Aqueduct Capability	0	0	0	0	0
Capability of Proposed Programs	**0**	**0**	**0**	**0**	**0**
Potential Surplus	**1,067,000**	**1,022,000**	**952,000**	**908,000**	**985,000**

Notes:

1. Represents Supply Capability for resource programs under listed year type.
2. California Aqueduct includes Central Valley transfers and storage program supplies conveyed by the aqueduct.
3. Colorado River Aqueduct includes programs and Exchange with SDCWA conveyed by the aqueduct.
4. Maximum CRA deliveries limited to 1.25 MAF including Exchange with SDCWA.
5. Total demands are adjusted to include Exchange with SDCWA.

Table 6.6 MET's Projected Supply Capability and Demands through 2050 for a Drought (5 Consecutive Water Years)

Drought Lasting Five Consecutive Years
Supply Capability[1] and Projected Demands
Repeat of 1988-1992 Hydrology
(acre-feet per year)

Forecast Year	2030	2035	2040	2045	2050
Current Programs					
In-Region Supplies and Programs	160,000	156,000	149,000	146,000	165,000
California Aqueduct[2]	733,200	720,400	690,400	660,400	579,400
Colorado River Aqueduct					
Total Supply Available[3]	1,189,200	1,241,700	1,204,500	1,197,000	1,245,500
Aqueduct Capacity Limit[4]	*1,250,000*	*1,250,000*	*1,250,000*	*1,250,000*	*1,250,000*
Colorado River Aqueduct Capability	1,189,200	1,241,700	1,204,500	1,197,000	1,245,500
Capability of Current Programs	**2,082,400**	**2,118,100**	**2,043,900**	**2,003,400**	**1,989,900**
Demands					
Total Demands on Metropolitan	1,324,000	1,390,000	1,411,000	1,434,000	1,453,000
Exchange with SDCWA	278,000	278,000	278,000	278,000	278,000
Total Metropolitan Deliveries[5]	**1,602,000**	**1,668,000**	**1,689,000**	**1,712,000**	**1,731,000**
Surplus	**480,400**	**450,100**	**354,900**	**291,400**	**258,900**
Programs Under Development					
In-Region Supplies and Programs	0	0	0	0	0
California Aqueduct	0	0	0	0	0
Colorado River Aqueduct					
Total Supply Available[3]	0	0	0	0	0
Aqueduct Capacity Limit[4]	*60,800*	*8,300*	*45,500*	*53,000*	*4,500*
Colorado River Aqueduct Capability	*0*	*0*	*0*	*0*	*0*
Capability of Proposed Programs	**0**	**0**	**0**	**0**	**0**
Potential Surplus	**480,400**	**450,100**	**354,900**	**291,400**	**258,900**

Notes:
1. Represents Supply Capability for resource programs under listed year type.
2. California Aqueduct includes Central Valley transfers and storage program supplies conveyed by the aqueduct.
3. Colorado River Aqueduct includes programs and Exchange with SDCWA conveyed by the aqueduct.
4. Maximum CRA deliveries limited to 1.25 MAF including Exchange with SDCWA.
5. Total demands are adjusted to include Exchange with SDCWA.

6.2.7.2 MET's Drought Risk Assessment Results

For its Drought Risk Assessment (DRA), MET assessed the reliability of each individual water supply source over the five-consecutive-year drought through a modeling method using the same historical hydrologic conditions as the water service reliability assessment: 1922 to 2021. MET used the five consecutive years of 1988 to 1992 to complete its DRA, because this represents the driest five-consecutive year historical sequence for MET's supply. The results, shown in Table 6.7, indicate that MET's SWP and CRA supplies alone cannot meet demands during this 5-year drought period without additional actions. MET's 2025 UWMP therefore identifies Water Shortage Contingency Plan (WSCP) actions as necessary tools to close the deficit and maintain service through the modeled drought sequence. Supply augmentation is anticipated to provide the additional water needed to meet projected demands without requiring demand reduction actions, as shown in Table 6.7. Supply augmentation actions are comprised of MET's portfolio of water storage reserves and flexible supply sources that are available on an as-needed basis, such as water from its storage facilities and from transfer and exchange programs. Therefore, MET's water supply from the SWP and CRA combined with supply augmentation strategies can reliably meet the demands of a 5-year drought from FY 2025-26 through FY 2029-30 (Table 6.7).

Table 6.7 MET's Water Use, Supply, and Drought Risk Assessment for 2026-2030

Metropolitan's Drought Risk Assessment
Water Use, Supply, and Risk Assessment for 2026 – 2030
(also included as Appendix 11 DWR Submittal Table 7-5)

Submittal Table 7-5 Wholesale: Five-Year Drought Risk Assessment Water Code Section 10635(b)(3)		
2026		**Total**
Total Water Use	(AF)	1,511,000
Total Supplies	(AF)	973,000
Surplus/Shortfall w/o WSCP Action		(538,000)
OPTIONAL Planned WSCP Actions (use reduction and supply augmentation)		
WSCP - supply augmentation benefit	(AF)	538,000
WSCP - use reduction savings benefit	(AF)	0
Revised Surplus/(shortfall)		0
2027		**Total**
Total Water Use	(AF)	1,633,000
Total Supplies	(AF)	2,267,000
Surplus/Shortfall w/o WSCP Action		634,000
OPTIONAL Planned WSCP Actions (use reduction and supply augmentation)		
WSCP - supply augmentation benefit	(AF)	0
WSCP - use reduction savings benefit	(AF)	0
Revised Surplus/(shortfall)		634,000
2028		**Total**
Total Water Use	(AF)	1,714,000
Total Supplies	(AF)	1,169,000
Surplus/Shortfall w/o WSCP Action		(545,000)
OPTIONAL Planned WSCP Actions (use reduction and supply augmentation)		
WSCP - supply augmentation benefit	(AF)	545,000
WSCP - use reduction savings benefit	(AF)	0
Revised Surplus/(shortfall)		0
2029		**Total**
Total Water Use	(AF)	1,561,000
Total Supplies	(AF)	1,197,000
Surplus/Shortfall w/o WSCP Action		(364,000)
OPTIONAL Planned WSCP Actions (use reduction and supply augmentation)		
WSCP - supply augmentation benefit	(AF)	364,000
WSCP - use reduction savings benefit	(AF)	0
Revised Surplus/(shortfall)		0
2030		**Total**
Total Water Use	(AF)	1,588,000
Total Supplies	(AF)	1,301,000
Surplus/Shortfall w/o WSCP Action		(287,000)
OPTIONAL Planned WSCP Actions (use reduction and supply augmentation)		
WSCP - supply augmentation benefit	(AF)	287,000
WSCP - use reduction savings benefit	(AF)	
Revised Surplus/(shortfall)		0
DWR NOTES: Units of measure (AF, CCF, MG) must remain consistent throughout the		
NOTES: Totals may not foot due to rounding. See 2025 UWMP discussion in Chapter 2.4 Drought Risk Assessment regarding the supply augmentation actions that may be exercised to meet demands through 2030.		

6.3 Local Groundwater

Among all local supplies available to MWDOC's service area, groundwater supplies make up the majority, with the primary supply from the OC Basin. The water supply resources within MWDOC's service area are enhanced by the existence of groundwater basins, which provide a reliable local source and, additionally, are used as reservoirs to store water during wet years and draw from storage during dry years.

MWDOC does not provide nor sell any groundwater to its retail agencies. However, its retail agencies do extract groundwater locally to diversify their portfolio. Table 6.8 shows a breakdown of historical groundwater production by the retail agencies from all groundwater basins within MWDOC's service area.

This section describes the five groundwater basins used by MWDOC's retail agencies and provides a 25-year projection of the service area's groundwater supply.

Table 6.8 Groundwater Pumped in the past 5 Years within MWDOC's Service Area (AF)

Submittal Table 6-1 Retail: Groundwater Volume Pumped Water Code Section 10631(4) and 10631(4)(c)							
Groundwater Type **Drop Down List** May use each category multiple times	Water Type (OPTIONAL) **Drop down list**	Location or Basin Name	2021	2022	2023	2024	2025
			(AF)	(AF)	(AF)	(AF)	(AF)
Alluvial Basin		OC Basin[1]	211,702	184,701	184,081	195,951	205,991
Alluvial Basin		San Juan Basin	2,792	2,739	1,850	2,995	2,254
Alluvial Basin		La Habra Basin	2,057	2,302	1,547	1,581	1,803
Alluvial Basin		Main San Gabriel Basin[2]	16,396	15,723	14,343	13,817	14,577
Alluvial Basin		San Mateo Basin[3]	0	0	0	0	0
		Total[4]	232,947	205,465	201,821	214,344	224,625

NOTES:
[1] Includes only the MWDOC member agencies' groundwater production. Does not include the groundwater production of Anaheim, Fullerton, and Santa Ana.
[2] Main San Gabriel Basin is outside of Orange County. Groundwater is purchased by the Cities of Brea and La Habra from Cal Domestic Water Company.
[3] The City of San Clemente is the only MWDOC member agency to have historically pumped from the San Mateo Basin but the City has not pumped from the basin since 2020.
[4] Total volumes are +/- 1 AF due to rounding.

6.3.1 Orange County Groundwater Basin

This section describes the OC Basin and the management measures taken by OCWD, the basin manager and member agency of MWDOC, to optimize local supply and minimize overdraft.

The OCWD was formed in 1933 by a special legislative act of the California State Legislature to protect and manage the County's vast, natural, groundwater supply using the best available technology and defend its water rights to the OC Basin. This legislation is found in the State of California Statutes, Water – Uncodified Acts, Act 5683, as amended. The OC Basin is managed by OCWD under the Act, which functions as a statutorily imposed physical solution. The OCWD Management Area includes approximately 89 percent of the land area of the OC Basin, and 98 percent of all groundwater production occurs within

the area. Approximately 2.5 million residents live within OCWD's boundaries and rely upon the basin for their primary water supply. OCWD manages water resource monitoring programs, land use elements related to basin management, groundwater elevation, groundwater quality, and coastal area monitoring through a number of monitoring programs. OCWD monitors the basin by collecting groundwater elevation and quality data from approximately 400 District-owned wells and manages an electronic database that stores water elevation, water quality, production, recharge, and other data on over 2,000 wells and facilities within and outside OCWD boundaries (OCWD, 2023). For detailed monitoring programs and management information, refer to the 2017 Basin 8-1 Alternative (Appendix E).

Groundwater levels are managed within a safe basin operating range to protect the long-term sustainability of the OC Basin and to protect against land subsidence. OCWD, a member agency of MWDOC, purchases untreated water from MET for basin recharge, as needed. In addition, OCWD regulates groundwater levels in the OC Basin by regulating the annual amount of pumping and setting the Basin Production Percentage (BPP) for the water year. As defined in the District Act, the BPP is the ratio of water produced from groundwater supplies within the OCWD service area to all water produced within the area from both supplemental sources and groundwater within the OCWD (OCWD, 2020a). More information regarding the BPP is discussed in Section 6.3.1.3.

6.3.1.1 Basin Characteristics

The OC Basin underlies the northern half of Orange County beneath broad lowlands. The OC Basin, managed by OCWD, covers an area of approximately 350 square miles, bordered by the Coyote and Chino Hills to the north, the Santa Ana Mountains to the northeast, and the Pacific Ocean to the southwest. The OC Basin boundary extends to the Orange County-Los Angeles Line to the northwest, where groundwater flows across the county line into the Central Groundwater Basin of Los Angeles County. A map of the OC Basin is shown on Figure 6.5. The total thickness of sedimentary rocks in the OC Basin is over 20,000 feet, with only the upper 2,000 feet to 4,000 feet containing fresh water. The OC Basin's estimated full storage volume is approximately 66 million AF.

There are three major aquifer systems that have been subdivided by OCWD, namely the:

- Shallow Aquifer System.
- Principal Aquifer System.
- Deep Aquifer System.

These three aquifer systems are hydraulically connected as groundwater can flow between each other through intervening aquitards or discontinuities in the aquitards. The Shallow Aquifer system occurs from the surface to approximately 250 feet below ground surface. Most of the groundwater from this aquifer system is pumped by small water systems for industrial and agricultural use. The Principal Aquifer system occurs at depths between 200 feet and 1,300 feet below ground surface. Over 90 percent of groundwater production is from wells that are screened within the Principal Aquifer system. Only a minor amount of groundwater is pumped from the Deep Aquifer system, which underlies the Principal Aquifer system and is up to 2,000 feet deep in the center of the OC Basin.

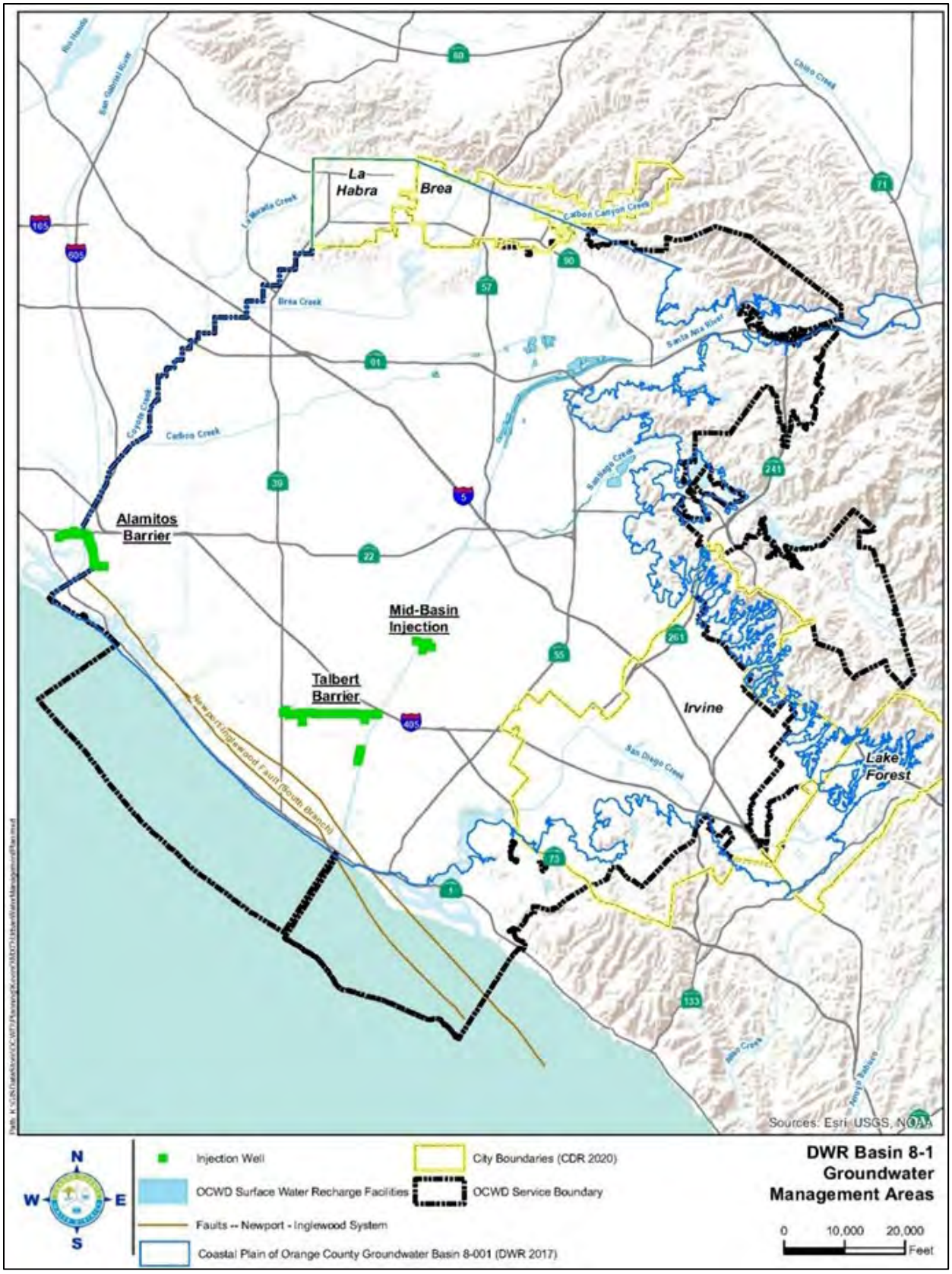


Figure 6.5 Map of the OC Basin (OCWD, 2022)

6.3.1.2 Sustainable Groundwater Management Act

In 2014, the State of California adopted the Sustainable Groundwater Management Act (SGMA) to help manage its groundwater sustainably and limit adverse effects such as significant groundwater-level declines, land subsidence, and water quality degradation. SGMA requires all high- and medium-priority basins, as designated by DWR, to be sustainably managed. DWR designated the Coastal Plain of OC Basin as a medium-priority basin, primarily due to heavy reliance on the OC Basin's groundwater as a source of water supply. Compliance with SGMA can be achieved in one of the following two ways (OCWD, 2023):

1. A Groundwater Sustainability Agency (GSA) is formed, and a Groundwater Sustainability Plan (GSP) is adopted.
2. Special Act Districts created by statute, such as OCWD, and other agencies may prepare and submit an Alternative to a GSP.

The agencies within Basin 8-1, OCWD and La Habra, collaborated to submit the original Alternative to a GSP in 2017, titled the "Basin 8-1 Alternative" to meet SGMA compliance. Under SGMA, alternatives must undergo periodic review and updating at 5-year intervals, analogous to GSP updates. OCWD prepared its first such periodic update, the 2022 update to the Basin 8-1 Alternative, and submitted it around January 2022.

6.3.1.3 Basin Production Percentage

Background

The OC Basin is not adjudicated and as such, pumping from the OC Basin is managed through a process that uses financial incentives to encourage groundwater producers to pump a sustainable amount of water. The framework for the financial incentives is based on establishing the BPP, the percentage of each Producer's total water supply that comes from groundwater pumped from the OC Basin. Groundwater production at or below the BPP is assessed the Replenishment Assessment (RA). While there is no legal limit as to how much an agency pumps from the OC Basin, there is a financial disincentive to pump above the BPP. The BPP is set uniformly for all Producers by OCWD on an annual basis. Agencies that pump above the BPP are charged the RA plus the Basin Equity Assessment (BEA). The BEA is presently calculated so that the cost of groundwater production is equivalent to the cost of importing potable water supplies. This approach serves to discourage, but not eliminate, production above the BPP, and the BEA can be increased to discourage production above the BPP if necessary.

The BPP is set based on groundwater conditions, availability of imported water supplies, and Basin management objectives. The supplies available for recharge must be estimated for a given year. The supplies of recharge water that are estimated are: 1) Santa Ana River stormflow, 2) natural incidental recharge, 3) Santa Ana River baseflow, 4) GWRS supplies, and 5) other supplies such as imported water and recycled water purchased for the Alamitos Barrier.

The BPP is a major factor in determining the cost of groundwater production from the OC Basin for that year. For the FY 2025-26 water year, OCWD is set to maintain a BPP of 85 percent. Under normal hydrologic conditions, groundwater production could reach approximately 315,000 AFY. However, OCWD anticipates groundwater production during FY 2025–26 will be approximately 297,000 AFY due to PFAS related impacts that continue to limit well availability across several producers.

BPP Adjustments for Basin Management

OCWD has established management guidelines that are used to establish future BPPs, as seen in Table 6.9. Raising or lowering the BPP allows OCWD to manage the amount of pumping from the basin. OCWD has a policy to manage the groundwater basin within a sustainable range to avoid adverse impacts to the basin. OCWD seeks to maintain some available storage space in the basin to maximize surface water recharge when such supplies are available, especially in relatively wet years. By keeping the basin relatively full during wet years, and for as long as possible in years with near-normal recharge, the maximum amount of groundwater could be maintained in storage to support pumping in future drought conditions. During dry hydrologic years, when less water is available for recharge, the BPP could be lowered to maintain groundwater storage levels. A component of OCWD's BPP policy is to manage the groundwater basin so that the BPP will not fluctuate more than 5 percent from year to year.

Table 6.9 Management Actions Based on Changes in Groundwater Storage

Available Storage Space(1)	Basin Management Actions to Consider
Less than 100,000 AF	Raise BPP
100,000 to 300,000 AF	Maintain and / or raise BPP towards 85% goal
300,000 to 350,000 AF	Seek additional supplies to refill basin and / or lower the BPP
Greater than 350,000 AF	Seek additional supplies to refill basin and lower the BPP

Notes:
(1) Amount below full basin condition.

The OCWD's GWRS came online in 2008 with a capacity of approximately 70 mgd and was expanded to 100 mgd in 2015. In 2023, it was expanded again to a final capacity of 130 mgd. The GWRS provides a resilient local water supply that recharges the Orange County groundwater basin with advanced treated wastewater. The additional yield supported OCWD's move to raise the BPP from the long-standing approximately 77 percent level prior to 2023 to 85 percent beginning in February 2023. Monthly water-resources reports show agencies achieving 86 percent to 88 percent pumping shares after the final expansion in late-2024 to early-2025, reflecting how GWRS production has enabled higher local reliance over the last decade, along with the relatively low water demands of approximately 400,000 AFY.

Modeling and forecasts generate estimates based on historical averages. Consequently, forecasts use average hydrologic conditions, which smooth the dynamic and unpredictable local hydrology. Variations in local hydrology are the most significant impact to supplies of water available to recharge the groundwater basin. The current BPP of 85 percent is based on modeling of average annual rainfall weather patterns and estimated groundwater recharge volumes. If OCWD were to experience a relatively dry period, the BPP could be reduced to maintain water storage levels, by as much as 5 percent.

Basin Equity Assessment Exemptions

In some cases, OCWD encourages treating and pumping groundwater that does not meet drinking water standards to protect water quality. This is achieved by using a financial incentive called the BEA Exemption. A BEA Exemption is used to promote beneficial uses of poor-quality groundwater and reduce or prevent the spread of poor-quality groundwater into non-degraded aquifer zones. OCWD uses a partial or total exemption of the BEA to compensate a qualified participating agency or Producer for the costs of treating poor quality groundwater, which typically include capital, interest and operations and maintenance costs for treatment facilities (City of La Habra et al., 2017). Similarly, for proactive water

quality management, OCWD exempts a portion of the BEA for their Coastal Pumping Transfer Program (CPTP). The CPTP encourages inland groundwater producers to increase pumping and coastal producers to decrease pumping to reduce the groundwater basin drawdown at the coast and protect against seawater intrusion. Inland pumpers can pump above the BPP without having to pay the full BEA for the amount pumped above the BPP (OCWD, 2015). Coastal pumpers receive BEA revenue from OCWD to assist in offsetting their additional water supply cost from taking less groundwater.

OCWD Groundwater Reliability Plan

To adapt to the substantial growth in water demands in OCWD's management area, it is paramount to anticipate and understand future water demands and develop projects to increase future water supplies proactively to match demands. The Groundwater Reliability Plan (GRP) is a continuation of these planning efforts that estimates the OC Basin's sustainable average annual production and extrapolates water needs of the OC Basin by combining recently completed water demand projections, and modeling of Santa Ana River flows available for recharge. These data will be used to evaluate future water supply projects and guide management of the OC Basin.

The OC Basin is unadjudicated and is therefore subject to implementation of a GSP. DWR approved an alternative to a GSP for the OC Basin. The alternative plan was submitted to DWR to meet requirements of the SGMA and demonstrate how water managers have already achieved or will achieve sustainable groundwater management. DWR received 15 alternative plans and nine were approved. The alternative report that was approved by DWR, entitled Basin 8-1 Alternative, was prepared in collaboration with the City of La Habra and Irvine Ranch Water District. OCWD has an adopted Groundwater Management Plan but elected to create a new report in a format that mirrors a GSP, which is required under SGMA.

Current water demand projections show a relatively slow increase over the 25-year planning horizon, which is generally of similar magnitude as the additional production from the GWRS since its final expansion in early 2023 to 130 mgd. This locally controlled, drought proof supply of water reduces the region's dependance on imported water.

Historically, the Santa Ana River has served as the primary source of water to recharge the OC Basin. To determine the availability of future Santa Ana River flows, OCWD utilized surface water flow modeling of the upper watershed. Modeling was developed to predict the impacts future stormwater capture and wastewater recycling projects in the upper watershed would have on future Santa Ana River flow rates at Prado Dam. Santa Ana River base flows are expected to decrease as more water recycling projects are built in the upper watershed. OCWD continues to work closely with the United States Army Corps of Engineers (USACE) to temporarily impound and slowly release up to approximately 20,000 AF of stormwater in the Prado Dam Conservation Pool. To some extent, the losses in baseflow are partially offset through the capture of additional stormwater held in the Prado Dam Conservation Pool. When available, OCWD will continue to augment groundwater recharge through the purchase of imported water through MET. OCWD will diligently monitor and evaluate future water supply projects to sustainably manage and protect the OC Basin for future generations. Specifically, in April 2021 USACE modified the Interim Water Control Manual change (IWCM) to allow 505 feet year-round, formalizing the higher pool and associated release operations used for conservation. And in February 2025, the USACE approved a new minor deviation permitting temporary storage up to elevation 508 feet, with potential future increases evaluated to 510 feet to 512 feet, enabling capture of roughly 2 billion gallons more stormwater and corresponding managed release rates tailored to OCWD's recharge capacity.

OCWD Engineer's Report

The OCWD Engineer's Report documents groundwater conditions and evaluates water supply and Basin utilization within OCWD's service area. The most recent report is the 2023-24 Engineer's Report released in February 2025. As reported, the Basin Production Percentage (BPP) for the 2023–24 water year was established at 85 percent by the OCWD Board of Directors. The overall BPP achieved within OCWD for non-irrigation use was 83.8 percent, with the reduced achievement attributed primarily to PFAS-related well shutdowns. Groundwater stored in the Basin increased by 56,000 AF for the 2023–24 water year, and the annual overdraft was 52,800 AF, which reflects the amount by which natural replenishment was exceeded. The increase in storage was supported by total groundwater recharge of 336,421 AF, including significant contributions from supplemental water recharged by the GWRS.

For the 2025–26 water year, OCWD is proposing to maintain a BPP of 85 percent. Under normal hydrologic conditions, groundwater production could reach approximately 315,000 AF; however, OCWD anticipates groundwater production during 2025–26 will be approximately 297,000 AF due to PFAS-related impacts that continue to limit well availability across several producers.

It is estimated that approximately 8,000 AF of additional production above the BPP will be undertaken by the City of Tustin, City of Huntington Beach, Mesa Water District, and Irvine Ranch Water District to support groundwater quality improvement projects. As in prior years, groundwater produced above the BPP for these water-quality projects will be partially or fully exempt from the BEA due to the Basin-wide benefit of pumping and treating poor-quality groundwater.

During the 2023–24 water year, MET untreated full-service water supplies were available for groundwater replenishment; however, OCWD did not purchase replenishment water due to favorable Basin storage conditions. OCWD likewise does not plan to purchase untreated full-service water for replenishment in 2025–26.

6.3.1.4 Recharge Management

Recharging water into the OC Basin through natural and artificial means is essential to support pumping from the OC Basin. Active recharge of groundwater began in 1949, in response to increasing drawdown of the OC Basin and, consequently, the threat of seawater intrusion. The OC Basin's primary source of recharge is supplied from the Santa Ana River, which is diverted into recharge basins and its main Orange County tributary, Santiago Creek. Other sources of recharge water include natural infiltration, recycled water, and imported water. Natural recharge consists of subsurface inflow from local hills and mountains, infiltration of precipitation and irrigation water, recharge in small flood control channels, and groundwater underflow to and from Los Angeles County and the ocean.

Recycled water for OC Basin recharge is from two sources. The main source is the GWRS, which completed its final expansion in 2023 and now produces up to 130 mgd of advanced-purified water for recharge at the Talbert Seawater Barrier and in the Kraemer, Miller, Miraloma, and La Palma basins. The second source is recycled water purified at the Water Replenishment District of Southern California's (WRD) Leo J. Vander Lans Advanced Water Treatment Facility (LVL), which provides up to 8 mgd for injection at the Alamitos Seawater Barrier (owned and operated by the Los Angeles County Department of Public Works). In recent years, WRD's upgrades and operations have increased the use of recycled water at the Alamitos Barrier and reduced reliance on imported supplies. Injection of recycled water into these barriers is an ongoing

effort by OCWD (in coordination with WRD and Los Angeles County) to control seawater intrusion into the OC Basin; operation of the injection wells forms a hydraulic barrier to seawater intrusion.

OCWD also purchases imported water for recharge through MWDOC. Untreated imported water can be used to recharge the OC Basin through the surface recharge system at multiple locations, such as Anaheim Lake, the Santa Ana River, Irvine Lake, and San Antonio Creek, while treated imported water may be used for in-lieu recharge when appropriate. For current planning context and detailed recharge management strategies, refer to OCWD's most recent planning documents, including the 2024 OCWD Resilience Plan, in addition to prior foundational documents (Appendix E).

6.3.1.5 MET Imported Water for Groundwater Replenishment

In the past, OCWD, MWDOC, and MET have coordinated water management to increase storage in the OC Basin when imported supplies are available for this purpose. MET's groundwater replenishment program was discontinued on January 1, 2013, and currently MET via MWDOC sells replenishment water to OCWD at the full-service untreated MET rate. Figure 6.6 shows MWDOC's imported water sales to OCWD since FY 1990-91, which averages approximately 27,888 AFY. In three of the past five water years, OCWD did not need to purchase more imported water to replenish groundwater.

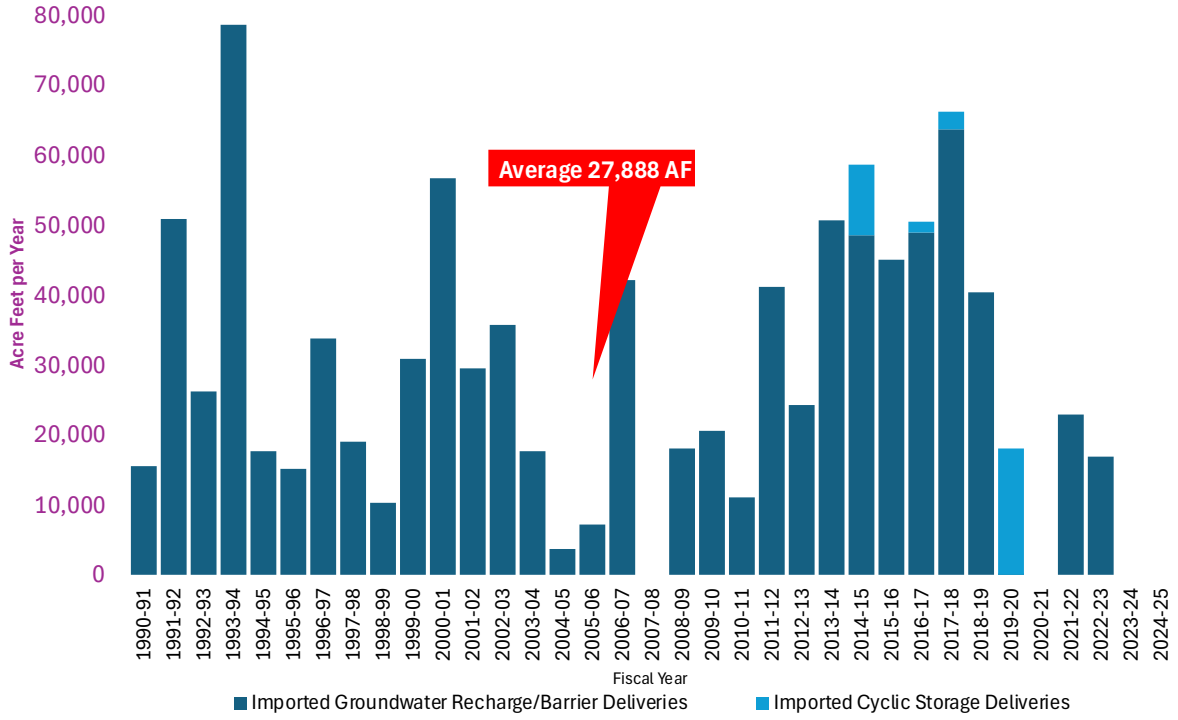


Figure 6.6 MWDOC Imported Water Sales for Groundwater Replenishment

6.3.1.6 MET Conjunctive Use/Cyclic Storage Program with OCWD

In April 2025, MET's Board elected to terminate six inactive conjunctive use program (CUP) agreements in June 2025, including the one with Orange County. MET has not stored water in the CUP account since 2014, and the CUP account has been withdrawn to zero. As so, the values in Figure 6.7 from 2015 onwards represent only volumes from the MET Cyclic Storage Agreement. The Cyclic Storage account is an alternative storage account with MET. However, unlike the CUP program, OCWD controls when the water is used. The Cyclic Water Storage Program allows MET to store water in a local groundwater basin during surplus conditions, where MET has limited space in its regional storage locations. Once the water is stored via direct delivery or In-lieu the groundwater agency can purchase this water at a future date or over a 5-year period.

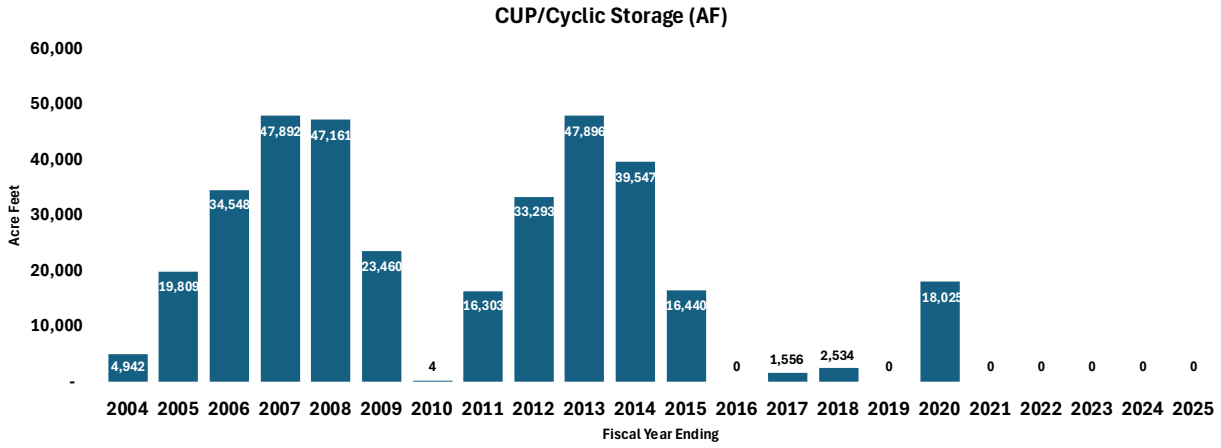


Figure 6.7 MWDOC Conjunctive Use Program Historical Storage Balance

6.3.2 San Juan Groundwater Basin

6.3.2.1 Basin Characteristics

Per DWR's designation, the San Juan Basin is a non-adjudicated, very low-priority basin (DWR, 2019). The San Juan Basin is located in the San Juan Creek Watershed and is comprised of four principal groundwater basins: 1) Lower Basin, 2) Middle Basin, 3) Upper Basin, and 4) Arroyo Trabuco. A map of the four principal groundwater basins is shown in Figure 6.8. The Middle Basin, Lower Basin, and Lower Trabuco consist of approximately 5.9 square miles of water bearing alluvium. Groundwater occurs in the relatively thin alluvial deposits along the valley floors and within the major stream channels. The younger alluvial deposits within the San Juan Basin consists of a heterogeneous mixture of sand, silts, and gravel.

Water quality in the San Juan Basin ranges from good to poor, as the deep lower basins contain brackish water that requires treatment, while the shallower upper subbasin has lower total dissolved solids (TDS) concentration. Groundwater production occurs primarily within the Lower Arroyo Trabuco, the Middle Basin, and the Lower Basin due to lack of storage and production capacity in the Upper Basin. Groundwater production within the San Juan Basin faces additional challenges, including shallow bedrock conditions, elevated dissolved solids content of the water, riparian habitat constraints on groundwater level drawdown, permit limits, and climate changes or drought conditions.

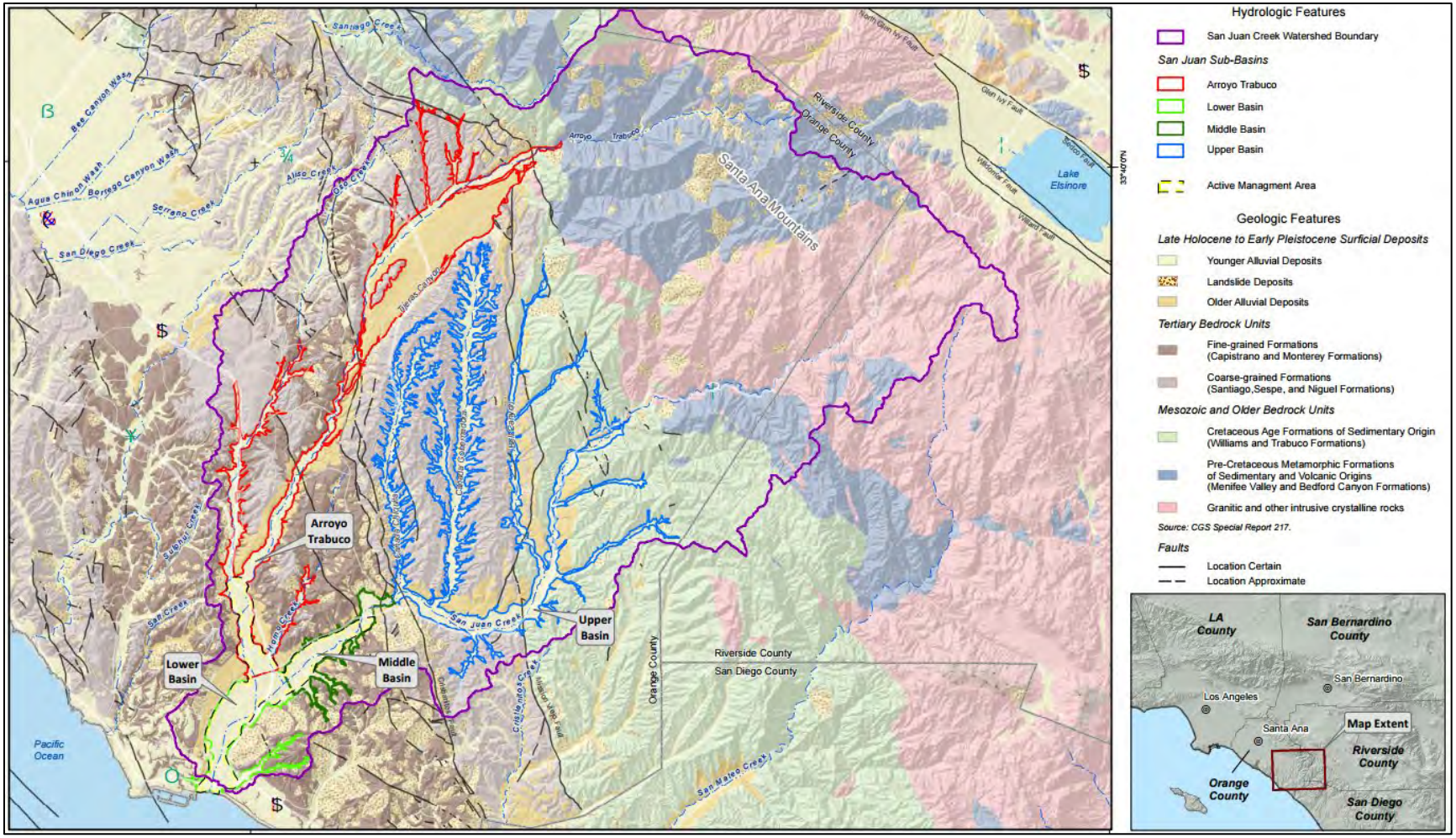


Figure 6.8 Principal Groundwater Basins for the San Juan Groundwater Basin

The physical boundaries of the San Juan Basin include the Santa Ana Mountain to the north, sedimentary rock formations to the sides of the Upper Basin and Arroyo Trabuco, and the Pacific Ocean to the south.

