

MEETING OF THE BOARD OF DIRECTORS OF THE
MUNICIPAL WATER DISTRICT OF ORANGE COUNTY

Jointly with the
PLANNING & OPERATIONS COMMITTEE

August 6, 2018, 8:30 a.m.
MWDOC Conference Room 101

P&O Committee:

Director Osborne, Chair
Director Tamaribuchi
Director Yoo Schneider

Staff: R. Hunter, K. Seckel, J. Berg,
H. De La Torre, K. Davanaugh

Ex Officio Member: Director Barbre

MWDOC Committee meetings are noticed and held as joint meetings of the Committee and the entire Board of Directors and all members of the Board of Directors may attend and participate in the discussion. Each Committee has designated Committee members, and other members of the Board are designated alternate committee members. If less than a quorum of the full Board is in attendance, the Board meeting will be adjourned for lack of a quorum and the meeting will proceed as a meeting of the Committee with those Committee members and alternate members in attendance acting as the Committee.

PUBLIC COMMENTS - Public comments on agenda items and items under the jurisdiction of the Committee should be made at this time.

ITEMS RECEIVED TOO LATE TO BE AGENDIZED - Determine there is a need to take immediate action on item(s) and that the need for action came to the attention of the District subsequent to the posting of the Agenda. (Requires a unanimous vote of the Committee)

ITEMS DISTRIBUTED TO THE BOARD LESS THAN 72 HOURS PRIOR TO 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 seventy-two (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 Internet Web site, accessible at <http://www.mwdoc.com>.

DISCUSSION ITEM

1. STATUS OF THE ORANGE COUNTY WATER RELIABILITY STUDY 2018 UPDATE
2. PROPOSED WATER RELIABILITY PILOT PROGRAM BETWEEN MWDOC & IRWD FOR EXTRAORDINARY SUPPLY DURING MET ALLOCATIONS

INFORMATION ITEMS (The following items are for informational purposes only – background information is included in the packet. Discussion is not necessary unless a Director requests.)

3. LETTER OF SUPPORT FOR SOUTH COAST WATER DISTRICT'S COMPLETION OF THE FINAL ENVIRONMENTAL IMPACT REPORT: DOHENY OCEAN DESALINATION PROJECT

4. STATUS REPORTS

- a. Ongoing MWDOC Reliability and Engineering/Planning Projects
- b. WEROC
- c. Water Use Efficiency Projects
- d. Water Use Efficiency Programs Savings and Implementation Report

5. REVIEW OF ISSUES RELATED TO CONSTRUCTION PROGRAMS, WATER USE EFFICIENCY, FACILITY AND EQUIPMENT MAINTENANCE, WATER STORAGE, WATER QUALITY, CONJUNCTIVE USE PROGRAMS, EDUCATION, DISTRICT FACILITIES, and MEMBER-AGENCY RELATIONS**ADJOURNMENT**

NOTE: At the discretion of the Committee, all items appearing on this agenda, whether or not expressly listed for action, may be deliberated, and may be subject to action by the Committee. On those items designated for Board action, the Committee reviews the items and makes a recommendation for final action to the full Board of Directors; final action will be taken by the Board of Directors. Agendas for Committee and Board meetings may be obtained from the District Secretary. Members of the public are advised that the Board consideration process includes consideration of each agenda item by one or more Committees indicated on the Board Action Sheet. Attendance at Committee meetings and the Board meeting considering an item consequently is advised.

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 telephoning Maribeth Goldsby, District Secretary, at (714) 963-3058, or writing to Municipal Water District of Orange County at P.O. Box 20895, Fountain Valley, CA 92728. 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.



Item No. 1

DISCUSSION ITEM

August 6, 2018

TO: Planning & Operations Committee
(Directors Osborne, Tamaribuchi, Yoo Schneider)

FROM: Robert Hunter, General Manager

Staff Contact: Karl Seckel

SUBJECT: Status of the Orange County Water Reliability Study 2018 Update

STAFF RECOMMENDATION

Staff recommends the Planning & Operations Committee receive and file the report.

COMMITTEE RECOMMENDATION

Committee recommends (To be determined at Committee Meeting)

SUMMARY

Staff and CDM Smith are continuing work on the Orange County Water Reliability Study 2018 Update. MWDOC staff has most recently been working on getting final cost, operating and yield numbers for the following projects. Part of the effort is developing the estimates in a manner so that there is consistency of assumptions, as best as can be developed, from project to project:

- Carson IPR
- Poseidon Huntington Beach
- Doheny Ocean Desalination
- San Juan Watershed Project
- Cadiz Water Bank
- Strand Ranch Water Bank
- SOC Interconnection Project expansion (pending completion of study with IRWD)
- Emergency Pump-in to the EOCF#2

Budgeted (Y/N):	Budgeted amount:	Core <input checked="" type="checkbox"/>	Choice <input type="checkbox"/>
Action item amount:	Line item:		
Fiscal Impact (explain if unbudgeted):			

In addition, OCWD recently requested the inclusion of the Santa Ana River Conservation and Conjunctive Use Project SARCCUP) at a conceptual cost level. SARCCUP will result in storing up to 36,000 AF of water, a portion of which could qualify as “extraordinary supplies”. This would provide the opportunity for OCWD to offer the availability of “extraordinary supplies” to their agencies or other agencies in Orange County for drought protection. A program by OCWD could be structured in a manner similar to that of the Strand & Stockdale Integrated Water Banking Program by IRWD, which is being discussed in MWDOC’s August P&O Committee.

Additional work on the study has included the following:

- Reviewing the methodology and calculations for the evaluation of projects
- Reviewing the scenarios under which the analysis will be completed (see the scenarios below)
- Staff has begun drafting an introductory section for the 2018 Study update

Our current schedule anticipates the following timing for completing the OC Water Reliability Study:

- August – Host a workshop with our consultant, member agencies, and the Three Cities; receive initial reactions, input and responses from the agencies
- September – Brief MWDOC’s P&O Committee on the various analyses including the initial responses from our agencies. Finish any remaining updates or analyses. Suggest moving the planned presentation to WACO from September to October.
- October – Complete the study documentation and provide a presentation to WACO

Final OC Study 2018 Update Planning Scenarios⁷

Planning Scenario	Climate Impact	SAR Baseflows to OC Basin	BOR Colorado River Allocations to Lower Basin States	MET WaterFix 2nd Tunnel Cost Recovery	MET WaterFix Average Supply ¹ (AFY)	New MET CRA Transfers ² (AFY)	New MET SWP Transfers ³ (AFY)	New MET-Region Local Supply (AFY)	Total New MET-Region Supply (AFY)
1. Good Conditions	Slight ⁴	Med	Draft DCP ⁶	No	440,000	100,000	0	88,000	628,000
2. Stressed Conditions	Significant ⁵	Med	Draft DCP ⁶	No	440,000	180,000	150,000	162,000	932,000

Notes:

1. Estimated average from model runs with 1-tunnel solution (MET gets approximately 32% of 6,000 cfs project).

2. Baseloaded supply.

3. Dry year supply.

4. Some climate change impacts on SWP, imbedded in DWR's CALSIM runs.

5. Moderate impact to SWP supplies and significant impact to Colorado River supplies (CSIRO GCM)

6. California and MET take shortages as early as Lake Mead elevation level of 1,045 feet.

7. Remaining shortages under both Planning Scenarios will be tested for sensitivity by adding either/or MET Regional Recycled Water Program (Carson) and New MET surface reservoir (400,000 AFY capacity)



DISCUSSION ITEM
August 6, 2018

TO: Planning & Operations Committee
(Directors Osborne, Tamaribuchi, Yoo Schneider)

FROM: Robert Hunter, General Manager

Staff Contacts: Karl Seckel, Assistant General Manager
Harvey De La Torre, Associate General Manager

SUBJECT: Proposed Water Reliability Pilot Program Between MWDOC & IRWD for Extraordinary Supply During MET Allocations

STAFF RECOMMENDATION

Staff recommends the Planning & Operations Committee to discuss the item and provide direction to staff.

COMMITTEE RECOMMENDATION

Committee recommends (To be determined at Committee Meeting)

INTRODUCTION

The frequency and severity of allocations from the Metropolitan Water District of Southern California (MET) is one measure of water supply reliability. During periods of extreme water supply shortage MET may enter into an allocation whereby MET Member Agencies (including MWDOC) are allocated a reduced amount of MET supply. If MET Member Agencies need and purchase water above the allocation amount, substantial surcharges are imposed (i.e., an additional charge of more than 100% the normal water price). MET water allocations have been imposed three times since 2000 with allocation reductions of 10% to 15% of the baseline imported sales. It is expected that the likelihood of MET allocations will decrease after the California WaterFix project is completed (estimated 2035).

One way to decrease the impact of these allocations is through the use of an extraordinary water supply. The value of the extraordinary supply is that it is directly added to the utility's baseline supply (1:1) and is not discounted or reduced in the supply allocation calculation.

Budgeted (Y/N): N	Budgeted amount: None	Core <input checked="" type="checkbox"/>	Choice <input type="checkbox"/>
Action item amount: N/A	Line item:		
Fiscal Impact (explain if unbudgeted):			

There are several conditions that must be met for a water supply to qualify as MET extraordinary supply and the most germane conditions are that it cannot be derived from a MET water supply and it must be used only during allocations or certain emergencies. For example, storing MET water in a surface reservoir or groundwater basin would not qualify and nor would a baseload water supply that produced water that was used during non-allocation periods. While extraordinary supplies can provide significant relief from an allocation, they are typically expensive to acquire and maintain due to the required conditions. Essentially you are paying for a water supply and then putting it on the shelf for future use under very limited conditions.

