

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

Jointly with the
PLANNING & OPERATIONS COMMITTEE

March 5, 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, P. Meszaros

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>.

ACTION ITEMS

1. ORANGE COUNTY QUALIFIED WATER EFFICIENT LANDSCAPER TRAINING PROGRAM
2. SOUTHERN CALIFORNIA WATER COALITION WATERFIX OUTREACH – PHASE 2

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. UPDATE RE EMERGENCY PLANNING FOR SOUTH ORANGE COUNTY AGENCIES

4. QUARTERLY UPDATE REGARDING IN-LIEU DELIVERIES
5. 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
6. 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.



ACTION ITEM

March 21, 2018

TO: Board of Directors

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

Robert Hunter
General Manager

Staff Contact: J. Berg
Director of Water Use Efficiency

SUBJECT: Orange County Qualified Water Efficient Landscaper Training Program

STAFF RECOMMENDATION

Staff recommends the Board of Directors authorize:

1. A one-time payment of \$10,000 to become a Professional Certifying Organization through the Sonoma-Marin Saving Water Partnership, and
2. The General Manager to enter into a professional services agreement with Blue Watchdog Conservation, Inc. in an amount not to exceed \$40,000 for program coordination and classroom instruction.

COMMITTEE RECOMMENDATION

Committee recommends (To be determined at Committee Meeting)

SUMMARY

Landscape water use accounts for approximately 50 percent of the total Municipal and Industrial (M&I) water use in Orange County. Based on total M&I water use in Fiscal Year 2016-17 (468,000 acre feet), landscape water use is estimated to be 234,000 acre feet. A conservative estimate of the water savings potential in the landscape is 25 percent or 58,500 acre feet per year.

The Municipal Water District of Orange County (MWD OC) began offering a variety of landscape rebates starting in 2004 with smart irrigation timers to promote irrigation scheduling efficiency. This water savings opportunity was pioneered in Orange County and has resulted in quantifiable and reliable savings over time. Since then, MWD OC expanded

| | | | |
|--|---------------------------|--------------------|---------|
| Budgeted (Y/N): Y | Budgeted amount: \$50,000 | Core: X | Choice: |
| Action item amount: \$50,000 | | Line item: 35-7040 | |
| Fiscal Impact (explain if unbudgeted): The costs to implement OC-QWEL is budgeted in the amount of \$50,000. In addition, it is estimated that approximately 500 hours of staff time will be invested per year to administer this program. | | | |

the opportunities to include low-volume sprinkler nozzles (2007), turf grass removal (2010), spray-to-drip conversions (2014), and regulations such as landscape ordinances. These efforts focus on residential, commercial, and public agency landscapes. Annual water savings from these activities are currently 13,800 acre feet per year.

In FY 16-17, staff convened a Project Advisory Committee (PAC) of member agencies to review existing landscape water use efficiency programs and evaluate new or missing program opportunities. PAC participants included staff from Laguna Beach County Water District, Mesa Water District, Moulton Niguel Water District, MWDOC, County of Orange Storm Water, City of San Clemente, Santa Margarita Water District, and Yorba Linda Water District. The PAC agreed that a comprehensive and prolonged approach is needed to achieve and maintain long-term landscape water savings and that the current portfolio of incentive programs was meeting a broad range of consumer needs. **The PAC identified landscape maintenance contractor training as a missing, yet very important, opportunity.** A single commercial landscape maintenance contractor manages dozens of properties containing hundreds to thousands of acres of urban landscapes.

The PAC then focused on evaluating a variety of options for commercial landscape maintenance contractor training. Over the course of four months, the PAC evaluated a variety of well-established and broadly implemented education programs specifically targeting commercial landscape maintenance contractors. The education programs evaluated are summarized in Exhibit A.

The PAC concluded that the Qualified Water Efficient Landscaper Training (QWEL) provided the best long-term fit for Orange County. The primary reasons the PAC made this training program selection is that QWEL:

- ✓ Provides a “Certification” for individuals who successfully complete the program
- ✓ Is well established and recognized by EPA as a Water Sense Program
- ✓ Was developed within the water industry and periodically undergoes curriculum refinements
- ✓ Allows water agencies to promote QWEL Certified contractors
- ✓ Requires continuing education to maintain certification

Based on a review of our landscape focused programs and requests from member agencies to implement a more comprehensive portfolio of landscape water saving activities, staff budgeted funding this fiscal year to begin a commercial landscape maintenance contractor training program.

DETAILED REPORT

QWEL Program Background

The QWEL program was developed in 2007 by Sonoma County Water Agency (Sonoma CWA) in partnership with the North Coast Chapter of California Landscape Contractors Association, landscape maintenance contractors, water retailers, and academia as a locally focused training program. The QWEL Program is a U.S. Environmental Protection Agency (EPA) WaterSense certified program. The Sonoma CWA serves as the parent Professional Certifying Organization (PCO). The QWEL Program website is www.qwel.net. This website contains program curriculum, training calendar, certified contractor search engine, continuing education opportunities, etc. Due to its local

success with several hundred graduates in its first couple of years, the Sonoma CWA expanded the QWEL program to allow for implementation throughout California and the nation in a campaign to improve landscape water management around the country. QWEL is now being implemented in over 20 locations throughout the western states.