The San Juan Basin is recharged through a variety of sources such as:

- Streambed infiltration in San Juan Creek, Horno Creek, Oso Creek, and Arroyo Trabuco.
- Subsurface inflows along boundaries at the head of the tributaries upstream and other minor subsurface inflows from other boundaries.
- Precipitation and applied water.
- Flow from fractures and springs.

Discharge of groundwater from the San Juan Basin occurs from a variety of sources such as:

- Groundwater production.
- Rising groundwater.
- Evapotranspiration.
- Outflow to Pacific Ocean.

Currently, the South Coast Water District (SCWD) and Santa Margarita Water District (SMWD) have groundwater rights to the Basin and use this water for either municipal purposes or for irrigation. The agencies with groundwater rights to the Basin and their 2025 pumping allocations are listed below:

- SCWD: 1,300 AFY.
- SMWD (formerly City of San Juan Capistrano) per their permit has 10,702 AFY. They currently do not have the equipment to operate at more than 5,200 AFY (Permit 21074):
  - The groundwater storage cannot be less than one-half the storage capacity in the alluvial groundwater basin.

6.3.2.2 Basin Management

The SWRCB has determined that the San Juan Creek watershed is not a groundwater basin but is rather a surface and underground flowing stream. Therefore, it is subject to SWRCB jurisdiction and its processes with respect to the appropriation and use of water within the watershed. The San Juan Basin Authority (SJBA) is a joint powers authority formed in 1971 to manage the watershed. Member agencies have evolved over time and currently include SCWD and SMWD, while MNWD withdrew in 2022 but continues to participate as a non-member agency under a cooperative services agreement for the Salt and Nutrient Management Plan (SJBA, 2025). Both the SJBA and SCWD have their own SWRCB Permit for Diversion and Use of Water: Permit No. 21074 and Permit No. 21138, respectively (SWRCB Order WR 2025-0008-DWR for Permit 21138).

The San Juan Basin differs from many adjudicated groundwater basins as it does not strictly follow the term "safe yield" in preventing undesirable results occurring as a result of over-production of groundwater. The SJBA adopted the concept of "adaptive management" of the Basin to vary pumping from year to year based on actual basin conditions derived from monitoring efforts, with the groundwater management implication that during dry periods groundwater pumping will be lower than in wet periods. SJBA serves as the "Basin Manager" responsible for annually determining the amounts of adapted "available safe yield" so that SMWD and SCWD can pump pursuant to their water rights. Following the

recommendations of the San Juan Basin Groundwater and Facilities Management Plan (Appendix E), SJBA began developing adaptive pumping management (APM) plans to annually determine the water available for pumping. The first APM plan was the 2016 plan, and the most current at the time of this writing is the 2023 plan. The plans are updated each April, after most of the rainy season has passed, to define and initial pumping allocation for the subsequent 12-month period (May to April) based on current Basin conditions. Adjustments to the initial allocation are made as appropriate. Based on climate conditions and groundwater levels in the Inland and Stonehill management zones, the Basin is near full, indicating that the initial 2020 pumping allocations may be set at the maximum limits.

The APM plan also discusses the various efforts SJBA leads to support the continued sustainable production from the Basin. Examples of such efforts include aquifer testing to better understand Basin characteristics and monthly water quality and water level monitoring programs.

The storage in the groundwater basin is small, at an estimated 41,400 AF, relative to recharge and production. The range of natural yield of the San Juan Basin is 7,000 AFY to 11,000 AFY. Instream recharge along both San Juan Creek and Arroyo Trabuco Creek is the only viable largescale recharge method for the San Juan Basin due to the lack of suitable off-stream sites for stormwater storage and recharge, and the inability of the basin to accept large amounts of recharge at a specific site (SJBA, 2016).

The San Juan Capistrano Groundwater Recovery Plant (GWRP)—now operated by SMWD following consolidation of the City's utilities—produces treated potable supply from the basin. In 2023–2025, SMWD completed a clearwell replacement project and began a $10 million upgrade adding two reverse osmosis (RO) trains. Upon commissioning, treatment capacity is planned to increase from approximately 2.4 mgd to approximately 5 mgd, improving local supply reliability and reducing imported water dependence.

6.3.3 La Habra Groundwater Basin

6.3.3.1 Basin Characteristics

The unadjudicated La Habra Groundwater Basin underlays portions of both Los Angeles County and Orange County. The Basin lies entirely within the Coyote Creek Watershed, and the La Habra Basin area is shown on Figure 6.9. A portion of the La Habra Basin is located within Central Basin as well as the northern tip of the OC Basin, which are both medium-priority basins.

The City of La Habra has been deemed the exclusive GSA under SGMA for the La Habra-Brea Management Area. This management area is part of Basin 8-1 but is hydrogeologically distinct from the OCWD Management Area and is not under the jurisdiction of OCWD. La Habra adopted a resolution to establish the La Habra Basin as a separate basin from Basin 8-1. OCWD adopted a resolution to support the City's request to DWR for an internal jurisdictional boundary modification in the OC Basin that follows the city limits of La Habra and Brea as it is outside of the OCWD's jurisdictional boundary.

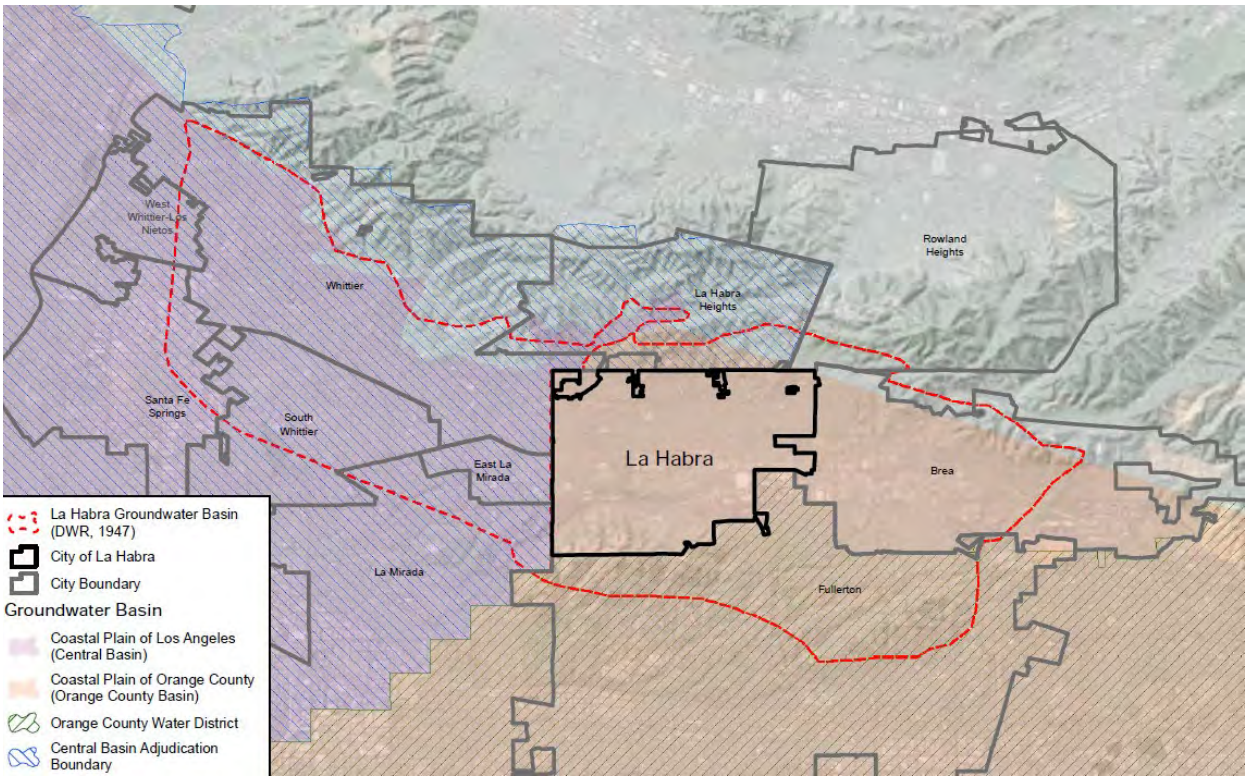


Figure 6.9 La Habra Groundwater Basin

From a structural geological standpoint, the La Habra Basin area is dominated by the northwest trending La Habra Syncline (a U–shaped down–fold) which is bounded on the north by the Puente Hills and on the south by the Coyote Hills. The fold is a naturally occurring trough, or valley, where significant quantities of groundwater have accumulated over the past 150,000 years. The La Habra Basin consists of three water-bearing zones: 1) the Alluvium, 2) the La Habra Formation (including the Coyote Hills Formation), and 3) the San Pedro Formation.

The Alluvium is comprised of young and old alluvium. The deposits are found along the surface stream courses and are composed of unconsolidated silt, clay, sand, and gravel. Alluvium thickness ranges from a few feet to over 100 feet. Generally, the La Habra Formation lies below the Alluvium, consisting of the La Habra and Coyote Hills Formations. However, in the Coyote Hill and Puente Hills, the Alluvium is uplifted and exposed. The La Habra Formation consists of non-marine mudstone, siltstone, sandstone, and conglomerate. It ranges in thickness from 300 to nearly 1,200 feet. Water levels of wells in the La Habra Formation have been measured between 100 and 200 feet below ground surface across the Basin.

Underneath the La Habra Formation lies the San Pedro Formation. As the deepest water bearing unit, the San Pedro Formation is comprised of sand, gravel, sandstone, conglomerate, and shale. The San Pedro Formation ranges between 200 feet and 400 feet in thickness and produces the best quality groundwater of all the water bearing zones. Pressure levels of confined groundwater in wells of the San Pedro aquifer zone range from about 100 feet to 200 feet below ground surface (La Habra, Groundwater Study, August 2014).

6.3.3.2 Basin Management and Safe Yield

The agencies within Basin 8-1, such as the City of La Habra, collaborated to submit an Alternative to a GSP in 2022, titled the "Basin 8-1 Alternative" to meet SGMA compliance. This document supersedes the Groundwater Management Plan from 2017 and must be updated every 5 years. The current version of the SGMA-compliant document is included in Appendix E.

Although the La Habra Basin is not adjudicated, the City of La Habra follows a "safe yield" which is used for the management and future planning of the La Habra Basin for sustained beneficial use. The safe yield is the volume of groundwater that can be pumped without depleting the aquifer to a point where it cannot recover through natural recharge over a reasonable period of time.

The safe yield for the La Habra Basin was estimated to be approximately 4,500 AFY. This safe yield was determined through an average from two separate studies that took into account natural groundwater recharge and natural groundwater discharge. The La Habra Basin continues to be managed sustainably by maintaining and coordinating groundwater production within the estimated safe yield. The City of La Habra is also evaluating its existing monitoring program with the intent to develop a more robust groundwater elevation and water quality monitoring program (La Habra, 2020).

6.3.3.3 Historical and Current Groundwater Extraction

Historically, hundreds of wells in this area supplied water for domestic use and irrigation until many were abandoned in the 1950s due to elevated concentrations of nitrate, total dissolved solids, metals, and taste-and-odor issues (OCWD, 2015). In recent years, the City of La Habra has evaluated opportunities to increase groundwater production from the subbasin as water quality and management practices have evolved.

OCWD's most up to date 2015 Groundwater Management Plan states that 2,200 to 5,500 AFY of groundwater naturally flows out of the La Habra Basin. Outflow occurs in two directions: southerly into the Main Basin along the Brea Creek drainage between the East and West Coyote Hills, and westerly into the Central Basin in Los Angeles County (OCWD, 2015). Areas lying outside the OCWD's boundaries in the northern portion of Basin 8-1, defined in DWR Bulletin 118, are also located within the La Habra Subbasin.

6.3.4 Main San Gabriel Groundwater Basin

California Domestic Water Company (CDWC) has water rights, production, treatment and conveyance facilities in the adjudicated Main San Gabriel Groundwater Basin that serve customers overlying the basin within Suburban Water Systems as well as serving the cities of Brea and La Habra in Orange County. Based on the 10-year average from FY 2014-15 through FY 2024-25, Brea and La Habra purchase approximately 13,261 AFY of Main San Gabriel Groundwater Basin groundwater from CDWC, making it the two cities' primary source of potable water. CDWC operates seven active groundwater wells, which supply water from the basin. After the water is pumped, it is then conveyed through treatment facilities and delivered through approximately 30 miles of pipeline from Los Angeles County, ending north Orange County, delivering to La Habra and Brea (California Domestic Water Company, n.d.).

There is no limit or cap on the amount of water CDWC can produce from the basin. CDWC owns approximately 12,363 AF of prescriptive pumping rights in the Main San Gabriel Basin. Prescriptive pumping rights are adjusted based on the determination of the Operating Safe Yield (OSY) annually. Based on the FY 2024-25 OSY set at 150,000 AF, CDWC's prescriptive pumping rights total 9,383.24 AF. Currently, this is the amount of groundwater CDWC can produce from the basin before incurring replacement water assessments.

The Main San Gabriel Basin and its operations are described in the following subsections.

6.3.4.1 Basin Characteristics

The Main San Gabriel Basin lies in eastern Los Angeles County and occupies most of San Gabriel Valley. The hydrologic basin or watershed coincides with a portion of the upper San Gabriel River watershed, and the aquifer or groundwater basin underlies most of the San Gabriel Valley. It is bounded on the north by the San Gabriel Mountains, on the northwest by Raymond Basin, on the southeast by Puente Basin, and on the south by Central Basin. The Main San Gabriel Basin encompasses approximately 107,000 acres and has a storage of 8.9 million AF when the groundwater elevation at the Baldwin Park Key Well is at 316 feet msl. One foot of groundwater elevation is equivalent to approximately 8,000 AF of storage.

The hydrogeological San Gabriel Basin is divided between three sub-basins, Main Basin, Puente Basin, and portions of Six Basins area. A portion of Six Basins area is tributary to the Main Basin. Each of the sub-basins are adjudicated and managed separately.

Major sources of recharge to the Main San Gabriel Basin are infiltration of rainfall on the valley floor and runoff from the nearby mountains. The Main San Gabriel Basin is the first of a series of basins to receive the water from mountain runoff. The Main San Gabriel Basin interacts hydrogeologically and institutionally with adjoining basins, including Puente Basin, Central Basin, and West Coast Basin (Main San Gabriel Basin Watermaster, 2020a).

Figure 6.10 depicts the boundaries of the Main San Gabriel Basin.

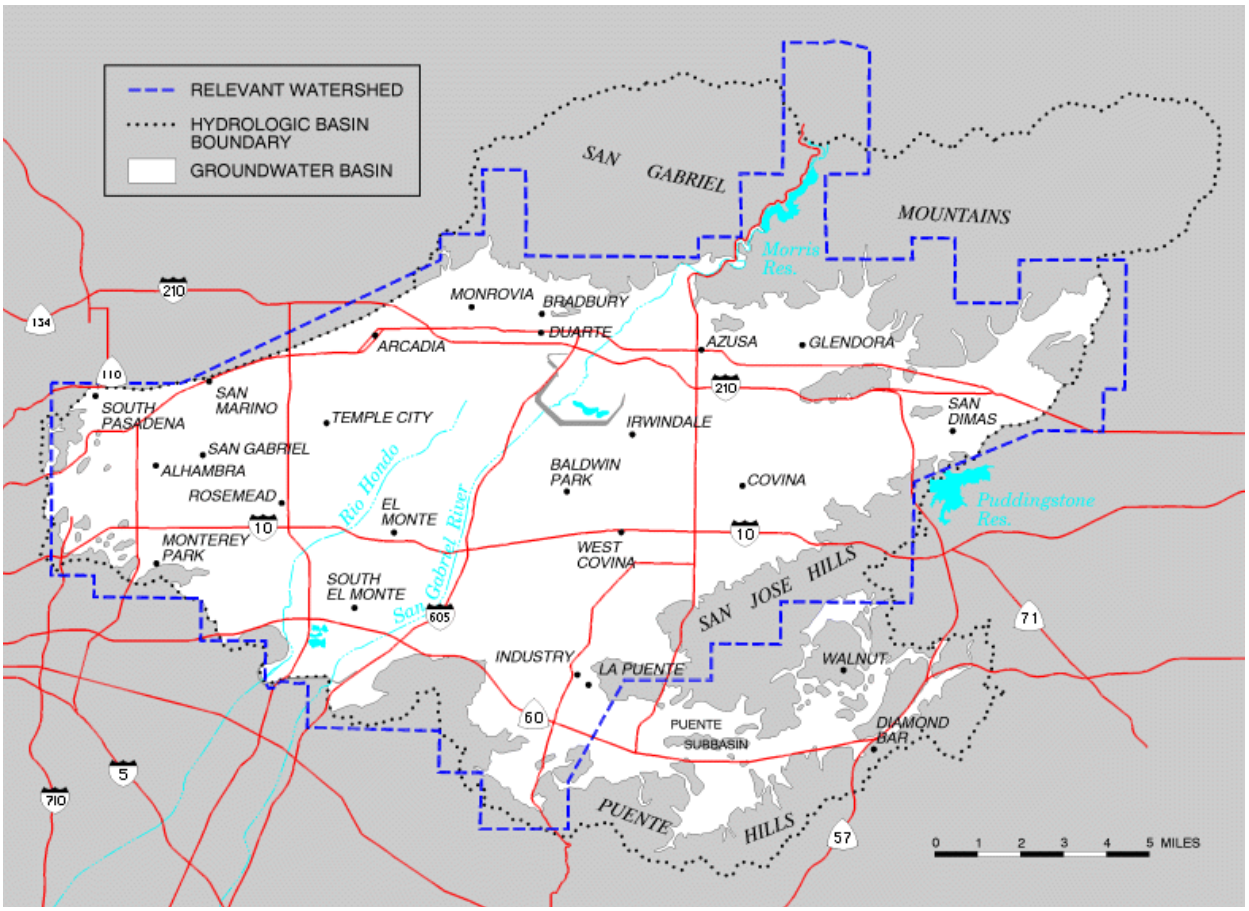


Figure 6.10 Main San Gabriel Groundwater Basin

6.3.4.2 Basin Judgment

Rapid urbanization in the San Gabriel Valley in the 1940s resulted in an increased demand for groundwater drawn from the Upper Area users in Main San Gabriel Basin. Consequently, the Main San Gabriel Basin was in a state of overdraft and the available water supply for the Lower Area and downstream users decreased. In 1968, at the request of producers, the Upper San Gabriel Municipal Water District filed a complaint that would adjudicate water rights in the Basin and would bring all Basin producers under control of one governing body. The result was the entry of the Main San Gabriel Basin Judgment in 1973.

The Judgment defined the water rights of 190 original parties to the legal action. It created a new governing body, the Main San Gabriel Basin Watermaster, and described a program for management of water in the Basin. Under the terms of the Main San Gabriel Basin Judgment all rights to the diversion of surface water and production of groundwater within the Main Basin and its relevant watershed were adjudicated. The Main Basin Judgment does not restrict the quantity of water agencies may extract from the Main Basin. Rather, it provides a means for replacing with Supplemental Water all annual extractions in excess of an agency's annual right to extract water. The Main Basin Watermaster annually establishes an OSY for the Main Basin that is then used to allocate to each agency its portion of the OSY that can be produced free of a Replacement Water Assessment. If a producer extracts water beyond his right under

the annual OSY, it must pay an assessment for Replacement Water that is sufficient to purchase one AF of Supplemental Water to be spread in the basin for each AF of excess production. All water production is metered and is reported quarterly to the Main Basin Watermaster. The OSY is set at 150,000 AF for FY 2024-25.

In addition to Replacement Water Assessments, the Main Basin Watermaster levies an Administration Assessment to fund the administration of the Main Basin management program under the Main Basin Judgment and a Make-up Obligation Assessment in order to fulfill the requirements for any Make-Up Obligation under the Long Beach Judgment and to supply fifty percent of the administration costs of the River Watermaster service. The Main Basin Watermaster levies an In-lieu Assessment and may levy special Administration Assessments.

Water rights under the Main Basin Judgment are transferable by lease or purchase so long as such transfers meet the requirements of the Main Basin Judgment. There is also provision for Cyclic Storage Agreements that allow parties and non-parties to store imported supplemental water in the Main San Gabriel Basin under such agreements with the Main Basin Watermaster pursuant to uniform rules and conditions and Court approval (Main San Gabriel Basin Watermaster, 2020a).

The Main Basin Watermaster has entered into a Cyclic Storage Agreement with three municipal water districts, including MET, Three Valleys Municipal Water District (TVMWD), and Upper San Gabriel Valley Municipal Water District (USGVMWD). The first agreement with MET and USGVMWD permits MET to deliver, and store imported water in the Main Basin in an amount not to exceed 100,000 AF for future Replacement Water use. The second Cyclic Storage Agreement is with TVMWD and permits MET to deliver and store 40,000 AF for future Replacement Water use. The third is with San Gabriel Valley Municipal Water District. The Amended Main San Gabriel Basin Judgment contains more detailed information on the agreements and management of water rights to the basin (Appendix E).

The Main San Gabriel Basin has experienced long-term hydrologic stress, with a predominance of below average rainfall conditions since approximately the year 2000. While recent wet years in 2023 and 2024 provided periods of increased runoff and recharge, basin recovery remains highly dependent on active management by the Main Basin Watermaster, including stormwater augmentation, cyclic storage, and Resource Development Assessment (RDA) water. Long-term basin demand has declined substantially from its peak in the mid-2000s and has stabilized at lower levels in recent years. Groundwater elevations, as measured at the Baldwin Park Key Well, have fluctuated in response to hydrologic conditions and management actions, including increases associated with cyclic storage and RDA water deliveries during wetter periods.

6.3.5 Impaired Groundwater

To date, nine groundwater remediation projects have been completed, all of which are included in the list below. These projects have collectively produced 25,443 AF of groundwater in FY 2024-25. At full build-out, their total yield is expected to exceed 30,000 AFY. Since these projects extract groundwater from impaired or deeper aquifer zones, in many cases the associated pumping is not counted toward an agency's BPP and therefore does not require a one-for-one replenishment obligation These projects were developed to restore impaired groundwater resources, expand the region's ability to store and manage water, and strengthen drought resilience by increasing access to groundwater held in storage. These impaired groundwater treatment projects are as follows:

Huntington Beach Well 9 - Huntington Beach Well 9 has been fully upgraded to a 3,000-gpm groundwater treatment system designed to remove hydrogen sulfide and other reduced water-quality constituents. The City completed multiple phases of project development, including laboratory testing, pilot studies, treatment facility design, permitting, bid support, and startup. The completed treatment facility includes granular activated carbon filtration, integrated structural and electrical controls, and a custom control panel for reliable day-to-day operation. With these improvements now in place, Well 9 is back in service and producing high-quality drinking water at its full design capacity (PACE, n.d.).

Tustin Main Street Desalter - The City of Tustin currently operates two desalter plants, the Main Street Desalter and 17th Street Desalter. The Main Street Treatment plant began operating in 1989 with a capacity of 2 mgd. The Main Street Desalter reduces nitrate levels from the groundwater produced by Tustin's Main Street wells. The untreated groundwater undergoes either RO or Ion Exchange treatment.

Tustin 17th Street Desalter - The Tustin 17th Street Desalter began operating in 1996 with a capacity of 3 mgd. The Tustin 17th Street Desalter reduces high nitrate and TDS concentrations from the groundwater pumped by Tustin's 17th Street wells. The 17th Street Desalter plant uses two RO membrane trains to treat the groundwater.

Mesa Water Reliability Facility (MWRF) - Mesa Water District originally built the Colored Water Treatment Facility (CWTF) in 2000 to treat amber-colored groundwater pumped from Wells 6 and 11. The facility was later upgraded and renamed to the Mesa Water Reliability Facility (MWRF), which began operating in 2013. The MWRF has a capacity of 5.8 mgd and removes color from deep water using microfiltration (MF).

IRWD Deep Aquifer Treatment System - IRWD's Deep Aquifer Treatment System (DATS) purifies drinking water from the lower aquifer of the OC Basin. The water in this aquifer is very high quality, but has a brownish tint imparted from the remains of ancient vegetation. The DATS facility went online in 2002 and can treat up to 7.4 mgd from two wells that pump water from 2,000 feet below ground level.

IRWD Wells 21 & 22 Desalter Treatment plant - The Wells 21 and 22 Rehabilitation, Pipelines and Water Treatment Plant project recover and treat local groundwater to remove nitrates using RO. The treated water is used in the potable water system. Adding this new source of drinking water helps to satisfy increasing demand for water and provides a sustainable infrastructure with long-term benefits. Once rehabilitated, Wells 21 and 22 will produce approximately 6,300 AFY of drinking water for the IRWD service area.

IRWD Irvine Desalter Project - The Irvine Desalter Project was completed in 2006 and purifies water found in the Irvine sub-basin of the larger OC Basin. It is a two-part endeavor, with recycled water and drinking water components. The Irvine Desalter Potable Treatment Facility uses two RO trains to produce 2.7 mgd by removing salts that are caused by natural geology and past agricultural use.

San Juan Groundwater Recovery Plant - The San Juan GWRP is a 5-mgd plant that came online in 2004 and is currently owned and operated by SMWD. The GWRP was previously known as the San Juan Basin Desalter, owned and operated by the City of San Juan Capistrano, prior to SMWD acquiring the City's water operations. The GWRP takes groundwater high in iron, manganese, and TDS using RO and makes it suitable for potable water uses. The plant has not operated continuously at the 5-mgd rate, but prior to the drought restrictions in the basin, it had been producing water at the rate of about 3 mgd. Recently, SMWD added additional RO filtration capacity, and the plant is expected to produce just under 5 mgd.

SCWD Groundwater Desalter - SCWD currently owns and operates a 1 mgd GRF that came on-line in FY 2007-08 in Dana Point, formerly known as the Capistrano Beach Desalter. The plant extracts brackish groundwater from an aquifer in the San Juan Basin and goes through iron and manganese removal due to high mineral content. Future increase in production is detailed in Section 6.7.2.

6.3.6 Planned Future Groundwater Sources

The agencies that manage the OC, Main San Gabriel, La Habra, and San Juan basins regularly evaluate potential projects and conduct studies to review the feasibility of new projects or sources. A few groundwater basin-related projects that are planned or in progress are described below.

6.3.6.1 OC Basin

Forecast Informed Reservoir Operations (FIRO) at Prado Dam - Stormwater represents a significant source of water used by OCWD to recharge the OC Basin. Much of this recharge is made possible by the capture of Santa Ana River stormflows behind Prado Dam in the Conservation Pool. FIRO represents the next generation of operating water reservoirs using the best available technology. Advances in weather and stormwater runoff forecasting hold promise to allow USACE to safely impound more stormwater while maintaining equivalent flood risk management capability behind Prado Dam. Analyses indicate that FIRO would increase average annual recharge by approximately 4,000 AFY to 6,000 AFY, and up to 23,000 AF in very wet years, consistent with earlier preliminary analyses. Federal and local partners have indicated FIRO at Prado Dam is moving from technical assessment toward implementation by 2031 (Center for Western Weather and Water Extremes, 2024).

Emergency Water Supplies to South Orange County - OCWD entered into an agreement with Moulton Niguel Water District (MNWD) to develop an emergency water supply program. The purpose of such program would provide MNWD water during emergencies. As part of the agreement, OCWD evaluated where and how to extract groundwater from the OC Basin with several options to pump the water to MNWD via the East Orange County Feeder No. 2.

6.3.6.2 Main San Gabriel Groundwater Basin

Involvement in MET's Pure Water Southern California - The Main San Gabriel Basin remains identified for potential replenishment deliveries from MET's Pure Water Southern California program. The program's demonstration facility began operating in October 2019 and continues to generate regulatory and design data for the full-scale advanced purification facility (targeted capacity up to 150 mgd) and associated conveyance for groundwater basin replenishment and potential direct industrial uses. Upper San Gabriel Valley Municipal Water District (USGVMWD) and the Main Basin Watermaster continue coordination with MET to position the basin for future indirect potable reuse (recharge) supplies as the regional program advances toward implementation milestones and regulatory approvals. The program remains in active development, with the final Environmental Impact Report (EIR) certified by MET's Board of Directors in early 2026 and is tracked in MET's conservation/recycling achievements reporting; basin agencies continue planning activities to integrate future replenishment deliveries once the regional program is commissioned.

6.3.6.3 San Juan Basin

San Juan Watershed Project - SMWD and other project partners have proposed a multi-phased project within the San Juan Creek Watershed to capture local stormwater and develop, convey, and recharge recycled water into the San Juan Groundwater Basin and treat the water upon pumping it out of the basin. The first phase includes the installation of three rubber dams within San Juan Creek to promote in-stream recharge of the basin, with an anticipated production of 700 AFY on average. The second phase would develop additional surface water and groundwater management practices by using stormwater and introducing recycled water for infiltration into the basin and has an anticipated production of 2,660 AFY to 4,920 AFY. The third phase will introduce recycled water directly into San Juan Creek through live stream recharge, with an anticipated production of up to 2,660 AFY (SMWD, 2021b). The Final EIR was completed in 2019, and the project remains on SMWD's list of Current/Future Projects with a projected ultimate supply on the order of 5.6 billion gallons per year (approximately 17,000 AFY) when fully implemented across phases.

6.4 Surface Water

In FY 2024-25, 2 percent of MWDOC's water supply portfolio was attributed to surface water captured in local reservoirs. The largest surface water reservoir in Orange County is Santiago Reservoir (Irvine Lake), which discussed below. In other areas, surface water runoff percolates into alluvial materials or groundwater basins. IRWD, SMWD, and SCWD capture and manage surface water supplies at certain locations. Surface water is managed by MWDOC's member agencies (Orange County Local Agency Formation Commission, 2020).

6.4.1 Irvine Lake

With a capacity of nearly 28,000 AF, Santiago Reservoir, or Irvine Lake, is the largest surface water reservoir in Orange County. Irvine Lake was built in 1931 and captures runoff from the upper Santiago Creek Watershed, as well as stores imported water (Orange County Local Agency Formation Commission, [2020]). The 700-acre Irvine Lake is currently owned by IRWD after Serrano Water District transferred their 25 percent ownership stake to IRWD in 2025 (Serrano Water District, 2026). The lake holds more than

9 billion gallons of water and is contained by the 810-foot-tall Santiago Dam. IRWD uses water from Irvine Lake as a source of water for non-drinking purposes such as irrigation and as a source of water for the Baker Treatment Plant (Section 6.2.5). IRWD balances the benefits of storing water in Irvine Lake by minimizing evaporation and preserving the ability to capture rainwater from the surrounding hills. During years with less rainfall, IRWD also adds imported water from MET to the lake (IRWD, 2021a).

6.5 Stormwater

MWDOC does not own or operate stormwater facilities. This section describes existing and planned stormwater sources in the region that would benefit Orange County.

6.5.1 Existing Sources

Costly and limited imported water availability from the CRA and SWP has heightened the need to enhance water supply by increasing local stormwater capture. The Prado Dam in Riverside County, California captures approximately 52,000 AF of stormwater annually, on average, for groundwater recharge in Orange County. During times of minimal flood threat, the dam can be regulated to control runoff in order to supply water to OCWD. The current agreement between USACE and OCWD allows for the capture of stormwater up to an elevation of 498 feet above sea level during flood season and up to 505 feet above sea level during non-flood season behind Prado Dam (OCWD, 2016).

6.5.2 Planned Future Stormwater Sources

FIRO is a reservoir-operations strategy that better informs decisions to retain or release water by integrating additional flexibility in operation policies and rules with enhanced monitoring and improved weather and water forecasts (American Meteorological Society, 2020). The FIRO Final Viability Assessment, completed in November 2023 in partnership between OCWD, USACE**,** and the Center for Western Weather and Water Extremes (CW3E) at Scripps Institution of Oceanography – UC San Diego, concluded that FIRO could offer an additional 4,000 AF to 6,000 AF of stormwater recharge annually, depending on the final elevation (between 510 feet and 512 feet). This volume could serve 32,000 to 48,000 people each year. Steps are now underway to integrate FIRO operations into the Prado Dam Water Control Manual (WCM), with USACE currently preparing its first update to accommodate structural changes at the dam. The WCM includes re-operation of the Prado Dam for controlled release of water for reduced discharge rates from the Prado Dam and reducing sediment deposition in the Basin to increase the effective yield of water from the Santa Ana River for diversion and infiltration at OCWD's facilities downstream of the dam. A minor deviation in the WCM will test FIRO capabilities by allowing the conservation pool to rise to elevation 508 feet for a trial period of 5 years. Concurrently, the CW3E, OCWD, and USACE will be developing decision support tools needed to operationalize FIRO and a habitat assessment tool to better understand the effects of holding more water on habitat. The final FIRO WCM update is scheduled for completion in 2029.

6.6 Wastewater and Recycled Water

MWDOC is not directly involved in wastewater services and does not own or operate the wastewater collection system or treatment facilities in its service area. Some local agencies provide wastewater collection and treatment as well as potable water services, while other agencies send their wastewater to large regional facilities. Wastewater is not collected by MWDOC and MWDOC does not treat or discharge wastewater.

MWDOC is indirectly involved in recycled water production through its supply to systems whose wastewater is sent for indirect potable reuse (IPR). MWDOC does not produce or manage recycled water, but supports, encourages, and partners in recycled water efforts within its service area. Recycled water planning within MWDOC's service area requires close coordination with multiple agencies that often have overlapping jurisdictional boundaries. As imported water supplies have become increasingly challenged, the local agencies, including OCWD have continued working to identify opportunities for the use of recycled water for irrigation purposes, groundwater recharge, and some non-irrigation applications. The following sections expand on the existing agency collaboration involved in these efforts as well as MWDOC's member agencies projected recycled water use over the next 25 years.

6.6.1 Agency Coordination

MWDOC does not own or operate wastewater treatment facilities and the individual agencies that MWDOC supplies often send collected wastewater to either OC San in North County or SOCWA in South County for treatment and disposal. OCWD is the manager of the OC Basin and strives to maintain and increase the reliability of the OC Basin through replenishment with imported water, stormwater, and advanced treated wastewater.

6.6.1.1 Orange County Sanitation District

OC San collects wastewater from residential, commercial, and industrial customers in 20 cities, 4 special districts, and portions of unincorporated Orange County, totaling 479 square miles that serves more than 2.6 million residents in northwest and central Orange County (OC San, 2025). These flows include dry weather urban runoff collected from 15 diversion points and discharged into the sewer system for treatment and Santa Ana River Interceptor flows from the upper Santa Ana watershed (OC San, 2017).

OC San operates and maintains two treatment plants: Reclamation Plant No. 1, located in Fountain Valley with a capacity of 320 mgd, and Reclamation Plant No. 2 located in Huntington Beach with a capacity of 312 mgd. OC San also operates 572 miles of collection system pipelines along with 15 offsite pump stations. Approximately 150 mgd of secondary effluent undergoes advanced treatment at the GWRS facility operated by the OCWD and 7.5 mgd undergoes tertiary treatment at OCWD's GAP facility. Treated wastewater is discharged to the Pacific Ocean via an ocean outfall in compliance with state and federal requirements as set forth in OC San's National Pollutant Discharge Elimination System (NPDES) permit. OC San's ocean outfall is 120-inch diameter and extends 5 miles off the coast of Huntington Beach. A 78-inch diameter emergency outfall also exists that extends 1.3 miles off the coast (OC San, 2017).

OC San Reclamation Plant No. 1 - Reclamation Plant No. 1 treats raw wastewater and has a maximum treatment capacity of 320 mgd. The plant provides primary and secondary treatment and supplies secondary effluent to OCWD for further tertiary treatment at their GAP facility and advanced treatment at their GWRS. Reclamation Plant No. 1 is the only plant that provides water to OCWD for additional treatment and recycling. An interplant pipeline allows flows to be conveyed to Treatment Plant No. 2.

OC San Treatment Plant No. 2 - Treatment Plant No. 2 provides primary and secondary treatment to raw wastewater and has a maximum treatment capacity of 312 mgd. All secondary effluent from their plant is discharged to the ocean through the ocean outfall.

6.6.1.2 Orange County Water District

OCWD is the manager of the OC Basin and provides water to 19 municipal water agencies and special districts. A full description of the OC Basin is available in Section 6.3.1. OCWD and OC San have jointly constructed and expanded two water recycling projects that include: 1) OCWD GAP and 2) OCWD GWRS.