There are currently few extraordinary water supplies and fewer that have been actually used during a MET allocation. For example, Western Municipal Water District has banked 6,000 Acre Feet (AF) of groundwater that qualifies as extraordinary supply. During the 2010 allocation the San Diego County Water Authority received approval from the MET Board of Directors for 15,200 AF of extraordinary supply for a water transfer from the Placer County Water Agency. MWDOC could independently develop an extraordinary supply through a commercial groundwater storage facility (e.g., Semi-Tropic), but again, at a very high cost to purchase, place, store, retrieve and deliver the water. Additional extraordinary supplies are likely to be developed in the future. For example, OCWD through the SARCCUP program is likely to develop an extraordinary supply in the future. However, the SARCCUP program requires MET Board approval, agency implementation and the availability and purchase of excess water from San Bernardino Valley Municipal Water District (a non-MET source) for storage in the OCWD groundwater basin. If the OCWD Board of Directors decided to make a program available to MWDOC, it may be five or more years before an adequate volume of water is accumulated by OCWD.

IRWD has already developed and is operating the Strand and Stockdale Integrated Water Banking Projects (Water Bank). Extraordinary supply is available and IRWD has proposed a plan whereby a specific amount of water can be reserved or optioned for use during an allocation. This provides the insurance of an extraordinary supply if and when needed at a significantly lower cost of the reserve or option payment. It is this water reliability pilot program that is the subject of this board letter.

SUMMARY

The Water Reliability Pilot Program under discussion is relatively simple in concept:

- MWDOC would contract with IRWD to reserve or option a specific amount of extraordinary supply water (5,000 AF) from the IRWD Water Bank at a specified annual rate (\$25/AF) for a specific period of time (7 years);
- If MWDOC determined that we need to call on that extraordinary supply to meet customer demands during an allocation then the water would be purchased and additional costs incurred;
- If MWDOC found that there was no need to call on the reserved extraordinary supply, then no additional charges are incurred and the annual payments could be viewed as an insurance premium (payments for coverage not exercised).

The primary benefits of the proposed pilot program are that MWDOC and our Member Agencies obtain an appropriately sized extraordinary supply at a price well below the cost of developing our own supply, if utilized this supply would be 28% less than paying the MET surcharge with a savings of \$3.85 million. The limited downside is that if the option is not

exercised then the annual cost of \$125,000 (\$880,000 over 7 years) can be viewed as being forgone.

The 5,000 AF represents approximately 2.5% of the MWDOC allocation in 2015-2016 MET 85% allocation. The significant per capita demand reduction from the last drought is likely to have two impacts. First, it is likely to be more difficult to conserve water because significant reduction has already taken place (i.e., demand hardening). Secondly, under similar hydrologic conditions the size of the allocation may be smaller because the baseline water use has decreased significantly. While MWDOC has never exceeded our pooled allocation and has never incurred a surcharge, it is more probable that we might in the future. Until such time as OCWD develops their own extraordinary supply, the benefits of this pilot program would apply to both MWDOC's retail basin and non-basin agencies. Benefits would likely closely approximate the volume of imported water purchased by the retail agencies. This pilot program is a method to mitigate this risk for the immediate future.

BACKGROUND

Since 2009, Irvine Ranch Water District (IRWD) has successfully developed and is now operating its Strand and Stockdale Integrated Water Banking Projects ("Water Bank"), which are located west of Bakersfield. Operations of this Water Bank is facilitated through a 30-year agreement that IRWD has with Rosedale-Rio Bravo Water Storage District.

IRWD has entered into agreements with several other water districts that allow exchanges of State Water Project (SWP) and non-SWP water on a 2-for-1 basis (also referred to as "unbalanced exchanges"). These exchange agreements result in a low cost water supply to IRWD's Water Bank with IRWD retaining 50 percent of all the water delivered into storage. Currently, IRWD has about 40,000 AF in storage in their Water Bank.

IRWD's objective of its banking projects is to secure surplus water supplies during wet periods to be utilized during dry-years. Agreements between IRWD, MWDOC and MET have been established to coordinate the use and delivery of IRWD's water when MET is in Drought Allocations or under emergency conditions. More importantly, this water is categorized as an "Extraordinary Supply," which provides an almost 1:1 additional allocation to enhance an agency's reliability to offset its allocation reductions during a water supply shortage event called by MET.

IRWD is also pursuing the future Kern Fan Groundwater Storage Project with Rosedale Rio Bravo Water Storage District and Dudley Ridge Water District to provide additional storage and operating flexibility for the project proponents as well as the Department of Water Resources under the Water Storage Investment Program (WSIP) being offered by the State. The future Kern Fan Project is separate and apart from the Strand and Stockdale Integrated Water Banking Projects.

MWDOC and IRWD staffs have discussed how IRWD's Banking Projects could potentially be expanded to enhance other retail agencies' water supply reliability in MWDOC's service area. On April 2, 2018, IRWD staff gave a presentation to the MWDOC Planning & Operations (P&O) Committee on the status of their Water Bank, existing partnerships, current amount in storage, and future expansion. Among the items presented by IRWD was the opportunity for opening up the Water Bank to MWDOC's member agencies through a Pilot Program. IRWD would reserve a portion of its stored supplies for retail agencies in the

MWDOC service area, which can be called upon during a Water Supply Allocation or emergency. The MWDOC P&O Committee asked that the general terms of a potential program be explored through staff and Ad Hoc committees of both MWDOC and IRWD.

On May 3, the two Ad Hoc committees met along with both staffs to discuss conceptual terms and conditions of a Pilot Program. The focus was on the potential program framework, agencies' roles, and how the program would be administered by MWDOC. Direction was given for staffs to continue working together on a proposed term sheet for the Boards' review and consideration.

REPORT

In July, IRWD and MWDOC staffs worked on the attached Proposed Terms for a Water Reliability Pilot Program. The intent of this program is to provide MWDOC access to Extraordinary Supplies from IRWD's Water Bank during MET Drought Allocations or during emergency conditions (e.g. Delta Levee failure) for the benefit of our retail agencies.

The purpose of this Board letter is to have the MWDOC P&O Committee: (1) review the draft proposed terms, conditions, roles, and payment structure of the pilot program between MWDOC and IRWD, (2) direct MWDOC staff to move forward on working with IRWD on drafting a program agreement for the Board's consideration and conduct supporting reviews and studies, (3) have discussions with and receive input from MWDOC's Member Agencies, and (4) utilize the terms and conditions developed herein for evaluation in the O.C. Reliability Study.

Key Pilot Program Working Draft Terms & Conditions

Parties: MWDOC and IRWD.

Term: Seven years fixed with no "opt out" provision; but leaving open the opportunity for future discussions related to extending the program to improve water supply reliability into the future. Staff believes the largest exposure under water allocations from MET will occur from now to about the time the California WaterFix begins operation in about 2035 (in 17 years). Other projects could be developed during that period to mitigate the allocation risk.

Amount: 5,000 AF from IRWD will be held available in its Water Bank (net of Kern County Losses) over the term of the Pilot Program.

Annual Reservation (Option) Charges: MWDOC would pay IRWD a \$25 per AF annual reservation charge (\$125,000 per year for seven years) to secure the right to call on up to 5,000 AF of Extraordinary Supply in any water allocation year or years (or during limited emergency events) within the 7 year term. MWDOC's base year allocation in the last drought was 196,560 AF.

The 5,000 AF would provide protection for MWDOC agencies beyond the "pooling" benefit provided by MWDOC. Under the pooling concept, some agencies can go over their allocations and others are under theirs and penalties are NOT imposed unless MWDOC as a whole is over its allocation with MET. The Pilot Program complements the basic MWDOC pooling by providing additional protection in case the pooled use is over the MWDOC allocation. If the pilot program extraordinary supply was called during the allocation then

those Member Agencies who exceeded their allocation would be charged for the additional costs. These program costs would be less than the costs of purchasing the water from MET with the associated surcharges.

MWDOC's role and responsibilities:

- Implement and administer the Pilot Program with the retail Member Agencies.
- Communicate calls for water to IRWD; coordinate deliveries to participants.
- Coordinate with MET deliveries into MWDOC service area.
- Invoice the retail agencies' access and use of this pilot program, and all necessary MET costs.
- Compensate IRWD according to the proposed contract terms:
 - Annual reservation charges for right to call on the water (\$25 per AF)
 - Actual extraction and deliveries costs (Estimated at \$533 per AF in the year 2025)

Irvine Ranch Water District's role and responsibilities:

- Provide up to 5,000 AF of Extraordinary Supply from its Water Bank to MWDOC.
- Operate its Water Bank.
- Coordinate recovery and delivery of Extraordinary Supply from IRWD's Water Bank for conveyance into MWDOC's service area.

Proposed IRWD Fees and Charges

Up Front Fixed Costs:	
Up to \$5,000 One-time Program Set-up Fee	Covers IRWD's actual administrative and legal costs to develop a Pilot Program Agreement.
Annual Costs:	
Annual Reservation (Option) Charge of \$25 per AF:	Based on IRWD's opportunity loss of 2,500 AF of water for reserving up to 5,000 AF of water in storage for MWDOC. Paid each of the seven years (no opt out).
Variable \$510 per AF Cost to Call on Water:	
Actual costs estimated at \$150 per AF Cost of Water	IRWD's cost of water is based on <u>actual costs</u> incurred to acquire water supplies through unbalanced exchanges, net of losses, and includes Rosedale's fees, Kern County Water Agency third party banking fees, share of recharge O&M costs, and Kern County conveyance costs.
Actual costs estimated at \$100 per AF for Recovery Costs	<u>Actual</u> recovery costs include estimated cost of power, Rosedale's fees, share of recovery O&M costs and Kern County conveyance costs.
Fixed fee of \$260 per AF Capital Facility Use Fee	Capital facility use fee is based on IRWD's total capital costs and the total amount of water expected to be delivered from the projects over 50 years.
Other Costs:	