OCWD GAP

OCWD owns and operates the GAP, a water recycling system that treats up to 7.5 mgd and provides 8,400 AFY of recycled water for irrigation and industrial uses. GAP provides an alternate source of water that is mainly delivered to parks, golf courses, greenbelts, cemeteries, and nurseries in the cities of Costa Mesa, Fountain Valley, Newport Beach, and Santa Ana. Approximately 100 customer sites use GAP water, current recycled water users include Mile Square Park and Golf Courses in Fountain Valley, Costa Mesa Country Club, Chroma Systems carpet dyeing, Kaiser Permanente, and Caltrans.

OCWD GWRS

OCWD's GWRS allows Southern California to decrease its dependency on imported water and creates a local and reliable source of water. OCWD's GWRS purifies secondary treated wastewater from OC San to levels that meet and exceed all state and federal drinking water standards. The GWRS Phase 1 plant has been operational since January 2008 and uses a three-step advanced treatment process consisting of MF, RO, and ultraviolet (UV) light with hydrogen peroxide. A portion of the treated water is injected into the seawater barrier to prevent seawater intrusion into the groundwater basin. The other portion of the water is pumped to ponds where the water percolates into deep aquifers and becomes part of Orange County's water supply. The treatment process is described on OCWD's website. (OCWD, GWRS, 2020).

The GWRS first began operating in 2008 producing 70 mgd and in 2015, it underwent a 30-mgd expansion. Approximately 39,200 AFY of the highly purified water is pumped into the injection wells and 72,900 AFY is pumped to the percolation ponds in the City of Anaheim where the water is naturally filtered through sand and gravel to deep aquifers of the groundwater basin. The OC Basin provides approximately 77 percent of the potable water supply for north and central Orange County. The design and construction of the first phase (78,500 AFY) of the GWRS project was jointly funded by OCWD and OC San; Phase 2 expansion (33,600 AFY) was funded solely by OCWD.

The Final Expansion of the GWRS is the third and final phase of the project and was completed in 2023. The plant now produces 130 mgd and requires additional treated wastewater from OC San. This additional water comes from OC San's Treatment Plant 2, which is in the City of Huntington Beach approximately 3.5 miles south of the GWRS. The Final Expansion project included expanding the existing

GWRS treatment facilities, constructing new conveyance facilities at OC San Plant 2 and rehabilitating an existing pipeline between OC San Plant 2 and the GWRS. Following completion, the GWRS plant now recycles 100 percent of OC San's reclaimable sources and produces enough water to meet the needs of over 1 million people.

6.6.1.3 South Orange County Wastewater Authority

SOCWA is a Joint Powers Authority created on July 1, 2001, to facilitate and manage the collection, transmission, treatment, and discharge of wastewater for more than 500,000 homes and businesses across South Orange County. It was formed as the legal successor to the Aliso Water Management Agency, South East Regional Reclamation Authority, and South Orange County Reclamation Authority. SOCWA has six member agencies that include: City of Laguna Beach, City of San Clemente, El Toro Water District, Emerald Bay Service District, Santa Margarita Water District, and South Coast Water District. All these service areas receive wholesale water through MWDOC. The service area encompasses approximately 220 square miles including the Aliso Creek, Salt Creek, Laguna Canyon Creek, and San Juan Creek Watersheds.

Within its service area, SOCWA operates two wastewater treatment plants, with an additional 10 wastewater treatment plants operated by South Orange County agencies. Wastewater in the service area is collected at the local and regional level through a series of interceptors that convey sewer to the wastewater treatment plants. Treated effluent throughout the service area is conveyed to two gravity flow ocean outfalls operated by SOCWA the Aliso Creek Outfall and the San Juan Creek Outfall. The Aliso Creek outfall has a capacity of 33.2 mgd and extends 1.5 miles offshore near Aliso Beach in the City of Laguna Beach. The San Juan Creek outfall has a nominal capacity of 36.8 mgd which can be increased by pumping and extends 2.2 miles offshore near Doheny Beach in the City of Dana Point. Full secondary treatment is provided at SOCWA wastewater treatment plants, with most plants exceeding this level of treatment when the water is beneficially reused.

SOCWA Coastal Treatment Plant - SOCWA's Coastal Treatment Plant (CTP) in Aliso Canyon, Laguna Niguel has a 6.7 mgd capacity and treats wastewater received from the City of Laguna Beach, Emerald Bay Service District (EBSD), MNWD, and SCWD to secondary effluent standards. Effluent from the CTP is treated to secondary or tertiary levels depending on the discharge method, ocean outfall or beneficial reuse. Recycled water is treated to Title 22 standards at the Advanced Water Treatment Plant (AWTP) owned by SCWD, but operated by SOCWA, located adjacent to the CTP. During the summer months, over 2 mgd of recycled water can be produced by the AWTP. Treated effluent that is not recycled is discharged through the Aliso Creek Ocean Outfall. Waste sludge is sent to the Regional Treatment Plant (RTP) in Laguna Niguel.

SOCWA J.B. Latham Treatment Plant - SOCWA's J.B. Latham Treatment Plant located in the City of Dana Point has a 13-mgd capacity and treats wastewater from MNWD, City of San Juan Capistrano, SMWD, and SCWD to secondary effluent standards. The secondary effluent is conveyed directly to the San Juan Creek Outfall as the plant does not have tertiary treatment.

6.6.2 Current Recycled Water Uses

MWDOC does not produce or manage recycled water, but supports, encourages, and partners in recycled water efforts within its service area. Recycled water planning within MWDOC's service area requires close coordination with multiple agencies that have overlapping jurisdictional boundaries. As imported water supplies have become more challenged, the local agencies, including OCWD have continued working to identify opportunities for the use of recycled water for irrigation purposes, groundwater recharge and some non-irrigation applications. A list of agencies that provide wholesale or retail recycled water within MWDOC's service area are below.

Recycled water is widely accepted as a water supply source throughout MWDOC's service area. In the past, recycled water was mainly used for landscape irrigation, but large recycled water projects including OCWD's GAP and GWRS, and IRWD's recycled water projects have significantly expanded and increased uses. GWRS uses include injection for sea water barriers and percolation for groundwater recharge. IRWD is at the forefront of using recycled water not only for irrigation, but for other uses such as toilet flushing and commercial applications. Other agencies in south Orange County, such as MNWD and SMWD use a significant amount of recycled water for non-potable uses. Recycled water in Orange County is treated to various levels depending on the end use and in accordance with Title 22 regulations as described below. For information on OCWD's GAP and GWRS, refer to Section 6.6.1.2.

ETWD Water Recycling Plant - ETWD's Water Recycling Plant (WRP) located in the City of Lake Forest has a maximum influent capacity of 6 mgd. Wastewater is treated to secondary or tertiary levels depending on the discharge method, ocean outfall or beneficial reuse. Recycled water is treated to Title 22 standards with the expansion completed in 2014. Treated effluent that is not recycled is discharged to the ocean through the Aliso Creek Ocean Outfall.

SMWD Chiquita Water Reclamation Plant - SMWD's Chiquita Water Reclamation Plant (CWRP) located in Chiquita Canyon treats wastewater to a tertiary level for recycled water use meeting Title 22 standards. CWRP has a maximum design capacity of 10 mgd after an expansion project was completed in 2025. Effluent that is not beneficially reused is discharged via the Chiquita Land Outfall that connects to the San Juan Creek Ocean Outfall.

SMWD Oso Creek Water Reclamation Plant - SMWD's Oso Creek Water Reclamation Plant (OCWRP) located along Oso Creek. Wastewater is treated to a secondary or tertiary depending on the method of discharge, ocean outfall or beneficial reuse. Recycled water is treated to Title 22 standards. A bypass facility allows excess wastewater to be sent to SOCWA's J.B. Latham Treatment Plant as OCWRP does not have an outfall. Without the ability to discharge treated effluent, excess flows beyond recycled water demands are sent to J.B. Latham Treatment Plant. The facility is currently out of commission for a major improvement and reconstruction project. It is being rebuilt and expanded to 3.3 mgd, with full completion expected around 2028.

SMWD Nichols Institute Water Reclamation Plant - The Nichols Institute WRP is operated by SMWD but owned by a private company that owns property within SMWD's service area. This small facility treats approximately 34 AFY and does not have an outfall. All wastewater is treated to Title 22 standards for recycling purposes. Since this facility is remote from existing water and wastewater facilities, SMWD is not obligated to provide an alternate source of water in the event the facility becomes inoperable.

San Clemente Water Reclamation Plant - The City of San Clemente owns and operates the San Clemente WRP located within San Clemente. The plant has a design capacity of 7 mgd and treats wastewater to secondary or tertiary levels depending on the discharge method, ocean outfall or beneficial reuse. Any secondary effluent in excess of the plant's recycling limit is conveyed to the San Juan Creek Ocean Outfall via the San Clemente Land Outfall. Recycling capacity is currently 4.4 mgd after the expansion was completed in 2014 and included 9 miles of pipelines, conversion of a domestic water reservoir to recycled water storage, and a pressure-reducing station as well as an interconnection with SMWD.

IRWD Los Alisos Water Recycling Plant - Los Alisos Water Recycling Plant (LAWRP) is operated by IRWD and is located in the City of Lake Forest. LAWRP has a capacity of 7.5 mgd and wastewater is treated to a secondary or tertiary level depending on the use, ocean outfall or beneficial reuse such as landscape irrigation and other non-potable uses. When excess secondary effluent beyond the plant's tertiary treatment capacity is received, it is conveyed to the SOCWA Effluent Transmission Main for discharge via the Aliso Creek Ocean Outfall.

IRWD Michelson Water Recycling Plant - Michelson WRP is located in the City of Irvine and is operated by IRWD. MWRP has a maximum influent capacity of 28 mgd. Wastewater is treated to a tertiary level with advanced treatment in the form of UV disinfection meeting Title 22 standards. All effluent is conveyed to the recycled water distribution system for landscape irrigation, toilet flushing, and industrial uses.

IRWD Dual Plumbed Buildings Initiative - IRWD was the first agency in California to work with a customer to construct a dual plumbed commercial building to use recycled water for flushing toilets and urinals in 1991. Today IRWD serves 140 dual-plumbed commercial buildings ranging from a restroom at a park to 20-story high-rise office buildings. From 2015 to 2025, IRWD added 13 commercial buildings to its customer rolls, and more are on the way.

TCWD Robinson Ranch Water Reclamation Plant - TCWD owns and operates the Robinson Ranch Wastewater Treatment Plant (RRWTP) located in the Robinson Ranch development in Trabuco Canyon, an unincorporated area of Orange County. RRWTP has a treatment capacity of 0.85 mgd, and the wastewater is treated to a tertiary level meeting Title 22 standards. All the wastewater is recycled as the plant is not permitted to have stream discharges and it is infeasible to connect to the existing outfalls in the SOCWA service area.

MNWD RTP Advanced Wastewater Treatment Plant - MNWD's RTP AWTP is operated by MNWD and is in the City of Laguna Niguel. The AWTP has a total capacity of 11.4 mgd and the secondary effluent from RTP is treated to a disinfected tertiary level that meets Title 22 requirements for landscape irrigation use.

MNWD Plant 3A Advanced Wastewater Treatment Plant - MNWD's Plant 3A AWTP is operated by MNWD and is located within the City of Laguna Niguel. The Plant 3A AWTP has a capacity of 2.4 mgd and the secondary effluent from 3A is treated to a disinfected tertiary level that meets Title 22 requirements for landscape irrigation use.

SCWD CTP Advanced Wastewater Treatment Plant - SCWD's CTP AWTP is operated by SOCWA and is located in the City of Laguna Niguel. The CTP AWTP has a capacity of 2.6 mgd and the secondary effluent from CTP is treated to a disinfected tertiary level that meets Title 22 requirements for landscape irrigation use.

SCWD Aliso Creek Water Reclamation Facility - SCWD completed construction on the Aliso Creek Water Reclamation Facility (ACWRF) in 2014 that intercepts and treats a portion of the urban runoff in lower Aliso Creek to supplement the advanced water treatment facility at CTP. The ACWRF has a capacity of 800 gpd, and the creek water is treated using ultrafiltration and RO to improve the quality of the recycled water supply to make it more attractive for irrigation users. The ACWRF has not been able to be used as the Aliso Creek water level is below what regulation allows. MWDOC does not directly treat or distribute recycled water within their service area.

6.6.3 Projected Recycled Water Uses

As of April 2019, the State of California amended its recycled water policy to expand its numeric goal of recycled water use to 2.5 million AFY by 2030 and added annual required reporting requirements for wastewater and recycled water. Specific to the MWDOC's service area, most agencies within the service area have already maximized their recycled water use. Most are projecting consistent use through to 2050 and are not expecting recycled water use to increase significantly due to the implementation of the GWRS, which maximizes IPR in the OC Basin. However, a few agencies in South Orange County do expect moderate growth in recycled water production and customers.

6.6.4 Potential Recycled Water Uses

Potential recycled water use within MWDOC's service area hinges upon many variables including, but not limited to, economics of treatment and distribution system extension (as well as site retrofits and conversions), water quality, public acceptance, infrastructure requirements, and reliability.

Even though demand exists, it is not necessarily economically feasible to provide recycled water to all potential users. Expansion of recycled water systems eventually reaches a point where returns diminish and higher investments for expansion are not cost effective. Water recycling projects involve collecting and treating wastewater to applicable standards depending on the end use, providing seasonal storage, pipeline construction, pump station installation, and conversions for existing potable water users or dual plumbing systems for new users. Creative solutions to secure funding, and overcome regulatory requirements, institutional arrangements, and public acceptance are required to offset existing potable demands with potential recycled water demands.

MNWD Recycled Water Optimization Program – Conveyance Capacity Expansions This program includes a series of projects involving the upsizing of approximately 12,000 linear feet of pipeline and the installation of approximately 2,600 linear feet of new pipeline to expand MNWD's recycled water distribution capacity. These improvements will enable additional recycled water retrofits that are anticipated to reduce potable water demand by approximately 306 AFY.

MNWD DPR Planning Study and Demo Plant Design Report - MNWD is currently advancing a DPR Planning Study and Demonstration Plant Preliminary Design Report. This study is a crucial component of the larger Optimized, Adaptive, Sustainable, and Integrated Supply (OASIS) Water Resource Center Program, aiming to establish a new, sustainable, and resilient potable water source for the district. The work evaluates implementation of a full-scale DPR facility to purify Regional Treatment Plant (RTP) effluent in accordance with Division of Drinking Water regulations with an anticipated design capacity of 3 mgd. The effort includes development of a conceptual-level design for the full-scale facility, including treatment process alternatives, site layout, integration with the potable distribution system, and

preliminary cost estimates. In parallel, MNWD is advancing a DPR demonstration facility including a conceptual planning study and a 30 percent preliminary design to support regulatory validation, operational planning, and future implementation of the full-scale program.

SMWD New Development in Rancho Mission Viejo - This project is a planned phased development to expand recycled water distribution system to irrigate parks, parkways, and slopes. The 2,500 AFY increase in recycled water use will be fully realized between FY 2026-50. SMWD is working collaboratively with Rancho Mission Viejo on development known as the Ranch Plan. Planning areas 3, 4, 5, and 8 are still to be developed and are planned to use approximately 2,500 AFY when fully built. Recycled water is prominently used throughout the development to irrigate all the parks, streetscapes, fuel modification zones, and slopes. Additionally, recycled water is used throughout the individual housing tract developments, irrigating the common areas between homes, including the HOA-maintained front yards of select single-family and multi-family residential developments.

SMWD Indirect Potable Reuse of San Juan Basin - SMWD has proposed implementation of the San Juan Watershed Project, an IPR project. This will support the safe operating yield of the groundwater basin. By FY 2030, the project will be implemented with a 1,500 AFY increase in recycled water use to support IPR. Section 6.3.6.3 further describes the San Juan Watershed Project.

SCWD Recycled Waer Roadmap - A six-phase strategy to expand SCWD's recycled water system through 2035, aligning system growth with customer conversion priorities and infrastructure needs. SCWD's goals are to maximize use of local, drought-resilient recycled water supplies, reduce potable water demand, and ensure reliable delivery through hydraulic upgrades, pressure-zone modifications, and strategic pipeline extensions.

6.6.5 Optimization Plan

Orange County is a leader in recycled water. In the OC Sanitation service area, with the completion of the GWRS final expansion, recycled water and IPR have been maximized. South Orange County is also working to expand recycled water use and IPR.

MET and MWDOC support research efforts to encourage development and use of recycled water. These include conducting studies and research to address public concerns, developing new technologies, and assessing health effects. Addressing public concerns is required to gain the support of stakeholders early in the planning process. Education is required to inform the public of the treatment processes. Developing new technologies is a prerequisite to help reduce the cost of producing recycled water. Health effects assessments have a two-fold purpose of alleviating public concerns and ensuring the protection of public health and the environment. Further research supported by MET and others (such as the National Water Research Institute) will have the benefit of reducing risks for MWDOC's member agencies.

To assist in meeting projections, MWDOC plans to take numerous actions to facilitate the use and production of recycled water within its service area. However, MWDOC is a wholesaler and does not impose development requirements or enact ordinances that mandate the use of recycled water. In many cases, additional recycled water production and use is economically infeasible given the current cost of potable water supplies in comparison to recycled water costs. MWDOC has taken the following actions to facilitate further production and use of recycled water:

- Sponsoring and supporting its member agencies in obtaining Local Resources Program (LRP) incentives from MET.

- Assisting and supporting member agencies in applications made for bond funds such as Proposition 84.
- Encouraging MET to participate in studies that will benefit recycled water production in the service area.
- Supporting MET in deriving solutions to regulatory issues.
- Participating in regional plans such as the South Orange County IRWMP.
- Working cooperatively with retail agencies, MET and its member agencies, and other Orange County water and wastewater agencies to encourage recycled water use and develop creative solutions to increase recycled water use.
- Assisting and supporting its member agencies to participate in MET's Future Supply Program, which provides funding for research and studies needed to set the state standards for Direct Potable Reuse (DPR) on American Water Works Association's (AWWA) research Foundation Project.

The MWDOC public education and Choice School Programs have reached millions of residents, businesses, and students with valuable, trusted water-centric information and education. One of the topics covered includes an introduction to water quality and water recycling as a critical component to the health and reliability of a more extensive Orange County water supply portfolio. MWDOC's multi-agency approach to public information includes collaboration with education, environmental, and utility agencies throughout the county. MWDOC reaches the public with essential information regarding present and future water supplies, the importance of sufficient quantity and quality of water – including recycled water – and the significance of implementing water use efficiency practices in daily life. Through MWDOC, water education programs have reached millions of residents, businesses, and students with information and education on recycled water.

Dealing with needed additional funding and other implementation barriers for recycled water at the state and regional level would assist in increasing recycled water production within MWDOC's service area. State funding assistance could reduce the overall cost per AF of recycled water so that it is comparable to the cost of potable water and would allow the development of more expensive recycled water projects in an earlier timeframe. There are numerous barriers to increasing water recycling that could be addressed at the State level. These barriers include establishment of uniform Regional Water Quality Control Board (RWQCB) requirements for recycled water, especially in areas where water and wastewater agency jurisdictions cross RWQCB jurisdictions resulting in varying requirements; partnering in health studies to illustrate the safety of recycled water; increasing public education; and establishing uniform requirements for retrofitting facilities to accept recycled water.

6.7 Desalination Opportunities

In 2014, MET modified the provisions of their Local Resources Program (LRP) to include incentives for locally produced seawater desalination projects that reduce the need for imported supplies.

MET's LRP incentivizes participating agencies to explore new local water supply opportunities. Developing local supplies within MET's service area is part of its IRP goal of improving water supply reliability in the region and reducing pressure on imported supplies from the SWP and Colorado River. To qualify for the incentive, proposed projects must replace existing demand or prevent new demand on MET's imported water supplies. In return, MET offers three incentive formulas under the program:

- Sliding scale incentive up to $340 per AF for a 25-year agreement term, depending on the unit cost of seawater produced compared to the cost of MET supplies.
- Sliding scale incentive up to $475 per AF for a 15-year agreement term (but requiring the project to produce local supplies for 25 years), depending on the unit cost of seawater produced compared to the cost of MET supplies.
- Fixed incentive up to $305 per AF for a 25-year agreement term.

6.7.1 Ocean Water Desalination

Doheny Ocean Desalination Project - Following the expiration of the Seawater Desalination Program (SDP) in 2020, MET approved a $39.9 million LRP agreement in April 2024 with MWDOC and SCWD for the 5,600 AFY Doheny Ocean Desalination Project. This potential incentive value is based on the sliding scale incentive of up to $474 per AF over 15 years. This agreement is a concrete example of how the LRP is being applied today to support seawater desalination specifically, helping offset capital and operating costs that would otherwise make desalination less competitive with imported water.

SCWD is moving forward with the implementation of its Doheny Ocean Desalination Project to create a new local, drought-proof water supply that will also provide emergency water supplies should the delivery of imported water be disrupted due to earthquakes or other natural disasters. In October 2022, the California Coastal Commission gave unanimous approval of the project, which will provide 5 mgd of drinking water to SCWD customers and other potential partners in South Orange County. The project is currently in progressive design/construction, moving towards 60 percent design and a Guaranteed Maximum Price contract in 2026, and is expected to be fully operational in 2029. There is potential for expansion to provide a total of 15 mgd. Once operational, the Doheny Ocean Desalination Project will be the first fully compliant ocean desalination facility to use the California Ocean Plan Amendment's preferred subsurface intake and blended brine discharge. Water is sourced from subsurface intake (slant) wells proposed at Doheny State Beach, which is the environmentally preferred technology because they are fully buried beneath the ocean floor to protect marine life. Brine, the saltwater left over from the desalination process, will be co-mingled with treated wastewater in an existing outfall pipe (San Juan Outfall) and discharged two miles out into the ocean.

6.7.2 Groundwater Desalination

In an effort to improve groundwater production, MET provides financial incentives to local agencies to treat brackish groundwater which has been impaired from either natural causes or from agricultural drainage. Through MET's LRP, the goal is to increase usage of groundwater storage within the region for firm local production, conjunctive use storage, and drought supply. In MWDOC's service area, four groundwater recovery brackish water projects in development have LRP contracts with MET.

MWRF Expansion - The Mesa Water Reliability Facility (MWRF), owned and operated by Mesa Water, pumps colored water from a deep colored water aquifer and removes the color and bromide through Nano filtration membrane treatment. In 2012, the MWRF's capacity increased from 5.8 mgd to 8.6 mgd.

SCWD GRF Expansion - SCWD constructed a 1 mgd GRF that came online in FY 2007-08 in Dana Point. The facility was originally built with capacity for more than twice the flow it currently treats, so no physical expansion of the GRF is needed. Instead of expanding the facility, SCWD would increase production by equipping three existing, unused treatment vessels with membranes (21 vessels total). Any increase in production beyond current levels may still require coordination with SJBA or confirmation of groundwater rights from the SWRCB.

Garden Grove Nitrate Blending Project - The Garden Grove Nitrate Blending Project was active during the years of 1990 to 2005. The project is located at the Lampson Reservoir site, where groundwater pumped from two wells is blended to meet the maximum contaminant level (MCL) for nitrate. The blending project was shut down in 2005, but the City retrofitted Well 28 with a variable frequency drive and reinstated the blending project in 2012. Blending continued until Well 28 nitrate levels remained consistently below the MCL and the blending project was shut down permanently in May 2023.

Tustin Nitrate Removal Project - The Tustin Nitrate Removal Project consists of two groundwater treatment facilities that are allowed above the BPP and the charges are BEA-exempt. The first facility is the Main Street Treatment Plant, operating since 1989 to reduce nitrate levels from the groundwater produced by Wells No. 3 and 4 by blending untreated groundwater with treatment plant product water which undergoes RO and ion exchange treatment processes. The second facility is the Tustin Seventeenth Street Desalter, operating since 1996 to reduce high nitrate and TDS concentration from groundwater produced by Wells No. 2 and 4 and the Newport well using RO (OCWD, 2015 Groundwater Management Plan, June 2015).

6.8 Water Exchanges and Transfers

6.8.1 Existing Exchanges and Transfers

Interconnections with other agencies result in the ability to share water supplies during short term emergency situations or planned shutdowns of major imported water systems. Transfers of water can help with short-term outages but can also be involved with longer term water exchanges to deal with droughts or long-term emergency situations. MWDOC helps its retail agencies develop both local and regional transfer and exchange opportunities that promote reliability within their systems. Examples of these types of projects include:

Santa Margarita Water District - SMWD has actively pursued additional water supply reliability through water transfers and successfully completed water transfers in the late 1990's through the MET system. At present, the future of such transfers as a reliable and cost-effective means of providing the basic supply remains uncertain. However, transfer with specific purposes, such as supplementing dry year supplies, can be effective. SMWD continues to explore opportunities for water transfers and exchanges as an alternative water supply and has worked with MWDOC and other agencies to investigate possible transfers.

IRWD Water Banking Program - IRWD developed their Water Banking Program in Kern County and initiated the first delivery of water under the program to their service territory of 1,000 AF in June 2015 as a demonstration effort. The delivered water was determined by MET to meet the definition of an "extraordinary supply"; meaning that IRWD received full credit for the water and that it counts essentially 1:1 during a drought/water shortage condition under MET's WSAP. The banking program has been implemented via agreements with MET to wheel the water through their system, when requested. IRWD has also entered into a 30-year water banking partnership with the Rosedale-Rio Bravo Water Storage District in Kern County in which IRWD can store up to 126,000 AF in the water bank and recover up to approximately 29,000 AF in any single year. IRWD has purchased high quality groundwater recharge land and constructed more than 700 acres of groundwater recharge ponds to allow available surface water to percolate into the basin for later use, in which IRWD has priority rights when Rosedale is not recharging Kern River floodwaters (IRWD, 2021b). There is an approved coordinated operating and exchange agreement between IRWD, MET, and MWDOC that will facilitate the recovery and delivery of State Water Project water from the water bank in Kern County into IRWD's service area in Orange County (IRWD, 2021b).

IRWD owns property within the Dudley Ridge Water District (DRWD) service area, a State Water Contractor located in Kings County. As a landowner in DRWD, IRWD is allocated up to 1,749 AF of DRWD's annual Table A allocation. IRWD has obtained approvals from DWR, DRWD, Kern County Water Agency, and MET to store its SWP water at it Water Bank in Kern County on a 2-for-1 unbalanced exchange basis.

Santa Ana River Conservation and Conjunctive Use Project - SARCCUP is a joint project established by five regional water agencies within the Santa Ana River Watershed (Eastern Municipal Water District, Inland Empire Utilities Agency, Western Municipal Water District, Orange County Water District, and San Bernardino Valley Municipal Water District). In September 2021, the participating agencies, in coordination with MET, executed a regional agreement framework establishing SARCCUP as a watershed-scale groundwater banking program to improve drought reliability across Orange, Riverside, and San Bernardino counties.

In 2016, SARCCUP received $55 million in Proposition 84 funding from DWR for use in the program's three main elements: 1) Watershed-Scale Cooperative Water Banking Program; 2) Water Use Efficiency—landscape design/irrigation improvements and water budget assistance; and 3) Habitat creation and Arundo donax removal within the Santa Ana River.

The Watershed-Scale Cooperative Water Banking Program is the largest component of SARCCUP. Under MET's arrangement with San Bernardino Valley Municipal Water District (Valley), when Valley declares surplus SWP water and offers it to MET, MET offers at least 50 percent of an equivalent amount to SARCCUP member agencies for storage, which can be later used in the Santa Ana River watershed, consistent with MET policy. This structure formalizes the purchase and storage pathway that aligns with MET's extraordinary supply policy during drought allocations.

Program capacity planning identifies up to approximately 137,000 AF of storage across six basins, including up to 36,000 AF in the Orange County Groundwater Basin for use in dry years. Stored SARCCUP supplies may be designated as "extraordinary supplies" during a MET's drought allocation if managed consistently with MET's Water Supply Allocation Plan, thereby enhancing participating agencies' drought reliability.

Within Orange County, extraordinary supply assignment agreements among MET, MWDOC/OCWD, and certain retail agencies (e.g., Anaheim, Fullerton, Santa Ana) document how SARCCUP extraordinary supply is assigned and delivered locally. Program implementation and participation details continue to be refined among OCWD, retail agencies, and MWDOC.

6.8.2 Planned and Potential Exchanges and Transfers

MWDOC supports its retail agencies in developing both local and regional transfer and exchange opportunities that promote reliability within their systems. Below are planned and potential exchanges and transfers that MWDOC member agencies are exploring:

IRWD Water Banking Program - IRWD has developed its Water Banking Program, and it has about 50,000 AF stored for IRWD's benefit.

IRWD and Rosedale were conditionally awarded funds by the California Water Commission (CWC) to develop a regional water bank, the Kern Fan Groundwater Storage Project, to store and capture unallocated Article 21 water from the SWP during periods when surface water is abundant, and they are now completing additional requirements outlined in the program regulations to receive funds.

IRWD is also pursuing various additional sources of water supply for the water bank, including long term agreements with Zone 7 Water Agency and Santa Clara Valley Water District that can provide water supplies for banking.

Cadiz Water Bank Program - SMWD has actively pursued additional water supply reliability through water transfers and is currently involved in the Cadiz water storage project. The Cadiz Project, also known as the Mojave Groundwater Bank, includes an average yield of 50,000 AFY for 50 years that could be produced from the Fenner Valley Groundwater Basin. Cadiz is authorized to pump as much as 75,000 AFY as long as the average yield over 50 years is 50,000 AF and assuming they are meeting all of the monitoring requirements imposed on the project. If not produced, the water would evaporate from the nearby dry lakes and be lost to productive use. The water would require treatment for Chromium VI and would be conveyed via a pump station and pipeline about 40 miles to MET's CRA. SMWD's board of

directors approved an agreement in 2024 for 5,000 AFY through Cadiz's Northern Pipeline. Under the agreement, Cadiz is expected to deliver 5,000 AFY to groundwater banks located along the 220-mile pipeline in the High Desert in exchange for water that can be delivered to SMWD by SWP Contractors with local water suppliers. The price of water, inclusive of all capital, operating, and maintenance costs, will not exceed $1,650 per AFY. The Northern Pipeline is anticipated to come online in 2026. SMWD holds existing contractual rights that enable it to acquire up to 15,000 AFY from the Cadiz Project by delivery through the CRA via Cadiz's Southern Pipeline, which has not yet been constructed. The 2024 agreement allows SMWD to obtain 5,000 AFY without waiting for the Southern Pipeline to be completed. OCWD is also considering the water supply. Work is underway to develop the terms and conditions for conveying the water via the CRA into southern California. The water would have to be wheeled through the MET system.

6.9 Future Water Projects

While MWDOC itself does not have any planned future water supplies that it has direct ownership of. Below are the projects that MWDOC is involved through MET and/or through partnerships with our member agencies are summarized in Table 6.10.

Table 6.10 Summary of Future Water Projects in Region

Submittal Table 6-7 Wholesale: Expected Future Water Supply Projects or Programs Water Code Section 10631 (f)							
Name of Future Projects or Programs	Joint Project with other suppliers?		Additional Description (as needed)	Water Type (after treatment if treated) (OPTIONAL) **Drop Down list**	Planned Implementation Year	Planned for Use in Year Type **Drop Down List**	Expected Increase in Water Supply to Supplier (This may be a range)
	Drop Down List (yes/no)	If Yes, Supplier Name					(AF)
Pure Water Southern California	Yes	MET		Potable		All Year Types	TBD
Sites Reservoir	Yes	MET		Potable		Single-Dry and Multi-Dry Year	TBD
Delta Conveyance Project	Yes	MET		Potable		All Year Types	TBD
MNWD/OCWD Pilot Storage Program	Yes	MNWD, City of Santa Ana and OCWD		Potable		Emergency Supply Only	10-14 cfs during emergency
SCWD Recycled Water Roadmap	No			Non-potable	2035	All Year Types	TBD
Doheny Ocean Desalination Project	Yes	SCWD, LBCWD, and potential other SOC agencies	Ocean desalination	Potable	2030	All Year Types	4,300 - 16,800
IRWD Water Banking Program	Yes	IRWD, Rosedale, and potential future partner agencies		Potable		Single-Dry and Multi-Dry Year	50,000 – 55,000
Cadiz Water Bank	Yes	SMWD and partner agencies		Potable		All Year Types	5,000 - 50,000
SARCCUP Water Storage Program	Yes	MET, MWDOC, Eastern MWD, Western MWD, Inland Empire Utilities Agency, OCWD		Potable		Single-Dry and Multi-Dry Year	TBD
NOTES: Doheny Ocean Desalination Project has a projected increase in supply of 4,300 AFY for the two agencies currently participating in the project but the total capacity will be 5,600 AFY for Phase 1. Potential for future expansion to a total of 15 mgd capacity (approx. 16,800 AFY). IRWD Water Banking Program provides 50,000 AF of storage for IRWD's benefit. MWDOC evaluating potential participation for 5,000 AF of storage for use during dry years.							

6.10 Energy Intensity

As MWDOC does not own or operate any water, wastewater, or recycled water facilities or conveyance system, it does not have operational control over the upstream portion of the water system. After imported water has been delivered to member agencies, these agencies are responsible for final treatment (for untreated imported water), delivery, and any pumping needed within their service area.

Although MWDOC does not have operational control over the downstream portions of the water system, the energy efficiency of these systems is integral to sound planning and appropriate investments in water supply, water use efficiency, regional delivery infrastructure, and emergency preparedness. To this end, awareness of the energy intensity of retail agencies helps with planning for future system needs. By setting a baseline, agencies can better understand and manage their operational expenditures. Several factors will affect the energy intensity of water delivery over time, such as static groundwater levels, total water demand, and proportion of local to imported supply. When tracking energy intensity over time, agencies should keep factors such as these in mind and focus on the efficiency of each facility they operate.

Each agency has a unique geography and customer set that it serves, so energy intensities of different agencies can be compared for informational purposes, but operational needs and constraints should be considered. For example, agencies with hills in their service area will inherently have higher pumping energy demands than agencies without hills. Additionally, some agencies have water treatment within their operational control while others deliver already treated water – leading to wide ranges in the energy demand among different agencies. Therefore, each agency should monitor their energy intensity and consider developing an energy management plan to identify strategies to reduce or limit increased energy use per AF of water supplied.

Based on energy intensity analysis using calendar year 2024 data from 21 Orange County water agencies, the energy intensities for water operations range between 8.0 and 1,115 kilowatt hours per AF (kWh/AF). For agencies that rely predominantly on imported water for potable use, the energy intensity for water operations ranges from 242 to 833 kWh/AF. Changes in energy intensity for 2024 compared to energy intensity reported in the 2020 UWMPs vary by agency, with some agencies having a decrease in energy per AF while others saw an increase. However, the highest reported energy intensities for agencies primarily supplied by groundwater (1,115 kWh/AF) and imported water (833 kWh/AF) both decreased by approximately 500 kWh/AF from the 2020 UWMP.

CHAPTER 7 WATER SERVICE RELIABILITY AND DROUGHT RISK ASSESSMENT

This chapter of the Urban Water Management Plan (UWMP) describes the MWDOC's water service reliability assessment for three long-term hydrological conditions: a normal year, a single dry year, and a drought period lasting five consecutive years. The Drought Risk Assessment (DRA) assesses water supply reliability during a severe drought lasting the next five consecutive years, from 2026 to 2030. Factors affecting water supply reliability, such as water quality, regulations and climate change, are also summarized in this assessment of reliability.

7.1 Water Service Reliability Overview

As part of the UWMP, every urban water supplier is required to assess the reliability of their water service to its customers under a normal year, a single dry year, and multiple dry years. MWDOC is one of 26 member agencies of the Metropolitan Water District of Southern California (MET), which imports water from the Colorado River through its own Colorado River Aqueduct (CRA) and from Northern California through the California Aqueduct managed by the State Water Project (SWP). MET has also invested in numerous programs and projects to augment its direct deliveries of imported water, such as water transfers, groundwater banking, and use of its reservoir storage, as summarized in Chapter 6.

In 2025, MWDOC developed a water demand forecast model for its service area that estimated water demand at the individual retail water agency level, which statistically correlates municipal and industrial (M&I) water use with demographic, socioeconomic, conservation, and weather variables. This demand forecast is reported in the 2025 Orange County Water Demand Projection Model TM (MWDOC, 2025). Because the model isolates weather, future water demand can be estimated under single and multiple-year droughts and under future climate change scenarios. The model used a 33-year dataset (1991-2024) to estimate demand under average (normal), single-dry year, and five consecutive dry years hydrologic conditions. Single-dry year demand was estimated to be 105 percent of the average year demand. Demands during consecutive multiple dry years were estimated to progressively increase from 105 percent of average in the first year to 117 percent of average in the fifth year. The corresponding supplies to meet these projected demands, expressed as a percentage of the average supply are summarized in Table 7.1.

Table 7.1 Wholesale: Basis of Water Year Data (Reliability Assessment)

OPTIONAL Submittal Table 7-1 Wholesale: Basis of Water Year Data (Reliability Assessment)			
Year Type	**Base Year:** If not using a calendar year, type in the last year of the fiscal, water year, or range of years, for example, water year 2024-2025, use 2025	**Available Supplies if Year Type Repeats**	
		☐ Check the box if quantification of available supplies is not compatible with this table and is provided elsewhere in the UWMP. **Location:** [insert location from UWMP]	
		Quantification of available supplies is provided in this table as either volume only, percent only, or both.	
		Volume Available (AF)	**% of Average Supply**
Average Year	1991-2024		100%
Single-Dry Year	2014		105%
Consecutive Dry Years 1st Year	1991-2024		105%
Consecutive Dry Years 2nd Year	1991-2024		112%
Consecutive Dry Years 3rd Year	1991-2024		113%
Consecutive Dry Years 4th Year	1991-2024		115%
Consecutive Dry Years 5th Year	1991-2024		117%

7.2 Factors Affecting Water Supply Reliability

To prepare realistic water supply reliability assessments, various factors affecting reliability were considered. These include climate change and environmental requirements, regulatory changes, water quality impacts, and locally applicable criteria. In May 2025, DWR published a technical addendum to the 2023 State Water Project Delivery Capability Report (DCR) describing the impact of subsidence to future SWP deliveries. The study showed that SWP deliveries could be reduced by future subsidence. DWR recommends using the 2025 DCR to support long-term planning efforts because DWR has planned near-term fixes and is committed to restore the conveyance capacity of the California Aqueduct. MET will continue to stay informed and incorporate any suitable subsidence modeling in the future.

7.2.1 Climate Change and the Environment

Changing climate patterns are expected to shift precipitation patterns and affect water supply availability. Unpredictable weather patterns will make water supply planning more challenging. Although climate change impacts are associated with exact timing, magnitude, and regional impacts of these temperature and precipitation changes, researchers have identified several areas of concern for California water planners (CAMP4W, 2025). These areas include:

- A reduction in Sierra Nevada Mountain snowpack.
- Extreme heat threatens both infrastructure and the health and safety of human lives.
- Prolonged drought periods.
- Water quality issues associated with increase in wildfires.
- Rising sea levels resulting in:
  - Impacts to coastal groundwater basins due to seawater intrusion.
  - Increased risk of damage from storms, high-tide events, and the erosion of levees.
  - Potential pumping cutbacks to the SWP and Central Valley Project (CVP).

Other important issues of concern due to global climate change include:

- Effects on local supplies such as groundwater.
- Changes in urban and agricultural demand levels and patterns.
- Alterations to power generation and pumping regime.
- Increases in ocean algal blooms affected seawater desalination supplies.
- Increases in algal blooms in lakes affected surface water supplies.

Without additional surface storage, earlier and heavier runoff will flow to the ocean instead of being held as mountain snowpack, causing California to lose more water. California therefore needs to place strong emphasis on expanding storage.

As described in Chapter 6, the Colorado River Basin supplies have been inconsistent since about the year 2000, with precipitation near normal while runoff has been less than average in 2 out of every 3 years. Climate models are predicting a continuation of this pattern whereby hotter and drier weather conditions will result in continuing lower runoff, pushing the system toward a drying trend that is often characterized as long-term drought.

Dramatic swings in annual hydrologic conditions have affected water supplies available from the SWP over the last decade. The declining ecosystem in the Delta has also led to a reduction in water supply deliveries, and operational constraints will likely continue until a long-term solution to these problems is identified and implemented (MET, 2025).

Climate change is also projected to impact future water demands. The 2025 Orange County Water Demand Model TM developed a sensitivity for the water demand forecast based on using future climate variables from a subset of 15 downscaled global climate models (GCMs) from the World Climate Research Program (WCRP) Coupled Model Intercomparison Project (CMIP6). Future weather variables under two climate scenarios were substituted for baseline historical average weather, with the results indicating that projected water demands under one to five consecutive dry years could be 5 percent to 17 percent greater than baseline demands (MWDOC, 2025).

7.2.2 Regulatory and Legal

Ongoing regulatory restrictions, such as those imposed by BiOps on the effects of SWP and the federal CVP operations on certain marine life, also contribute to the challenge of determining water delivery reliability. Endangered species protection and conveyance needs in the Delta have resulted in operational constraints that are particularly important because pumping restrictions impact many water resources programs – SWP supplies and additional voluntary transfers, Central Valley storage and transfers, and in-region groundwater and surface water storage. BiOps protect special-status species listed as threatened or endangered under the Endangered Species Act (ESA) and imposed substantial constraints on Delta water supply operations through requirements for Delta inflow and outflow and export pumping restrictions.

In addition, the State Water Resources Control Board (SWRCB) has set water quality objectives that must be met by the SWP including minimum Delta outflows, limits on SWP and CVP Delta exports, and maximum allowable salinity level. SWRCB has implemented the new Lower San Joaquin River flow objectives from the Phase 1 Delta Plan amendments through adjudicatory (water rights) and regulatory (water quality) processes. The Lower San Joaquin River flow objectives are estimated to reduce water available for municipal water use. New litigation, listings of additional species under the ESA, or regulatory requirements imposed by the SWRCB could further adversely affect SWP operations in the future by requiring additional export reductions, releases of additional water from storage, or other operational changes impacting water supply operations.

The Colorado River 2007 Interim Guidelines governing the Lower Basin water supply shortages and the operations of Lakes Mead and Powell are set to expire in 2026, and new operating guidelines will need to be developed for 2027 and beyond. At the time of this 2025 UWMP, negotiations over the successor post-2026 guidelines are ongoing and the outcome is highly uncertain. It is anticipated that California will likely be required to reduce its supplies from the Colorado River, on average, under the new guidelines, and that as the junior priority, MET is at risk. A final EIS with a Selected Alternative is expected in the summer of 2026 with a record of decision to follow.

The difficulty and implications of environmental review, documentation, and permitting pose challenges for multi-year transfer agreements, recycled water projects, and seawater desalination plants. The timeline and roadmap for getting a permit for recycled water projects are challenging and inconsistently implemented in different regions of the state. Indirect Potable Reuse (IPR) projects face regulatory restraints such as treatment, blend water, retention time, and Basin Plan Objectives, which may limit how much recycled water can feasibly be recharged into the groundwater basins. New regulations and permitting uncertainty are also barriers to seawater desalination supplies, including updated Ocean Plan Regulations, Marine Life Protected Areas, and Once-Through Cooling Regulations (MET, 2025).

7.2.3 Water Quality

The following sub-section describes the water quality of the region's water supplies and the measures being taken to continue delivering high-quality drinking water that meets federal and state regulations.

7.2.3.1 Imported Water

MET is responsible for providing high quality potable water throughout its service area. Over 250,000 water quality tests are performed per year on MET's water to test for regulated contaminants and additional contaminants of concern to monitor the safety of its waters (MET, 2025). MET's supplies originate primarily from the CRA and from the SWP. A blend of these two sources, proportional to each year's availability of the source, is then delivered throughout MET's service area.

Although the CRA and SWP have different water quality characteristics, MET has implemented effective treatment and management strategies to maintain high-quality water. The CRA water source contains higher TDS and the SWP contains higher levels of naturally occurring organic matter, lending to the formation of disinfection byproducts. To remediate the CRA's high level of salinity and the SWP's high level of organic matter, MET blends CRA and SWP supplies and has upgraded all its treatment facilities to include ozone treatment processes. In addition, MET has been engaged in efforts to protect its Colorado River supplies from threats of uranium, perchlorate, and Chromium VI while also investigating the potential water quality impact of the following emerging contaminants: N-nitrosodimethylamine (NDMA), pharmaceuticals and personal care products (PPCP), microplastics, per- and polyfluoroalkyl substances (PFAS), and 1,4-dioxane (MET, 2025).

PFAS is a group of widely used man-made "forever chemicals" that include both PFOA (Perfluorooctanoic Acid) and PFOS (Perfluorooctane Sulfonate). MET has voluntarily monitored PFAS in its source and treated waters since 2017. Most samples have shown non detect (ND) for all tested PFAS, including PFOA and PFOS. A limited number of other PFAS—such as PFHxA, PFBA, PFPeA, PFDoA, PFTA, and PFBS, have been detected only at trace levels below their method detection limits. PFOA and PFOS have not been detected in MET's imported or treated water supplies. Some member agencies, however, have detected these compounds in local groundwater wells, which may require treatment or source management to comply with emerging Division of Drinking Water (DDW) regulations. As DDW and United States Environmental Protection Agency (EPA) establish enforceable maximum contaminant levels (MCLs) for PFOA and PFOS, some agencies may supplement their local supplies with increased purchases of MET water (MET, 2025).

EPA finalized the first national drinking water standards for six PFAS compounds in April 2024. These standards include enforceable MCLs for PFOA and PFOS set at 4 parts per trillion (ppt). In May 2025 the EPA announced that it would extend the compliance deadline for PFOA and PFOS from 2029 to 2031 to provide additional time for testing, planning, and installation of treatment technologies. While MET and its member agencies continue to monitor and test PFAS in imported and local sources, the delay in the federal compliance date allows additional time to evaluate treatment options, coordinate funding, and plan system upgrades necessary to meet forthcoming federal PFAS standards.

PFAS have been detected in the OC Basin in very tiny amounts (ppt), entering primarily via the Santa Ana River whose flows infiltrate into the basin. Despite playing no role in releasing PFAS into the environment, OCWD is working with its cities and retail water districts to remove it from local water supplies in order to comply with new state and federal regulations. More than 100 wells have been impacted due to various state and federal regulations. Fifteen impacted agencies will have to temporarily purchase more costly imported water to replace PFAS contaminated supplies. As of 2025, 53 impacted wells are back online due to close to a billion dollars being spent on state-of-the-art testing, research and piloting of different treatment systems, and design and construction of treatment plants that are now operational.

The presence of quagga mussels in water sources is a water quality concern. Quagga mussels are an invasive species that was first discovered in 2007 at Lake Mead, on the Colorado River. This species of mussels forms massive colonies in short periods of time, disrupting ecosystems and blocking water intakes. They can cause significant disruption and damage to water distribution systems. MET has had success in controlling the spread and impacts of the quagga mussels within the CRA; however, the future could require more extensive maintenance and reduced operational flexibility than current operations allow. It also resulted in MET eliminating deliveries of CRA water into the DVL to keep the reservoir free from quagga mussels (MET, 2025).

In addition, Golden Mussels, another invasive species capable of disrupting pipelines and altering ecosystems, were detected in the Sacramento–San Joaquin Delta in October 2024 and are now spreading through the SWP. These mussels pose similar concerns due to their ability to obstruct raw water conveyance facilities and negatively affect aquatic environments. Although their presence does not typically result in violations of drinking water standards, unmanaged infestations can degrade habitats, clog infrastructure, and reduce the aesthetic and recreational value of lakes and reservoirs. State and regional agencies continue to monitor golden mussel movement and evaluate appropriate response strategies to limit their spread (MET, 2025).

7.2.4 Locally Applicable Criteria

Within Orange County, there are no significant local applicable criteria that directly affect reliability. Over the years, the water agencies in Orange County have made tremendous efforts to integrate their systems to provide flexibility for interchanging with different sources of supply. There are emergency agreements in place to provide adequate supply of water in all parts of the County. In the northern part of the County, agencies can meet most of their demands from groundwater with very little limitation, except for the OCWD BPP. For the agencies in south Orange County, most of their demands are met with imported water, and their limitations are based on the capacity of their systems, which are very robust. However, if a major earthquake on the San Andreas Fault occurs, it can potentially be damaging to key water aqueducts and disrupt imported supplies to the entire Southern California for up to 6 months. The MET region would likely require a water-use reduction of 10 percent to 25 percent before the system is repaired. However, MET has taken proactive steps to handle such disruption, such as constructing DVL, which mitigates potential impacts. DVL, along with other local reservoirs, can store a 6- to 12-month supply of emergency water (MET, 2025).

7.3 Water Service Reliability Assessment

This section presents the supply reliability assessment of MWDOC's water service to its customers. This is completed by comparing the projected long-term water demand (Chapter 4), to the projected water supply sources available to MWDOC (Chapter 6), in 5-year increments, for a normal water year, a single dry water year, and a drought lasting five consecutive water years.

7.3.1 Normal Year Reliability

In 2025, MWDOC and OCWD in collaboration with Orange County retail agencies, developed water demand forecast models for individual retail water agencies in Orange County, as described in detail in Chapter 4. This 25-year demand forecast uses statistical models to account for demographic, socioeconomic, conservation, and weather variables (MWDOC, 2025). For normal year reliability, the demand forecast represents average weather conditions.

MWDOC is 100 percent reliable for normal year demands from 2025 through 2050. MWDOC receives imported water via connection to MET's regional distribution system. Although pipeline and connection capacity rights do not guarantee the availability of water, they do guarantee the ability to convey water into the local system when it is available to the MET distribution system.

A comparison between MWDOC's supply and demand for projected years between 2025 and 2050 is shown in Table 7.2, while a breakdown of potable and non-potable supplies are presented in Table 7.3 and Table 7.4, respectively. The tables demonstrate that projected supplies and demands are equal in every planning year, with no anticipated surpluses or shortfalls. As stated above, the available supply will meet projected demands due to a diversified supply and conservation measures limiting and reducing imported supplies in the later years. All of MWDOC's supplies are provided by MET. In MET's 2025 Urban Water Management Plan, they identify their wholesale supplies as 100 percent reliable under normal-year conditions, with surpluses over 3 million AF across the planning horizon (Submittal Table 7-2; MET, 2025).

Table 7.2 Wholesale: Normal Year Supply and Use Comparison

Submittal Table 7-2 Wholesale: Normal Year Supply and Use Comparison Water Code Section 10635 (a)					
	2030	2035	2040	2045	2050 (Opt)
	(AF)	(AF)	(AF)	(AF)	(AF)
Supply totals (autofill from Submittal Table 6-9 W)	107,651	106,929	115,806	114,832	114,275
Use totals (see OPTIONAL Submittal Table 4-2 W)	107,651	106,929	115,806	114,832	114,275
Surplus/(shortfall)	**0**	**0**	**0**	**0**	**0**
NOTES: This table compares the projected demand and supply volumes determined in Sections 4.3.2 and 6.1, respectively.					

Table 7.3 Wholesale: Normal Year Supply and Use Comparison-Potable

OPTIONAL Submittal Table 7-2 Wholesale: Normal Year Supply and Use Comparison - POTABLE					
	2030	2035	2040	2045	2050 (Opt)
	(AF)	(AF)	(AF)	(AF)	(AF)
Supply totals (autofill from Submittal Table 6-9 W)	97,651	96,929	95,806	94,832	94,275
Use totals (see OPTIONAL Submittal Table 4-2 W)	97,651	96,929	95,806	94,832	94,275
Surplus/(shortfall)	**0**	**0**	**0**	**0**	**0**
NOTES: This table compares the projected demand and supply volumes determined in Sections 4.3.2 and 6.1, respectively.					

Table 7.4 Wholesale: Normal Year Supply and Use Comparison-Non-Potable

OPTIONAL Submittal Table 7-2 Wholesale: Normal Year Supply and Use Comparison – NON-POTABLE					
	2030	2035	2040	2045	2050 (Opt)
	(AF)	(AF)	(AF)	(AF)	(AF)
Supply totals (autofill from Submittal Table 6-9 W)	10,000	10,000	20,000	20,000	20,000
Use totals (see OPTIONAL Submittal Table 4-2 W)	10,000	10,000	20,000	20,000	20,000
Surplus/(shortfall)	**0**	**0**	**0**	**0**	**0**
NOTES: This table compares the projected demand and supply volumes determined in Sections 4.3.2 and 6.1, respectively.					

7.3.2 Single Dry Year Reliability

A single dry year is defined as a single year of minimal to no rainfall within a period where average precipitation is expected to occur. Orange County's water demand projection model (described in Chapter 4) isolated the impacts that weather and future climate can have on water demand through the use of a statistical model. The impacts of hot/dry weather conditions are reflected as a percentage increase in water demands from the normal year condition. For a single dry year condition (FY 2013-14), the model projects a 5 percent increase in demand for the MWDOC's service area (MWDOC, 2025) as shown in Table 7.1. Detailed information of the model is included in Appendix H.

MWDOC has documented that it is 100 percent reliable for single dry year demands from 2025 through 2050. As shown in Table 7.5, projected single dry year supplies and demands are equal from 2030 to 2050, resulting in no anticipated shortages. This assessment incorporates a 5 percent increase in demand above normal-year levels and shows the significant reserves and conservation measures available within MET.

Table 7.5 Wholesale: Single Dry Year Supply and Demand Comparison

Submittal Table 7-3 Wholesale: Single Dry Year Supply and Use Comparison Water Code Section 10635(a)					
	2030	2035	2040	2045	2050 (Opt)
	(AF)	(AF)	(AF)	(AF)	(AF)
Supply totals	113,034	112,275	121,596	120,574	119,989
Use totals	113,034	112,275	121,596	120,574	119,989
Surplus/(shortfall)	0	0	0	0	0
NOTES: The single dry year projections estimate a 5% increase on imported M&I demand.					

7.3.3 Multiple Dry Years Reliability

Multiple dry years are defined as five or more consecutive dry years with minimal rainfall within a period of average precipitation. Orange County water demand projection model (described in Chapter 4) isolated the impacts that weather and future climate can have on water demand through the use of a statistical model. The impacts of hot/dry weather conditions are reflected as a percentage increase in water demands from the normal year condition. During multiple dry years, the UWMP applies dry-year adjustment factors to reflect future climate conditions and retail level water demand. These increase 5 percent in single-dry and first multiple-dry year, going up to 12 percent, 13 percent, 15 percent, and 15 percent in subsequent drought years, relative to average-year demand (see Table 7.1) (MWDOC, 2025).

Rather than repeating the single-dry-year factor for all 5 years, the 5-year multi-dry-year scenario applies the year-specific dry-year adjustment factors for each consecutive year, reflecting the increasing impacts of extended drought.

MWDOC has demonstrated that its water supplies remain fully reliable throughout a five-consecutive-year dry period from 2025 through 2050. Even assuming a conservative demand increase of 5 percent to 17 percent each year per over five consecutive years, MWDOC is capable of meeting all customers' demands from 2025 through 2050 (Table 7.6), with significant reserves held by MET and conservation.

The table includes treated and untreated water from MET for M&I and non-M&I demands. The multiple dry-year projections estimate a 5 percent to 15 percent increase on imported M&I demand. The 2030 column assesses supply and demand for FY 2025-26 through FY 2029-30; the 2035 column assesses FY 2030-31 through FY 2034-35 and so forth, to end the water service reliability assessment in FY 2045-50.

Table 7.6 Wholesale: Multiple Dry Years Supply and Demand Comparison

Submittal Table 7-4 Wholesale: Multiple Dry Years Supply and Use Comparison Water Code Section 10635(a)						
		2030	2035	2040	2045	2050 (Opt)
		(AF)	(AF)	(AF)	(AF)	(AF)
First year	Supply totals	113,034	112,275	121,596	120,574	119,989
	Use totals	113,034	112,275	121,596	120,574	119,989
	Surplus/(shortfall)	0	0	0	0	0
Second year	Supply totals	120,569	119,760	129,703	128,612	127,988
	Use totals	120,569	119,760	129,703	128,612	127,988
	Surplus/(shortfall)	0	0	0	0	0
Third year	Supply totals	121,646	120,830	130,861	129,760	129,131
	Use totals	121,646	120,830	130,861	129,760	129,131
	Surplus/(shortfall)	0	0	0	0	0
Fourth year	Supply totals	123,799	122,968	133,177	132,057	131,416
	Use totals	123,799	122,968	133,177	132,057	131,416
	Surplus/(shortfall)	0	0	0	0	0
Fifth year	Supply totals	125,952	125,107	135,493	134,353	133,702
	Use totals	125,952	125,107	135,493	134,353	133,702
	Surplus/(shortfall)	0	0	0	0	0
NOTES: The 2030 column assesses supply and demand for FY 2025-26 through FY 2029-30; the 2035 column assesses FY 2030-31 through FY 2034-35 and so forth, in order to end the water service reliability assessment in FY 2049-50.						

7.4 Management Tools and Options

Existing and planned water management tools and options that seek to maximize local resources and results in minimizing the need to import water are described below:

- **Reduced Delta Reliance:** Both MWDOC and MET have demonstrated consistency with Reduced Reliance on the Delta Through Improved Regional Water Self-Reliance (Delta Plan policy WR P1) by reporting the expected outcomes for measurable reductions in supplies from the Delta. MET has improved its self-reliance through methods including water use efficiency, water recycling, stormwater capture and reuse, advanced water technologies, conjunctive use projects, local and regional water supply and storage programs, and other programs and projects. Similarly, Orange County agencies have further invested in water use efficiency, local water supply projects, and advanced water

technologies to increase regional self-reliance. In the near term (2030), regional self-reliance during a normal water year for the entire MET service area is projected to increase by approximately 601 TAF compared to the 2010 baseline, an improvement equal to nearly 20 percent of projected 2030 retail demands. Looking ahead to 2050, normal year regional self-reliance is expected to grow by more than 1.0 million AF above the 2010 baseline, representing an increase of roughly 20 percent of projected 2050 retail demands (MET, 2025). See Appendix C for more information.

- **The continued and planned use of groundwater:** The water supply resources within MWDOC's service area are enhanced by the existence of groundwater basins that account for the majority of local supplies available. As described in Chapter 6 the OC Basin is also used as reservoirs to store water during wet years and draw from storage during dry years, subsequently minimizing MWDOC service area's reliance on imported water. Groundwater basins are managed within a safe basin operating range so that groundwater wells are only pumped as needed to meet water use. Although MWDOC does not manage any of the service area's groundwater basins, MWDOC supports and partners in efforts to maintain the health of the local basins through local groundwater recharge efforts such as OCWD's GWRS program.
- **Groundwater storage and transfer programs:** MWDOC and OCWD's involvement in Santa Ana River Conservation and Conjunctive Use Program (SARCCUP) includes participation in a conjunctive use program that improves water supply resiliency and increases available dry-year yield from local groundwater basins. The groundwater bank has 137,000 AF of storage (Inland Empire Utilities Agency, 2021). MET has numerous groundwater storage and transfer programs in which MET endeavors to increase the reliability of water supplies, including the Antelope Valley-East Kern Water Agency (AVEK) Waster Agency Exchange and Storage Program and the High Desert Water Bank Program. In addition, MET has encouraged storage through its cyclic and conjunctive use programs that allow MET to deliver water into a groundwater basin in advance of agency demands, such as the Cyclic Storage Agreements under the Main San Gabriel Basin Judgement.
- **MWDOC Water Loss Program:** The water loss audit program reduces MWDOC retail member agencies' dependency on imported water from the Delta by implementing water loss control technologies after assessing audit data and leak detection.
- **Increased use of recycled water:** MWDOC partners with local agencies in recycled water efforts, including OCWD to identify opportunities for the use of recycled water for irrigation purposes, groundwater recharge and some non-irrigation applications. OCWD's Groundwater Replenishment System (GWRS) and GAP help southern California reduce its reliance on imported water by providing a local, reliable water supply that meets or exceeds all federal and state drinking water standards. OCWD completed the final expansion of the GWRS in 2023 to increase production to 130 mgd, further strengthening regional water self-sufficiency.
- **Implementation of demand management measures during dry periods:** During dry periods, water reduction methods to be applied to the public through the retail agencies will in turn reduce MWDOC's overall demands on MET and reliance on imported water. MWDOC assisted its retail agencies by leading the coordination of the 20 percent by 2020 Orange County Regional Alliance for all of the retail agencies in Orange County. Since the adoption of the "Making California a Conservation Way of Life" legislation, MWDOC has been assisting its retail member agencies in making progress toward compliance with this legislation.

7.5 Drought Risk Assessment

California Water Code (CWC) Section 10635(b) requires every urban water supplier to include a DRA for its water service area as part of information considered in developing its demand management measures and water supply projects and programs. The DRA is a specific planning action that assumes MWDOC is experiencing a drought over the next 5 years and addresses MWDOC's water supply reliability in the context of presumed drought conditions. Together, the water service reliability assessment, DRA, and Water Shortage Contingency Plan (WSCP) allow MWDOC to have a comprehensive picture of its short-term and long-term water service reliability and to identify the tools to address any perceived or actual shortage conditions.

CWC Section 10612 requires the DRA to be based on the driest five-year historical sequence for MWDOC's water supply. However, CWC Section 10635 also requires that the analysis consider plausible changes on projected supplies and demands due to climate change, anticipated regulatory changes, and other locally applicable criteria.

The following sections describe the methodology and results from MWDOC's DRA.

7.5.1 Methodology

As described in more detail in Chapter 4, the water demand forecasting model prepared for Orange County isolated the impacts that weather and future climate can have on water demand through the use of an econometric model. In addition to weather related factors, the model incorporates explanatory variables that influence both historical and projected water use, including water price, gross domestic product, median household income, housing density, persons per household, households per account, sectoral employment mix (for CII demand), seasonal patterns, historical conservation trends, drought restrictions, and COVID19 behavioral effects. These variables allow the model to separately quantify how economic conditions, demographic shifts, land use characteristics, and institutional constraints affect demand across residential, commercial, industrial, institutional, and irrigation sectors (MWDOC, 2025).

The impacts of hot/dry weather conditions are reflected as a percentage increase in water demands from the average condition. For a single dry year condition (FY 2013-14), the model projects a 5 percent increase in demand for the MWDOC's service area (MWDOC, 2025). The model used a 33-year dataset (1991-2024) to estimate demand under average (normal), single-dry year, and five consecutive dry years hydrologic conditions. Correlation coefficients between demand, temperature, and precipitation were applied to the hottest and driest historical sequences to calculate high-demand scenarios, which were expressed as scaling factors relative to the 33-year average demand.

For MWDOC, the five consecutive dry year demand scenario is based on the demand model's multiple dry year methodology. In accordance with the econometric demand model approach used to develop UWMP demand projections, a single hot/dry year was first identified based on weather conditions that produced the greatest demand response. Consecutive dry years were then represented by applying incremental scaling factors to this single hot/dry year demand to account for the compounding effects of persistent warm and dry conditions over time. These scaling factors show long-term relationships between regional water use and multi-year temperature and precipitation deficits and are applied sequentially to simulate second through fifth consecutive dry years. This approach is consistent with the demand modeling framework summarized in Table 7.1 and Table 7.7.

7.5.1.1 Water Demand Characterization

All of MWDOC's water supplies are purchased from MET, regardless of hydrologic conditions. As described in Chapter 6, MET's supplies are from the Colorado River, SWP, and in-region storage. As stated previously, MET's DRA concluded that even without activating WSCP actions Beyond this, MET's DRA indicated a surplus of supplies that would be available to all of its member agencies, including MWDOC, should the need arise. Therefore, any increase in demand that is experienced in MWDOC's service area is assumed to be met by MET's water supplies.

Based on the water demand projection model discussed in more detail in Chapter 4, in a single dry year, demand is expected to increase by 5 percent above a normal year (see Table 7.1). MWDOC's DRA conservatively assumes that a drought from FY 2025-26 through FY 2029-30 is based on the FY 2025 normal year supply with the 5-year consecutive dry year hydrology (from Table 7.1) (MWDOC, 2025).

7.5.1.2 Water Supply Characterization

MWDOC's assumptions for its supply capabilities are discussed and presented in 5-year increments under its water reliability assessment described in Section 7.3. For MWDOC's DRA, these supply capabilities are further refined and presented annually for the years 2026 to 2030, which MWDOC (2025) applied a historical dry-year sequence from within 1991-2024 dataset as an analog for five consecutive dry years. Groundwater is sustainably managed through the BPP and robust management measures (Section 6.3.4 and Appendix E), direct and indirect recycled water uses provide additional local supply (Section 6.6), and based on MET's and MWDOC's UWMP, imported water is available to close any local water supply gap (Section 7.5.1).For its DRA, MWDOC assessed the reliability of supplies available to MWDOC through MET using historical supply availability under dry-year conditions. MET's supply sources from the CRA, SWP, and in-region supply categories are individually listed and discussed in detail in MET's 2025 UWMP. Future supply capabilities for each of these supply sources are also individually tabulated in Appendix 3 of MET's 2025 UWMP, with consideration for plausible changes on projected supplies under climate change conditions, anticipated regulatory changes, and other factors. MWDOC's supplies are used to meet consumptive use, surface water and groundwater recharge needs that are in excess of locally available supplies. In addition, MWDOC has access to supply augmentation actions through MET. MET may exercise these actions based on regional need, and in accordance with their WSCP, and may include the use of supplies and storage programs within the Colorado River, SWP, and in-region storage.

7.5.2 Total Water Supply and Use Comparison

MWDOC's anticipated total water use and supply under a 5-year drought from FY 2025-26 through FY 2029-30, are compared in Table 7.7 MWDOC's assessment reveals that its supply capabilities are expected to balance with its projected water use for the next 5 years, from 2026 to 2030.

Table 7.7 Wholesale: Five-Year Drought Risk Assessment

Submittal Table 7-5 Wholesale: Five-Year Drought Risk Assessment Water Code Section 10635(b)(3)		
2026		**Total**
Total Water Use	(AF)	129,941
Total Supplies	(AF)	129,941
Surplus/Shortfall w/o WSCP Action		0
2027		**Total**
Total Water Use	(AF)	138,603
Total Supplies	(AF)	138,603
Surplus/Shortfall w/o WSCP Action		0
2028		**Total**
Total Water Use	(AF)	139,841
Total Supplies	(AF)	139,841
Surplus/Shortfall w/o WSCP Action		0
2029		**Total**
Total Water Use	(AF)	142,316
Total Supplies	(AF)	142,316
Surplus/Shortfall w/o WSCP Action		0
2030		**Total**
Total Water Use	(AF)	144,791
Total Supplies	(AF)	144,791
Surplus/Shortfall w/o WSCP Action		0

7.5.3 Water Source Reliability

As detailed in Chapter 8, MWDOC has a robust WSCP and comprehensive shortage response planning efforts that include demand reduction measures and supply augmentation actions. However, since MWDOC's DRA shows a balance of zero AFY in all 5 years listed in Table 7.7, no water service reliability concern is anticipated, and no shortfall mitigation measures are expected to be exercised over the next 5 years.

Additionally, Table 7.6 shows that supplies and demands remain in balance during the Multiple Dry Year Supply and Use assessment, with a zero surplus or shortfall in each of the five consecutive dry years. It is important to note that MET's DRA shows a surplus of supplies that would be available to all of its Member Agencies, including MWDOC, should the need for additional supplies arise. MWDOC will periodically revisit its representation of both individual supply sources and of the gross water use estimated for each year and will revise its DRA if needed.

CHAPTER 8 WATER SHORTAGE CONTINGENCY PLANNING

8.1 Background

Water shortage contingency planning is a strategic planning process that the Municipal Water District of Orange County (MWDOC) engages to prepare for and respond to water shortages. A water shortage is defined when water supply available is insufficient to meet the customer demand at a given point in time. This may occur due to water supply availability changes, water quality changes, and/or catastrophic events (e.g., earthquake). The Water Shortage Contingency Plan (WSCP), included in Appendix F and summarized in this chapter, provides a water supply availability assessment and structured steps designed to respond to actual conditions. This level of detailed planning and preparation is intended to help maintain reliable supplies and reduce the impacts of supply interruptions.

The Water Code Section 10632 requires that every urban water supplier that serves more than 3,000 AFY or have more than 3,000 connections prepared and adopt a standalone WSCP as part of its UWMP. The WSCP is required to plan for a greater than 50 percent supply shortage. The WSCP may require updating based on new DWR requirements every five years and will be adopted as a current update for submission to DWR by July 1, 2026.

8.2 Overview of the Water Shortage Contingency Plan

The WSCP serves as the operating manual that MWDOC will use to prevent catastrophic service disruptions through proactive, rather than reactive, mitigation of water shortages. The WSCP defines the processes and procedures that would be deployed when shortage conditions arise so that MWDOC's governing body, its staff, and its retail agencies can easily identify and efficiently implement pre-determined steps to mitigate a water shortage to the level appropriate for the degree of water shortfall anticipated. The relationship between the three procedural documents related to planning for and responding to water shortages is graphically depicted in Figure 8.1.



Figure 8.1 Purpose and Relationships of the UWMP, WSCP, and Water Shortage Response Ordinance

A complete version of the MWDOC WSCP is provided in Appendix F and includes the steps to assess if a water shortage is occurring, and what level of demand reduction actions to trigger the most appropriate response to the water shortage conditions. MWDOC, as a wholesaler of MET treated water supply, has an interdependent relationship with MET documents related to planning for, and responding to, water shortage conditions. MWDOC's WSCP therefore includes the MET Water Supply Allocation Plan[1]. The MET Water Supply Allocation Plan outlines how MET will determine and implement each of its wholesale and retail agencies' allocation during a time of shortage. MWDOC also has its own version of a Water Supply Allocation Plan that outlines how MWDOC will determine and implement each of its retail agency's allocation during a time of shortage.

The interdependent relationship between the MET and MWDOC procedural documents related to planning for and responding to water shortages is illustrated in Figure 8.2.

[1] MET's Water Shortage Contingency Plan, which includes Water Surplus and Drought Management Plan and Water Supply Allocation Plan, Appendix 4 of the 2025 UWMP

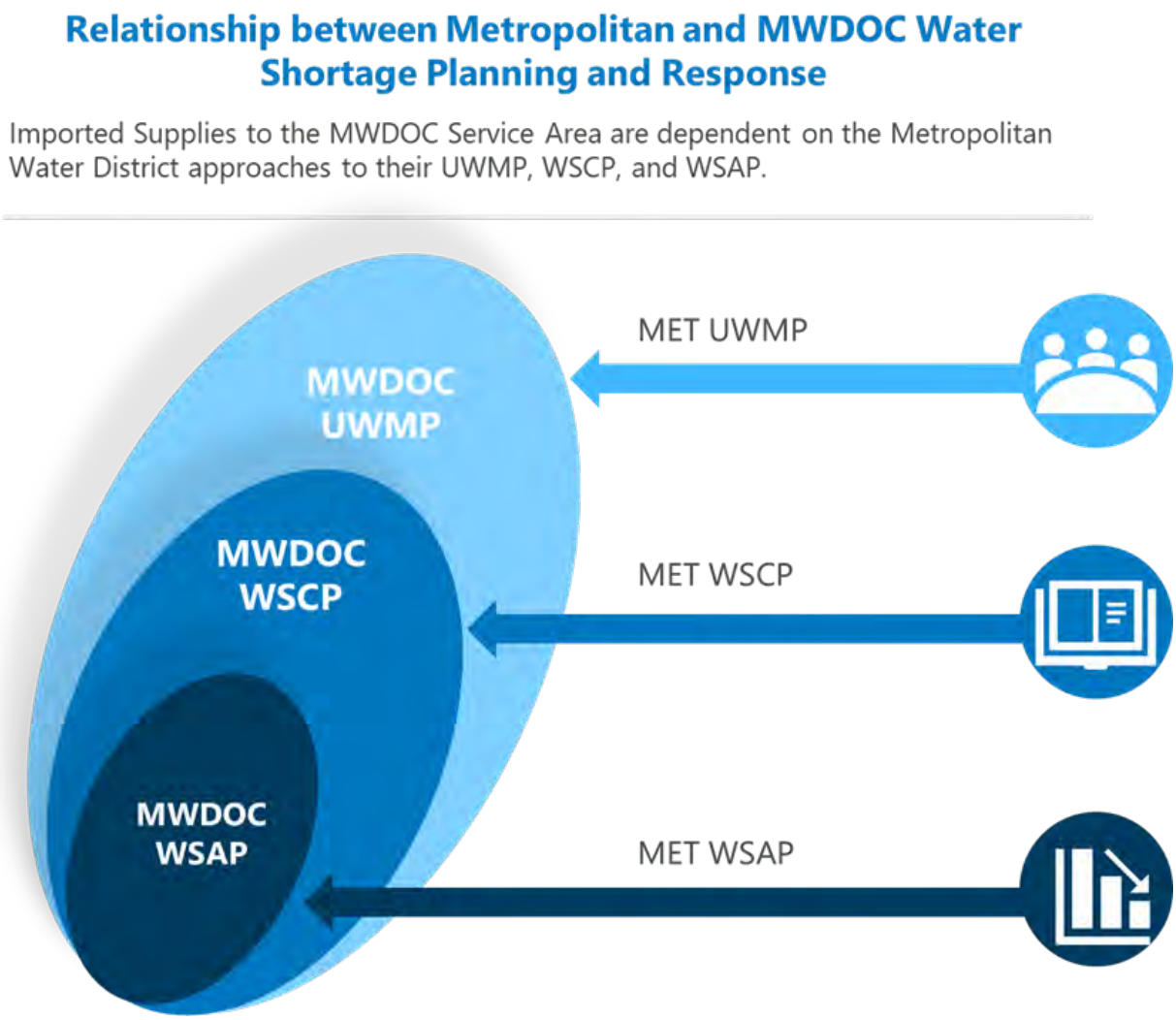


Figure 8.2 Relationship Between MET and MWDOC Water Shortage Planning and Response

A WSCP has prescriptive elements, including an analysis of water supply reliability; the drought shortage actions for each of the six standard water shortage levels, that correspond to water shortage percentages ranging from 10 percent to greater than 50 percent; an estimate of potential to close supply gap for each measure; protocols and procedures to communicate identified actions for any current or predicted water shortage conditions; procedures for an annual water supply and demand assessment; and reevaluation and improvement procedures for evaluating the WSCP.

During past shortages, MWDOC has adopted Board Resolutions urging its retail agencies to develop and implement their water shortage plans, calling upon each agency to adopt and enforce regulations prohibiting the waste of water, and implementing an allocation plan for available imported water consistent with reductions, incentives, and allocation surcharges imposed on MWDOC by MET. As part of this 2025 UWMP, MWDOC has worked with retail agencies to develop and align individual WSCPs.

8.3 Summary of Water Shortage Response Strategy and Required DWR Tables

The WSCP is organized into the following three main sections with Section 3 aligned with the California Water Code Section 16032 requirements.

- **Section 1 Introduction and WSCP Overview** gives an overview of the WSCP fundamentals.
- **Section 2 Background Information** provides a background on MWDOC's water service area.
- **Section 3 Water Shortage Contingency Preparedness and Response Planning.**
- **Section 3.1 Water Supply Reliability Analysis** provides a summary of the water supply analysis and water reliability findings from the 2025 UWMP.
- **Section 3.2 Annual Water Supply and Demand Assessment Procedures** provides a description of procedures to conduct and approve the AWSDA.
- **Section 3.3 Six Standard Water Shortage Levels** explains the WSCP's six standard water shortage levels corresponding to progressive ranges of up to 10, 20, 30, 40, 50, and more than 50 percent shortages.
- **Section 3.4 Shortage Response Actions** describes the WSCP's shortage response actions that align with the defined shortage levels.
- **Section 3.5 Communication Protocols** addresses communication protocols and procedures to inform customers, the public, interested parties, and local, regional, and state governments, regarding any current or predicted shortages and any resulting shortage response actions.
- **Section 3.6 Compliance and Enforcement** is not required by wholesale water providers.
- **Section 3.7 Legal Authorities** describes the legal authorities that enable MWDOC to implement and enforce its shortage response actions.
- **Section 3.8 Financial Consequences of WSCP** provides a description of the financial consequences of and responses for drought conditions.
- **Section 3.9 Monitoring and Reporting** is not required by wholesale water providers.
- **Section 3.10 WSCP Refinement Procedures** addresses reevaluation and improvement procedures for monitoring and evaluating the functionality of the WSCP.
- **Section 3.11 Special Water Feature Distinction** provides a required definition per the Water Code for retail water agencies, not applicable to MWDOC as a wholesale water supplier.
- **Section 3.12 Plan Adoption, Submittal, and Availability** describes the process MWDOC followed to adopt its WSCP.