\$500 Transaction Fee Each Time Water is Called	Covers IRWD's administrative costs to coordinate recovery of water from the Water Bank, invoicing and tracking.
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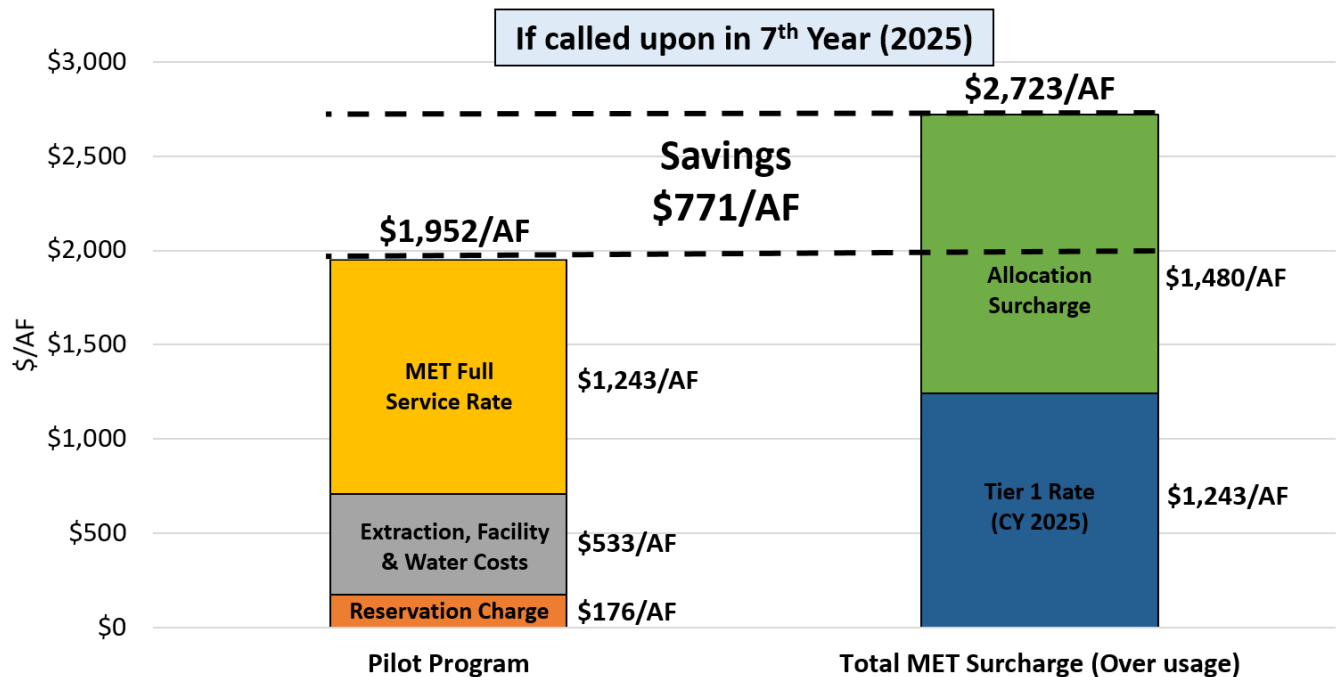
Below is a breakdown of the aggregate cost of the program per AF if MWDOC calls on the water in the last year of the seven year program (2025) along with a comparison of the Proposed Pilot Program to the MET Allocation Surcharge:

Aggregate Cost of Program Water if Called in Seventh Year (2025)

All Reservation Charges & Set-Up Fee	\$176/AF*
Est. Actual Cost of the water in storage	\$150/AF
Est. Actual Cost of Recovery out of storage	\$123/AF**
Fixed Fee of Capital Facility Use	\$260/AF
Subtotal	\$709/AF
MET Tier 1 Treated Rate (CY2025)	\$1,243/AF
TOTAL	\$1,952/AF

[*] The \$176/AF was determined by dividing the total annual reservation charges over the 7 years (\$875,000) plus the one-time set-up fee (\$5,000) by the 5,000 AF program amount

[**] Estimated using a 3% escalation rate



- (1) MET actually has a two-tier surcharge for agencies going over their allocation. The first tier is for agencies exceeding the allocation by up to 15% (which is shown above). Under the MET WSAP, agencies exceeding their allocation by more than 15% incur an even higher surcharge (an additional \$1480 is added).

Program Benefits

The purpose of this program is to provide MWDOC Members Agencies with reliability “Insurance” to access Extraordinary Supplies during a MET Drought Allocation or during emergency conditions when agencies are unable to live within their MET allocation provided by MWDOC. The probability of allocations does not significantly decrease until the California WaterFix is operational or other source projects are developed. Having access to Extraordinary Supplies to mitigate a Drought Allocation will provide a significant benefit during that period. As shown above, the cost savings between the proposed pilot program and the MET allocation surcharge is estimated at \$771/AF.

However, it important to note that under the structure of this program, MWDOC would not pay the full cost and delivery of this water unless it is actually needed. MWDOC is only required to pay a one-time set-up fee of \$5,000 and a \$25/AF annual reservation charge (totaling \$125,000 per year) over the seven years of the program term (total investment over 7 years would be \$880,000). This totals approximately \$176/AF of financial risk (to secure an insurance policy); which provides relatively inexpensive “insurance protection” compared to other reliability projects.

Cost and potential cost avoidance are summarized below for different term periods (years) assuming that the option is exercised only once at the end of the term; all calculations are based on 5,000 AF:

TERM (Yrs)	FIXED COSTS (Annual + Up Front Payments)	TOTAL PROJECT COST (with Water Purchase)	TOTAL MET COSTS IF OVER ALLOCATION (Water Purchase + Surcharge)	POTENTIAL COST AVOIDANCE	RATIO D./A. (COST AVOIDANCE divided by FIXED COSTS)
	A.	B.	C.	D. = C. less B.	D./A.
5	\$ 630,000	\$ 9,140,137	\$ 12,881,316	\$ 3,741,179	5.94
7	\$ 880,000	\$ 9,760,437	\$ 13,615,201	\$ 3,854,764	4.38
9	\$ 1,130,000	\$ 10,417,887	\$ 14,425,760	\$ 4,007,873	3.55
13	\$ 1,630,000	\$ 11,845,056	\$ 16,277,534	\$ 4,432,478	2.72
17	\$ 2,130,000	\$ 13,402,304	\$ 18,391,759	\$ 4,989,455	2.34

The Fixed Costs represent the payments that are sunk costs whether or not the option is exercised and the extraordinary supply water is called. The Potential Cost Avoidance is the estimated cost of the purchase of the additional water from MET including the surcharge for exceeding the allocation minus the Total Project Cost of the pilot program.

In addition, it should be noted that the institutional structure is already in place and tested to deliver this water when needed. IRWD has had their operational agreements and facilities with their banking partners in Kern County in place for a number of years. Moreover, agreements with MET to coordinate the delivery of this water are already established. In 2011, IRWD, MET and MWDOC signed the Coordinated Operating and Exchange Agreement to delivery SWP water; and in 2014 a wheeling agreement was signed to deliver

1,000 AF of Non-SWP to IRWD. More importantly, both agreements with MET recognize this source of water as an “Extraordinary Supply”.

Lastly, staff finds this pilot program is consistent with MWDOC’s mission and goal to enhance our service area’s water reliability in an equitable and economical way; and to provide access to “Extraordinary Supply” of water to *every retail member agency in Orange County*.

Next Steps

Based on the feedback from the MWDOC P&O Committee, staff would like to present the proposed terms, fees and charges of the Pilot Program to the MWDOC member agencies. In addition, staff would like to start developing a draft Pilot Program Agreement with IRWD, and research and propose rate considerations for our Board and member agencies to review and discuss.

Attachments:

- **Proposed DRAFT Terms for a Water Reliability Pilot Program Between IRWD and MWDOC**
- **The Powerpoint Presentation will be emailed separately**

**Proposed Terms for Water Reliability Pilot Program Between
IRWD and MWDOC
(July 30, 2018) Revised**

DRAFT

General Terms:	
Parties	Irvine Ranch Water District (IRWD) and Municipal Water District of Orange County (MWDOC).
Purpose	IRWD and MWDOC seek to implement a Water Reliability Pilot Program (Pilot Program) for the benefit of the MWDOC member agencies utilizing IRWD's Strand and Stockdale Water Banking Projects (Water Bank). The Pilot Program will provide MWDOC with extraordinary water supply during periods when Metropolitan Water District of Southern California (Metropolitan) declares a Water Supply Allocation or during system emergency conditions.
Program Overview	Over the duration of the Pilot Program, MWDOC will pay, on behalf of its member agencies, annual reservation charges for the right to call on Pilot Program water during the same year, consistent with defined price and payment terms.
Pilot Program Water	IRWD would make up to 5,000 acre-feet (AF) of water (net of Kern County losses) from its Water Bank available for delivery to MWDOC over the Term of the Pilot Program.
Program Duration:	
Length of Pilot Program:	<p>Initial Pilot Program duration of 7 years fixed (no opt out).</p> <p>Discussions/negotiations related to future extensions of the program shall consider Metropolitan regional storage levels, water deliveries, payments made in the Pilot Program and the expected start-up date of the California WaterFix (estimated 2035).</p>

Agency Roles:	
IRWD's Role	<p>IRWD would:</p> <ul style="list-style-type: none"> • Make available Pilot Program Water from its Water Bank; • Operate its Water Bank; and • Coordinate the recovery and delivery of water consistent with the Coordinated Operating Water Storage, Exchange and Delivery Agreement among IRWD, MWDOC and Metropolitan (Coordinated Agreement). • Consider program extensions of some type up to the start-up of the California WaterFix (estimated 2035)
MWDOC's Roles	<p>MWDOC would:</p> <ul style="list-style-type: none"> • Implement the Pilot Program such that it is cost neutral to IRWD; • Participate to provide additional water supply reliability to its member agencies by way of the Pilot Program; • Coordinate with member agencies on exercising calls for water; • Communicate requests to IRWD for the recovery and delivery of called upon Pilot Program Water; • Coordinate with Metropolitan such deliveries into MWDOC's service area; • Make all up front, annual reservation, water call and other cost payments to IRWD, as described under the Price and Payment Terms, over the course of the program and invoice for actual water deliveries made under the Pilot Program; and • Pay all Metropolitan Full Service Rates pursuant to the Coordinated Agreement. • Consider program extensions of some type up to the start-up of the California WaterFix (estimated 2035)

Price and Payment Terms (MWDOC pays to IRWD): **DRAFT**

Up Front Fixed Costs:	
Up to \$5,000 One-time Program Set-up Fee	Covers IRWD's actual administrative and legal costs to develop a Pilot Program Agreement.
Annual Costs:	
Annual Reservation Charge of \$25 per AF:	Based on IRWD's opportunity loss of 2,500 AF of water for reserving up to 5,000 AF of water in storage for MWDOC. Paid each of the seven years (no opt out).
Variable \$510 per AF Cost to Call on Water:	
Actual costs estimated at \$150 per AF Cost of Water	IRWD's cost of water is based on <u>actual costs</u> incurred to acquire water supplies through unbalanced exchanges, net of losses, and includes Rosedale's fees, Kern County Water Agency third party banking fees, share of recharge O&M costs, and Kern County conveyance costs.
Actual costs estimated at \$100 per AF for Recovery Costs	<u>Actual</u> recovery costs include estimated cost of power, Rosedale's fees, share of recovery O&M costs and Kern County conveyance costs.
Fixed fee of \$260 per AF Capital Facility Use Fee	Capital facility use fee is based on IRWD's total capital costs and the total amount of water expected to be delivered from the projects over 50 years.
Other Costs:	
\$500 Transaction Fee Each Time Water is Called	Covers IRWD's administrative costs to coordinate recovery of water from the Water Bank, invoicing and tracking.