The WSCP is based on adequate details of demand reduction and supply augmentation measures that are structured to match varying degrees of shortage will aim to make the relevant stakeholders understand what to expect during a water shortage situation. MWDOC adopted water shortage levels consistent with the requirements identified in Water Code Section 10632 (a)(3)(A) (Table 8.1).

The six shortage levels MWDOC uses in their water shortage planning and documented in their WSCP are the same as DWR's six standard shortage levels in terms of percentage shortage range for each of the six levels, as indicated in Table 8.1.

The water supply augmentation measures that align with each agency shortage level are described in Table 8.2. These augmentations represent short-term management objectives triggered by the WSCP and do not overlap with the long-term new water supply development or supply reliability enhancement projects.

The demand reduction action measures that align with each shortage level are summarized in Table 8.1. The purpose of Table 8.2 and Table 8.3 are to demonstrate the results MWDOC can expect once shortage level actions are implemented to deliver the expected outcomes necessary to meet the requirements of a given shortage level.

Table 8.1 Cross-Reference for Standard vs Supplier Shortage Levels

Submittal Table 8-1: Cross-reference for Standard vs Supplier Shortage Levels Water Code Section 10632(a)(3)(B)			
☑	Check the box if the Supplier uses the Standard six levels of water shortage. Proceed to the next table.		
Standard Shortage Levels	**Percent Shortage Range**	**Suppliers Shortage Levels**	**Percent Shortage Range**
1	Up to 10%		
2	Up to 20%		
3	Up to 30%		
4	Up to 40%		
5	Up to 50%		
6	>50%		
NOTES:			

Table 8.2 Supply Augmentation and Other Actions

Submittal Table 8-2 Wholesale: Supply Augmentation and Other Actions Water Code Section 10632(a)(4)(A),(C) and (E)				
Yes	Is the Supplier completing this table using the standard six levels? (yes/no)			
Shortage Level	Supply Augmentation Methods and Other Actions by Water Supplier **Drop down list** These are the only categories that will be accepted by the WUE data online submittal tool	How much is this going to reduce the shortage gap?		Additional Explanation or Reference (OPTIONAL)
		Volume or Percentage Drop down	Shortage Gap Reduction Value (May be a range) (AF)	
0 through 6	Other Actions (describe)		TBD	MWDOC will work in close coordination with MET on their supply augmentation projects during this time to ensure reliability for the service area.
DWR NOTES: Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Submittal Table 2-3.				

Table 8.3 Demand Reduction Actions

Submittal Table 8-3 Wholesale: Demand Reduction Actions Water Code Section 10632(a)(4)(B) and (E)				
Yes	Is the Supplier completing this table using the standard six levels? (yes/no)			
Shortage Level	Demand Reduction Actions **Drop down list** These are the only categories that will be accepted by the WUE data online submittal tool. Select those that apply.	How much is this going to reduce the shortage gap?		Additional Explanation or Reference (OPTIONAL)
		Volume or Percentage Drop down	Shortage Gap Reduction Value (May be a range) (AF)	
0	Provide Rebates for Landscape Irrigation Efficiency		On-going Long Term-Conservation Savings Measure. Not applicable to Water Shortage Contingency Plan quantifiable savings.	Base level of support to retail agencies and their customers through Landscape Irrigation Efficiency rebates.

Submittal Table 8-3 Wholesale: Demand Reduction Actions Water Code Section 10632(a)(4)(B) and (E)				
Yes	Is the Supplier completing this table using the standard six levels? (yes/no)			
Shortage Level	Demand Reduction Actions **Drop down list** These are the only categories that will be accepted by the WUE data online submittal tool. Select those that apply.	How much is this going to reduce the shortage gap?		Additional Explanation or Reference (OPTIONAL)
		Volume or Percentage Drop down	Shortage Gap Reduction Value (May be a range) (AF)	
0	Provide Rebates on Plumbing Fixtures and Devices		On-going Long Term-Conservation Savings Measure. Not applicable to Water Shortage Contingency Plan quantifiable savings.	Base level of support to retail agencies and their customers through water saving device rebates.
0	Provide Rebates for Turf Replacement		On-going Long Term-Conservation Savings Measure. Not applicable to Water Shortage Contingency Plan quantifiable savings.	Base level of support to retail agencies and their customers through MWDOC's Turf Removal Program.
0	Reduce System Water Loss		On-going Long Term-Conservation Savings Measure. Not applicable to Water Shortage Contingency Plan quantifiable savings.	Base level of programmatic support to retail agencies through MWDOC's Water Loss Program.
1	Expand Public Information Campaign	Percentage	0 - 5	Expand Public Awareness to encourage residents and industries to reduce their usage of water.
1	Other	Percentage	0 - 10	Implement Voluntary Demand Reduction
1	Other	Percentage	0 - 10	Implement Water Supply Allocation Plan

Submittal Table 8-3 Wholesale: Demand Reduction Actions Water Code Section 10632(a)(4)(B) and (E)				
Yes	Is the Supplier completing this table using the standard six levels? (yes/no)			
Shortage Level	Demand Reduction Actions **Drop down list** These are the only categories that will be accepted by the WUE data online submittal tool. Select those that apply.	How much is this going to reduce the shortage gap?		Additional Explanation or Reference (OPTIONAL)
		Volume or Percentage Drop down	Shortage Gap Reduction Value (May be a range) (AF)	
2	Expand Public Information Campaign	Percentage	0 - 20	Increase Public Awareness efforts to encourage residents and industries to reduce their usage of water.
2	Other	Percentage	0 - 20	Implement Voluntary Recommended Demand Reduction
2	Other	Percentage	0 - 20	Implement Water Supply Allocation Plan
3	Expand Public Information Campaign	Percentage	0 - 30	Pursue an aggressive Public Awareness Campaign to encourage residents and industries to reduce their usage of water.
3	Other	Percentage	0 - 30	Work with retail agencies to review and update as needed water waste prohibitions and ordinances to discourage unnecessary water usage.
3	Other	Percentage	0 - 30	Implement Voluntary Demand Reduction
3	Other	Percentage	0 - 30	Implement Water Supply Allocation Plan
4	Expand Public Information Campaign	Percentage	0 - 40	Pursue an aggressive Public Awareness Campaign to encourage residents and industries to reduce their usage of water.
4	Other	Percentage	0 - 40	Implement Voluntary Demand Reduction
4	Other	Percentage	0 - 40	Implement Water Supply Allocation Plan

Submittal Table 8-3 Wholesale: Demand Reduction Actions **Water Code Section 10632(a)(4)(B) and (E)**				
Yes	Is the Supplier completing this table using the standard six levels? (yes/no)			
Shortage Level	Demand Reduction Actions **Drop down list** These are the only categories that will be accepted by the WUE data online submittal tool. Select those that apply.	How much is this going to reduce the shortage gap?		Additional Explanation or Reference (OPTIONAL)
		Volume or Percentage Drop down	Shortage Gap Reduction Value (May be a range) (AF)	
5	Expand Public Information Campaign	Percentage	0 - 50	Pursue an aggressive Public Awareness Campaign to encourage residents and industries to reduce their usage of water.
5	Other	Percentage	0 - 50	Implement Voluntary Demand Reduction
5	Other	Percentage	0 - 50	Implement Water Supply Allocation Plan
6	Other	Percentage	0 - 50	Implement Voluntary Demand Reduction
6	Other	Percentage	>50	Implement Water Supply Allocation Plan
DWR NOTES: Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Submittal Table 2-3.				
NOTES: Note 1: NFT irrigation requirements begin January 1, 2027 for State and local government properties, January 1, 2028 for commercial, industrial and institutional owned landscapes, January 1, 2029 for homeowners' associations common area landscapes, and January 1, 2031 for local government properties in disadvantaged communities (DAC). Coordination with the Water Emergency Response Organization of Orange County (WEROC), administered by MWDOC is anticipated to begin at Level 4 or greater. In the event of a short or long-term emergency, MWDOC will utilize the WEROC Emergency Operations Plan and follow the detailed steps and process as specified.				

CHAPTER 9 DEMAND MANAGEMENT MEASURES

Over the past several decades, water use efficiency and conservation have evolved from voluntary best practices into core regulatory requirements shaping urban water management throughout California and Orange County. In response to recurring droughts, growing urban demand, and increasing competition for limited water supplies, the California Urban Water Conservation Council (CUWCC) was formed in 1991 to promote statewide cooperation on urban water conservation. Through the development and implementation of the CUWCC Best Management Practices, water agencies established a consistent, voluntary framework for improving efficiency through locally tailored programs. This early foundation was later strengthened by legislative actions, most notably Senate Bill (SB) X7-7, the Water Conservation Act of 2009, which set enforceable urban water use reduction targets to cut per capita use by 20 percent by 2020 and required retail water suppliers to actively manage demand as part of long-term water planning. All Orange County water agencies came together to create the Orange County 20x2020 Regional Alliance and met compliance as a region. The Municipal Water District of Orange County (MWODC, District) also met compliance individually. These efforts reflected a growing recognition that efficient water use is essential to ensuring reliability amid population growth, limited supplies, and increasing climate variability.

Recurring drought conditions have further accelerated the pace and scale of conservation efforts in the last decade. The 2013-2014 drought prompted a statewide emergency response, culminating in an executive order mandating a 25 percent reduction in urban water use across California. All Orange County Water Agencies, including the District, met this reduction target as reported in Chapter 5 of this 2025 Urban Water Management Plan (UWMP). More recently, the 2021-2022 drought reinforced the need for sustained efficiency gains and durable demand management strategies beyond temporary emergency actions. These regulatory and hydrologic drivers ultimately led to the passing and adoption of SB 606 and Assembly Bill (AB) 1668, the "Making Conservation a California Way of Life" legislation (passed in 2018 and adopted in 2024). The legislation establishes long-term water use objectives for individual water suppliers and reinforces conservation as a permanent element of water management. Together, these milestones underscore the necessity for MWDOC, working in close coordination with its wholesaler, the Metropolitan Water District of Southern California (MET), and with its 27 member agencies in Orange County, to implement comprehensive demand management measures and meet established urban water use reduction targets to ensure regional water supply resilience.

The goal of the Demand Management Measures (DMM) chapter is to provide a comprehensive description of the water use efficiency (WUE) programs that MWDOC has implemented in the most recent 5 years, and is currently implementing, and plans to implement to help agencies meet their urban water use reduction targets. Per the "Making California a Conservation Way of Life" Framework (Conservation Framework), each Urban Water Supplier is required to calculate and report their Urban Water Use Objective (UWUO) and to stay within their calculated annual water budget. The UWUO is an aggregate efficient water use of:

- Indoor Residential Use (population x gallons per capita per day (GPCD) standard).
- Outdoor Residential Use (measurements of irrigated/irrigable area, local weather data, and a landscape efficiency factor).

- Outdoor Use with Dedicated Irrigation Meters (measurements of irrigated area, local weather data, and a landscape efficiency factor).
- Distribution System Water Losses.
- Approved Variances.
- Potable Reuse Bonus.

Additionally, the Conservation Framework includes commercial, industrial, and institutional (CII) non-volumetric Performance Measures, including CII customer account classifications, thresholds for converting mixed-use CII meters (MUMs) irrigating over half an acre of landscape to dedicated irrigation meters (DIMs) or in lieu technologies, CII best management practices (BMPs), and identification of and information sharing with disclosable buildings.

One of MWDOC's top priorities since the adoption of the "Making California a Conservation Way of Life" Framework has been to help member agencies make progress toward compliance with the Conservation Framework. This chapter will describe MWDOC's specific measures it has implemented to support the Conservation Framework, as well as other DMM activities, including those administered by its wholesaler MET.

9.1 MWDOC Demand Management Measures

This section describes the specific DMMs performed by MWDOC, including DMMs offered in partnership with MET, its wholesale supplier, to encourage water conservation within their service area. Table 9.1 summarizes DMM implementation responsibilities of MWDOC as Orange County's wholesale supplier and responsibilities of MWDOC's member agencies.

Table 9.1 DMM Implementation Responsibility and Regional Programs in Orange County

Efficiency Measure	Responsibility of:		MWDOC Regional Program and Activities
	Retailer	MWDOC as a Wholesaler	
Implementation Assistance Programs			
State Water Conservation Compliance Assistance	-	✓	✓
Local Program Assistance	-	✓	✓
Research and Evaluation	-	✓	✓
Operations Practices			
Conservation Pricing	✓	✓	✓
Conservation Coordinator	✓	✓	✓
Water Waste Prevention	✓	-	✓
Water Loss Control (System Water Audits, Leak Detection and Repair)	✓	(1)	✓
Metering with Commodity Rates	✓	(1)	(1)

Efficiency Measure	Responsibility of:		MWDOC Regional Program and Activities
	Retailer	MWDOC as a Wholesaler	
Education and Outreach			
Public Outreach Programs	✓	✓	✓
K-20 Water Education Initiatives and K-12 School Programs	✓	✓	✓
OC Scouts Boy Scouts of America (BSA) and OC Girl Scouts Programs	✓	✓	✓
Water Awareness Poster Contest	✓	✓	✓
Water Energy Education Alliance	✓	✓	✓
Qualified Water Efficient Landscaper (QWEL) Training Program	✓	✓	✓
Residential Indoor Implementation			
Residential Indoor Rebates	✓	-	✓
Flow Monitor Device Rebates	✓	-	✓
Commercial, Industrial, and Institutional Implementation			
Water Savings Incentive Program	✓	-	✓
On-site Retrofit Program	✓	-	✓
CII Indoor Rebates (High Efficiency Toilets and Urinals, Plumbing Flow Control Valves, Connectionless Food Steamers, Air-cooled Ice Machines, Food Defrosters, Cooling Tower Conductivity Controllers and pH Controllers, Dry Vacuum Pumps, Laminar Flow Restrictors)	✓	-	✓
Landscape Programs			
Turf Replacement Program (including Tree Rebate)	✓	-	✓
Spray-to-Drip Irrigation Rebate Program	✓	-	✓
Landscape Rebates (Smart Timers, High Efficiency Sprinkler Nozzles, Large Rotary Nozzles, In-stem Flow Regulators)	✓	-	✓
Residential Landscape Design Assistance Program	✓	-	✓

Notes:
(1) MWDOC does not own or operate a distribution system; water wholesaled by MWDOC is delivered through MET distribution system and meters.

9.1.1 Implementation Assistance Programs

To help facilitate implementation of DMMs throughout Orange County, MWDOC's efforts focus on the following three areas: 1) State Water Conservation Compliance Assistance (e.g., Conservation Framework and Non-Functional Turf[1]), 2) Regional Rebate Programs and Local Program Assistance, and 3) Research and Evaluation. This both complies with and goes beyond the Foundational BMPs of Utility Operations Programs requirements.

[1] https://nonfunctionalturfca.org/

9.1.1.1 State Water Conservation Compliance Assistance

To support Orange County retailers with compliance of SB 606 and AB 1668, MWDOC is providing multi-level support to assist agencies in meeting the primary goals of the legislation, including to use water more wisely and to eliminate water waste. Beginning in 2023, urban water suppliers were required to calculate and report their annual UWUO, submit validated water audits annually, and implement and report BMP CII performance measures.

MWDOC offers Orange County water suppliers a "Conservation Framework Technical Assistance Program (TAP)" and "Meter Area Measurements Program" to assist them with compliance with the Conservation Framework.

Conservation Framework Technical Assistance Program (TAP)

This program provides Orange County water suppliers with support on tasks that are required as part of the Conservation Framework. An agency may opt in to receive support with any of the following:

- Readiness Assessment – perform a retailer-specific compliance readiness assessment, including next-step recommendations and pricing to help retail agencies understand what areas need to be addressed.
- Conservation Framework Compliance Plan – create an in-depth, customized Framework Compliance Plan that outlines 1) what the retailer needs to do to prepare for compliance and 2) what needs to be implemented to achieve the water savings necessary to comply with the Urban Water Use Objective.
- Annual Report Compilation and Data Management – support the retailer with Annual Report preparation and assistance; and organize and manage data needed to comply with the reporting requirements of the Regulation.
- CII Account Classification – classify CII customer accounts according to the Regulation requirements and create a guidance plan to keep classifications at a 95 percent (or higher) accuracy rate.
- CII Best Management Practices (BMPs) and In-Lieu Technologies Implementation Plan – create a customized implementation plan mapping compliance with the Conservation Framework regulation, including the CII BMP requirements of § 974, the in-lieu technologies and accompanying BMP requirements in § 973, and disclosable buildings requirements in § 974a.
- Miscellaneous Framework Technical Assistance – various activities such as:
  - Development of metrics and annual targets to demonstrate progress.
  - Additional training or technical support.
  - Workshop or webinar facilitation to spur cross-team collaborations.
  - Develop outreach and engagement plans and implement meetings to support engagement of internal and external collaborators.

Meter Area Measurements Program

The Program assists Orange County water supplier in providing 1) landscape area measurements (LAM) associated with dedicated irrigation meters (DIMs); 2) identification of mixed-use CII meters (MUMs) irrigating landscapes greater than half acre and subject to the regulation; and 3) reconciliation of DIM and residential LAMs where areas may overlap or leave gaps.

9.1.1.2 Regional Rebate Programs and Local Program Assistance

MWDOC develops, obtains funding for, and implements regional water savings rebate programs on behalf of all retail water agencies in Orange County, such as the Turf Replacement Program. This approach minimizes confusion for consumers by providing the same programs with the same participation guidelines, maintains a consistent public message to use water efficiently, and provides support to retail water agencies by serving as program administrators for the region. As a leader of water efficiency in Orange County, MWDOC provides a holistic suite of programs that are accessible to all consumer groups in the region. When requested, MWDOC also assists retail agencies in developing and implementing local programs within their service areas. This assistance includes collaborating with each retail agency to design a program that fits that agency's local needs, including providing staffing, targeting customer classes, acquiring grant funding from a variety of sources, and implementing, marketing, reporting, and evaluating the program.

On behalf of its member agencies, MWDOC also organizes and provides the following:

- Monthly coordinator meetings.
- Marketing materials.
- Online resources and information.
- Public speaking.
- Community events.

9.1.1.3 Research and Evaluation

An essential part of MWDOC's regional water use efficiency program is the ongoing research and evaluation of both existing and potential initiatives. Research allows an agency to measure the water savings benefits of a specific program and compare those benefits to the costs of implementing the program. This allows the agency to evaluate the economic feasibility of the program when compared to other efficiency projects or existing or potential sources of supply, before investing in new initiatives or continuing to implement existing programs. MWDOC routinely conducts statistical water savings (impact) evaluations and process evaluations to guide strategic investment and ensure the effective management of its regional water use efficiency programs.

From 2021 to 2025, MWDOC conducted several research initiatives to support informed decision-making. In partnership with Flume Data Labs, MWDOC completed its Residential End Use Study in 2021, with subsequent updates in 2022 and 2024. This study provided detailed insights into disaggregated residential indoor and outdoor water use, significantly enhancing understanding of water use patterns across Orange County. In 2023, MWDOC released its Potential and Opportunities study, which quantified the remaining water savings potential in the Orange County residential market, identified the most promising and cost-effective methods for reducing residential demand, and made recommendations on how best to direct financial and technical assistance to Retail Agencies and consumers for implementing residential water efficiency upgrades.

To assess the economic impact of the Conservation Framework, MWDOC worked with M.Cubed and in 2023 published the Draft Water Use Efficiency Standards Economic Analysis: Impact Assessment of State-Mandated Urban Water Use Objectives. MWDOC continues to evaluate the impact of the regulation and Orange County retailer compliance.

Additionally, MWDOC is piloting a tree program that allows eligible trees to qualify as a sustainability feature in Turf Replacement projects. Pilot goals include increasing the presence of trees in Turf Replacement projects and breaking down barriers to participation. The pilot project is described in further detail in Section 9.1.6.1.

A pilot research program investigating water savings associated with the replacement of broken pressure regulating valves at residential homes wrapped up in 2025. The results of this study are expected in 2027.

9.1.2 Operations Practices

9.1.2.1 Conservation Coordinator

MWDOC has specialized Water Use Efficiency staff who help to develop and implement all DMMs. Some of MWDOC's WUE staff also serve as adjunct staff for its member agencies, especially those that do not have a designated conservation coordinator, to help with retailer-level program implementation.

9.1.2.2 Water Loss Control

In 2015, MWDOC began a distribution system water loss program on behalf of water suppliers throughout the county to ensure their compliance with Senate Bill 555[2]. Since August 2019, MWDOC staff have been in the field daily, surveying nearly thousands of miles of water mains, locating hidden leaks, and helping all Orange County water retailers optimize their water distribution systems. MWDOC has developed a comprehensive Water Loss Control (WLC) program with two integral components:

- **WLC Technical Assistance Program (WLC-TAP)** – provides data analysis services that help agencies comply with State regulations and strategically guide field interventions to achieve an economically optimized level of water loss.
- **WLC Shared Service Program** – provides water loss control field interventions such as leak detection, customer meter accuracy testing, and pressure surveys.

WLC-TAP Background

On October 21, 2015, the Board of Directors authorized the General Manager to enter into a 3-year professional services agreement with E Source Companies, LLC (E Source), to provide water loss control technical assistance to the member agencies as well as the cities of Anaheim, Fullerton, and Santa Ana. The resulting WLC-TAP has been in existence for 10 years now. Through subsequent bid processes and agreement renewals, E Source has continued to deliver this service.

Additionally, over the last 10 years, water loss control regulations have evolved through SB 555, SB 606, AB 1668, AB 1414, and an extensive State Water Resources Control Board (SWRCB) formal rulemaking process. As a result, to better meet the agencies' needs thus far over the program term, the number of Technical Assistance tasks provided to participating retail water agencies has grown from 5 to 12 tasks. The WLC-TAP also includes bimonthly Water Loss Control Workgroup Meetings that have had consistent, robust attendance by retail water agency staff. These work groups have served as a venue for the agencies

[2] https://water.ca.gov/Programs/Water-Use-And-Efficiency/Urban-Water-Use-Efficiency/Validated-Water-Loss-Reporting

to develop an understanding of water loss control regulations and best practices, as well as share experiences and ideas.

Program Achievements

The collaboration and coordination between MWDOC staff and E Source in the facilitation of the WLC-TAP has been highly beneficial, and agency participation and feedback have been overwhelmingly positive. Every Orange County retail water agency has either participated in the WLC-TAP or the WLC Shared Services Program.

Within Orange County, of the 27 retail water agencies required to submit their audits to the Department of Water Resources and mandatory questionnaires to the SWRCB, 25 utilized the WLC-TAP. Ten agencies have also worked with E Source through the WLC-TAP to calculate custom parameter adjustments to the SWRCB economic model, thereby increasing their real loss standard, right-sizing their target, making compliance more realistic, and reducing excessive spending.

9.1.3 Public Education and Outreach

MWDOC implements several public education and outreach measures, including the programs administered by MET, its wholesale supplier. MWDOC develops, coordinates, and delivers a substantial amount of public information, education, and outreach programs aimed at elevating water agency and consumer awareness and understanding of current water issues as well as efficient water use and water-saving practices, sound policy, and water reliability investments that are in the best interest of the region. An outline of MWDOC's public education initiatives is below.

9.1.3.1 K-20 Water Education Initiatives and K-12 School Programs

Over the past several years, MWDOC's investment in K-20 water education has significantly grown, evolving to include programs and activities that support environmental literacy for all Orange County students. The effort has expanded beyond K-12 water education programs to include career and workforce development initiatives in higher education through the Water Energy Education Alliance (WEEA) described in more detail in Section 9.1.3.4.

MWDOC's K-12 Water Education School Programs bring standards-aligned, engaging water lessons directly into classrooms and connect water to every part of students' lives. All elementary, middle, and high school programs meet California State Standards and Next Generation Science Standards, providing students with high-quality, relevant learning experiences that build both academic and real-world understanding. This includes a Grab-and-Go Water Activities program, developed in partnership with the Orange County Department of Education, that provides free, self-guided water activities for K-12 teachers, parents and students.

9.1.3.2 OC Scouts Boy Scouts of America (BSA) and OC Girl Scouts Programs

MWDOC hosts multiple water education workshops each year, in partnership with retail agencies, to help Scouts BSA earn the *Soil & Water Conservation Merit Badge* and Girl Scouts earn the *MWDOC Water Resources & Conservation Patch*. These hands-on science, technology, engineering, and mathematics (STEM) clinics teach children of all ages where their water comes from, how to use water more efficiently, and how all life depends on the health and security of our natural resources, fostering water awareness and responsibility through fun, activity-based learning.

9.1.3.3 Water Awareness Poster Contest

MWDOC hosts an annual Water Awareness Poster Contest, offered for students in grades K-12. The Poster Contest presents children with an opportunity to use their artistic talents to express the importance and value of water through artwork. Each year, hundreds of entries are collected from students and classrooms across the county, and from these entries, 40 winners are selected.

9.1.3.4 Water Energy Education Alliance

The Water Energy Education Alliance (WEEA) unites over 260 water, energy, and education leaders across the state to build and strengthen career pathways for all California students. Administered and led by the MWDOC, WEEA is comprised of a powerful statewide coalition of education leaders, workforce advocates, and industry experts to raise student awareness, forge strong partnerships, and cultivate a diverse, highly skilled talent pipeline. By connecting students with high-impact opportunities, WEEA is shaping a workforce that fuels industry success, enhances worker well-being, and ensures a resilient, thriving California.

9.1.3.5 Qualified Water Efficient Landscaper Training Program

Since 2018, MWDOC has collaborated with MET to offer free Qualified Water Efficient Landscaper (QWEL) certification classes designed for landscape professionals. Classes are open to any city staff, professional landscaper, water district employee, or maintenance personnel that would like to become a Qualified Water Efficient Landscaper. The QWEL certification program provides 20 hours of instruction on water efficient areas of expertise such as local water supply, sustainable landscaping, soil types, irrigation systems and maintenance, as well as irrigation controller scheduling and programing. QWEL has received recognition from EPA WaterSense for continued promotion of water use efficiency. To earn the QWEL certification, class participants must demonstrate their ability to perform an irrigation audit as well as pass the QWEL exam. Successful graduates will be listed as a Certified Professional on the WaterSense website as well as on MWDOC's landscape resources page, to encourage Turf Removal participants or those making any landscape improvements to hire a QWEL certified professional.

Started in December 2020, a hybrid version of QWEL is available in conjunction with the California Landscape Contractors Association's Water Management Certification Program. This joint effort allows landscape industry an opportunity to obtain two nationally recognized EPA WaterSense Professional Certifications with one course and one written test. This option is offered through MET.

9.1.4 Residential Indoor Rebate Programs

MWDOC implements residential measures for its member agencies to participate in that target indoor water use efficiency for single family and multifamily residential customers.

9.1.4.1 High Efficiency Clothes Washer and Toilet Rebate Programs

The High Efficiency Clothes Washer (HECW) Rebate Program provides residential customers with rebates starting at $85 for purchasing and installing HECWs that use 35 percent to 50 percent less water than standard washer models. Devices must meet or exceed the Consortium for Energy Efficiency (CEE) Tier 1 Standard, and a listing of qualified products can be found at ocwatersmart.com. There is a maximum of one rebate per home.

The Premium High Efficiency Toilet (HET) Rebate Program offers residential customers rebates starting at $40 for replacing their toilets using 1.6 gallons per flush (gpf) with Premium HETs. Premium HETs use just 1.1 gallons of water or less per flush, which is 20 percent less water than WaterSense standard toilets.

9.1.4.2 Flow Monitor Device Pilot

This pilot program provides rebates starting at $100, or more in select areas, per flow monitor device installed. These devices monitor a home's water use and can help detect leaks, making them a proactive tool for preventing expensive water bills and water damage due to unforeseen leaks. A list of residential rebate-eligible flow monitoring devices is provided.

9.1.5 CII Programs

MWDOC provides a variety of financial incentives, in partnership with MET, to help businesses, restaurants, institutions, hotels, hospitals, industrial facilities, and public sector sites achieve their efficiency goals. Water users in these sectors have options to choose from a standardized list of water efficient equipment/devices or may complete customized projects through a pay-for-performance where the incentive is proportional to the amount of water saved. Such projects include high efficiency commercial equipment installation and manufacturing process improvements.

9.1.5.1 Water Savings Incentive Program

The Water Savings Incentive Program (WSIP) is designed for CII customers to improve their water efficiency through upgraded equipment or services that do not qualify for standard rebates. WSIP is unique because it provides an incentive based on the actual amount of water saved by the customers. This "pay-for-performance" design lets customers implement custom projects for their sites. MWDOC partners with MET to offer this program.

Projects must save at least 10 MG of water to qualify for the Program and incentives are paid by MET based on the amount of water saved. Payment amount is up to $0.60 per 1,000 gallons saved per year over the project life, up to a maximum of 10 years. Payments are limited to 50 percent of the eligible project costs while funding is available. Additional funding may be available through MWDOC, but it is limited. Examples of successful projects include but are not limited to changing industrial process system water to capture and reuse process wastewater, capturing condensation and using it to supplement cooling tower water supply, and replacing water-using equipment with more efficient products.

9.1.5.2 Recycled Water On-site Retrofit Program

Through the Recycled Water On-site Retrofit Program, MWDOC, in partnership with MET, offers incentives for CII properties to convert potable water irrigation or industrial systems to recycled water. Financial incentives of up to $1,950 per AF of potable water saved are available for the customer-side on the meter retrofits. Projects may also be eligible for up to an additional $325 per AF of annual water savings from MWDOC. Recycled water conversion projects can help to ensure a more reliable water future for Orange County.

9.1.5.3 CII Rebates

MWDOC offers additional financial incentives under the SoCal Water$mart Rebate Program which offers rebates for various water efficient devices to CII customers. Core funding is provided by MET and supplemental funding is sourced from MWDOC via grant funds and/or retail water agencies. Devices include High Efficiency Toilets and Urinals, Plumbing Flow Control Valves, Connectionless Food Steamers, Air-cooled Ice Machines, Food Defrosters, Cooling Tower Conductivity Controllers and pH Controllers, Dry Vacuum Pumps, and Laminar Flow Restrictors.

9.1.6 Landscape Programs

Some of the most active and effective water use efficiency programs MWDOC provides are those that target the reduction of outdoor water use. With a large proportion of water consumed outdoors via landscape demands, this sector has been and will continue to be a focus for MWDOC.

9.1.6.1 Turf Replacement Program

The Orange County Turf Replacement Program offers incentives to replace existing turf grass with California-friendly, drought-tolerant plants and landscaping. Residential, commercial, and public properties in MWDOC's service area are all eligible for this program. The goals of this program are to increase water use efficiency through sustainable landscaping practices that result in multi-benefit projects across Orange County. Participants are encouraged to utilize smart irrigation timers and furthermore, projects are required to include a stormwater capture feature, such as a rain garden or dry stream bed, and have a minimum of three plants per 100 square feet to increase plant density and promote healthy soils. These projects save water and reduce dry and wet weather runoff, improving water quality.

Additionally, MWDOC is piloting a tree program that allows eligible trees to qualify as a sustainability feature in Turf Replacement projects. Beginning March 4, 2024, Turf Replacement Program participants also became eligible for an additional incentive for planting trees as part of their Turf Replacement project. New trees will provide shade, sequester more carbon, and more. Participants can receive up to $100 per tree, for up to 5 trees ($500), in addition to the Turf Replacement rebate. The pilot goals include increasing the presence of trees in Turf Replacement projects and breaking down barriers to participation. It is anticipated that the pilot will be evaluated in 2026.

9.1.6.2 Spray-to-Drip Rebate Program

The Spray to Drip Rebate Program offers residential, commercial, and public agency customers rebates for converting areas irrigated by traditional high-precipitation rate spray heads to low-precipitation rate drip irrigation. Drip irrigation systems are extremely water efficient. Rather than spraying wide areas subject to wind drift, overspray and runoff, drip systems use in-line emitters to deliver water to specific locations at or near plant root zones. Water drips slowly from the emitters either onto the soil surface or below ground. As a result, less water is lost to wind, evaporation, and overspray, saving water, and reducing irrigation runoff and non-point source pollution. MWDOC provides $0.50 per square foot of conversion area when replaced with eligible drip irrigation products.

9.1.6.3 SoCal Water$mart Rebate Program for Landscape

MWDOC also offers financial incentives under the SoCal Water$mart Rebate Program for a variety of water-efficient landscape devices, such as Smart Irrigation Timers and Central Computer Irrigation Controllers, large rotary nozzles and rotating sprinkler nozzles, soil moisture sensors, irrigation master valves, and in-stem flow regulators.

9.1.6.4 Landscape Design Assistance Rebate

This program is offered for residential customers who are participating in the turf replacement program and are seeking professional design services. Participants must hire a landscape design professional to provide a design that meets the rebate-eligible design requirements. Participants will receive up to $1,000 upon completion of their turf replacement project if they have used a professional designer.

9.2 MWDOC DMM Implementation (2020-2025)

During the past 5 years, FY 2020-21 to FY 2024-25, MWDOC has continued water use efficiency programs for its region and has garnered participation from its 27 member agencies, as shown in Table 9.2. These values represent the total number of rebates or projects completed across the service area. MWDOC will continue to implement all applicable programs in the next 5 years.

Table 9.2 Water Use Efficiency Program Participation in MWDOC Service Area (2020-2025)

Program	FY20/21	FY21/22	FY22/23	FY23/24	FY24/25
High Efficiency Clothes Washer (HECW)	2,951	2,068	1,810	1,585	1,262
High Efficiency Toilets (HETs)	180	105	150	736	208
Flow Monitoring Devices (FMD)	0	613	74	154	165
Commercial Plumbing Fixtures (CII)	623	884	3,410	2,272	2,183
Water Savings Incentives Projects (WSIP)	1	0	1	10	1
Turf Replacement (Res.)	168,236	243,540	531,674	335,916	181,409
Turf Replacement (Comm.)	386,150	549,168	1,628,856	1,316,804	1,241,204
Landscape Design Rebate Program (LDAP)	168	232	220	52	34
Landscape Design Rebate Program (LMAP)	69	59	120	69	0
Spray-to-Drip (Res.)	82,330	102,469	272,495	217,915	131,408
Spray-to-Drip (Comm.)	43,066	500,094	730,732	1,003,232	968,127
Rotating Nozzles (Small Res.)	1,503	1,483	1,232	1,614	1,100
Rotating Nozzles (Small Comm.)	0	0	1,141	3,259	2,930
Rotating Nozzles (Large Comm.)	0	0	1,270	0	0
Smart Timers (Res.)	3,272	1,513	1,280	1,428	1,042
Smart Timers (Comm.)	442	479	398	415	397
Rain Barrels (Res.)	140	83	182	141	66
Recycled Water Onsite Retrofits (Comm.)	13	4	3	5	4

9.3 Urban Water Use Objective and CII Performance Measure Compliance Support

A large focus for MWDOC is to implement DMMs that will help member agencies to meet the requirements of the Conservation Framework. DMMs described in this chapter may help to support member agencies with meeting their required UWUO and achieving CII Performance Measure Compliance. In addition, MWDOC provides support to agencies to assist with the calculation of UWUOs and compliance with CII Performance measures via the Meter Area Measurement and TAP Programs, as described in Section 9.1.

9.3.1 UWUO Components

Table 9.3 describes MWDOC's programs that will assist agencies in meeting their UWUO, through both direct measures (programs/activities that result in directly quantifiable water savings) and indirect measures (programs that provide resources promoting water efficiencies to the public that are impactful but not directly measurable). Additionally, MWDOC provides technical assistance to support water suppliers with compliance.

Table 9.3 MWDOC Programs to Help OC Retail Agencies Meet their Urban Water Use Objectives

UWUO Component	Calculation	Program	Impact
Indoor Residential	Population and GPCD standard	Direct Impact ▪ High efficiency indoor fixtures and appliance rebates	Direct Impact ▪ Increased indoor residential efficiencies and reductions of GPCD use
Outdoor Residential	Irrigated/irrigable area measurement and a landscape efficiency factor of local ETo and effective precipitation	Direct Impact ▪ Turf Replacement ▪ High efficiency irrigation rebates Indirect Impact ▪ Online resources such as OC Friendly Gardens Webpage ▪ Educational classes	Direct Impact ▪ Increase outdoor residential efficiencies and reductions of gallons per square feet of irrigated/ irrigable area used Indirect Impact ▪ Provide information, resources, and education to promote efficiencies in the landscape

UWUO Component	Calculation	Program	Impact
Outdoor Dedicated Irrigation Meters	Irrigated area measurement and a landscape efficiency factor of local ETo and effective precipitation	Technical Assistance ▪ DIM landscape classification and measurement Direct Impact ▪ Turf Replacement ▪ High efficiency irrigation rebates Indirect Impact ▪ OC Friendly Gardens Webpage ▪ Educational training and resources	Technical Assistance ▪ Classification and measurement of landscapes associated with DIMs are required to complete the calculation. Direct Impact ▪ Increase outdoor residential efficiencies and reductions of gallons per square feet of irrigated/ irrigable area used. Indirect Impact ▪ Provide information, resources, and education to promote landscape efficiencies.
Water Loss	Agency-specific loss factor and number of connections	Technical Assistance ▪ Water Balance Validation ▪ Customer Meter Accuracy Testing ▪ Distribution System Pressure Surveys Direct Impact ▪ Distribution System Leak Detection	Technical Assistance ▪ The accuracy of the water loss audit is validated for submission to the State. Direct Impact ▪ Identify areas of the distribution system that need repair, replacement, or other actions to limit water loss.
Bonus Incentives	Volume of indirect potable reuse water applied to residential and DIM irrigation uses; not to exceed 15% of UWUO	Direct Impact ▪ Groundwater replenishment system (GWRS)	Direct Impact ▪ The GWRS (run by Orange County Water District [OWCD]) recharges the groundwater basin with purified, highly treated wastewater, allowing OCWD-member agencies to access indirect potable reuse.

9.3.2 CII Performance Measures

Urban water supplies are required to report BMPs for CII customers. MWDOC offers a broad variety of programs and incentives to help its members' CII customers implement BMPs and increase their water efficiencies (Table 9.4).