INFORMATION ITEM

August 6, 2018

TO: Planning & Operations Committee
(Directors Osborne, Tamaribuchi, Yoo Schneider)

FROM: Robert Hunter, General Manager

Staff Contact: Karl Seckel
Charles Busslinger

SUBJECT: Letter of Support for South Coast Water District's Completion of the Final Environmental Impact Report: Doheny Ocean Desalination Project

STAFF RECOMMENDATION

Staff recommends the Planning & Operations Committee receive and file the attached report.

COMMITTEE RECOMMENDATION

Committee recommends (To be determined at Committee Meeting)

SUMMARY

Staff intends to submit the attached letter in support of completion of South Coast Water District's Doheny Ocean Desalination Project Environmental Impact Report.

DETAILED REPORT

The South Coast Water District has prepared a Draft Environmental Impact Report (EIR) pursuant to the California Public Resources Code and the California Environmental Quality Act (CEQA) to evaluate the environmental effects associated with the proposed 5 MGD Doheny Ocean Desalination Project. The Draft EIR was released for public review and comments on June 6, 2018 for a 60-day review period which is scheduled to end August 6, 2018. Staff has drafted the attached letter in support of the completion of the EIR and the 5 MGD project. South Coast Water District anticipates certifying the Final EIR in September 2018

Budgeted (Y/N):	Budgeted amount:	Core ____	Choice ____
Action item amount:	Line item:		
Fiscal Impact (explain if unbudgeted):			



July 30, 2018

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Director

Jeffery M. Thomas
Director

Robert J. Hunter
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
City of San Juan Capistrano
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

Rick Shintaku, P.E.
Acting General Manager/Chief Engineer
South Coast Water District
31592 West Street
Laguna Beach, CA 92651

DRAFT

Re: Letter of Support for South Coast Water District's Completion of the Final Environmental Impact Report: Doheny Ocean Desalination Project

Dear Mr. Shintaku:

The Municipal Water District of Orange County supports the 5 Million Gallon per Day Doheny Ocean Desalination Project and recommends that South Coast Water District proceed to complete the Final Environmental Impact Report. Development of the Doheny Ocean Desalination Project is a part of a long-term goal of water supply reliability by developing and supplementing SCWD's water supplies through the treatment of ocean water, and diversification of SCWD's water supply portfolio. The Municipal Water District of Orange County has been providing reliable, safe drinking water to its customers since 1951 and its service area includes SCWD. The need for the Doheny Ocean Desalination Project was identified in the Orange County Water Reliability Study as one of several projects that could be developed to meet South Orange County water reliability needs. The Municipal Water District of Orange County fully supports the project and SCWD's efforts to enhance water use efficiency and local water supply reliability.

If you have any questions or need additional information regarding our support of this project, please do not hesitate to contact me by email at rhunter@mwdoc.com or via telephone at (714) 593-5026.

Sincerely,

Robert J. Hunter
General Manager

ENGINEERING & PLANNING	
Orange County Reliability Study	Please see the P&O packet for details on this item.
South Orange County Emergency Service Program	A kick-off meeting was held on May 14, 2018 with consultant Dudek, IRWD staff, and MWDOC staff to study IRWD's ability to convey groundwater via an interconnection with South Orange County water agencies under emergency supply conditions. Several additional meetings have been held to review hydraulics and model settings. A draft report on the findings is anticipated in September 2018.
Workshop with B&V Engineers and Hazen & Sawyer Consultants	<p>MWDOC staff is working with Ed Means to host a workshop on August 31, 2018 on integrating potential local water supply projects into the OC water system; such as Poseidon, Doheny or the groundwater pump-in project.</p> <p>The concern is that these local projects may be implemented by others, without fully accounting for the water quality considerations and other issues, could result in unintended consequences. MWDOC's goal is to try to fully understand the associated issues prior to any of these projects going on-line. The intended outcome of the workshop is to develop scopes of work for follow-up.</p>
Strand Ranch Project	Please see the P&O packet for details on this item.
Upcoming Issues with MET	<p>MET Evaluation of Regional Storage Portfolio (ERSP)</p> <p>On April 30, 2018, MET held the first ERSP member agency workshop to discuss the update of emergency criteria and re-evaluation of Metropolitan's Emergency Storage Requirement. A follow-up workshop is scheduled on August 29, 2018 to continue the discussion.</p>
Poseidon Resources	<p>On July 18, 2018 OCWD's Board approved a new non-binding 2018 Water Reliability Agreement (Term Sheet) with Poseidon Resources. The major changes in the new 2018 Term Sheet include:</p> <ol style="list-style-type: none"> 1. The rate OCWD pays Poseidon Resources for water is no longer indexed to the MWD water supply rate. OCWD would pay Poseidon's documented cost of service along with an agreed to return on equity. This approach is modeled after the San Diego County Water Authority and Poseidon Resources agreement for the Carlsbad Ocean Desalination Facility. 2. The new Term Sheet calls for a 30 to 35-year contractual partnership with Poseidon rather than the 2015 Term Sheet 50-year partnership. The exact length of the contract would be negotiated with the final Water Purchase Contract. A longer contract duration allows for the project capital cost to be amortized over a longer time period

resulting in a lower project unit cost; however, the total payments made to Poseidon are greater.

3. OCWD would assume the risk for electricity rate increases. Under the 2015 Term Sheet, Poseidon was taking on this risk. This represents a philosophical change in how to deal with future electricity rate increases for the following reasons:
 - a. Allocating this risk onto Poseidon was not free. Poseidon would have had to charge OCWD a higher rate due to this cost exposure.
 - b. With OCWD agreeing to pay the actual cost of electricity, OCWD should be able to negotiate a slightly lower overall rate for the water.
 - c. If future electricity prices do increase excessively, it will impact the entire water industry and many water supply sources.
 - d. Power cost have remained flat or even decreased in recent years. Under the 2015 Term Sheet, this scenario would have resulted in additional profit for Poseidon. This is consistent with the 2018 Term Sheet approach of paying for Poseidon's actual cost.

Average Southern California Edison electricity cost is currently estimated at \$.086/kwh and is assumed to escalate at 2.5% annually for modeling purposes.

4. OCWD would retain the lead role in developing all aspects of the distribution plan. However, there is now an option to have Poseidon Resources take responsibility for financing and constructing facilities distributing potable water to OCWD, Producers and other retail water agencies.

With this option, Poseidon would coordinate the timing of constructing the treatment plant with constructing the distribution facilities to serve potable water to customers.

	2015 Term Sheet	2018 Term Sheet
Treatment Plant	Poseidon responsible to develop	Poseidon responsible to develop
Distribution System	OCWD responsible to develop	OCWD to oversee development of distribution system. Includes option to have Poseidon responsible to construct/finance distribution system that serves potable water to participating retail

			agencies. OCWD can purchase distribution system constructed by Poseidon in future.
Contract Duration	50 years		30 or 35 Years
Price OCWD Pays for Water	Initially negotiate a rate of up to 20% above MWD rate for first 1 years. Up to 15% above the MWD rate for the second ten year period, and so forth. Negotiate a minimum annually rate increase. Compare rate against Poseidon's actual cost in future years and adjust the rate if necessary.		Pay Poseidon's actual cost plus a negotiated return on equity
SCE Electricity Rate Increases	Poseidon responsibility		OCWD responsibility
End of Contract	Project becomes property of OCWD		Project becomes property of OCWD
Water Quality	Must meet all legal standards and be mutually agreeable to all parties		Must meet all legal standards and be mutually agreeable to all parties
Delivery of Water	OCWD initially responsible to take 56,000 acre-feet per year		OCWD initially responsible to take 56,000 acre-feet per year
Updated Estimated Project Unit Cost			
Item		Unit Cost (30 Year Option)	Unit Cost (35 Year Option)
Estimated Year 2022 Treatment Plant Unit Cost		\$1,916/AF	\$1,854/AF
Estimate (Placeholder) for Distribution System Cost		\$350/ AF	\$350/ AF
MWD LRP subsidy		(\$475/AF)	(\$475/AF)
Total Project Unit Cost		\$1,791/ AF	\$1,729/AF
Estimated 2022 MWD Rate (assuming 4.1% annual increase – includes \$80/AF for RTS & Capacity Charge)		\$1,255/AF	\$1,255/AF

	Difference	\$536/AF	\$481/AF
	Permitting Work is still proceeding by the Santa Ana Regional Water Quality Control Board (“SARWQCB”) to consider the NPDES permit and Ocean Plan Amendment compliance for the Poseidon Project. It is anticipated that the SARWQCB will act on the permit in the next 6 months.		
SMWD Rubber Dams Project	The Draft Program Environmental Impact Report (EIR) was circulated for a 65-day public review period, which ended February 23, 2017. The EIR was originally scheduled for adoption in March 2018. Due to the complexity of some of the issues associated with the steelhead trout, SMWD Board adoption of the EIR has been postponed until additional study work is completed.		
Doheny Ocean Desalination Project	<p>South Coast WD Doheny Ocean Desalination Project Draft Environmental Impact Report (EIR) has been released for public comments. The deadline to submit public comments is August 6, 2018. MWDOC staff intend to submit a letter of support for the project.</p> <p>A Request for Qualifications (RFQ) for a 3rd party legal firm to assist with Design-Build-Operate (DBO) contract development was released and 5 proposals were received. The proposals are being reviewed and it is anticipated that the South Coast WD Board will consider awarding a contract in August or September 2018</p> <p>South Coast WD submitted an application for an \$18 million grant for project construction through Bureau of Reclamation ‘Water SMART: Desalination Construction Projects under the WIIN Act’ in time to meet the July 27, 2018 deadline.</p>		
Meetings			
	Karl Seckel, Charles Busslinger, and Chris Lingad met with EOCWD staff on July 23, 2018 to discuss details of conducting a meter test for OC-70. Other issues relative to OC-70 were discussed.		
	Charles Busslinger attended the monthly San Juan Basin Authority (SJBA) Board Meeting on July 10, 2018.		
	Charles Busslinger attended a meeting with MET staff on July 26, 2018 to discuss a planned shutdown of the Orange County Feeder. The shutdown is necessary to make lining repairs to the OCF within Bristol Street, between Willits Street and the I-405, including the section directly in front of South Coast Plaza. Due to the high traffic volumes during Christmas shopping season, the shutdown is scheduled for Feb. 18 th to Aug. 9 th 2019.		
	Karl Seckel, Rob Hunter, MWDOC Director Sat Tamaribuchi and Garry Brown, Executive Director for OC Coastkeeper discussed the status of a number of habitat development projects in the Delta with Curt Schmutte and Alison Collins from MET to get more information on how the projects are progressing.		

	<p>Karl Seckel and Kevin Hostert met with the City of Newport Beach on the CM-1 service connection operations. MET is leaning towards not doing any improvements at the facility which will result in water quality in the pipeline just upstream of this facility not meeting drinking water standards. To begin deliveries at CM-1, MET has to drain the line, flush it, refill it and take and confirm bacteriological samples prior to start-up, a process that may take 5 days or so. Newport Beach will discuss this issue with Laguna Beach and provide input to MWDOC regarding resolution of this issue.</p>
	<p>A field meeting was held between MET and MWDOC regarding the potential change-out of the venturi meter at CM-12 with a mag meter to provide an expanded range of operations. MET is requesting a design deposit of \$52,000 to prepare a preliminary design and cost estimate for the change out of the meter. CM-12 provides service to the Aufdenkamp line and delivers water into Laguna Beach.</p>

Status of Ongoing WEROC Projects
July 2018

Description	Comments
Coordination with WEROC Member Agencies	<p><i>Ongoing: WEROC, with Michal Baker as the lead consultant, is facilitating 19 agencies through the process of updating the Orange County Water and Wastewater Multi-Jurisdictional Hazard Mitigation Plan. Update: Francisco Soto has been working with the consultant and participating agencies to finalize the public review draft of the Hazard Mitigation Plan. The plan is scheduled to for a public review process in August of 2018 and will be submitted to California Office of Emergency Services (CalOES) in September 2018. Public review involves the draft plan being posted on participating agencies websites and social media platforms for review and comment.</i></p> <p><i>WEROC Radio Replacement Update: Francisco Soto continues to work with member agencies, Motorola, and the Sheriff's Communications staff to implement the OC 800 MHz radio system for WEROC. Francisco has been working with the Sheriff's Communication Division to provide two 800 MHz Radio trainings for WEROC member agencies. One training took place on July 25th, with the second scheduled to take place on August 14th. Francisco has continued to work with City Agencies to program the WEROC channel into their existing 800 MHz radios, as well as coordinating with the Catalina Conservancy and MET to remove the old radio equipment for repeater sites. Lastly, Francisco has been working with Kelly Hubbard to create Standard Operation Procedures for the use of the new radio system.</i></p> <p>Karl Seckel and Kelly meet with the General Manager, Betty Burnett, and the Environmental Compliance and Safety Manager, Sean Peacher, of the South Orange County Wastewater Authority (SOCWA). This is an annual meeting to review the WEROC program, the WEROC budget, SOCWA's support of WEROC and what services SOCWA may need support of in the coming year.</p> <p>Karl, Harvey De La Torre and Kelly also meet with the new City of Orange Public Works Department Manager, Chris Cash, and Water Manager, Jose Diaz. Kelly was able to provide a quick intro on WEROC and how staff can support the City's water and sewer operations in a disaster. Karl and Harvey provided additional background on other MWDOC programs.</p>
Training and Programs	<p>Francisco attended the Agency Representative Training at the County Emergency Operations Center. The course focused on describing the purpose and responsibilities of an Agency Representative to the Emergency Operation Center and Incident Command Center. Agency Representative is a role WEROC and our member agencies would potential need to fulfill in a real event.</p>

<p>Coordination with the County of Orange</p>	<p>Kelly attended the July Orange County Emergency Management Organization (OCOMO) General Meeting and the OCOMO Exercise Design meeting. Updates on county-wide planning and coordination were discussed.</p> <p>The Operational Area has started its review and update of the Flood, Dam and Reservoir Annex. This was previously 2 separate documents that County Staff realized had many similarities and decided to combine the two plans. This plan review is very important for the WEROC Member Agencies that have certified dams under the Office of Dam Safety or that have operations in a flood area. Following the Oroville Dam Spillway Failure in 2017, the State of CA has changed the requirements for Dam Inundation Maps and Emergency Action Plans. It is critical for those agencies with dams to ensure they are participating in this county-wide process to create consistent plans that will work in coordination with each other.</p> <p><i>County and FEMA Recovery Exercise Update: WEROC staff is working with the County and FEMA on a Recovery Exercise on October 18, 2018 that involves responding to a 7.8 earthquake on the San Andreas Fault. The exercise scenario will begin 3 weeks after the earthquake and focus on recovery operations. The exercise is unique in that it is testing long term recovery concepts by focusing in on housing and infrastructure repair. Kelly participated in several follow-up calls with the County and FEMA to refine where water and wastewater utilities may be in the recovery process at this theoretical point in time and what concerns or issues may need to be resolved. This type of planning helps to ensure that the exercise is as realistic as possible, engages the WEROC staff and accomplishes needed policy discussions for future responses.</i></p> <p><i>Ongoing: WEROC staff participation in the OA Agreement Revision Working Group. Update: Kelly met with the ISDOC Executive Committee to present the current status of the Working Group and OA Agreement revision process. Kelly informed the ISDOC Executive Committee that MWDOC has formally requested that WEROC be added to the OA Agreement as a direct voting member and discussed the potential of how this representation could impact ISDOC's representation to the OA Executive Board. Kelly will continue to work the ISDOC Executive Committee to receive a formal stance on changes to the OA Agreement to be presented to the OA Agreement Working Group.</i></p> <p>Kelly attended the AlertOC Working Group meeting to provide input into the OA Integrated Public Alert and Warning System (IPAWS)/Emergency Alert System (EAS)/AlertOC Request Form. The form is intended to allow agencies to request the County to send an emergency notification to the public on their behalf through any of the noted public notification. Currently IPAWS and EAS messages can only be sent by the County and four cities within OC. AlertOC can be used by most OC cities and public water systems, but this form can also be used for instances in which the local agencies for</p>
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	<p>some reason cannot access AlertOC to send the message themselves. Water Utilities are being restricted from being able to request these types of notifications at this time as the county does not have water utility use of these systems written into the county-wide notification policy. Kelly is working with the County to remedy this gap in the policy.</p>
EOC Readiness	<p>The new 800 MHz Radio Control Station was installed at the WEROC SEOC.</p> <p>Kelly provided new MWDOC Staff training on the MWDOC Continuity of Operations Plan (COOP). This training is provided as needed quarterly for new staff.</p> <p>WEROC hosted First Aid, CPR, and AED training for MWDOC staff to meet the goal of all MWDOC staff being certified. WEROC will schedule this training on an annual basis. The training was made available to WEROC Member Agency staff as well. SOCWA, East Orange County WD, and City of Fullerton all sent staff.</p> <p>Janine Schunk attended an AlertOC training and met with the OA Staff in charge of the program to work through final corrections in the MWDOC/WEROC contact data within the reverse notification system.</p>
Coordination with Outside Agencies	<p>Kelly attended the California Office of Emergency Services (CalOES) Southern California Catastrophic Earthquake Plan (CAT Plan) briefing. The CalOES is updating the 2011 Plan and is asking for local government involvement in the process. It is important that WEROC participate in this planning process, as the State plans on using this document as a pre-scripted playbook for limited resources when responding to a major event.</p> <p>Kelly had the opportunity to meet with staff from the Santa Rosa Water Department to discuss their lessons learned in responding to the catastrophic Tubbs Fire in 2017. The Santa Rosa Water Department discovered Benzene contamination in their water system following the fire in certain areas of their community that had significant property loss. The Water Department went through a significant process of testing their system, evaluating what caused the contamination, and how to restore their system. They discussed with Kelly how they managed the coordination of water quality testing and resources, public communications and the ongoing restoration of their system. Kelly will be sharing these lessons learned with the WEROC member agencies at the August WEROC quarterly meeting.</p> <p>WEROC hosted one of several Department of Homeland Security (DHS) Southern California Water RRAP Information Security Workshops. The Southern California Water Regional Resiliency Assessment Program (RRAP)</p>

	<p>project is focused on the impacts of extreme events on the resilience of Southern California's water systems. The goal of this project is to provide insights to the California stakeholders on how to improve the resilience and security of the water systems from extreme events. The Southern California Water RRAP project builds on and extends the work of the 2016 California Central Valley Water System RRAP project. The data collection phase of the Southern California Water RRAP project has been completed and the Key Findings developed. The purpose of this meeting was to provide a status update to California stakeholders on the Key Findings and the proposed Resilience Enhancement Options and implementation activities that may assist water utilities to address any findings found in the reports.</p> <p>Kelly attended the CalOES Mutual Aid Regional Advisory Committee (MARAC) Quarterly meeting. Topics included updates on current mutual aid efforts statewide, new planning resources available and a round table on current preparedness efforts and concerns.</p>
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Status of Water Use Efficiency Projects