Table 9.4 MWDOC Programs to Help OC Retail Agencies Implement CII Performance Measures

Component	Requirement	Program Offered	Impact
CII Customer Account Classifications	Classify each CII water user, based on the end-use of water for the water user, in accordance with Energy Star Portfolio Manager's 18 broad categories, in addition to 4 other categories.	Technical Assistance ▪ CII Customer Account Classification	Technical Assistance ▪ Classify customer accounts according to the specified categories to comply with the regulation.
Large Landscape Identification	Identify all CII water users associated with large landscapes – landscapes irrigated with a mixed-use meter greater than half an acre	Technical Assistance ▪ Large Landscape identification	Technical Assistance ▪ Identify and map landscapes associated with MUM landscapes that are greater than half an acre to comply with the regulation.
Best Management Practices (BMPs)	Offer CII BMPs for customers that exceed the recommended size, volume of water use, or another threshold	Technical Assistance ▪ BMP Implementation Plan	Technical Assistance ▪ Provide a BMP Implementation Plan to guide water suppliers with a roadmap to compliance with the regulation.
Disclosable Buildings	Identify disclosable buildings in service area according to the list provided by the California Energy Commission	Technical Assistance ▪ Disclosable buildings list	Technical Assistance ▪ Provide the California Energy Commission list of disclosable buildings by water supplier to comply with the regulation.

CHAPTER 10 PLAN ADOPTION, SUBMITTAL, AND IMPLEMENTATION

The Water Code requires the Urban Water Management Plan (UWMP) to be adopted by Municipal Water District of Orange County's (MWDOC) governing body. Before the adoption of the UWMP, MWDOC must notify the public and the cities and counties within its service area per the Water Code and hold a public hearing to receive input from the public on the UWMP. Post adoption, MWDOC submits the UWMP to the Department of Water Resources (DWR) and the other key agencies and makes it available for public review. This section provides a record of the process MWDOC followed to adopt and implement its UWMP.

10.1 Overview

Recognizing that close coordination among other relevant public agencies is key to the success of its UWMP, MWDOC worked closely with many other entities, to develop and update this planning document. MWDOC also encouraged public involvement through its public review and hearing process, which provided residents with an opportunity to learn and ask questions about their water supply management and reliability. Through the public hearing, the public has an opportunity to comment and put forward any suggestions for revisions of the Plan.

Table 10.1 summarizes external coordination and outreach activities carried out by MWDOC and their corresponding dates. The UWMP checklist to confirm compliance with the Water Code is provided in Appendix A.

Table 10.1 External Coordination and Outreach

External Coordination and Outreach	Date	Reference
Notified city or county within supplier's service area that water supplier is preparing an updated UWMP (at least 60 days prior to public hearing)	02/17/2026	Appendix I
Public Hearing Notice	04/20/2026 & 04/27/2026	Appendix I
Held Public Hearing	05/20/2026	
Adopted UWMP and WSCP	05/20/2026	Appendix J
Submitted UWMP to DWR (no later than 30 days after adoption)	06/19/2026	-
Submitted UWMP to the California State Library (no later than 30 days after adoption)	06/19/2026	-
Submitted UWMP to the cities and county within the supplier's service area (no later than 30 days after adoption)	06/19/2026	-

Notes:
UWMP – Urban Water Management Plan; WSCP – Water Shortage Contingency Plan

This UWMP was adopted by the MWDOC Board of Directors on May 20, 2026. A copy of the adopted resolution is provided in Appendix J.

10.2 Agency Coordination

The Water Code requires the Suppliers preparing UWMPs to notify any city or county within their service area at least 60 days prior to the public hearing. As shown in Table 10.2, MWDOC sent a Letter of Notification to the County of Orange and the cities within its service area on February 17, 2026, to state that it was in the process of preparing an updated UWMP. This notice of preparation is included in Appendix I.

Table 10.2 Notification to Cities and Counties

Submittal Table 10-1 Wholesale: Notification to Cities and Counties Water Code Section 10621(b) and 10642		
☑	Check the box if the Supplier has notified more than 10 cities or counties in accordance with Water Code Sections 10621 (b) and 10642. **Completion of the table below is not required. Provide a separate list of the cities and counties that were notified.**	
Appendix I	Provide the page or location of this list in the UWMP.	
	Check the box if the Supplier has notified 10 or fewer cities or counties. **Complete the table below.**	
City Name	60 Day Notice **Drop Down (yes/no)**	Notice of Public Hearing **Drop Down (yes/no)**
County Name **Drop Down List**	60 Day Notice **Drop Down (yes/no)**	Notice of Public Hearing **Drop Down (yes/no)**

MWDOC's water supply planning relates to the policies, rules, and regulations of its regional and local water providers. MWDOC is dependent on imported water from the Metropolitan Water District of Southern California (MET). As such, MWDOC involved MET and other relevant agencies in this 2025 UWMP at various levels of contribution as summarized in Table 10.3.

Table 10.3 Coordination with Appropriate Agencies

Agencies	Participated in Plan Development	Commented on Draft	Attended Public Meetings	Contacted for Assistance	Sent Copy of Draft Plan	Sent Notice of Public Hearing	Not Involved/No Information
Cities within Service Area	-	-	-	-	✓	✓	✓
County of Orange	-	-	-	-	✓	✓	✓
MET	✓	-	-	✓	✓	✓	✓
MWDOC 27 Retail Agencies	✓	✓	✓	✓	✓	✓	✓
OC San	✓	-	-	✓	✓	-	-
OCWD	✓	-	-	✓	✓	✓	✓
Public Library	-	-	-	-	-	✓	-
SJBA	✓	-	-	-	✓	-	-
SOCWA	✓	-	-	✓	✓	-	-

MET - As a member agency of MET, MWDOC developed this UWMP in collaboration with MET's 2025 UWMP to promote consistency between the two documents.

MWDOC Retail Agencies - MWDOC provided assistance to its retail agencies' 2025 UWMP development by providing much of the data and analysis such as water demand projections and population projections from the California State University, Fullerton Center for Demographic Research (CDR) and the information quantifying water availability to meet the retailers' projected demands for the next 25 years, in 5-year increments. Additionally, MWDOC provided details on its water conservation programs facilitated for its member agencies and implemented demand management measures since 2020.

Groundwater Management Agencies - MWDOC also worked with the following five agencies to obtain information for the five groundwater basin resources in its service area:

- Orange County Water District (OCWD) for the Lower Santa Ana River Basin.
- San Juan Basin Authority (SJBA) for the San Juan Basin.
- City of La Habra for the La Habra Basin.
- City of San Clemente for the San Mateo Basin.
- Laguna Beach County Water District (LBCWD) for the Laguna Canyon Basin.

Detailed descriptions of the basin information are included in Section 6.3.

Wastewater Management Agencies - To meet the requirements of the Act in the preparation of this UWMP, MWDOC contacted individual wastewater collection and treatment providers and other water agencies within its service area for data on recycled water and associated projects in the region. The information MWDOC obtained was then combined with a review of several completed Orange County studies. The information MWDOC obtained from wastewater collection and treatment providers allows the UWMP to describe wastewater discharge methods, treatment levels, discharge volumes, and recycled use in the region.

10.3 Public Participation

MWDOC encouraged community and public interest involvement in the Plan update through a public hearing and inspection of the draft document on May 20, 2026. Copies of the draft 2025 UWMP were placed for public review at MWDOC's office and made available for the public on MWDOC's website.

Public hearing notifications were sent to retail agencies and other interested parties. A copy of the Notice of Public Hearing is included in Appendix I.

The hearing was conducted during a regularly scheduled meeting of the MWDOC Board of Directors. A staff report and presentation reviewed the process, key components of the UWMP and the conclusions that served as the basis of the UWMP. The President of the Board of Directors then opened the Public Hearing where all comments were recorded.

10.4 UWMP Submittal

The Board of Directors reviewed and approved the 2025 UWMP at its May 20, 2026 meeting after the public hearing. See Appendix J for the resolution approving the Plan.

By June 19, 2026, the Adopted 2025 UWMP was filed with DWR, California State Library, County of Orange, and cities within MWDOC's service area. The submission to DWR was done electronically through the online submittal tool – WUE Data Portal. MWDOC will make the Plan available for public review on its website no later than 30 days after filing with DWR.

10.5 Amending the Adopted UWMP or WSCP

Based on DWR's review of the UWMP, MWDOC will make amendments in its adopted UWMP, as required and directed by DWR and will follow each of the steps for notification, public hearing, adoption, and submittal for amending the adopted UWMP.

If MWDOC revises its Water Shortage Contingency Plan (WSCP) after UWMP is approved by DWR, then an electronic copy of the revised WSCP will be submitted to DWR within 30 days of its adoption.

CHAPTER 11 REFERENCES

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Member Agency Comments:

From: Olsen, Chris <colsen@ocwd.com>
Sent: Thursday, April 30, 2026 11:06 AM
To: Sarina Sriboonlue
Subject: Re: [EXTERNAL] Fw: Municipal Water District of Orange County - 2025 Urban Water Management Plan and 2025 Water Shortage Contingency Plan
Attachments: OCWD Comments on MWDOC Draft UWMP 2026.docx

Chris Olsen, PE
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6.3.1.2 Sustainable Groundwater Management Act

In 2014, the State of California adopted the Sustainable Groundwater Management Act (SGMA) to promote sustainable groundwater management~~help manage its groundwater sustainably~~ and limit "undesirable results", ~~adverse effects such as~~including significant groundwater-level declines, land subsidence, and water quality degradation. SGMA requires all high- and medium-priority basins, as designated by DWR, to be sustainably managed. DWR designated the Coastal Plain of Orange County Groundwater ~~C~~ Basin (Basin 8-1) as a medium-priority basin, primarily due to heavy reliance on ~~the OC Basin's~~ groundwater as a ~~source of~~ water supply source.

Compliance with SGMA can be achieved in one of the following two ways (OCWD, 2023):

1. Formation of a ~~A~~ Groundwater Sustainability Agency (GSA) ~~is formed,~~ and adoption of a Groundwater Sustainability Plan (GSP) ~~is adopted~~.

2. Preparation and submittal of an ~~Special Act Districts created by statute, such as OCWD, and other agencies may prepare and submit an~~ Alternative to a GSP by eligible agencies, including special act districts such as OCWD.

~~The~~ Aagencies within Basin 8-1, including OCWD, the City of ~~and~~ La Habra, and the Irvine Ranch Water District (IRWD), collaborated to submit the original Alternative to a GSP in 2017, titled the "Basin 8-1 Alternative" to demonstrate compliance with SGMA. ~~to meet SGMA compliance.~~ Under SGMA, alternatives and GSPs must bey updated and submitted ~~undergo periodic review and updating~~ every at 5-years ~~intervals, analogous to GSP updates~~. OCWD prepared its first ~~such~~ periodic update in, ~~the~~ 2022 ~~update to the Basin 8-1 Alternative, and submitted it around January 2022~~.

For the remainder of this report, when the term “OC Basin” is used, it refers to the portion of Basin 8-1 that is within OCWD’s service area (see Figure 6-5).

6.3.1.3 Basin Production Percentage

Background

The OC Basin is not adjudicated; therefore, groundwater production is ~~and as such, pumping from the OC Basin is~~ managed through a framework ~~process~~ that uses financial incentives to encourage sustainable pumping~~groundwater producers to pump a sustainable amount of water~~. The framework is based on the BPP, which represents ~~for the financial incentives is based on establishing the BPP,~~ the percentage of each Producer’s total water supply that comes from groundwater pumped from the OC Basin. Groundwater production at or below the BPP is assessed the Replenishment Assessment (RA). While there is no legal limit as to how much an agency pumps from the OC Basin, there is a financial ~~disincentive~~ impact to pump above the BPP. The BPP is set uniformly for all Producers by OCWD on an annual basis. Agencies that pump above the BPP are charged the RA plus the Basin Equity Assessment (BEA). The BEA is ~~presently~~ calculated so that the cost of groundwater production above the BPP is equivalent to the cost of importing potable water supplies. This approach ~~serves to~~ ensures there is no financial advantage for~~discourage, but not eliminate,~~ production above the BPP. The ~~, and the~~ BEA can be increased to discourage production above the BPP if necessary.

The BPP is set annually by OCWD based on groundwater conditions, availability of imported water supplies, and OC Basin management objectives. The supplies available for recharge must be estimated for a given year. The estimated supplies of recharge water include~~that are estimated are~~: 1) ~~Santa Ana River~~ stormflow from the Santa Ana River and Santiago Creek, 2) natural incidental recharge, 3) Santa Ana River baseflow, 4) GWRS supplies, and 5) other supplies such as imported water and recycled water purchased for the Alamitos Barrier.

The BPP is a major factor in determining the cost of groundwater production from the OC Basin ~~for that year~~. For the FY 2026~~5~~-27~~6~~ water year, OCWD ~~is set to~~ maintain~~ed~~ a BPP of 85 percent. Under normal hydrologic conditions, groundwater production could reach approximately 315,000 AFY. However, actual production in~~OCWD anticipates groundwater production during~~ FY 2026~~5~~–27~~6~~ is expected to be ~~will be~~ approximately 29~~97~~,000 AFY due to PFAS - related impacts that continue to limit groundwater~~well~~ availability among ~~across~~ several producers.

BPP Adjustments for Basin Management

OCWD has established management guidelines that are used to establish future BPPs, as seen in Table 6.9. Raising or lowering the BPP allows OCWD to manage the amount of pumping from the basin. OCWD has a policy to manage the groundwater basin within a sustainable range to avoid adverse impacts to the basin. OCWD seeks to maintain some available storage space in the basin to maximize surface water recharge when such supplies are available, especially in relatively wet years. By keeping the basin relatively full during wet years, and for as long as possible in years with near-normal recharge, the maximum amount of groundwater could be maintained in storage to support pumping in future drought conditions. During dry hydrologic years, when less water is available for recharge, the BPP could be lowered to maintain groundwater storage levels. A component of OCWD's BPP policy is to manage the groundwater basin so that the BPP will not fluctuate more than 5 percent from year to year.

Table 6.9 Management Actions Based on Changes in Groundwater Storage Available Storage Space(1) Basin Management Actions to Consider Less than 100,000 AF Raise BPP 100,000 to 300,000 AF Maintain and / or raise BPP towards 85% goal 300,000 to 350,000 AF Seek additional supplies to refill basin and / or lower the BPP Greater than 350,000 AF Seek additional supplies to refill basin and lower the BPP Notes: (1) Amount below full basin condition.

The OCWD's GWRS came online in 2008 with a capacity of approximately 70 mgd and was expanded to 100 mgd in 2015. In 2023, it was expanded again to a final capacity of 130 mgd. The GWRS provides a resilient local water supply that recharges the OC Basin ~~Orange County groundwater basin~~ with advanced treated wastewater. The additional yield supported OCWD's move to raise the BPP from the long-standing approximately 77 percent level prior to 2023 to 85 percent beginning in February 2023. Monthly water-resources reports show agencies achieving 86 percent to 88 percent pumping shares after the final expansion in late-2024 to early-2025, which reflects~~reflecting how~~ increased reliance on local groundwater supplies enabled by GWRS production ~~has enabled higher local reliance over the last decade,~~ along with the reduced ~~relatively low~~ water demands of approximately 400,000 AFY.

Modeling and forecasts generate estimates based on historical averages. Consequently, forecasts use average hydrologic conditions, which smooth the dynamic and unpredictable local hydrology. Variations in local hydrology are the most significant impact to supplies of water available to recharge the groundwater basin. The current BPP of 85 percent is based on modeling of average annual rainfall weather patterns and estimated groundwater recharge volumes. If OCWD were to experience a relatively dry period, the BPP could be

reduced to maintain water storage levels along with other management actions shown in ~~,~~ ~~by as much as 5 percent~~Table 6.9.

Basin Equity Assessment Exemptions

In some cases, OCWD encourages treating and pumping groundwater that does not meet drinking water standards to protect water quality. This is achieved by using a financial incentive called the BEA Exemption. A BEA Exemption is used to promote beneficial uses of poor-quality groundwater and reduce or prevent the spread of poor-quality groundwater into non-degraded aquifer zones. OCWD uses a partial or total exemption of the BEA to compensate a qualified participating agency or Producer for the costs of treating poor quality groundwater, which typically include capital, interest and operations and maintenance costs for treatment facilities (City of La Habra et al., 2017). Similarly, for proactive water ~~-~~quality management, OCWD occasionally exempts a portion of the BEA for their Coastal Pumping Transfer Program (CPTP). The CPTP encourages inland groundwater producers to increase pumping and coastal producers to decrease pumping to reduce the groundwater basin drawdown at the coast and protect against seawater intrusion. Inland pumpers can pump above the BPP without having to pay the full BEA for the amount pumped above the BPP (OCWD, 2015). Coastal pumpers receive BEA revenue from OCWD to assist in offsetting their additional water supply cost from taking less groundwater.

OCWD ~~Groundwater~~ Resilience ~~liability~~ Plan

To address evolving conditions within OCWD's service area, it is important to anticipate potential challenges and proactively plan for strategies that sustain and enhance water supply reliability, water quality, and overall system resilience. The OCWD Resilience Plan is an adaptive management plan that evaluates future water demands and available supplies, while also identifying potential projects and response strategies to address risks to key District assets, including the groundwater basin, Santa Ana River, groundwater replenishment facilities, and natural resources.

The plan builds on OCWD's historical planning efforts and provides a flexible, project-based framework to maintain sustainable basin conditions and strengthen the long-term resilience of the District's water resources over a 5- to 25-year planning horizon.

The Resilience Plan also supports evaluation of future water supply projects, recharge strategies, and operational improvements to guide management of the OC Basin under changing hydrologic, regulatory, and demand conditions.

~~To adapt to the substantial growth in water demands in OCWD's management area, it is paramount to anticipate and understand future water demands and develop projects to increase future water supplies proactively to match demands. The Groundwater Reliability~~

~~Plan (GRP) is a continuation of these planning efforts that estimates the OC Basin's sustainable average annual production and extrapolates water needs of the OC Basin by combining recently completed water demand projections, and modeling of Santa Ana River flows available for recharge. These data will be used to evaluate future water supply projects and guide management of the OC Basin.~~

The Basin 8-1 Alternative submitted to DWR in 2017 showed that Basin 8-1 had been sustainably managed for the prior 10 years, which was a SGMA requirement. Based on avoiding undesirable results as defined in SGMA, the OC Basin has been sustainably managed since the construction of the Talbert Seawater Intrusion Barrier in the mid-1970s. Required annual reports and periodic updates submitted to DWR show that Basin 8-1 continues to be sustainably managed. ~~The OC Basin is unadjudicated and is therefore subject to implementation of a GSP. DWR approved an alternative to a GSP for the OC Basin. The alternative plan was submitted to DWR to meet requirements of the SGMA and demonstrate how water managers have already achieved or will achieve sustainable groundwater management. DWR received 15 alternative plans and nine were approved. The alternative report that was approved by DWR, entitled Basin 8-1 Alternative, was prepared in collaboration with the City of La Habra and Irvine Ranch Water District. OCWD has an adopted Groundwater Management Plan but elected to create a new report in a format that mirrors a GSP, which is required under SGMA.~~

Current water demand projections show a relatively slow increase over the 25-year planning horizon, which is generally of similar magnitude as the additional production from the GWRS since its final expansion in early 2023 to 130 mgd. This locally controlled, drought proof supply of water reduces the region's dependance on imported water.

Historically, the Santa Ana River has served as the primary source of water to recharge the OC Basin. To determine the availability of future Santa Ana River flows, OCWD utilized surface water flow modeling of the upper watershed. Modeling was developed to predict the impacts future stormwater capture and wastewater recycling projects in the upper watershed would have on future Santa Ana River flow rates at Prado Dam. Santa Ana River base flows are expected to decrease as more water recycling projects are built in the upper watershed. OCWD continues to work closely with the United States Army Corps of Engineers (USACE) to temporarily impound and slowly release up to approximately 20,000 AF of stormwater in the Prado Dam Conservation Pool. The amount of water that can be temporarily impounded in the conservation pool has grown over time and in 2025, it was increased to over 25,000 AF. To some extent, the losses in baseflow are partially offset through the capture of additional stormwater held in the Prado Dam Conservation Pool. When available, OCWD will continue to augment groundwater recharge through the

purchase of imported water through MET. OCWD will diligently monitor and evaluate future water supply projects to sustainably manage and protect the OC Basin for future generations. ~~Specifically, in April 2021 USACE modified the Interim Water Control Manual change (IWCM) to allow 505 feet year-round, formalizing the higher pool and associated release operations used for conservation. And in February 2025, the USACE approved a new minor deviation permitting temporary storage up to elevation 508 feet, with potential future increases evaluated to 510 feet to 512 feet, enabling capture of roughly 2 billion gallons more stormwater and corresponding managed release rates tailored to OCWD's recharge capacity.~~

OCWD Engineer's Report

The OCWD Engineer's Report documents groundwater conditions and evaluates water supply and Basin utilization within OCWD's service area. The most recent report is the ~~Draft~~ 2024~~3~~-2~~5~~4 Engineer's Report ~~released~~ filed in ~~February~~March 2026~~5~~. As reported, the Basin Production Percentage (BPP) for the 2024~~3~~–2~~5~~4 water year was maintained ~~established~~ at 85 percent by the OCWD Board of Directors. The overall BPP achieved within OCWD for non-irrigation use was 83.8 percent, with the reduced achievement attributed primarily to PFAS-related well shutdowns. Groundwater stored in the Basin dein~~in~~creased by 5~~0~~6,000 AF for the 2023~~4~~–2~~5~~4 water year, and the annual overdraft was ~~52,800~~165,300 AF, which reflects the amount by which natural replenishment was exceeded. The ~~increase~~ decrease in storage was ~~supported~~ reflected by a relatively dry year and the~~by~~ total groundwater recharge ~~of~~ was 252,214 AF,~~336,421 AF,~~ ~~including significant~~which included contributions from supplemental water recharged by the GWRS. For the 2025~~6~~–2~~6~~7 water year, OCWD is proposing to maintain a BPP of 85 percent. Under normal hydrologic conditions, groundwater production could reach approximately 315,000 AF; however, OCWD anticipates groundwater production during 2025~~6~~–2~~6~~7 will be approximately 29~~7~~9,000 AF due to PFAS-related impacts that continue to limit well availability across several producers.

It is estimated that approximately ~~8,000~~ 13,500 AF of additional production above the BPP will be undertaken by the City of Tustin, City of Huntington Beach, Mesa Water District, and Irvine Ranch Water District to support groundwater quality improvement projects. As in prior years, groundwater produced above the BPP for these water-quality projects will be partially or fully exempt from the BEA due to the Basin-wide benefit of pumping and treating poor-quality groundwater.

During the ~~2023–24~~2024-25 water year and current 2025-26 water year, MET untreated full-service water supplies were available for groundwater replenishment; however, OCWD did not purchase replenishment water due to favorable Basin storage conditions. OCWD

likewise does not plan to purchase untreated full-service water for replenishment in 202556–2667.

6.3.1.4 Recharge Management

Recharging water into the OC Basin through natural and artificial means is essential to support pumping from the OC Basin. Active recharge of groundwater began in 193649, in response to increasing drawdown of the OC Basin and, consequently, the threat of seawater intrusion. The OC Basin's primary source of recharge is supplied from the Santa Ana River, which is diverted into recharge basins and its main Orange County tributary, Santiago Creek. Other sources of recharge water include natural infiltration, recycled water, and imported water. Natural recharge consists of subsurface inflow from local hills and mountains, infiltration of precipitation and irrigation water, recharge in small flood control channels, and groundwater underflow to and from Los Angeles County and the ocean.

Recycled water for OC Basin recharge is from two sources. The main source is the GWRS, which completed its final expansion in 2023 and now produces up to 130 mgd of advanced-purified water for recharge at the Talbert Seawater Barrier and in the Kraemer, Miller, Miraloma, and La Palma basins. The second source is recycled water purified at the Water Replenishment District of Southern California's (WRD) Leo J. Vander Lans Advanced Water Treatment Facility (LVL), which provides up to 8 mgd for injection at the Alamitos Seawater Barrier (owned and operated by the Los Angeles County Department of Public Works). In recent years, WRD's upgrades and operations have increased the use of recycled water at the Alamitos Barrier and reduced reliance on imported supplies. Injection of recycled water into these barriers is an ongoing effort by OCWD (in coordination with WRD and Los Angeles County) to control seawater intrusion into the OC Basin; operation of the injection wells forms a hydraulic barrier to seawater intrusion.

OCWD also purchases imported water for recharge through MWDOC. Untreated imported water can be used to recharge the OC Basin through the surface recharge system at multiple locations, such as Anaheim Lake, the Santa Ana River, Irvine Lake, and San Antonio Creek, while treated imported water may be used for in-lieu recharge when appropriate. For current planning context and detailed recharge management strategies, refer to OCWD's most recent planning documents, including the 2024 OCWD Resilience Plan, in addition to prior foundational documents (Appendix E).

6.3.1.5 MET Imported Water for Groundwater Replenishment

In the past, OCWD, MWDOC, and MET have coordinated water management to increase storage in the OC Basin when imported supplies are available for this purpose. MET's

groundwater replenishment program was discontinued on January 1, 2013, and currently MET via MWDOC sells replenishment water to OCWD at the full-service untreated MET rate. Figure 6.6 shows MWDOC's imported water sales to OCWD since FY 1990-91, which averages approximately 27,888 AFY. In three of the past five water years, OCWD did not need to purchase more imported water to replenish groundwater.

6.3.1.6 MET Conjunctive Use/Cyclic Storage Program with OCWD In April 2025, MET's Board elected to terminate six inactive conjunctive use program (CUP) agreements in June 2025, including the one with OCWD~~range County~~. MET has not stored water in the CUP account since 2014, and the CUP account has been withdrawn to zero. As so, the values in Figure 6.7 from 2015 onwards represent only volumes from the MET Cyclic Storage Agreement. The Cyclic Storage account is an alternative storage account with MET. However, unlike the CUP program, OCWD controls when the water is used. The Cyclic Water Storage Program allows MET to store water in a local groundwater basin during surplus conditions, where MET has limited space in its regional storage locations. Once the water is stored via direct delivery or In-lieu the groundwater agency can purchase this water at a future date or over a 5-year period.

4.2.1 Water Use Projections for 2030-2050

Based on the Orange County Water Demand Projection Model methodology, MWDOC's service area's total water demands (by source) for the next 25 years are shown in Table 4.2. By 2050, total water demand is projected to be 414,936 AF, a 2.5 percent increase (as compared to 2025 actuals). Orange County groundwater is expected to continue providing a notable percentage of total water demand between 2025 and 2050 (roughly 51.1 percent in 2050).

Table 4.2 MWDOC's Service Area Future Water Use by Source

Water Source	2030	2035	2040	2045	2050
OCWD Basin GW	207,029	209,233	211,222	211,601	211,916
Non-OCWD GW (Potable)(1)	21,570	22,656	24,256	24,538	24,502
Non-OCWD GW (Non-potable)(2)	99	101	102	102	102
Recycled Water (Non-potable)	52,567	53,767	54,332	54,463	54,975
Surface Water (Irvine Lake)	5,000	5,000	5,000	5,000	5,000
Ocean Desalination	4,176	4,179	4,187	4,176	4,166
MET (Retail M&I)(3)	94,451	93,729	92,606	91,632	91,075
MET Irvine Lake Fill(3)	3,200	3,200	3,200	3,200	3,200
Total M&I Demand	388,092	391,865	394,905	394,712	394,936
MET GW Replenishment (Non-potable)(3,4)	10,000	10,000	20,000	20,000	20,000
Total non-M&I Demand	10,000	10,000	20,000	20,000	20,000
Total Water Demand	398,092	401,865	414,905	414,712	414,936

Notes:
(1) Includes San Juan Basin, La Habra Basin, and Main Basin.
(2) Includes non-potable supply from La Habra Basin for irrigation use.
(3) MWDOC is the wholesale provider of imported water that provides treated and untreated water from MET for M&I (direct) and non-M&I (indirect) uses within its service area. Irvine Lake fill is MET untreated water that is treated at Serrano, Baker, and TCWD water treatment plants (potable). A small portion is used for agriculture.
(4) Includes indirect use by OCWD for groundwater replenishment and seawater barrier water.

Please add the note below to table 4.2:

1 Includes only the MWDOC member agencies' groundwater production. Does not include the groundwater production of Anaheim, Fullerton, and Santa Ana.







MWDOC's 2025 Urban Water Management Plan & 2025 Water Shortage Contingency Plan

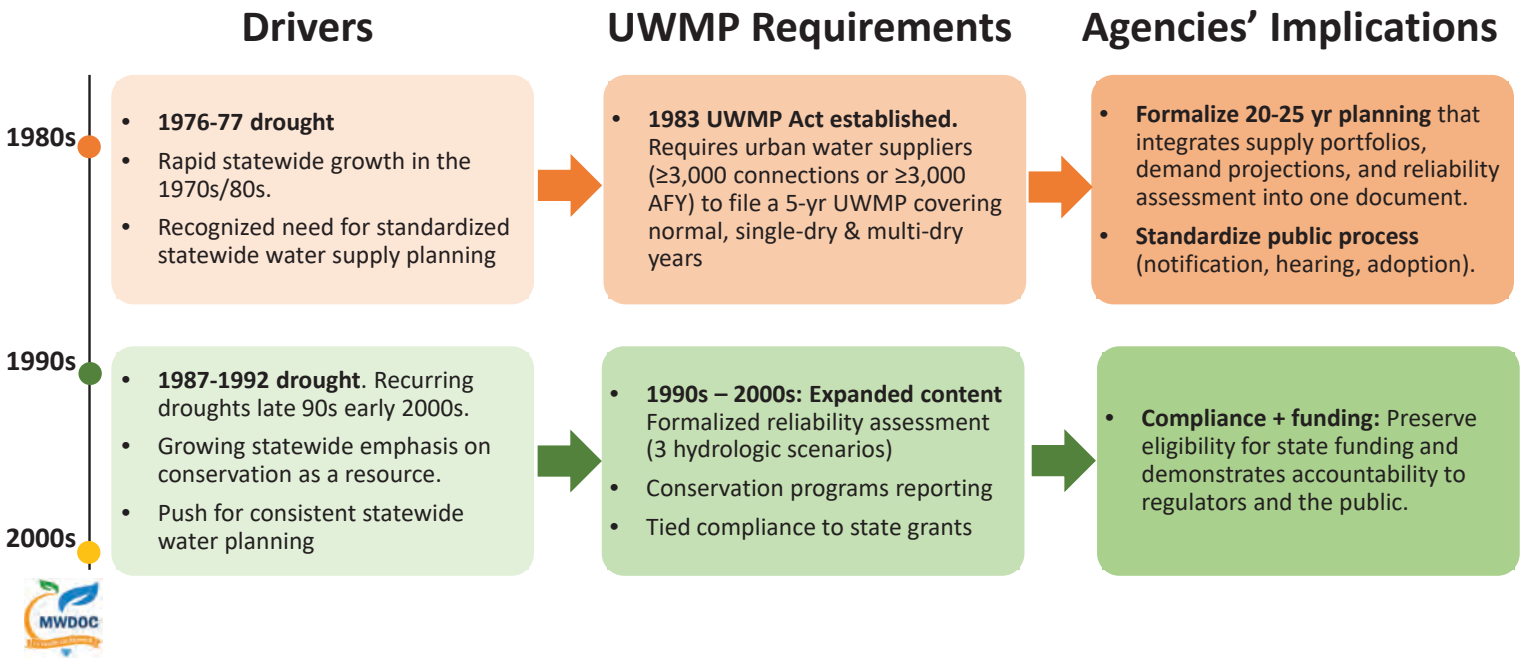
Regular Board Meeting

UWMP Requirements

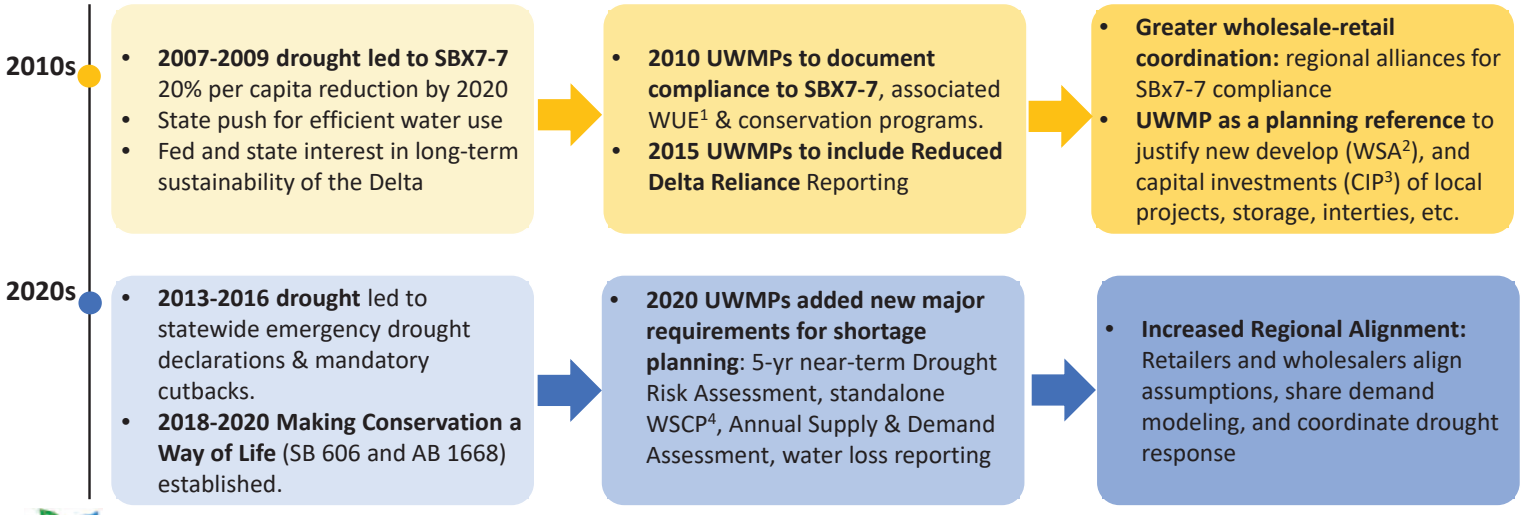
- **State of California, Department of Water Resources (DWR) requirement:**
  - **Who:** Every water supplier, publicly or privately owned, that provides water for municipal purposes to **>3,000 customers or >3,000 acre-feet annually**.
  - **What:** "UWMPs support suppliers' long-term resource planning to ensure adequate water supplies are available to meet existing and future water needs."
  - **When:** Every **5-years**, ending in 1 and 6, on July 1st.
  - **Why:** Statutory requirement in the Water Code. Non-submission impacts eligibility for state grants



UWMPs Through the Years: Early Years



UWMPs Through the Years: Later Years



[1] WUE – Water Use Efficiency
[2] WSA – Water Supply Assessment (SB 610)
[3] CIP – Capital Improvement Plan/Program
[4] WSCP – Water Shortage Contingency Plan

MWDOC's Regional Approach

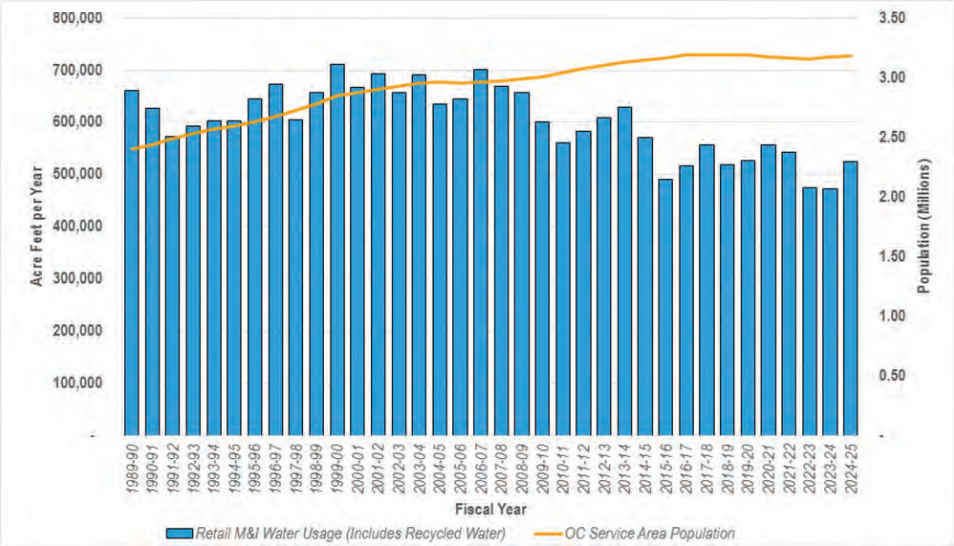
- **MWDOC's UWMP is a regionally focused plan.**
- **Provides analysis and information at the regional level**
  - OC Demand Model informed UWMP demand projections and supply analysis
  - MWDOC service area wide water use efficiency and public education activities and efforts
  - Coordination of Water Shortage Contingency Plans
- **Coordination among OC water agencies**
- **Coordination with Metropolitan**

UWMP Key Elements

Water Use Characterization	• Historical, current, and projected water use by customer category for the next 20-25 years
Water Supply Characterization	• Historical, current, and projected water supply portfolio + planned projects and potential supply for the next 20-25 years
Water Service Reliability & Drought Risk Assessment	• Assessment of water service reliability for 3 hydrologic scenarios: normal year, single-dry, and 5 consecutive dry years; focus on 2026-2030
Water Shortage Contingency Plan	• Structured guide to deal with water shortages, standardized shortage stages with implementation actions to augment supply and/or reduce demand
Demand Management Measures	• Documentation of water use efficiency program implementation; SBX7-7 recap

Water Use Characterization

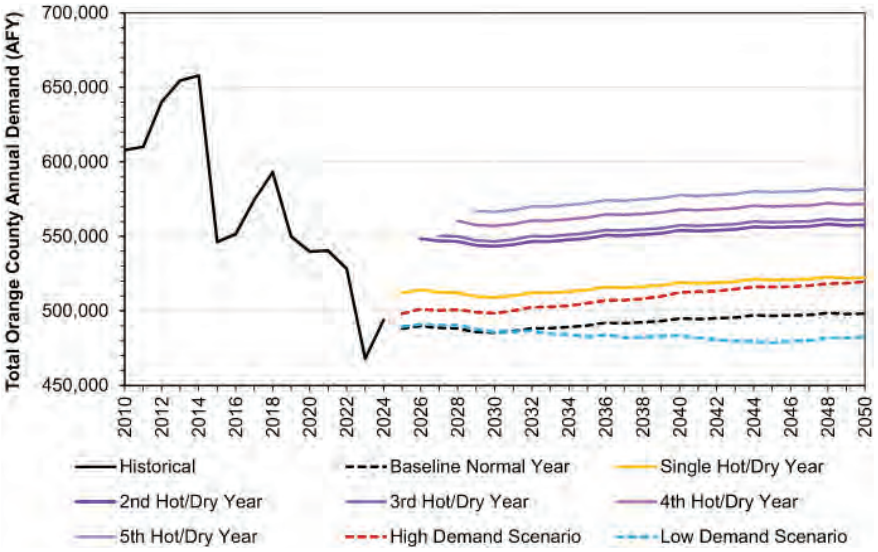
- FY 20-21 and FY 21-22: highest water use over last 5 years due to drought
- FY 22-23 and FY 23-24: lowest water use in 40-yr history
- MWDOC's service area **total** demand over last 5 years: 406,563 AF
- MWDOC's service area **imported** water demand FY24-25: 123,753 AF (31% of total demand)
- Long-term demand trends remain flat



***Total Orange County** demand continues to trend down since early 2000s, while population has increased more than 700,000 (+30%) since early 90s.*

Water Use Projections

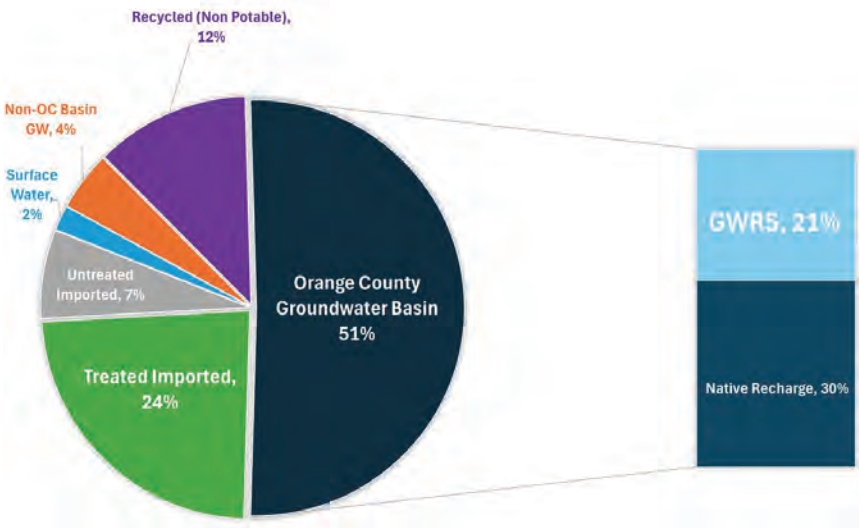
- MWDOC, OCWD & OC retail agencies developed the 2025 OC Water Demand Projection Model.
- Normal year demands projected to be relatively flat through 2050 (baseline demand)
- **Single-dry year**: **5%** increase from normal year demand
- **Five consecutive dry years**: **12-17%** increase from normal year demand
- Demand for MWDOC imported water is projected to **decrease** **7.7%** over 25 yrs:
  - 2025: 123,753 AF
  - **2050: 114,275 AF**



***Total Orange County** water demands under varying hydrologic scenarios*

Water Supply Characterization

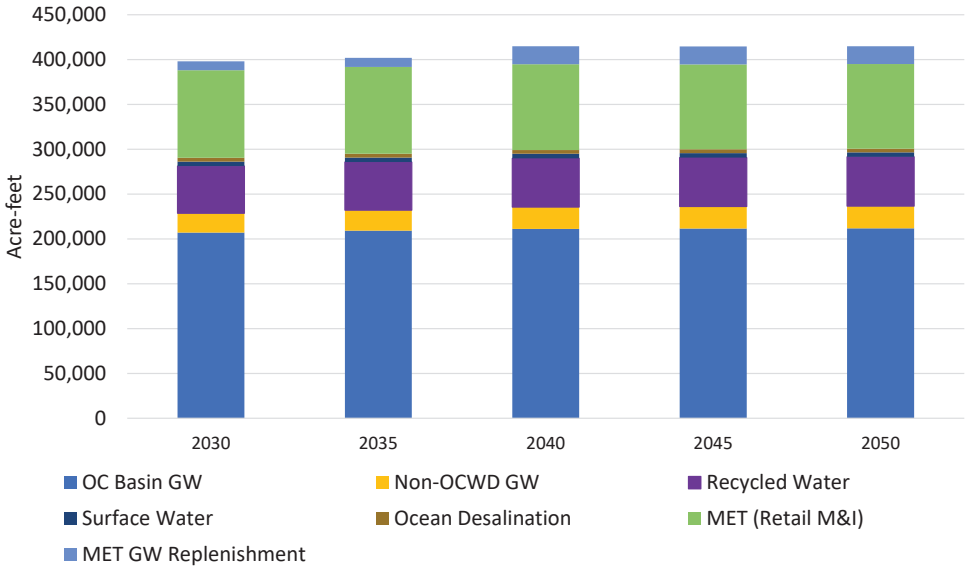
- MWDOC's imported water deliveries FY24-25: 123,753 AF
- Imported water from MET represents ~31% of FY24-25 supply
- Groundwater represents ~55% of FY24-25 supply
- Groundwater pumped within MWDOC's service area has reduced ~4% over last 5 years.