August 2018

Description	Lead Agency	Status % Complete	Scheduled Completion or Renewal Date	Comments
Smart Timer Rebate Program	MWDSC	Ongoing	Ongoing	In June 2018, 245 residential and 6 commercial smart timers were installed in Orange County. For program water savings and implementation information, see MWDOC Water Use Efficiency Program Savings and Implementation Report.
Rotating Nozzles Rebate Program	MWDSC	Ongoing	Ongoing	In June 2018, 587 rotating nozzles were installed in Orange County. For program savings and implementation information, please see MWDOC Water Use Efficiency Program Savings and Implementation Report.
SoCal Water\$mart Residential Indoor Rebate Program	MWDSC	Ongoing	Ongoing	In June 2018, 220 high efficiency clothes washers and 21 premium high efficiency toilets were installed through this program. For program savings and implementation information, please see MWDOC Water Use Efficiency Program Savings and Implementation Report.
SoCal Water\$mart Commercial Rebate Program	MWDSC	Ongoing	Ongoing	In June 2018, 343 premium high efficiency toilets and 278 plumbing control valves were installed through this program. For program savings and implementation information, please see MWDOC Water Use Efficiency Program Savings and Implementation Report.
Industrial Process/ Water Savings Incentive Program (WSIP)	MWDSC	50%	June 2020	This program is designed for non-residential customers to improve their water efficiency through upgraded equipment or services that do not qualify for standard rebates. Incentives are based on the amount of water customers save and allows for customers to implement custom water-saving projects. This fiscal year, two projects have been completed, saving over 57 AFY.

Description	Lead Agency	Status % Complete	Scheduled Completion or Renewal Date	Comments
				Total water savings to date for the entire program is 640 AFY and 2,828 AF cumulatively.
Turf Removal Program	MWDOC	Ongoing	Ongoing	<p>In June 2018, 39 rebates were paid, representing \$94,899.14 in rebates paid this month in Orange County. To date, the Turf Removal Program has removed approximately 21.5 million square feet of turf.</p> <p>For program savings and implementation information, please see MWDOC Water Use Efficiency Program Savings and Implementation Report.</p>
Spray to Drip Conversion Program	MWDOC	Ongoing	Ongoing	<p>This is a rebate program designed to encourage residential and commercial sites to convert their existing conventional spray heads to low-volume, low-precipitation drip technology.</p> <p>To date, 230 residential sites and 58 commercial sites have completed spray to drip conversion projects.</p>
Recycled Water Retrofit Program	MWDSC	50%	September 2018	This program provides incentives for commercial sites to convert dedicated irrigation meters to recycled water. To date, Metropolitan has provided a total of \$147,624.85 in funding to 22 sites irrigating over 66 acres of landscape, and MWDOC has paid a total of \$41,483.00 in grant funding to 15 of those sites. The total potable water savings achieved by these projects is over 149 AFY.

Orange County

Water Use Efficiency Programs Savings and Implementation Report

Retrofits and Acre-Feet Water Savings for Program Activity

Program	Program Start Date	Retrofits Installed in	Month Indicated		Current Fiscal Year		Overall Program		
			Interventions	Water Savings	Interventions	Water Savings	Interventions	Annual Water Savings[4]	Cumulative Water Savings[4]
High Efficiency Clothes Washer Program	2001	June-18	220	0.63	3,633	73.64	116,545	4,021	26,994
Smart Timer Program - Irrigation Timers	2004	June-18	251	1.45	2,228	255.77	22,713	8,048	46,784
Rotating Nozzles Rebate Program	2007	June-18	587	2.35	1,489	5.95	564,307	2,749	18,326
Commercial Plumbing Fixture Rebate Program	2002	June-18	621	1.03	8,494	125.81	93,773	4,919	44,372
Industrial Process/Water Savings Incentive Program (WSIP)	2006	June-18	0	4.80	2	4.80	30	640	3,019
Turf Removal Program ^[3]	2010	June-18	58,169	0.68	689,477	49.82	21,595,078	3,024	10,282
High Efficiency Toilet (HET) Program	2005	June-18	21	0.07	452	19.40	60,099	2,221	16,731
Water Smart Landscape Program ^[1]	1997						12,677	10,621	72,668
Home Water Certification Program	2013						312	7,339	15,266
Synthetic Turf Rebate Program	2007						685,438	96	469
Ultra-Low-Flush-Toilet Programs ^[2]	1992						363,926	13,452	162,561
Home Water Surveys ^[2]	1995						11,867	160	1,708
Showerhead Replacements ^[2]	1991						270,604	1,667	19,083
Total Water Savings All Programs			11		705,775	535	23,797,369	51,625	423,011

^[1] Water Smart Landscape Program participation is based on the number of water meters receiving monthly Irrigation Performance Reports.

^[2] Cumulative Water Savings Program To Date totals are from a previous Water Use Efficiency Program Effort.

^[3] Turf Removal Interventions are listed as square feet.

^[4] Cumulative & annual water savings represents both active program savings and passive savings that continues to be realized due to plumbing code changes over time.

Item 4d

HIGH EFFICIENCY CLOTHES WASHERS INSTALLED BY AGENCY

through MWDOC and Local Agency Conservation Programs

Agency	FY 11/12	FY 12/13	FY 13/14	FY 14/15	FY 15/16	FY 16/17	FY 17/18	Total	Current FY Water Savings Ac/Ft (Cumulative)	Cumulative Water Savings across all Fiscal Years	15 yr. Lifecycle Savings Ac/Ft
Brea	144	93	115	114	76	57	56	1,923	0.97	450.46	995
Buena Park	145	105	106	91	76	54	50	1,568	1.06	352.25	811
East Orange CWD RZ	10	10	8	8	8	3	1	193	0.02	48.58	100
El Toro WD	112	134	121	111	65	47	50	1,571	0.95	354.63	813
Fountain Valley	158	115	102	110	76	65	49	2,449	0.96	598.62	1,267
Garden Grove	236	190	162	165	251	127	87	3,650	1.64	846.81	1,889
Golden State WC	485	265	283	359	260	138	156	5,171	3.18	1,198.16	2,676
Huntington Beach	582	334	295	319	225	180	141	8,387	2.79	2,090.00	4,340
Irvine Ranch WD	2,170	1,763	1,664	1,882	1,521	1,373	1,203	25,869	25.06	5,651.85	13,385
La Habra	128	82	114	87	66	53	48	1,375	1.04	308.23	711
La Palma	46	34	25	34	29	10	14	472	0.29	106.55	244
Laguna Beach CWD	57	38	37	39	32	19	20	952	0.43	229.17	493
Mesa Water	176	114	86	89	113	80	54	2,572	1.03	638.34	1,331
Moulton Niguel WD	679	442	421	790	688	575	527	10,448	10.28	2,262.13	5,406
Newport Beach	142	116	92	95	66	61	51	2,675	1.07	679.70	1,384
Orange	262	218	163	160	124	80	74	3,972	1.48	994.30	2,055
Orange Park Acres	-	-	-	-	-	-	-	12	0.00	3.76	6
San Juan Capistrano	110	76	73	92	63	33	33	1,492	0.68	351.64	772
San Clemente	206	140	94	141	75	70	85	2,705	1.77	637.39	1,400
Santa Margarita WD	679	553	662	792	466	367	274	9,790	5.63	2,202.24	5,066
Seal Beach	51	31	29	38	23	9	17	619	0.38	146.26	320
Serrano WD	20	13	10	26	8	11	8	365	0.14	90.61	189
South Coast WD	112	89	79	68	43	44	36	1,620	0.82	381.23	838
Trabuco Canyon WD	62	30	45	47	34	28	22	820	0.44	190.03	424
Tustin	97	78	59	80	66	44	49	1,661	0.92	403.06	859
Westminster	208	121	82	109	149	84	65	2,651	1.26	624.71	1,372
Yorba Linda	273	181	167	156	123	56	67	3,819	1.17	953.63	1,976
MWDOC Totals	7,350	5,365	5,094	6,002	4,726	3,668	3,237	98,801	65.46	22,794.35	19,088
Anaheim	477	331	285	295	266	213	173	10,855	3.70	2,608.00	5,617
Fullerton	270	200	186	211	165	107	99	3,794	1.97	811.19	1,963
Santa Ana	190	163	131	132	259	141	124	3,095	2.50	780.29	1,601
Non-MWDOC Totals	937	694	602	638	690	461	396	17,744	8.18	4,199.48	3,428
Orange County Totals	8,287	6,059	5,696	6,640	5,416	4,129	3,633	116,545	73.64	26,993.83	22,516