FY 2024-25 supply mix within MWDOC's service area

Water Supply Projections

- Groundwater represents ~57% of future supply. OC Basin BPP[1] projected to remain at 85%.
- Recycled water supply ~13% thru 2050 (54,975 AFY)
- Doheny Ocean Desal (5 mgd or 5,600 AFY) expected online 2030.
- MET imported water ~25% in 2030 ~23% by 2050 (94,275 AFY)



[1] BPP = Basin Pumping Percentage

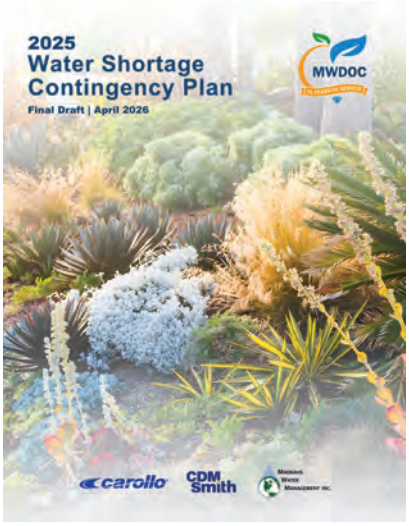
*Supply portfolio to meet demands within **MWDOC's service area** (2030 – 2050)*

Water Supply Reliability Assessment

- MWDOC is projected to meet all imported water demands under normal, single-dry, and five-consecutive-dry year scenarios through 2050.
- MET's reliability is supported by diversified supplies, including Colorado River Aqueduct, State Water Project, storage reserves (>3.8 MAF), groundwater banking, and transfer program.
- Supply augmentation (e.g. storage withdraws) closes any dry-year deficits.
- Local reliability is enhanced by OC Basin management, water reuse, and new local supply projects (e.g., Doheny Desal).

Water Shortage Contingency Plan

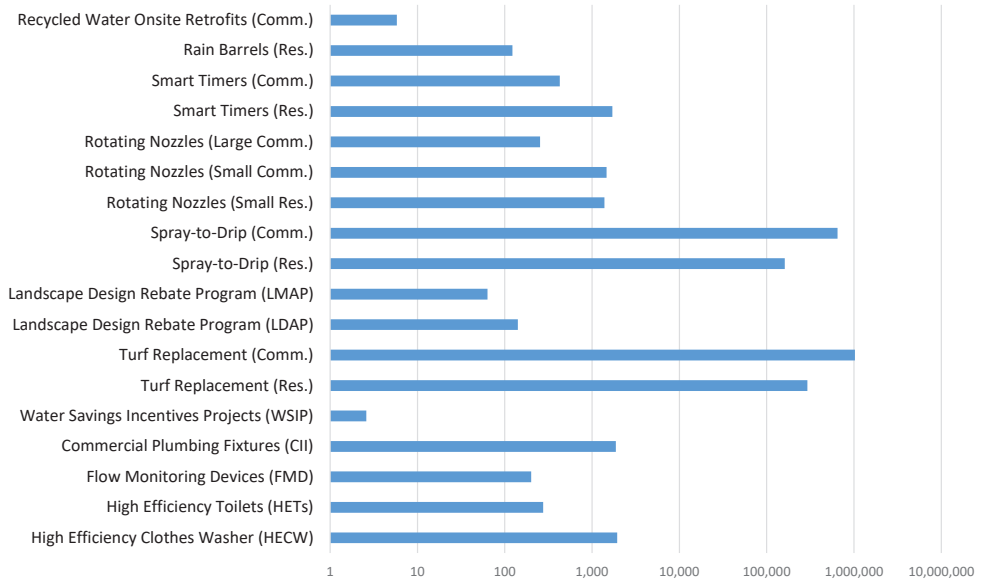
- No new DWR requirements this year.
- Six standardized shortage levels from 10% to >50% shortage).
- Prescriptive supply augmentation and demand reduction actions by shortage level.
- Procedures for Annual Water Supply & Demand Assessments, communication protocols, and emergency response.
- Alignment with MET's Water Supply Allocation Plan and Water Surplus and Drought Management Plan.



MWDOC's Water Shortage Contingency Plan

Demand Management Measures (DMMs)

- As a regional wholesaler, MWDOC's efforts focus on three areas:
  - Regional Program Implementation
  - Local Program Assistance
  - Research and Evaluation
- MWDOC continues to support a comprehensive suits of DMMs.

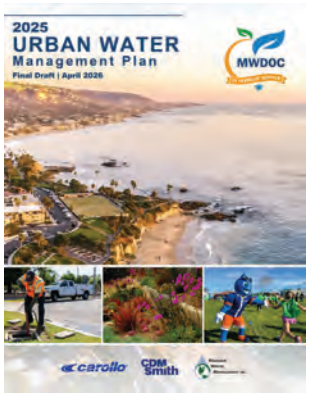


[1] Turf replacement is measured in square feet while other programs are measured in number of devices or projects

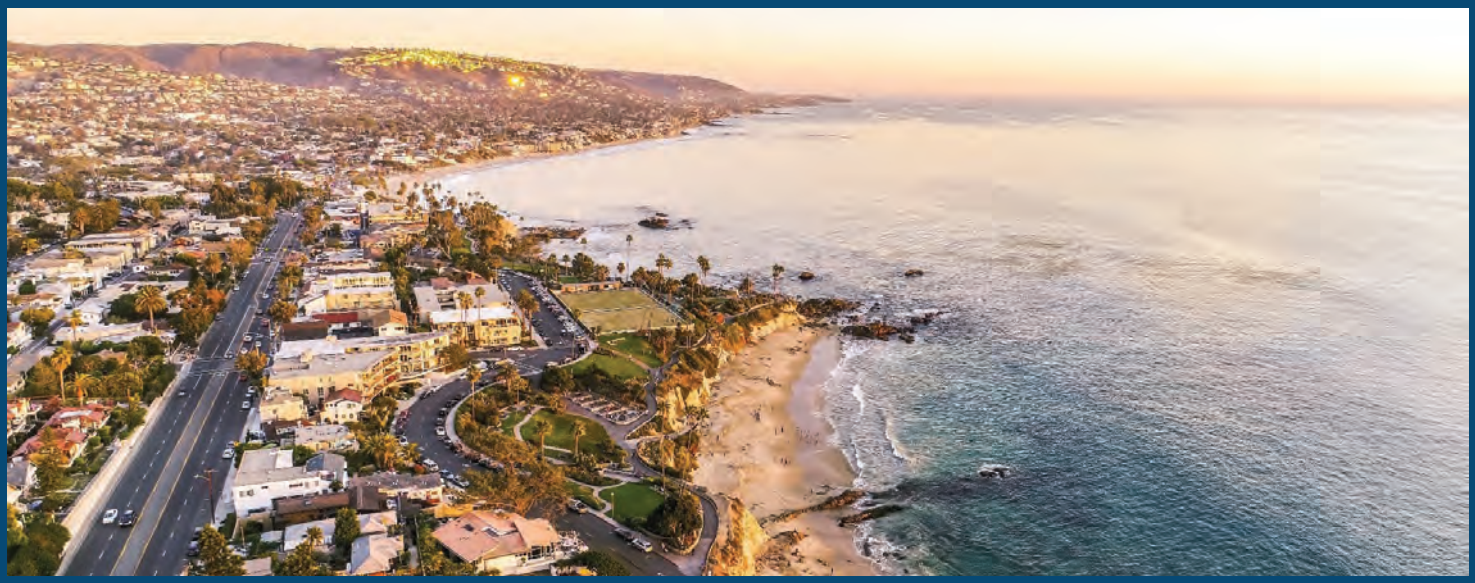
Staff Recommendation

Staff recommends the Board of Directors:

- Open the public hearing (as noticed) regarding the proposed 2025 Urban Water Management Plan and proposed 2025 Water Shortage Contingency Plan to receive input from the public;
- Discuss and consider the proposed plans and resolutions;
- Adopt a resolution Approving the Adoption of the 2025 Water Shortage Contingency Plan; and
- Adopt a resolution Approving the Adoption of the 2025 Urban Water Management Plan.







Thank you!

Item No. 9

ACTION ITEM
May 20, 2026

TO: **Board of Directors**

FROM: **Administration & Finance Committee**

Harvey De La Torre, General Manager

Staff Contact: Hilary Chumpitazi, Director of Finance/IT
Lina Gunawan, Senior Accountant

SUBJECT: **ADOPT A RESOLUTION APPROVING THE INVESTMENT POLICY AND GUIDELINES**

STAFF RECOMMENDATION

Staff recommends the Board of Directors adopt a resolution approving the Investment Policy and Guidelines.

COMMITTEE RECOMMENDATION

The committee concurred with staff recommendation.

REPORT

Purpose

This item requests the Municipal Water District of Orange County (MWDOC or District) Board of Directors (Board) to adopt a resolution approving an update to the Investment Policy and Guidelines (Attachment 1).

Background

To ensure that the District is responsive to changing economic conditions, laws, regulations, and best practices governing public agency investments, Section 2109 of the MWDOC Administrative Code requires an annual review of the Investment Policy. The last review of the Investment Policy and Guidelines was completed by the Board on May 21, 2025, with no changes.

The current Investment Policy and Guidelines, which are outlined in Sections 2100–2109 of MWDOC's Administrative Code, were adopted by the Board at its May 17, 2023 meeting under Resolution No. 2140.

Discussion

The California Debt and Investment Advisory Commission (CDIAC) annually produces the Local Agency Investment Guidelines reflecting current investment statutes to aid local officials in their efforts to implement existing laws pertaining to the investment of public funds. The 2026 Local Agency Investment Guidelines include updates that impact the District's Investment Policy and require Board consideration and approval.

The proposed 2026 updates include the following:

- Statutory and Delegated Authority (Section 2101): Following the passage of Senate Bill (SB) 827, this amendment incorporates a new requirement mandating two hours of fiscal and financial training for local agency officials. The required fiscal and financial training must cover core topics such as investments, debt management, budgeting, and financial reporting. The regulations also include new requirements for recordkeeping and public accessibility of training records.
- Investment Policy Guidelines (Section 2106): extension of the maximum allowable maturity for Commercial Paper investments from 270 days to 397 days.
- Glossary (Section 2110): updates to definitions to ensure consistency with the revised provision in Section 2106 related to Commercial Paper maturity limits.

To ensure compliance with current state requirements and maintain sound financial management practices, staff recommends that the Board of Directors adopt a resolution approving the revised Investment Policy and Guidelines (Attachment 1).

ALIGNMENT WITH BOARD STRATEGIC PRIORITIES

☒ *Clarifying MWDOC's mission and role; defining functions and actions.*
☐ *Balance support for Metropolitan's regional mission and OC values and interests.*
☐ *Strengthen communication and coordination of messaging.*
☐ *Work with member agencies to develop water supply and demand objectives.*
☐ *Solicit input and feedback from member agencies.*
☐ *Invest in workforce development and succession planning.*

BOARD OPTIONS

Option #1: Adopt a resolution approving the revised Investment Policy and Guidelines.

Fiscal Impact: While there is no direct fiscal impact associated with adopting the revised Investment Policy and Guidelines, approval would ensure continued compliance with current state requirements and maintain sound financial management practices.

Option #2: Not adopting the resolution approving the Investment Policy and Guidelines would place the District out of compliance with SB 827 requirements.

Fiscal Impact: None.

Budgeted: ☐ Yes ☐ No ☒ N/A		Budgeted amount:
Core: ☐	Choice: ☐	Movement between Cost Centers: ☐ Yes ☐ No
Action item amount:		

Attachments/Links:
Attachment 1: Draft Resolution Adopting the Investment Policy and Guidelines (Redlined)

INVESTMENT POLICY AND GUIDELINES

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RESOLUTION NO. ____2140

RESOLUTION OF THE
MUNICIPAL WATER DISTRICT OF ORANGE COUNTY
BOARD OF DIRECTORS
APPROVING THE INVESTMENT POLICY AND GUIDELINES
2023

BE IT RESOLVED by the Board of Director of the Municipal Water District of Orange County that the following is the policy and guidelines of the District for investment of funds and rescinds prior Resolution No. 21140, dated May 179, 20231.

SECTION 2100 - PURPOSE

The purpose of this policy is to set forth the investment and operational policies for the management of the public funds of Municipal Water District of Orange County. These policies have been adopted by, and can be changed only by a majority vote of the Board of Directors.

These policies are designed to ensure the prudent management of public funds, the safety of principal, the availability of operating funds when needed, and an investment return competitive with those of comparable funds and financial market indexes.

A copy of this policy will be provided to all investment brokers and investment managers doing business with the Municipal Water District of Orange County. Receipt of this policy, including confirmation that it has been reviewed by persons dealing directly with the Municipal Water District of Orange County's account will be received prior to any organization providing investment services to the Municipal Water District of Orange County.

SECTION 2101 - STATUTORY AND DELEGATED AUTHORITY

Authority to manage the investment of surplus funds is derived from California Government Code Sections 53601, et seq. In accordance with Section 53607 of the Government Code of the State of California, the authority of the Board of Directors to invest public funds may be delegated to the Treasurer for a one-year period, which may be renewed annually.

The Municipal Water District of Orange County (MWDOC) Board of Directors has expressly delegated the investment authority of the Board of Directors to the Treasurer pursuant to Resolution No. 1166. By Resolution No. 1277, the Board of Directors created the office of Deputy Treasurer and delegated to the Deputy Treasurer the authority to direct investment of MWDOC funds under the circumstances set forth in said Resolution, and to make a monthly report of those transactions to the Board. The Board of Directors created the office of Alternate Deputy Treasurer by Resolution No. 1434 and specified

circumstances under which the Alternate Deputy Treasurer would have authority to direct the investment of MWDOC funds.

No person may engage in an investment transaction on behalf of MWDOC unless he or she has been duly appointed by the Board of Directors to the office of Treasurer, Deputy Treasurer, or Alternate Deputy Treasurer, and subject to the limitations and conditions set forth in the Resolutions establishing those offices and the terms of this policy. Notwithstanding the foregoing, upon the occurrence of a vacancy in the office of Treasurer, the Board of Directors may appoint an Acting Treasurer, who shall have and exercise the authority delegated to the Treasurer until appointment of a successor Treasurer by the Board of Directors.

The delegations in Resolution Nos. 1277 and 1434 are renewed on the adoption of this Policy. The Treasurer shall be responsible for all transactions undertaken and shall establish procedures and a system of internal controls to regulate the activities of subordinate officials.

Pursuant to Chapter 661, Statutes of 2025 (SB 827), local agency officials, as defined in the California Government Code, shall complete at least two hours of ethics and two hours of fiscal and financial training once every two years. The fiscal and financial training shall cover laws and principles relating to financial administration, budgeting, financial reporting, capital financing and debt management, and general fiscal and financial planning principles. MWDOC shall maintain training records for at least five years, make them available upon request, and post clear instructions on our website for requesting such records.

SECTION 2101.5 – COMPLIANCE EXCEPTIONS REPORTING

Any compliance exceptions with the Investment Policy and Guidelines (IPG) will be reported within 72 hours to the General Manager, Board President, and the Chair of the Administration & Finance Committee. At the time of reporting, a recommended resolution to the matter shall be included. Notification shall also be included in the monthly Treasurer's Report to the Board of Directors with the resolution noted.

SECTION 2102 - ORGANIZATION

The organizational structure of the investment functions of MWDOC shall consist of the Board of Directors, the Administration & Finance Committee, the Treasurer and Deputy Treasurers. The responsibilities of these groups are as follows:

Board of Directors - the elected body responsible for the administration and investment of the assets of MWDOC. The Board may acquire, hold, manage, purchase, sell, assign, trade, transfer and/or dispose of any security, evidence of debt, or other investment in which MWDOC's assets may be invested by law. To assist them in discharging their responsibilities, the Board shall appoint a Treasurer, Deputy Treasurers and custodians of assets.

Administration & Finance Committee - appointed by the Board to review transactions, performance and asset mix, monitor, recommend policy, and propose adjustments for Board approval.

Treasurer - responsible for the administration and the investment of the funds, subject to the policies and restrictions set by the Board. The Treasurer as investment officer of MWDOC is granted full authority and responsibility by the Board in the purchase, sale, assignment, exchange and transfer of securities and for the safe custody of security holdings, subject to Board policies, rules, regulations and directives consistent with regulatory and statutory limitations. The Treasurer is responsible for interpreting, administering and advising on legal requirements, investment policies and strategies; collecting income, preparation of reports. Also responsible for Deputy Treasurer, and investment staff compliance with this Investment Policy and guidelines.

Deputy Treasurers - act in the absence of the Treasurer as specified within the Resolution of appointment to fulfill the duties and responsibilities as assigned by the Treasurer.

SECTION 2103- INVESTMENT PHILOSOPHY

Except where specifically directed by the State Constitution, statutes or regulations, the general investment policies of MWDOC will be guided by the prudent investor standard ("Standard") set forth in California Government Code Section 53600.3. Under this Standard, those with investment responsibility for public funds are trustees and, as trustees, shall act with care, skill, prudence and diligence under the circumstances then prevailing, including, but not limited to, the general economic conditions and the anticipated needs of MWDOC, that a prudent person acting in a like capacity and familiarity with those matters would use in the conduct of funds of a like character and with like aims to safeguard the principal and maintain the liquidity needs of the agency.

This Standard shall be applied in the context of managing the overall investment portfolio. The investment officer, acting in accordance with written procedures and this investment policy and exercising due diligence shall be relieved of personal responsibility for an individual security's credit risk or market price changes, provided deviations from expectations are reported in a timely fashion and appropriate action is taken to control adverse developments.

SECTION 2104 - SCOPE

It is intended that this Investment Policy cover all funds and investment activities of MWDOC. Any reference to the portfolio shall mean the collection of MWDOC securities held by the Treasurer. Those securities held in Trust or escrow by a third-party Trustee or escrow agent on behalf of MWDOC are invested under the Treasurer's direction in accordance with this Investment Policy and the terms of the specific escrow or trust agreements related to the funds.

MWDOC funds are divided into two categories, and the investment objectives and policies vary with the nature of the fund.

- Operating and Fiduciary Funds - These funds are to provide for the ordinary annual operating expenses of MWDOC (General Fund, Water Fund) and Funds to provide for trustee functions and expenditures (WFC, with the exception of the Debt Service Reserve) and other specified recurring and non-recurring purposes where MWDOC serves in a fiduciary role. These funds are considered "short-term" for investment purposes and will be invested to provide the safety and liquidity to meet all anticipated expenditures.

- Reserve funds – These funds are designated for contingencies or emergencies and may be used to supplement the other funds as necessary. These funds may be invested "longer-term" as defined in this Investment Policy.

SECTION 2105- INVESTMENT OBJECTIVES

When investing, reinvesting, purchasing, acquiring, exchanging, selling or managing MWDOC's funds, the primary objective is to safeguard the principal of the funds. The secondary objective is to meet the liquidity needs of MWDOC. The third objective is to achieve a maximum return on invested funds (California Government Code Section 53600.5.). It is the policy of MWDOC to invest funds in a manner to obtain the highest yield possible while meeting the daily cash flow demands of MWDOC as long as investments meet the criteria established by this investment policy for safety and liquidity and conform to all laws governing the investment of MWDOC's funds.

Safety of Principal.

Safety of principal is the foremost objective of MWDOC. Each investment transaction shall seek to first ensure that capital losses are avoided, whether they arise from securities defaults, institution default, broker-dealer default, or erosion of market value of securities. MWDOC shall mitigate the risk to the principal of invested funds by limiting credit and interest rate risks. Credit risk is the risk of loss due to the failure of a security's issuer or backer. Interest rate risk is the risk that the market value of the MWDOC's portfolio will change due to an increase/decrease in general interest rates.

1) Credit risk will be mitigated by:

   (a) Limiting investments to only the most creditworthy types of permissible investments as described in Section 2106;
   (b) By pre-qualifying the financial institutions with which the Agency will do business; and
   (c) By diversifying the investment portfolio so that the potential failure of any one issue or issuer will not place an undue financial burden on the District.

2) Interest rate risk will be mitigated by:

(a) Structuring the portfolio so that securities mature to meet the District's cash requirements for ongoing obligations, thereby reducing the possible need to sell securities on the open market at a loss prior to their maturity to meet those requirements; and
(b) Investing primarily in shorter term securities.

Liquidity

Availability of sufficient cash to pay for current expenditures shall be maintained. An adequate percentage of the portfolio shall be maintained in liquid short-term securities which can be converted to cash as necessary to meet disbursement requirements. Since cash requirements cannot always be anticipated, sufficient investments in securities with active secondary or resale markets shall be utilized.

Rates of Return

Yield on investments shall be considered only after the basic requirements of safety and liquidity have been met. The investment portfolio shall be designed to attain a market average rate of return throughout budgetary and economic cycles, taking into account the MWDOC's risk constraints, the composition and cash flow characteristics of the portfolio, and applicable laws.

SECTION 2106- INVESTMENT POLICY GUIDELINES

MWDOC authorized investment types, amounts, maturities, and other characteristics are stated in the Government Code Section 53601 (as periodically amended), and with the following exceptions as noted below.

° Collective Investment Pools - Assets of any of the funds may be invested in collective investment pools run and managed by other public bodies and banks that are approved by the Board of Directors. However, no such investment shall be made in a pool where the investment objectives differ from the investment objectives listed in Section 2105 of this investment policy, nor should any investment be made in a fund that engages in market timing or anticipating interest rate changes or that uses derivatives or other securities other than as a hedge against interest rate risk. The investment shall not exceed 20% of portfolio in effect immediately after such investment and no more than 10% in one pool.

° Money Market Mutual Funds - Investment in shares of money market mutual funds may be made if the investments meet the same restrictions as those of collective investment pools. In addition, purchase of these funds must not result in payment of a purchase premium or commission. These mutual funds must attain the

highest ranking of two nationally recognized ratings services and the investment adviser must be registered with the Securities and Exchange Commission (SEC) as an investment adviser with not less than five years' experience managing market mutual funds with investment portfolios of greater than $500 million. An investment shall not exceed 20% of portfolio in effect immediately after such investment.

- Cash Holdings - The portfolio will hold sufficient cash equivalent investments to ensure availability of sufficient funds to meet known obligations for the next three months. Idle cash will be invested to the fullest extent practicable in interest-bearing investments.

- Other permissible investments for the Operating and Fiduciary funds are:

  - Bank checking accounts, time deposits or certificates of deposit not to exceed the current Federal Deposit Insurance Corporation (FDIC) limit without being collateralized.
  - Negotiable Certificates of Deposit shall not exceed 30% of portfolio in effect immediately after such investment and no more than 5% in one issuer.
  - U.S. Treasury obligations.
  - U.S. Government Agency obligations and, U.S. Government Instrumentality obligations. May not invest more than 50% of portfolio from one issuer.
  - Prime Commercial Paper rated A-1/P-1/F-1 by Moody's, Standard and Poor's or Fitch. May not exceed 25% of portfolio in effect immediately after such investment and may purchase no more than 10% of the outstanding commercial paper of any single issuer. The maximum maturity for Commercial Paper is 397~~270~~ days.
  - Prime Banker's Acceptances rated A-1/P-1/F-1 by Moody's, Standard and Poor's or Fitch shall not exceed 40% of portfolio in effect immediately after such investment and no more than 5% may be of any one commercial bank. The maximum maturity is 180 days.
  - Corporate Securities (Medium-Term Notes) with a rating of "A" or better by at least two nationally recognized rating services. Shall not exceed 30% of portfolio in effect immediately after such investment with no more than 10% in one issuer.
  - Loans with an agreement for the collateral to be repurchased by the borrower (Repurchase Agreements); the amount of such instruments will not exceed 20% of the market value of the portfolio with no more than 10% from one issuer. Maximum maturity is 1 year. U.S. Treasury and Agency securities are acceptable collateral with a market value of at least 102% of the value of the Repurchase Agreement. Prior to investment, a Master Repurchase Agreement will be signed with the qualified counterparty.

- Permissible investments for Reserve Funds are:

    - All investments permitted for the Operating and Fiduciary funds, except maturities may not exceed five years without Board approval prior to investment.

- Prohibited Investments and Investment Practices - The following are prohibited:

    - Purchases on margin or short sales.
    - "Derivative" securities of any type.
    - Lending securities with an agreement to buy them back after a stated period of time (Reverse Repurchase Agreements).
    - Futures, Options and Margin Trading
    - In no instance shall a swap be used in speculation. Losses are only acceptable if the proposed swap or trade can clearly enhance quality or yield (value) over the life of the new security on a Total Return basis.
    - Investments are limited to maturities of five years or less without express authorization of the Board prior to the investment.

- Diversification - The investment portfolio will be diversified to avoid undue concentration in securities of one type or securities of one financial institution, so that no single investment or class of investments can have a disproportionate impact on the total portfolio. This restriction does not apply to U.S. Treasury securities.

- Exemptions - Any investment currently held that does not meet the guidelines of this policy shall be exempted from the requirements of this policy. At maturity or liquidation, such monies shall be reinvested only as provided by the current policy.

SECTION 2107 - EXECUTION

The responsibility for the execution of security transactions shall rest with such qualified members of the investment staff as designated by the Board. The selection of the broker-dealer for a specific transaction shall be based on price and yield quotations. Every effort shall be made to obtain appropriate discounts on individual orders.

Security orders shall be placed on the basis of accepted investment practices. All security transactions, including for repurchase agreements, entered into by MWDOC shall be on a Delivery-vs.-Payment (DVP) basis, i.e. payment will be made upon receipt of the securities to the safekeeping or trust account or custodial facility. All securities shall be held in MWDOC's name pursuant to an agreement and all financial institutions are instructed to mail confirmation and safekeeping receipts directly to MWDOC within three business days after the trade.

Receipts for the confirmation of trades of authorized securities will include information on trade date, par value, maturity, interest rate, price, yield, settlement date, description of securities purchased, agency's name, amount due, and third party custodial information.

SECTION 2108 - PERSONAL CONDUCT

The Board of Directors of Municipal Water District of Orange County is acutely aware of the responsibilities the staff has in administering the investment assets of MWDOC.

Members of the Board of Directors, the Treasurer, Deputy Treasurers and members of the investment staff may not have a direct or indirect interest in the gains or profits of any investment made by MWDOC and may not receive any pay or emolument (profit arising from office or employment usually in the form of compensation or perquisites) for services other than as designated by MWDOC for compensation and authorized expenses.

All persons responsible for investment decisions or who are involved in the management of MWDOC assets shall be governed in their personal investment activities by the codes of conduct established by the applicable state statutes, the Financial Industry Regulatory Authority (FINRA), the Securities and Exchange Commission, and the Code of Ethics and Standards of Professional Conduct of the Association for Investment Management and Research.

All persons responsible for investment decisions or who are involved in the management of MWDOC assets shall refrain from any personal business activity that could conflict with the proper execution and management of the MWDOC investment program, or that could impair their ability to make impartial investment decisions.

SECTION 2109 - REPORTING

The Treasurer shall prepare an investment report monthly, including a management summary that provides the status of the current investment portfolio and transactions made over the last month. The Report shall be submitted within forty-five (45) days following the month ended. The report should be provided to and reviewed by the General Manager, the Administration & Finance Committee and provided to the Board of Directors. The report will include the following:

- A listing of individual securities held at the end of the reporting period;
- Average weighted yield to maturity of portfolio on MWDOC investments;
- Listing of investments by maturity date;
- Market values of current investments;
- Percentage of the total portfolio which each type of investment represents.

This investment policy shall be reviewed by the Administration and Finance Committee annually and as frequently as necessary, to enable the Treasurer to respond to changing economic and market conditions.

SECTION 2110 - GLOSSARY

AGENCIES: Federal agency securities and/or Government-sponsored enterprises.

ANNUAL COMPREHENSIVE FINANCIAL REPORT (ACFR): A set of government financial statements comprising the financial report of a government entity that complies with the accounting requirements of the Governmental Accounting Standards Board (GASB). It is composed of three sections: Introductory, Financial and Statistical.

ASKED: The price at which securities are offered.

BANKERS' ACCEPTANCE (BA): A draft or bill or exchange accepted by a bank or trust company. The accepting institution guarantees payment of the bill, as well as the issuer.

BENCHMARK: A comparative base for measuring the performance or risk tolerance of the investment portfolio. A benchmark should represent a close correlation to the level of risk and the average duration of the portfolio's investments.

BID: The price offered by a buyer of securities. (When you are selling securities, you ask for a bid.) See Offer.

BROKER: A broker brings buyers and sellers together for a commission.

BROKER-DEALER: A person or firm acting as a principal in securities transaction as either a broker or a dealer depending on the transaction. Technically, a broker is only an agent who executes orders on behalf of clients, whereas a dealer acts as a principal and trades from the firm's own account. Transaction confirmations must disclose this information. Because most brokerage firms act as both brokers and principals, the term broker-dealer is commonly used to describe them.

CASH EQUIVALENTS (CE): Highly liquid and safe instruments or investments that can be converted into cash immediately. Examples include bank accounts, money market funds, and Treasury bills.

CERTIFICATE OF DEPOSIT (CD): A time deposit with a specific maturity that usually pays interest. Also referred to as Negotiable CD's, they are insured by FDIC up to $250,000, but they are not collateralized beyond that amount.

COLLATERAL: Securities, evidence of deposit or other property, which a borrower pledges to secure repayment of a loan. Also refers to securities pledged by a bank to secure deposits of public monies.

COMMERCIAL PAPER: Short-term unsecured promissory note issued by corporations or municipalities with maturities ranging from 2 to 397~~270~~ days.

COUPON: (a) The annual rate of interest that a bond's issuer promises to pay the bondholder on the bond's face value. (b) A certificate attached to a bond evidencing interest due on a payment date.

DEALER: A dealer, as opposed to a broker, acts as a principal in all transactions, buying and selling for his own account.

DEBENTURE: A bond secured only by the general credit of the issuer.

DELIVERY VERSUS PAYMENT: There are two methods of delivery of securities: delivery versus payment and delivery versus receipt. Delivery versus payment is delivery of securities with an exchange of money for the securities. Delivery versus receipt is delivery of securities with an exchange of a signed receipt for the securities.

DERIVATIVES: (1) Financial instruments whose return profile is linked to, or derived from, the movement of one or more underlying index or security, and may include a leveraging factor, or (2) financial contracts based upon notional amounts whose value is derived from an underlying index or security (interest rates, foreign exchange rates, equities or commodities).

DISCOUNT: The difference between the cost price of a security and its maturity when quoted at lower than face value. A security selling below original offering price shortly after sale also is considered to be at a discount.

DISCOUNT SECURITIES: Non-interest bearing money market instruments that are issued a discount and redeemed at maturity for full face value *(e.g., U.S. Treasury Bills.)*

DIVERSIFICATION: Dividing investment funds among a variety of securities offering independent returns.

DURATION: A measure of the sensitivity of the price (the value of principal) of a fixed-income investment to a change in interest rates. Duration is expressed as a number of years. Rising interest rates mean falling bond prices, while declining interest rates mean rising bond prices.

FEDERAL CREDIT AGENCIES: Agencies of the Federal government set up to supply credit to various classes of institutions and individuals, *e.g.*, S&L's, small business firms, students, farmers, farm cooperatives, and exporters.

FEDERAL DEPOSIT INSURANCE CORPORATION (FDIC): A federal agency that insures bank deposits, currently up to $250,000 per entity.

FEDERAL FUNDS RATE: The rate of interest at which Fed funds are traded. This rate is currently pegged by the Federal Reserve through open-market operations.

FEDERAL HOME LOAN BANKS (FHLB): Government sponsored wholesale banks (currently 12 regional banks), which lend funds and provide correspondent banking services to member commercial banks, thrift institutions, credit unions and insurance companies. The mission of the FHLBs is to liquefy the housing related assets of its members who must purchase stock in their district Bank.

FEDERAL NATIONAL MORTGAGE ASSOCIATION (FNMA): FNMA, like GNMA was chartered under the Federal National Mortgage Association Act in 1938. FNMA is a federal corporation working under the auspices of the Department of Housing and Urban Development (HUD). Fannie Mae, as the corporation is called, is a private stockholder-owned corporation. The corporation's purchases include a variety of adjustable mortgages and second loans, in addition to fixed-rate mortgages. FNMA's securities are also highly liquid and are widely accepted. FNMA assumes and guarantees that all security holders will receive timely payment of principal and interest.

FEDERAL OPEN MARKET COMMITTEE (FOMC): Consists of seven members of the Federal Reserve Board and five of the twelve Federal Reserve Bank Presidents. The President of the New York Federal Reserve Bank is a permanent member, while the other Presidents serve on a rotating basis. The Committee periodically meets to set Federal Reserve guidelines regarding purchases and sales of Government Securities in the open market as a means of influencing the volume of bank credit and money.

FEDERAL RESERVE SYSTEM: The central bank of the United States created by Congress and consisting of a seven member Board of Governors in Washington, D.C., 12 regional banks and about 3,543 commercial banks that are members of the system.