SMART TIMERS INSTALLED BY AGENCY

through MWDOC and Local Agency Conservation Programs

Agency	FY 11/12		FY 12/13		FY 13/14		FY 14/15		FY 15/16		FY 16/17		FY 17/18		Total Program		Cumulative Water Savings across all Fiscal Years
	Res	Comm	Res	Comm	Res	Comm	Res	Comm	Res	Comm	Res	Comm	Res	Comm	Res	Comm.	
Brea	8	0	9	8	4	0	43	6	20	4	31	4	32	0	163	80	522.87
Buena Park	4	19	3	0	0	0	4	10	7	4	10	7	15	3	46	44	149.53
East Orange CWD RZ	5	0	2	0	0	0	2	0	1	0	11	1	6	0	31	1	18.98
El Toro WD	26	2	7	2	11	0	8	9	9	17	33	8	29	4	144	359	2,480.25
Fountain Valley	8	2	3	2	4	0	7	10	13	1	33	12	28	12	119	52	187.79
Garden Grove	7	0	5	2	9	0	10	14	13	11	28	0	27	2	128	40	175.37
Golden State WC	13	3	9	49	9	25	39	12	35	16	56	37	88	6	313	198	819.74
Huntington Beach	15	4	18	33	20	35	19	2	42	12	88	94	70	30	342	298	1,084.19
Irvine Ranch WD	267	71	414	135	71	59	67	310	239	207	344	420	416	78	2,185	2,364	11,386.07
La Habra	3	0	4	7	2	0	4	7	3	1	12	7	8	0	44	44	203.41
La Palma	1	0	1	0	2	0	2	0	3	2	1	0	5	0	15	2	6.21
Laguna Beach CWD	109	2	76	2	71	0	86	0	86	1	27	0	11	0	508	20	235.46
Mesa Water	21	0	10	2	15	2	17	28	36	12	149	41	49	0	367	154	735.10
Moulton Niguel WD	179	31	51	74	40	45	46	95	163	100	236	129	284	33	1,198	834	3,609.83
Newport Beach	275	12	242	26	168	75	11	9	28	43	30	12	24	0	1,062	409	2,616.28
Orange	25	0	20	24	13	9	18	31	51	13	69	10	61	13	346	178	938.88
San Juan Capistrano	103	2	14	18	6	11	6	19	20	8	22	8	23	5	245	130	646.69
San Clemente	212	17	26	7	28	2	28	24	26	3	37	13	38	41	1,089	415	2,684.65
Santa Margarita WD	262	7	53	171	64	93	53	321	189	136	326	221	273	220	1,427	1,592	5,778.04
Santiago CWD	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00
Seal Beach	0	3	1	0	1	36	1	12	2	2,446	2	4	5	0	12	2,502	5,119.68
Serrano WD	3	0	1	0	0	0	4	0	11	2	4	0	8	0	46	2	14.33
South Coast WD	78	10	13	16	8	4	104	73	9	11	7	0	15	2	293	214	1,149.61
Trabuco Canyon WD	12	0	6	0	2	0	6	1	16	50	13	3	20	0	123	157	951.17
Tustin	11	0	8	4	9	1	18	14	33	8	33	23	27	1	170	81	340.97
Westminster	2	0	1	1	2	0	13	17	7	1	17	12	22	0	87	44	197.98
Yorba Linda	22	0	20	0	12	5	32	2	61	27	72	71	68	10	406	193	836.23
MWDOC Totals	1,671	185	1,017	583	571	402	648	1,026	1,123	3,136	1,691	1,137	1,652	460	10,909	10,407	42,889.32

Anaheim	23	60	19	10	9	26	7	52	30	34	87	10	62	0	306	457	2,608.93
Fullerton	22	51	9	29	8	0	40	26	32	12	53	7	43	0	242	199	935.52
Santa Ana	6	5	8	19	7	8	9	27	22	26	15	3	11	0	93	100	350.57
Non-MWDOC Totals	51	116	36	58	24	34	56	105	84	72	155	20	116	0	641	756	3,895.02
Orange County Totals	1,722	301	1,053	641	595	436	704	1,131	1,207	3,208	1,846	1,157	1,768	460	11,550	11,163	46,784

ROTATING NOZZLES INSTALLED BY AGENCY
through MWDOC and Local Agency Conservation Programs

Agency	FY 13/14			FY 14/15			FY 15/16			FY 16/17			FY 17/18			Total Program			Cumulative Water Savings across all Fiscal Years
	Small		Large	Small		Large	Small		Large	Small		Large	Small		Large	Small		Large	
	Res	Comm.	Comm.	Res	Comm.	Comm.	Res	Comm.	Comm.	Res	Comm.	Comm.	Res	Comm.	Comm.	Res	Comm.	Comm.	
Brea	84	0	0	157	45	0	74	2,484	0	0	0	0	0	0	0	572	2,749	0	49.46
Buena Park	53	0	0	248	0	0	45	98	0	0	0	0	0	0	0	509	173	2,535	813.11
East Orange	30	0	0	221	0	0	0	0	0	0	0	0	0	0	0	781	0	0	19.29
El Toro	56	3,288	0	1,741	28,714	0	730	4,457	0	55	242	0	36	0	0	3,260	43,348	890	1,191.68
Fountain Valley	0	0	0	107	0	0	222	0	0	0	0	0	85	0	0	919	2,874	0	17.55
Garden Grove	80	0	0	88	50	0	110	0	0	55	98	0	52	0	0	855	254	0	32.73
Golden State	192	0	0	583	1,741	0	1,088	0	0	207	6,008	0	161	-495	0	3,480	10,837	0	240.44
Huntington Beach	120	0	0	798	1,419	0	1,345	2,836	0	149	3,362	0	-37	0	0	4,001	9,135	2,681	1,310.80
Irvine Ranch	11,010	4,257	0	1,421	632	0	1,989	5,047	0	335	9,511	0	356	-215	0	46,498	43,325	2,004	4,745.04
La Habra	15	0	0	109	338	0	300	0	0	0	0	0	0	0	0	1,515	55,404	900	365.97
La Palma	0	0	0	0	0	0	46	505	0	0	2,385	0	33	0	0	89	3,163	0	26.21
Laguna Beach	2,948	878	0	2,879	1,971	0	1,390	0	0	0	0	0	0	0	0	11,948	2,896	0	301.19
Mesa Water	361	0	0	229	0	0	166	0	0	113	0	0	36	0	0	2,062	302	343	195.29
Moulton Niguel	361	227	0	1,596	4,587	0	5,492	1,441	0	153	5,872	0	893	0	0	12,728	20,598	2,945	1,691.98
Newport Beach	19,349	6,835	0	460	3,857	0	348	670	0	0	0	0	45	0	0	46,865	16,632	0	1,584.28
Orange	245	120	0	304	668	0	631	91	0	0	0	0	0	0	0	3,133	5,853	0	109.25
San Juan Capistrano	370	0	0	495	737	0	310	593	0	75	123	0	59	0	0	5,027	3,143	0	445.73
San Clemente	415	5,074	0	326	0	0	426	0	0	0	0	0	146	0	0	10,062	11,948	1,343	800.17
Santa Margarita	389	0	0	1,207	1,513	0	1,820	837	0	15	0	0	224	0	0	15,387	7,283	611	824.85
Seal Beach	0	0	0	40	5,261	0	0	2,300	0	0	0	0	0	0	0	155	7,561	0	127.44
Serrano	105	0	0	377	0	0	695	0	0	0	0	0	0	0	0	1,907	291	0	93.29
South Coast	70	0	0	4,993	13,717	0	1,421	2,889	0	16	0	0	0	0	0	9,628	18,870	0	472.75
Trabuco Canyon	0	0	0	56	0	0	130	0	0	0	4,339	0	0	0	0	729	4,339	0	131.59
Tustin	329	0	0	408	0	0	317	386	0	65	-341	0	30	0	0	4,444	1,849	0	120.83
Westminster	0	0	0	54	0	0	73	0	0	105	0	0	50	0	0	748	0	0	11.18
Yorba Linda	40	990	0	921	0	0	1,715	0	0	213	0	0	0	0	0	5,790	1,103	500	460.06
MWDOC Totals	36,622	21,669	0	19,818	65,250	0	20,883	24,634	0	1,556	31,599	0	2,199	-710	0	194,823	274,867	14,752	16,182.15

Orange County Totals	37,153	24,202	0	21,310	67,158	0	22,198	38,290	0	1,768	39,692	0	2,199	-710	0	202,612	341,727	16,341	18,325.80
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COMMERCIAL PLUMBING FIXTURES REBATE PROGRAM^[1]
INSTALLED BY AGENCY
 through MWDOD and Local Agency Conservation Programs

Agency	FY 11/12	FY 12/13	FY 13/14	FY 14/15	FY 15/16	FY 16/17	FY 17/18	Totals	Cumulative Water Savings across all Fiscal Years
Brea	1	234	0	10	91	734	242	1,607	503
Buena Park	290	5	23	56	591	133	49	2,538	1,219
East Orange CWD RZ	0	0	0	0	0	0	0	0	0
El Toro WD	137	0	212	6	268	35	737	1,799	666
Fountain Valley	314	0	0	1	249	0	895	1,767	671
Garden Grove	0	4	1	167	676	410	0	2,451	1,644
Golden State WC	135	0	1	0	1,008	53	93	2,958	2,087
Huntington Beach	156	104	144	7	783	641	10	2,964	1,753
Invine Ranch WD	646	1,090	451	725	11,100	5,958	1,599	29,465	8,559
La Habra	0	0	0	0	340	42	0	925	605
La Palma	0	0	0	0	0	509	0	675	131
Laguna Beach CWD	0	0	27	0	0	0	0	446	342
Mesa Water	41	6	0	79	661	782	0	4,254	2,307
Moulton Niguel WD	0	0	0	3	413	281	506	1,783	926
Newport Beach	35	0	0	566	0	0	0	1,834	1,414
Orange	73	1	271	81	275	2,851	458	5,488	2,042
San Juan Capistrano	0	0	14	0	0	0	0	260	427
San Clemente	19	0	0	1	0	0	0	432	412
Santa Margarita WD	0	0	0	2	90	743	598	1,548	301
Santiago CWD	0	0	0	0	0	0	0	0	0
Seal Beach	0	0	0	0	0	184	278	816	475
Serrano WD	0	0	0	0	0	0	0	0	0
South Coast WD	84	148	0	382	0	0	0	1,320	577
Trabuco Canyon WD	0	0	0	0	0	0	0	11	16
Tustin	0	0	0	75	358	212	2	1,404	913
Westminster	35	1	28	0	146	177	25	1,163	1,094
Yorba Linda	0	1	0	0	226	84	338	933	623
MWDOD Totals	1,966	1,594	1,172	2,161	17,275	13,829	5,830	68,841	29,711
Anaheim	48	165	342	463	3,072	309	1,808	15,561	7,687
Fullerton	0	94	0	178	476	621	274	3,052	1,821
Santa Ana	12	16	17	5	1,293	238	582	6,319	5,153
Non-MWDOD Totals	60	275	359	646	4,841	1,168	2,664	24,932	14,660
Orange County Totals	2,026	1,869	1,531	2,807	22,116	14,997	8,494	93,773	44,372

[1] Retrofit devices include ULF Toilets and Urinals, High Efficiency Toilets and Urinals, Multi-Family and Multi-Family 4-Liter HETs, Zero Water Urinals, High Efficiency Clothes Washers, Cooling Tower Conductivity Controllers, Ph Cooling Tower Conductivity Controllers, Flush Valve Retrofit Kits, Pre-rinse Spray heads, Hospital X-Ray Processor Recirculating Systems, Steam Sterilizers, Food Steamers, Water Pressurized Brooms, Laminar Flow Restrictors, and Ice Making Machines.

INDUSTRIAL PROCESS/WATER SAVINGS INCENTIVE PROGRAM

Number of Projects by Agency

Agency	FY 11/12	FY 12/13	FY 13/14	FY 14/15	FY 15/16	FY 16/17	FY 17/18	Overall Program Interventions	Annual Water Savings[1]
Brea	0	0	0	0	0	0	0	0	0
Buena Park	0	0	0	0	1	0	0	2	54
East Orange	0	0	0	0	0	0	0	0	0
El Toro	0	0	0	0	0	0	0	0	0
Fountain Valley	0	0	0	0	0	1	0	1	23
Garden Grove	0	0	0	0	1	0	0	1	0
Golden State	0	0	0	0	0	0	0	1	3
Huntington Beach	0	2	0	1	2	0	1	6	180
Irvine Ranch	1	1	1	0	2	1	0	9	115
La Habra	0	0	0	0	1	0	0	1	0
La Palma	0	0	0	0	0	0	0	0	0
Laguna Beach	0	0	0	0	0	0	0	0	0
Mesa Water	0	0	0	0	0	0	0	0	0
Moulton Niguel	0	0	0	0	0	0	0	0	0
Newport Beach	0	0	0	1	0	0	0	1	21
Orange	0	0	0	0	1	2	1	5	97
San Juan Capistrano	0	0	0	0	0	0	0	0	0
San Clemente	0	0	0	0	0	0	0	0	0
Santa Margarita	0	0	0	0	0	0	0	0	0
Seal Beach	0	0	0	0	0	0	0	0	0
Serrano	0	0	0	0	0	0	0	0	0
South Coast	0	0	0	0	1	1	0	2	134
Trabuco Canyon	0	0	0	0	0	0	0	0	0
Tustin	0	0	0	0	0	0	0	0	0
Westminster	0	0	0	0	0	0	0	0	0
Yorba Linda	0	0	0	0	0	0	0	0	0
MWDOC Totals	1	3	1	2	9	5	2	29	628
Anaheim	0	0	0	0	0	0	0	0	0
Fullerton	0	0	0	0	0	0	0	0	0
Santa Ana	0	0	0	0	1	0	0	1	11
OC Totals	1	3	1	2	10	5	2	30	640

[1] Acre feet of savings determined during a one year monitoring period.
If monitoring data is not available, the savings estimated in agreement is used.

TURF REMOVAL BY AGENCY⁽¹⁾

through MWDOC and Local Agency Conservation Programs

Agency	FY 13/14		FY 14/15		FY 15/16		FY 16/17		FY 17/18		Total Program		Cumulative Water Savings across all Fiscal Years
	Res	Comm.	Res	Comm.	Res	Comm.	Res	Comm.	Res	Comm.	Res	Comm.	
Brea	5,997	0	71,981	30,617	118,930	404,411	8,354	479	9,853	27,234	225,817	472,207	307.90
Buena Park	0	0	11,670	1,626	77,127	16,490	3,741	0	4,586	0	97,124	18,116	48.45
East Orange	1,964	0	18,312	0	27,844	0	0	0	0	0	48,120	0	23.32
El Toro	4,582	0	27,046	221,612	63,546	162,548	13,139	48,019	7,273	42,510	124,989	547,407	331.14
Fountain Valley	4,252	0	45,583	5,279	65,232	0	3,679	0	8,631	0	129,359	12,803	69.26
Garden Grove	8,274	0	67,701	22,000	177,408	49,226	11,504	0	4,487	0	287,921	117,403	224.31
Golden State	32,725	8,424	164,507	190,738	310,264	112,937	0	0	0	0	581,902	346,272	506.98
Huntington Beach	20,642	0	165,600	58,942	305,420	270,303	9,560	21,534	14,236	6,032	553,108	421,737	491.65
Invine Ranch	36,584	76,400	234,905	317,999	782,844	2,675,629	231,483	46,725	86,893	61,037	1,417,466	3,224,634	2,023.02
La Habra	0	0	14,014	1,818	49,691	72,164	0	0	3,003	0	66,708	90,019	77.27
La Palma	0	0	4,884	0	10,257	59,760	0	0	0	0	15,141	59,760	32.14
Laguna Beach	4,586	226	13,647	46,850	47,614	0	3,059	0	589	0	75,670	48,788	65.44
Mesa Water	22,246	0	131,675	33,620	220,815	106,896	4,173	77,033	17,373	77,785	413,726	295,334	297.43
Moulton Niguel	14,739	40,741	314,250	1,612,845	889,748	1,059,279	220,749	0	98,271	0	1,554,734	2,840,054	2,142.40
Newport Beach	894	0	33,995	65,277	76,675	375,404	2,924	0	5,938	6,499	127,428	449,526	256.98
Orange	11,244	0	120,093	281,402	289,990	106,487	12,847	2,366	11,956	0	475,052	398,978	438.59
San Clemente	18,471	13,908	90,349	1,137	215,249	438,963	4,267	0	33,083	7,098	398,983	474,271	401.10
San Juan Capistrano	12,106	0	101,195	32,366	197,290	143,315	2,624	40,748	0	0	365,415	347,277	409.91
Santa Margarita	17,778	48,180	211,198	514,198	534,048	550,420	17,010	28,094	62,706	25,000	859,338	1,194,453	975.37
Santiago	0	0	0	0	0	0	0	0	0	0	0	0	-
Seal Beach	0	0	15,178	504	17,349	15,911	1,234	0	752	0	38,124	16,415	26.23
Serrano	2,971	0	41,247	0	127,877	4,403	5,450	0	555	0	178,100	4,403	82.34
South Coast	15,162	116,719	84,282	191,853	181,102	128,290	14,967	0	13,319	7,806	325,067	465,387	420.60
Trabuco Canyon	2,651	0	14,771	0	42,510	88,272	1,465	0	4,788	0	67,999	110,712	86.55
Tustin	1,410	0	71,285	14,137	232,697	33,362	11,173	0	16,926	0	343,471	47,499	174.45
Westminster	0	0	14,040	34,631	71,833	23,902	11,112	0	10,033	0	107,018	58,533	71.98
Yorba Linda	0	0	112,136	12,702	360,279	116,985	19,420	0	9,529	3,696	512,713	133,383	290.35
MWDOC Totals	238,978	304,598	2,195,544	3,692,153	5,493,639	7,015,357	613,934	264,998	424,780	264,697	9,390,493	12,195,371	10,275.17

Anaheim	0	0	0	0	0	0	0	0	0	0	0	0	-
Fullerton	0	9,214	0	0	0	0	0	0	0	0	0	9,214	6.45
Santa Ana	0	0	0	0	0	0	0	0	0	0	0	0	-
Non-MWDOC Totals	0	9,214	0	0	0	0	0	0	0	0	0	9,214	6.45

Orange County Totals	238,978	313,812	2,195,544	3,692,153	5,493,639	7,015,357	613,934	264,998	424,780	264,697	9,390,493	12,204,585	10,282
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(1) Installed device numbers are listed as square feet

HIGH EFFICIENCY TOILETS (HETs) INSTALLED BY AGENCY

through MWDOC and Local Agency Conservation Programs

Agency	FY 11-12	FY 12-13	FY 13-14	FY 14-15	FY 15-16	FY 16-17	FY 17-18	Total	Cumulative Water Savings across all Fiscal Years
Brea	0	0	38	146	154	4	6	456	97.16
Buena Park	0	0	96	153	112	13	3	687	186.15
East Orange CWD RZ	0	0	13	26	24	0	0	86	20.43
El Toro WD	0	133	218	869	264	12	6	2,043	524.75
Fountain Valley	0	0	41	132	220	7	9	832	243.69
Garden Grove	0	0	63	350	363	7	4	1,488	411.72
Golden State WC	80	2	142	794	512	9	11	2,801	758.74
Huntington Beach	0	0	163	1,190	628	4	3	2,904	698.52
Irvine Ranch WD	0	1,449	810	1,777	2,798	638	239	17,148	5,304.09
Laguna Beach CWD	0	0	45	112	81	1	4	392	101.59
La Habra	0	0	37	94	83	5	1	591	190.75
La Palma	0	0	21	59	52	4	2	224	56.56
Mesa Water	0	0	147	162	162	7	3	1,621	581.23
Moulton Niguel WD	0	0	400	2,497	1,939	49	40	5,730	1,102.15
Newport Beach	0	0	49	168	243	11	6	731	177.43
Orange	0	1	142	978	416	17	10	2,189	516.07
San Juan Capistrano	0	0	35	140	202	3	5	528	117.17
San Clemente	0	0	72	225	246	11	6	878	218.75
Santa Margarita WD	0	0	528	997	1,152	114	34	3,343	653.07
Seal Beach	0	2	17	50	69	-1	0	857	385.24
Serrano WD	0	0	2	40	55	3	0	121	23.54
South Coast WD	23	64	102	398	235	11	7	1,028	223.09
Trabuco Canyon WD	0	0	10	108	169	2	3	342	62.99
Tustin	0	0	64	132	201	12	10	1,516	525.69
Westminster	0	0	35	161	359	3	4	1,335	403.72
Yorba Linda WD	0	0	40	280	379	12	8	1,259	335.45
MWDOC Totals	103	1,651	3,330	12,038	11,118	958	424	51,130	13,919.75

Anaheim	0	0	156	1,188	614	70	19	5,884	1,941.76
Fullerton	0	0	61	293	286	14	9	1,064	268.25
Santa Ana	0	0	33	602	293	20	0	2,021	601.53
Non-MWDOC Totals	0	0	250	2,083	1,193	104	28	8,969	2,811.54

Orange County Totals	103	1,651	3,580	14,121	12,311	1,062	452	60,099	16,731.29
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