FITCH, INC.: (See Nationally Recognized Statistical Rating Organization)

GOVERNMENT NATIONAL MORTGAGE ASSOCIATION (GNMA or Ginnie Mae): Residential mortgage-backed security (MBS) instruments influencing the volume of bank credit guaranteed by GNMA and issued by geographically diverse mortgage companies, commercial banks, and thrifts of all sizes, as well as state housing finance agencies. Security holder is protected by full faith and credit of the U.S. Government. Ginnie Mae securities are backed by the FHA, VA or FHA mortgages. The term "pass-throughs" is often used to describe Ginnie Maes.

LIQUIDITY: A liquid asset is one that can be converted easily and rapidly into cash without a substantial loss of value. In the money market, a security is said to be liquid if the spread between bid and asked prices is narrow and reasonable size can be done at those quotes.

LOCAL GOVERNMENT INVESTMENT POOL (LGIP): The aggregate of all funds from political subdivisions that are placed in the custody of the State Treasurer for investment and reinvestment.

MARKET VALUE: The price at which a security is trading and could presumably be purchased or sold.

MASTER REPURCHASE AGREEMENT: A written contract covering all future transactions between the parties to repurchase—reverse repurchase agreements that establishes each party's rights in the transactions. A master agreement will often specify, among other things, the right of the buyer-lender to liquidate the underlying securities in the event of default by the seller borrower.

MATURITY: The date upon which the principal or stated value of an investment becomes due and payable.

MEDIUM TERM NOTES: Debt securities issued by a corporation or depository institution with a maturity of five years or less. This can also include debt securities originally issued for maturities longer than five years, but which have now fallen within the five year maturity range. If issued by a bank they are also referred to as "bank notes".

MOODY'S INVESTORS SERVICES, INC.: (See Nationally Recognized Statistical Rating Organization)

MONEY MARKET: The market in which short-term debt instruments (bills, commercial paper, bankers' acceptances, etc.) are issued and traded.

NATIONALLY RECOGNIZED STATISTICAL RATING ORGANIZATION: Firms that review the creditworthiness of the issuers of debt securities and express their opinion in the form of letter ratings (e.g. AAA, AA, A, BBB, etc.). The primary rating agencies are the following Standard & Poor's Corporation, Moody's Investor Services, Inc., and Fitch, Inc.

OFFER: The price asked by a seller of securities. (When you are buying securities, you ask for an offer.) See Asked and Bid.

OPEN MARKET OPERATIONS: Purchases and sales of government and certain other securities in the open market by the New York Federal Reserve Bank as directed by the FOMC in order to influence the volume of money and credit in the economy. Purchases inject reserves into the bank system and stimulate growth of money and credit; sales have the opposite effect. Open market operations are the Federal Reserve's most important and most flexible monetary policy tool.

OPTIONS: A contract that gives the buyer the right to buy or sell an obligation at a specified price for a specified time.

PORTFOLIO: Collection of securities held by an investor.

PRIMARY DEALER: A group of government securities dealers who submit weekly reports of market activity and positions and monthly financial statements to the Federal

Reserve Bank of New York and are subject to its informal oversight. Primary dealers include Securities and Exchange Commission (SEC)-registered securities broker-dealers, banks, and a few unregulated firms.

PRUDENT PERSON RULE: An investment standard. In some states the law requires that a fiduciary, such as a trustee, may invest money only in a list of securities selected by the custody state—the so-called legal list. In other states the trustee may invest in a security if it is one which would be bought by a prudent person of discretion and intelligence who is seeking a reasonable income and preservation of capital.

QUALIFIED PUBLIC DEPOSITORIES: A financial institution which does not claim exemption from the payment of any sales or compensating use or ad valorem taxes under the laws of this state, which has segregated for the benefit of the commission eligible collateral having a value of not less than its maximum liability and which has been approved by the Public Deposit Protection Commission to hold public deposits.

RATE OF RETURN: The yield obtainable on a security based on its purchase price or its current market price. This may be the amortized yield to maturity on a bond the current income return.

REPURCHASE AGREEMENT (REPO): A holder of securities sells these securities to an investor with an agreement to repurchase them at a fixed price on a fixed date. The security "buyer" in effect lends the "seller" money for the period of the agreement, and the terms of the agreement are structured to compensate him for this.

REVERSE REPURCHASE AGREEMENT (REVERSE REPO): A reverse-repurchase agreement (reverse repo) involves an investor borrowing cash from a financial institution in exchange for securities. The investor agrees to repurchase the securities at a specified date for the same cash value plus an agreed upon interest rate. Although the transaction is similar to a repo, the purpose of entering into a reverse repo is quite different. While a repo is a straightforward investment of public funds, the reverse repo is a borrowing.

SAFEKEEPING: A service to customers rendered by banks for a fee whereby securities and valuables of all types and descriptions are held in the bank's vaults for protection.

SECONDARY MARKET: A market made for the purchase and sale of outstanding issues following the initial distribution.

SECURITIES & EXCHANGE COMMISSION: Agency created by Congress to protect investors in securities transactions by administering securities legislation.

SEC RULE 15(C) 3-1: See Uniform Net Capital Rule.

STANDARD & POOR'S CORPORATION: (See Nationally Recognized Statistical Rating Organization)

STRUCTURED NOTES: Notes issued by Government Sponsored Enterprises (FHLB, FNMA, SLMA, etc.) and Corporations, which have imbedded options (e.g., call features, step-up coupons, floating rate coupons, derivative-based returns) into their debt structure. Their market performance is impacted by the fluctuation of interest rates, the volatility of the imbedded options and shifts in the shape of the yield curve.

TOTAL RETURN: A measure of performance, Total Return is the actual rate of return of an investment or a pool of investments, over a given evaluation period. Total Return accounts for two categories of return: income and capital appreciation. Income includes interest paid by fixed-income investments, distributions or dividends. Capital appreciation represents the change in the market price of an asset.

TREASURY BILLS: A non-interest bearing discount security issued by the U.S. Treasury to finance the national debt. Most bills are issued to mature in three months, six months, or one year.

TREASURY BONDS: Long-term coupon-bearing U.S. Treasury securities issued as direct obligations of the U.S. Government and having initial maturities of more than 10 years.

TREASURY NOTES: Medium-term coupon-bearing U.S. Treasury securities issued as direct obligations of the U.S. Government and having initial maturities from two to 10 years.

TREASURY SECURITIES: Securities issued by the U.S. Treasury and backed by the full faith and credit of the United States. Treasuries are considered to have no credit risk and are the benchmark for interest rates on all other securities in the U.S. and overseas. The Treasury issues both discounted securities and fixed coupon notes and bonds.

UNIFORM NET CAPITAL RULE: Securities and Exchange Commission requirement that member firms as well as nonmember broker-dealers in securities maintain a maximum ratio of indebtedness to liquid capital of 15 to 1; also called net capital rule and net capital ratio. Indebtedness covers all money owed to a firm, including margin loans and commitments to purchase securities, one reason new public issues are spread among members of underwriting syndicates. Liquid capital includes cash and assets easily converted into cash.

U.S. GOVERNMENT AGENCY SECURITIES: Debt securities issued by U.S. Government sponsored enterprises and federally related institutions (FHLB, Federal Home Loan Mortgage Corporation (FHLMC or Freddie Mac), FNMA).

YIELD: The rate of annual income return on an investment, expressed as a percentage. (a) INCOME YIELD is obtained by dividing the current dollar income by the current market price for the security. (b) NET YIELD or YIELD TO MATURITY is the current income yield minus any premium above par or plus any discount from par in purchase price, with the

adjustment spread over the period from the date of purchase to the date of maturity of the bond.

BE IT FURTHER RESOLVED, the investment policy shall be reviewed by the Administration & Finance Committee annually, and as frequently as necessary, to enable the Treasurer to respond to changing market conditions;

PASSED AND ADOPTED by the Board of Directors of the Municipal Water District of Orange County at its regular meeting held on May ~~17~~20, 202~~3~~6, by the following roll call vote:

AYES:
NOES:
ABSTAIN:
ABSENT:

~~Maribeth Goldby~~Angela Crespi
District Secretary
Municipal Water District of Orange County

GENERAL MANAGER REPORT OF STAFF ACTIVITIES

May 2026

MWDOC Member Agency Managers' Meeting

On April 16, MWDOC held its Member Agency Managers' meeting via Zoom.

In attendance: Rudy Correa – Brea, Mike McGee – Buena Park, David Youngblood – East Orange County Water District, Dennis Cafferty – El Toro Water District, Mark Sprague – Fountain Valley, Cody Nicolae – Garden Grove, John Poehler and Kristen Schroeder – Huntington Beach, Paul Weghorst – Irvine Ranch Water District, Keith Van Der Maaten – Laguna Beach County Water District, Jake Chavira – La Palma, Johnathan Cruz – Moulton Niguel Water District, Mark Vukojevic and Steffen Catron – Newport Beach, Sonny Tran – Orange, Dustin Burnside and Dave Rebensdorf – San Clemente, Iris Lee – Seal Beach, Andrew Wiesner – Serrano Water District, Kyle Gough – South Coast Water District, Larry McKenney and Michael Perea – Trabuco Canyon Water District, Michael Chandler - Tustin, Noelani Leal – Westminster, Douglas Davert - Yorba Linda Water District

Staff in attendance: Harvey De La Torre, Charles Busslinger, Damon Micalizzi, Heather Baez, Sarina Sriboonlue, Beth Fahl, Jared Dawson, Cassidy Harding, Angela Crespi, Pari Francisco, and Kathy Pham

General Meeting Information/Discussion Items:

- MWDOC Update
  a. Draft Board Agendas
  b. MWDOC Final Draft Budget for Fiscal Years 2026-27 and 2027-28
  c. MWDOC Water Rates for Fiscal Year 2026-27
- Metropolitan Update
  a. Metropolitan Proposed Biennial Budget for Fiscal Years 2026-27 and 2027-28
- Engineering Update
  a. 2025 Urban Water Management Plans Update and Water Shortage Contingency Plans Update
  b. Consumer Confidence Reports Update
  c. Lead & Copper Rule Improvements Update
- Government Affairs Update
  a. SB 872 (McNerney) Coalition Letter
  b. AB 2215 (Calderon) Coalition Letter

The next meeting will be held via Zoom on May 21, 2026.

ENGINEERING AND PLANNING

2025 URBAN WATER MANAGEMENT PLANS AND 2025 WATER SHORTAGE CONTINGENCY PLANS

Staff will recommend scheduling a public hearing at the May 20, 2026, Regular Meeting to receive public input and consider adoption of the proposed 2025 Urban Water Management Plan (UWMP) and the proposed 2025 Water Shortage Contingency Plan (WSCP).

UPCOMING METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA (METROPOLITAN) SHUTDOWNS

Metropolitan completed two shutdowns in the Spring 2026 with impacts to Orange County, including the Diemer Water Treatment Plant Shutdown (March 2-8, 2026) to install backup chlorine feed lines, diffusers, and additional sampling lines to provide additional redundancy, and the Irvine Cross Feeder Shutdown (April 8-10, 2026) to inspect the pre-stressed concrete cylinder pipe (PCCP). Both shutdown events were successful.

Metropolitan staff have begun planning for the FY 2026-27 shutdown season. MWDOC staff is currently coordinating with Metropolitan and affected agencies for a 7-day shutdown of the Allen McColloch Pipeline (AMP). During the shutdown, Metropolitan will inspect the remaining 7 miles of unlined Prestressed Concrete Cylinder Pipeline (PCCP) to assess its condition to assist with planning of future PCCP rehabilitation of the remaining unlined reaches of the AMP.

Tentative dates for the AMP inspection are either October 2026 or February 2027.

EMERGENCY PREPAREDNESS

INCIDENTS/EVENTS

(A LISTED ONLY INCLUDES WEROC INVOLVEMENT. EVENTS AND INCIDENTS HAPPEN EVERY DAY, BUT MAY NOT REQUIRE REPORTING, OR COORDINATION WITH WEROC)

Carbon Fire Incident – One Agency

April 25: Carbon Fire, Brea - WEROC coordinated with the City of Brea's Water Division at the onset of a vegetation fire. Updates were shared about potential threats to nearby structures. Water service was not impacted. Orange County Fire Authority used the Diemer Treatment Plant heli-hydrant for suppression efforts. The fire was contained at just over 200 acres.

Cyber Incident – Two Agencies

WEROC MEMBER AGENCY PLANNING, COORDINATION, AND PROGRAM EFFORTS

America's Water Infrastructure Act (AWIA) Compliance

In April, Herndon Solutions Group (HSG) conducted Emergency Response Plan (ERP) revision workshops, including Risk and Resilience Assessments (RRAs) with Tiers 2 and Tier 3 participating agencies. The WEROC team joined in meetings to provide direct technical support and coordination assistance to member agencies. A total of nine meetings were held for this project.

WEROC Legislation Watch

Vicki provided comments during the first week of April before going out on leave.

Vicki continues to monitor state legislation and policy proposals emerging from the January 2025 Los Angeles County wildfires that impact water and wastewater emergency operations, infrastructure resilience, and mutual aid. Vicki participated in multiple calls with the American Water Works Association (AWWA), the California Municipal Utilities Association (CMUA), and the Association of California Water Agencies (ACWA).

Vicki works with partner associations to provide input, recommended language, and operational considerations on proposed legislation. This coordination is focused on ensuring alignment with real-world operations, mutual aid frameworks, and established emergency management principles.

WEROC Readiness Mobile Command Vehicle/Peters Canyon Location

The Mobile Command Vehicle is maintained through regular testing protocols to ensure sustained operational readiness. Peter's Canyon location is in a continuous state of readiness.

WEROC PRESENTATIONS, TRAINING, AND EXERCISES

Presentations:

4/3: Chapman University - Disaster Resilience & Community Partnership Summit (Vicki)

Training and Exercises for Member and Partner Agencies in April:

4/2: Orange County Water District (OCWD) - Custom Management Training/Tabletop (Vicki)

WEROC Regional Fuel Planning Project

In early April, the Regional Fuel Plan Request For Proposals (RFP) was submitted to Legal for formal review, advancing it through the RFP approval process. In support of this initiative, staff continue to conduct open conversations with Member Agencies through meetings to identify operational gaps and strengthen fuel planning efforts. This coordination continues to be critical in ensuring the Regional Fuel Plan's operational effectiveness during emergency response. Stakeholder discussions focused on fuel types, operational protocols, and the identification and establishment of Fuel Points of Distribution (FPODs) to support emergency continuity of operations, as recommended by WEROC member agency operations staff.

At the time of this report, legal counsel has confirmed receipt of the RFP, which is currently under review.

OPERATIONAL AREA, STATE AND FEDERAL MEETINGS

Airport Fire

Continuation of the Local Public Health Declaration coordination with the County Health Officer.

The WEROC team helped coordinate communications between the impacted member agency and the County Health Officer.

Disaster Resilience & Community Partnership Summit: Co-Creating Actionable Solutions for Southern California Communities at Chapman University, Orange

The WEROC team attended the Disaster Resilience & Community Partnership Summit at Chapman University, where staff engaged with subject matter experts and stakeholders on disaster resilience strategies and inter-agency collaboration. During the summit, Vicki participated in a panel presentation, and the WEROC team participated in

discussions and activities to advance the critical role of water agencies in regional emergency management and community resilience. The team provided substantive input advocating for water-sector representation in disaster planning, addressing how natural and human-made hazards affect communities, and positioning WEROC's collaborative approach to supporting member agencies through a community resilience framework. This engagement strengthened WEROC's visibility within academic and professional networks while reinforcing the interconnection between water infrastructure, emergency preparedness, and regional disaster resilience.

John Wayne Airport 2026 AIREX (Airport Exercise) Full-Scale Exercise

WEROC participated as both observer and evaluator in John Wayne Airport's 2026 AIREX Full-Scale Exercise, a federally mandated drill simulating a commercial aviation emergency. The exercise brought together multiple agencies to assess emergency coordination, communication protocols, and inter-agency collaboration during a complex incident response. As observers, WEROC staff gained operational insight into large-scale emergency management procedures. In an evaluator capacity, the team provided formal feedback on response systems and processes that contribute to continuous improvement planning for future emergency response efforts.

2026 Children’s Water Education Festival

The WEROC team participated in the 2026 Children's Water Education Festival at Oak Canyon Park, presented by the Orange County Water District. It reached approximately 7,000 third through fifth-grade students over two days. WEROC deployed the Mobile Command Vehicle (MCV) as an educational asset and provided substantive feedback on OCWD's event Safety Plan, developed by James Event Productions, to support OCWD's event coordination.

The WEROC team also provided support to MWDOC’s student participants on water education, including WEROC's role in regional emergency management, the critical importance of water agencies in community resilience, and foundational emergency preparedness concepts, such as the development and maintenance of emergency go-bags. This engagement strengthened WEROC's community presence and advanced early awareness of emergency preparedness among local youth. In addition, the Mobile Command Vehicle supported member agencies by providing cold drinking water and power to charge their laptops.

OTHER EVENTS, INFORMATION, AND WEROC ACTIVITIES

Federal Shutdown Impacts on WEROC Agencies (Training & Grant Impacts)

The Federal Emergency Management Agency’s (FEMA) online Independent Study website has been restored as of April 16. While FEMA National Incident Management System (NIMS) online courses are now accessible, users experiencing technical issues

accessing their accounts may not receive support due to ongoing federal circumstances. WEROC will continue to assist member agencies as needed.

WEROC has been coordinating with Member Agencies to schedule state and federal training to support the adjustable training program.

Regional Water Distribution Plan - Vendor Outreach for Packaged and Bulk Potable Water

The WEROC Team continues targeted outreach to water distribution providers to enhance emergency potable water supply capabilities across Orange County. This ongoing effort focuses on identifying vendors that provide bottled and canned water, 3- and 5-gallon jug services, and bulk water hauling/tanker delivery, while gaining a general understanding of scalability, incident prioritization, and potential alignment with emergency procurement and mutual aid frameworks.

This work remains in progress, and no decisions or agreements have been finalized. Information gathered, such as points of contact and an understanding of different providers' capabilities and capacities, will inform future considerations for a "menu of options" for emergency water distribution, including potential approaches for contracts, activation, and coordination. A more detailed update will be provided to the Board of Directors (Board) in the coming months.

WEROC Emergency Operations Center (EOC) Readiness

On March 31, the WEROC team met with Moulton Niguel Water District (MNWD), which is serving as an alternate EOC location. WEROC and MNWD visited the site, which is still under construction, and reviewed the furniture and layout as a team. The Use of Facility Agreement has also been completed.

PUBLIC/GOVERNMENT AFFAIRS

MEMBER AGENCY SUPPORT

Public Affairs Staff:

- Designed and translated summer bill inserts to provide to Member Agencies.
- Engineering Department Support: Facilitated Consumer Confidence Report 1-on-1 Meetings with participating Member Agencies and Stetson Engineering.
- Sent invitations to the Public Affairs Workgroup members and planned for the April 29 meeting.
- Designed and distributed a *Writing to Win!* Grant Workshop email invitation and flyer for the MWDOC workshop on May 20, presented by Soto Resources.

Government Affairs Staff:

- Circulated the monthly Grants Tracking & Acquisition Report to all participating Member Agencies.
- Provided an overview of Assembly Bill (AB) 2215 (Calderon) and Senate Bill (SB) 872 (McNerney), both sponsored by the State Water Contractors, to the Municipal Water District of Orange County (MWDOC) Member Agency General Managers and shared the opportunity to join both coalition letters.

COMMUNITY AND SPECIAL EVENTS

Public Affairs Staff:

- Hosted information booth at:
  - OC Coastkeeper's Earth Day Beach Cleanup in Huntington Beach with over 300 volunteers in attendance on April 18;
  - Water University of California, Irvine (UCI) Health Earth Day Fair in Irvine on April 21, and engaged with over 100 attendees; and
  - Santiago Canyon College in Orange and engaged with 150 attendees.
- Coordinated an event to have MWDOC staff select the top 40 winners of the 2026 Water Awareness Poster Contest.
- Announced the winners of the 2026 Water Awareness Poster Contest.
- Provided giveaways to the Water Use Efficiency department for a booth at California Native Plant Society's 24th Annual Orange County (OC) Native Plant Garden Tour.
- Graduated from the Supervisors Academy, hosted by MWDOC and facilitated by the Center for Organization Effectiveness.
- Attended training class, *Virtual First Amendment Auditors,* hosted by Association of California Water Agencies Joint Powers Insurance Authority (ACWA JPIA).
- Participated in The Metropolitan Water District of Southern California (Metropolitan) Public Information Officer Working Group Meeting.

Government Affairs Staff:

- Along with Director Dick and Director Erdman, attended the South Orange County Economic Coalition's "Meet the Mayors" breakfast.
- Attended the Orange County Business Council (OCBC) Government Affairs Committee meeting.

EDUCATION INITIATIVES

Public Affairs Staff:

General Education

- Engaged nearly 750 3rd-5th-grade students across two days at Orange County Water District's annual Children's Water Education Festival through two interactive booths: one on water stewardship (developed by the MWDOC Education & Workforce Development Division) and one on water careers (developed by Water Energy Education Alliance (WEEA)), both delivered by the MWDOC Public Affairs team.
- Hosted a Project WET (Water Education Today) Orange County Facilitators Training in partnership with Metropolitan.
- Participated in the Water Course Curriculum meeting for the Orange Unified School District's Water Career Technical Education (CTE) Pathway at Villa Park High School.
- Attended the 3rd Annual Coastline Regional Occupation Program (ROP) Open House, showcasing CTE pathways currently available to students in Irvine, Newport-Mesa, Saddleback Valley, and Tustin Unified School Districts.
- Participated in the Metropolitan Water Education Coordinator's bi-monthly meeting.
- Authored a Ten Strands article, "Where Learning Meets Livelihood."

MWDOC Choice K-12 School Programs

- Completed the Request for Proposals (RFP) Process for the Design and Implementation of K-12 Water Education School Program Services.
- Provided information regarding the MWDOC Choice K-12 School Program to the City of Anaheim, Trabuco Canyon Water District, Mesa Water District, Irvine Ranch Water District, City of Orange, Yorba Linda Water District, and the City of Orange.

Water Energy Education Alliance (WEEA)

- Designed a 20-minute, hands-on sequence connecting the environment to communities to water systems to jobs, which was piloted at the 2026 Orange County Children's Water Festival.
- Participated in the American Water Works Association (AWWA) 2050 Workforce Assessment Sub-Committee meeting.

- Panelist; industry engagement through career networking with students and faculty at the 2026 CSU-WATER Conference (California State University-Water Advocacy Through Education & Research).
- Met with an Industrial and Organizational psychologist to discuss water workforce challenges and high-interest areas of focus.
- Participated in Metropolitan's Member Agency Workforce Development Working Group.
- Developed and distributed invitations and social posts promoting the next WEEA Leadership Roundtable meeting on May 21, featuring a Sponsor Spotlight on Metropolitan.
- Shared new statewide workforce findings and recommendations developed by the Water UCI student research team in partnership with WEEA. The report is available at mwdoc.com/weea and water.uci.edu/ideal-water-uci.

DIGITAL COMMUNICATIONS, PUBLICATIONS, AND MEDIA ENGAGEMENT

- Developed and distributed social media content across all MWDOC social media channels.
- Developed and distributed the **April edition** of the eCurrents Newsletter that garnered 6,325 Opens (an email open rate of 49%)

SPECIAL PROJECTS

Public Affairs Staff:

- Delivered MWDOC-branded seed packets and giveaways to Mary Wilson Library in Seal Beach, and the City of Seal Beach staff added their branded giveaways to the display.
- Engineering Department Support:
    - Designed Front Cover Artwork for Urban Water Management Plan;
    - Design Front Cover Artwork for Water Shortage Contingency Plan;
    - Developed social media graphics and content supporting both draft publications; and
    - Posted information to the MWDOC website at mwdoc.com/uwmp.
- Board Support: Briefed MWDOC-MET board members on the kick-off of the 2026-2027 inspection trip planning.
- Continued rolling out video shorts for MWDOC's FACES campaign, celebrating 75 years of service.
- Began filming interviewees for a Water Loss Control video feature, a continuation of the 75th anniversary reflections series.
- Updated the OC Water Summit website and began soft outreach to sponsors from previous years.

Government Affairs Staff:

- Staffed the Water Advisory Committee of Orange County (WACO) meeting featuring speaker John Cain on "Restoring Hope on the Floodplains of the Bay-Delta Watershed."
- Drafted and distributed the Independent Special Districts of Orange County (ISDOC) Executive Committee agenda and edited the monthly meeting minutes.
- Staffed the ISDOC Executive Committee meeting. Provided an update on program speakers and the upcoming luncheon.
- Working towards the California Special Districts Association (CSDA) Essential Leadership Skills Certificate Program, attended the following full-day training courses:
    - Financial Management;
    - Human Resources Management; and
    - Supervisory Skills for the Public Sector.
- Drafted and circulated the WACO Planning meeting agenda.

OUTREACH METRICS

Public Affairs Staff:

- Google Performance Analytics (GM Report Timeframe)
    - 149 business profile interactions
    - 1,866 people viewed the business profile
- mwdoc.com Website Analytics (GM Report Timeframe)
    - 10,171 pageviews
    - Top pages for this date range
        - Home Page – 2,196
        - Poster Awareness Contest – 626
        - Board Meetings – 593
        - Residential Rebates – 566
        - Turf Replacement Rebate – 459
        - RFPs and RFQs – 313
- ocwatersmartgardens.com Analytics (March 2026)
    - 1,132 Sessions, 907 New Users
    - Top pages for this date range
        - Guided Plant Search
        - Landing Page
        - Eligible Sustainability Feature Trees
- ocwatersmartparks.com: 7 site sessions (GM Report Timeframe)
- Social Media (GM Report Timeframe)
    - 8.5% engagement rate (a good rate is between 1% and 5%)
    - 5,131 post reach (number of people)
    - 436 post engagement (actions taken – likes, shares, etc.)

LEGISLATIVE AFFAIRS

Government Affairs Staff:

- Participated in the Association of California Water Agencies (ACWA) Region 10 State Legislative Committee prep meeting.
- Participated in the California Municipal Utilities Association (CMUA) Water Supplier Emergency Response Strike Team: SB 1001 Discussion.
- Attended the ACWA State Legislative Committee meeting.
- Attended the CMUA discussion of the Advanced Clean Fleets (ACF) 15-Day Regulatory Language.
- Participated in the Southern California Economic Coalition Legislative Task Force meeting.
- Attended the CSDA Annual Legislative Days in Sacramento.
- Met with the following offices to advocate for CSDA's 2026 Legislative Priorities:
    - Assemblywoman Diane Dixon
    - Senator Lena Gonzalez
    - Senator Tony Strickland
    - Senator Steven Choi
- Attended the CMUA Regulatory Committee meeting.
- Participated in the CMUA Legislative Committee meeting.
- Attended the California Council for Environmental and Economic Balance (CCEEB) Water, Chemistry & Waste Project meeting.
- Participated in the ACWA Region 10 State Legislative Committee prep meeting.
- Attended the ACWA State Legislative Committee meeting in Sacramento.
- Along with Director Crane, participated in the State Water Contractors' lobby day to advocate support for AB 2215 (Calderon), SB 872 (McNerney), and support allocation of $57M from the regional conveyance pot of Prop 4 funds for near-term conveyance and subsidence repair activity. We met with the following offices:
    - Assemblyman Tri Ta
    - Assemblywoman Sharon Quirk-Silva
    - Senator Steven Choi (staff)
    - Senator Eloise Gomez Reyes (staff)
    - Assemblyman Avelino Valencia (staff)
    - Senator Tony Strickland (staff)
    - Assemblywoman Diane Dixon
    - Assemblywoman Laurie Davies (staff)

WATER USE EFFICIENCY

Making Conservation a CA Way of Life Framework

The following items relate to the Making Conservation a CA Way of Life regulation:

SB 1157

SB 1157 requires the Department of Water Resources (DWR) and the State Water Resources Control Board (SWRCB) to conduct investigations to assess and quantify the economic benefits and impacts of the 2030 indoor residential-use standard on water, wastewater, and recycled-water systems. Rachel Waite-Harvey serves on the Indoor Water Use Technical Advisory Panel (TAP), which provides feedback on the Indoor Water Use Study being conducted by Flume Inc. on behalf of DWR, and coordinates with other TAPs. This study seeks to understand indoor water use across the state and will be considered in the broader context of the Conservation Framework's impact.

- On April 6, Rachel W-H. joined the California Municipal Utilities Association (CMUA) and California Association of Sanitation Agencies (CASA) TAPs Debrief, which focused on coordination and information sharing from the past Indoor Water Use TAP and the Benefits and Impacts (B&I) TAP meetings.
- On April 23, Rachel W-H. joined the B&I Working Group conference call to prepare for the upcoming meeting with DWR and their research team. The group reviewed materials and discussed important questions to ask.
- On April 27, Rachel W-H. joined the DWR B&I Working Group meeting, which is open to members of the Indoor Water Use TAP and members of the public. DWR and their research team presented their work to date and received feedback and questions from the B&I TAP.

MWDOC Technical Assistance

On April 20, MWDOC and City of Fountain Valley staff met with NV5 Geospatial to kick off the next steps for landscape mapping technical assistance. Discussion focused on the upcoming efforts to identify and measure large landscapes per the Way of Life Regulation and to reconcile state and retailer data. The Reconciliation data was delivered on April 29; additional work remains in progress.

On April 22, MWDOC and City of Seal Beach staff met with Environmental Incentives to review the Framework Technical Assistance Program work being performed and next steps for the city. A recap of progress to date was given to a new City of Seal Beach staff member who is taking on Program responsibility.

American Water Works Association (AWWA) Water Conference of the West

On April 7-9, Rachel Davis and Katie Vo attended the AWWA Water Conference of the West in San Diego. In her role as Water Loss Control Committee Chair, Rachel D. facilitated the Committee meeting and moderated an afternoon of presentations on water loss control. Rachel D. also co-presented on MWDOC's customer meter accuracy testing program with E Source. Katie V. served as a volunteer, helping to ensure the smooth running of the conference.

Implementation Meetings with Submittable

On April 7 and April 9, Tina Fann and Britney Held-Walker, Submittable Implementation Specialist, hosted Submittable training sessions to introduce the new platform to MWDOC's Landscape Program Advisory Committee. MWDOC member agencies in attendance included Moulton Niguel Water District, Irvine Ranch Water District, El Toro Water District, and Santa Margarita Water District. The training sessions collected feedback on the application and review process.

Additional training sessions with the rest of MWDOC's member agencies and inspection vendors will be scheduled in May.

Metropolitan Conservation Credits Program Advisory Committee (PAC)

On April 8, Sam Fetter and Tina F. attended Metropolitan's Conservation Credits PAC via Zoom. Topics on the agenda included:

- Soil Amendments
- General Conservation Program Items
- Agency Roundtable

The next meeting is scheduled for July 8.

Compost Caravan

On April 8, Rachel W-H., Tina F., and Cristal Castro met with representatives from the People, Food and Land Foundation, the CA Association of Compost Producers, and Irvine Ranch Water District regarding an upcoming Compost Caravan event in Irvine. The Compost Caravan will feature compost application demonstrations for water savings and stormwater management at 3 Irvine sites: the South Coast Research and Extension Center, the Frank R. Bowerman Landfill Greenery, and the James A. Musick Facility.

The event is scheduled for June 4.

2028 California Water Plan

On April 8, Rachel W-H. joined a DWR web-based workshop focusing on the 2028 Water Plan. Members of the Advisory Committee were introduced, and presentations focused on setting the stage for the Plan's goals, including helping California plan for a hotter and more unpredictable future.

To represent water conservation and efficiency, Tia Flemming, Executive Director of the California Water Efficiency Partnership (CalWEP), has been selected to join the 2028 California Water Plan Advisory Committee. On April 22, Rachel W-H. joined CalWEP staff and members to discuss and strategize messaging for the Committee.

AB 1572 Meeting

On April 9, Rachel W-H. joined City of Seal Beach staff and Councilman Steele to meet with representatives of Leisure World, including those from the Golden Rain Foundation and the Mutuals within the community. Rachel W-H. provided an overview of AB 1572, provided examples of functional and nonfunctional turf, shared MWDOC's resources, and answered questions from the group.

A follow-up meeting will be scheduled at an undetermined date.

Mesa Water Interview Panel

On April 10, Rachel W-H. participated in an interview panel for a Water Efficiency Specialist/Analyst position at Mesa Water. No follow-up will be necessary.

Metropolitan Water Use Efficiency Workgroup Meeting

On April 16, Tina F. and Cristal attended Metropolitan's Water Use Efficiency Workgroup meeting at Metropolitan; Rachel W-H. and Sam joined virtually. Items on the agenda included:

- Metropolitan Board Meeting Update
- Metropolitan Conservation Program Updates
  - MAAP Scheduling for End of Year
  - Grant Funding Update
  - Literature Review: Weather-Based Irrigation Controllers
- Metropolitan & SoCal Gas Direct Install Program
- California Association of Compost Producers
- Water Supply Update
- Metropolitan External Affairs Update

The next meeting is scheduled for May 21.

Orange County Data Acquisition Partnership (OCDAP) Steering and Technical Advisory Committee (STAC) Meeting

On April 16, Rachel W-H. attended the OCDAP STAC meeting. This working group collaborates to organize a regional effort to cost-share the acquisition of high-resolution aerial imagery and related products, and to plan the OC GIS Users meetings. Discussion focused on confirming participating agencies' financial commitments to ensure the timely purchase of 2026 Cycle #3 before the scheduled summer capture.

The next meeting is scheduled for May 12.

DWR Monthly Webinar Series on Water Loss and Leak Detection

On April 16, Rachel D. attended the monthly DWR webinar. Items on the agenda included:

- DWR ESRI Storymap & Dashboard
- How the Las Vegas Valley Water District leverages comprehensive NRW analysis data to meet its 25 gallons per service connection per day (GPSCD) real loss goal
- Consultant Services Showcase: ASTERRA USA. The Missing Layer: Unlocking Hidden Water Loss with Satellite Intelligence
- City of Davis Water Loss Reduction Efforts

The next webinar is scheduled for May 21.

California Native Plant Society (CNPS) Orange County Chapter Annual Garden Tour

On April 18, Tina F. hosted a table for CNPS's Orange County Garden Tour at a Huntington Beach resident's garden. The MWDOC table provided a rebate program and MWDOC giveaway items to over 75 visitors.

CalWEP Landscape Task Force

On April 21, Tina F. attended CalWEP's Landscape Task Force meeting via Zoom. Items on the agenda included:

- Legislative and Regulatory Advocacy Updates
- Subcommittee Discussions
    - Tree Health
    - Firescaping
    - HOAs
- Upcoming Events – CalWEP Peer to Peer

The next meeting is scheduled for May 18.

CalWEP Research and Evaluation (R&E) Committee Meeting

On April 29, Rachel W-H., as vice-chair, co-hosted the CalWEP R&E Committee meeting with CalWEP staff and the committee chair. Ellie Song joined the Committee's discussion, which focused on an AMI data-related presentation from the Eastern Municipal Water District and identifying research topics of interest to develop and ultimately move forward.

The next meeting will be held in June.

Colorado River Basin Water Efficiency Network (CRB WUE Network) Kickoff

On April 29, Rachel W-H. joined the first meeting of the CRB WUE Network, which aims to connect water efficiency and land use practitioners to advance municipal water efficiency across the basin. The CRB WUE Network is organized by Alliance for Water Efficiency (AWE) and the Babbitt Center for Land and Water Policy. It is completely independent of negotiations that may take place regarding the Colorado River Basin. Topics on the agenda included a CRB WUE Network overview, participant introductions, a keynote conversation with Felicia Marcus, small group discussions, and next steps.

The next meeting is yet to be scheduled.

California Data Collaborative (CaDC) Steering Committee Meeting

On April 30, Cassidy Harding attended the CaDC Steering Committee Meeting. The quarterly meeting provides oversight and strategic direction for the organization through collaborative decision-making. Discussion centered on membership updates, organizational growth strategy, grants and funding opportunities, Data Summit planning, future staffing needs, and key ongoing and upcoming initiatives. Projects slated for the next fiscal year include technical assistance for compiling the Urban Water Use Objective (UWUO) report, enhancements to the Wavelet Advanced Metering Infrastructure (AMI) analysis platform, and efforts to streamline state reporting requirements.

The next meeting is scheduled for July 22.

Proposition 4 Sustainable Groundwater Management Grant Program & Watershed Resilience Grant Program (Joint Workshop)

On April 30, Rachel W-H. joined the Proposition 4 Joint Workshop hosted by DWR. The workshop provided an overview of the Proposition 4 Climate Bond funding and the proposed application process. Information was shared on both the Watershed Resilience Grant Program, which includes a modest carve-out for water efficiency, and the Groundwater Management Grant Program, which will be rolled out in two separate processes.

Staff will attend more informational sessions as they become available.

CA-NV AWWA Water Loss Control Committee Meeting

On April 30, Rachel D., committee chair, hosted the CA-NV AWWA Water Loss Control Committee meeting via Zoom. There were approximately 32 attendees. Items on the agenda included:

- Welcome
- Upcoming Events
- Water Main Break Rates in the United States and Canada - Presentation by Author, Steven Barfuss, Utah Water Research Laboratory
- Call for Future Topics

The next meeting is scheduled for June 11.

AWE Water Efficiency & Conservation 101 (WUE 101) Steering Committee

On May 5, Rachel W-H. joined AWE's WUE 101 Steering Committee, which focuses on developing an entry-level yet robust water-efficiency training course for those beginning their careers in this industry. Discussion focused on finalizing the program's curriculum and reviewing the draft application and recruitment materials.

The next meeting is yet to be scheduled.

Orange County Water Use Efficiency Coordinator Workgroup Meeting

On May 7, Sam, Rachel D., Tina F., Cristal, and Beth Fahl hosted the Orange County Water Use Efficiency Coordinator Workgroup meeting via Zoom. Approximately 40 staff members from member agencies attended the workgroup. Topics discussed included:

- Metropolitan Budget Update
- Water Supply Update
- WUE Updates
- Conservation Framework and AB 1572

The next meeting is scheduled for June 4.

MWDOC GENERAL INFORMATION ITEMS

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