The QWEL training program focuses on landscape professionals such as landscape maintenance contractors, city and school district maintenance staff, gardeners, landscape architects, landscape designers, and building maintenance managers. The QWEL curriculum includes 12 classes, as defined in Table I.

| Table I | | | | |
|--|--------------|--|---------------------------|--------------------|
| Qualified Water Efficient Landscaper Training | | | | |
| Class Matrix | | | | |
| Day | Class | | Time/Length (Hrs.) | Instructor |
| 1 | 1a | Where Our Water Comes From | 1.5 | Water Agency Staff |
| | 1b | Sustainable Landscaping | 1.0 | Consultant(s) |
| 2 | 2a | Soils | 2.0 | Consultant(s) |
| | 2b | Landscape Water | 2.0 | Consultant(s) |
| 3 | 3a | Irrigation Systems | 2.0 | Consultant(s) |
| | 3b | Irrigation Maintenance & Troubleshooting | 1.0 | Consultant(s) |
| 4 | 4a | Irrigation System Auditing | 2.0 | Consultant(s) |
| | 4b | Field Audit | 2.0 | Consultant(s) |
| 5 | 5a | Irrigation Scheduling | 1.5 | Consultant(s) |
| | 5b | Irrigation Controllers | 1.5 | Consultant(s) |
| 6 | 6a | Putting it All Together | 1.5 | Water Agency Staff |
| | 6b | Final Exam | 3.0 | Water Agency Staff |
| | | Total Hours | 21.0 | |

Implementation of QWEL in Orange County

The PAC considered a variety of QWEL implementation approaches for Orange County. Approaches ranged from a full turn-key program administered entirely by consultants to a program fully implemented by water agency staff. Ultimately, the PAC concluded that a combination of water agency staff and consultants was the best initial approach. MWDOC and member agency staff will provide the overall administration and coordination of QWEL, along with instruction of three training classes. A consultant would be hired to provide instruction of the other nine classes. The consultant would also be available for some logistics such as coordination of meeting rooms, setup and takedown, marketing, and curriculum development. The proposed approach for implementation includes the following, but may be modified as the program is refined over time:

- ✓ MWDOC to become the Professional Certifying Organization for Orange County responsible for the overall administration
- ✓ Member agencies will host classes and market the QWEL program to their customers

- ✓ Two classes will be taught per day
- ✓ All twelve classes would be taught over a series of six days (e.g., six consecutive Tuesdays)
- ✓ A combination of instructors from water agencies (three classes) and consultants who are subject matter experts (9 classes) will teach the classes
- ✓ Three to four 12-class series will be hosted per year

QWEL Professional Certifying Organization

In order to become a QWEL Professional Certifying Organization for Orange County, MWDOC is required to submit an application to the Sonoma-Marín Saving Water Partnership (Partnership). The application documents the eligibility requirements of the EPA WaterSense Professional Certification Program Labeling System. The Partnership requires a one-time onboarding fee for wholesale water agencies of \$10,000 to cover the administrative cost of establishing a new PCO. Administrative costs include:

- ✓ Establishment of new PCO on the QWEL website and associated certified contractor management system
- ✓ Access to QWEL teaching materials
- ✓ Access to QWEL marketing materials
- ✓ Access to QWEL program management software
- ✓ Instruction and training on the use of the program management software

Annually, a licensing fee will also be paid to the Partnership. This fee is tiered based on the number of certified professionals at the end of each year. The licensing fee ranges from \$500 to \$5,000 for 100 to 5,000 certified professionals respectively. The annual licensing fee covers ongoing costs associated with the QWEL program, such as continued development of program materials and software licensing fees.

Request for Proposals Process for Class Instructors

Staff composed and distributed a Request for Proposals (RFP) outlining the desired class instruction services and schedule for implementation of the QWEL in Orange County. On January 15, 2018, the RFP was distributed to more than 15 subject matter experts thought to be capable of providing the class instruction services. On January 24, 2018, staff held a Pre-Bid meeting to review the RFP with potential respondents and give them an opportunity to ask questions of clarification regarding the desired class instruction to be performed. Two organizations attended this meeting. The RFP required proposals to be submitted to MWDOC on February 1, 2018. Two consulting firms submitted proposals: Blue Watchdog Conservation Inc. (BWC), based in Cardiff, CA, and Green Media Creations, based in Burbank, CA.

Staff convened the PAC again to evaluate and score proposals and recommend a consulting firm for MWDOC Board Consideration. In addition to MWDOC staff, the review panel included representatives from Mesa Water District, City of San Clemente, and Santa Margarita Water District. The review panel found both firms to be qualified to perform the QWEL class instruction. However, the review panel felt that BWC was more qualified because BWC:

- ✓ Has QWEL Certified Instructors
- ✓ Have been providing QWEL training services in San Diego for the past two years
- ✓ Can provide class instruction in both English and Spanish
- ✓ Demonstrated a better understanding of the approach and scope of work in their proposal,
- ✓ Also provides Water Budgeting, Cooling Tower, Water Balance, Water Use Intensity, and Return on Investment services, and
- ✓ Offered a significantly lower hourly rate for professional services

Staff budgeted \$50,000 for commercial landscape maintenance contractor training in Fiscal year 2017-18. Staff recommends the Board of Directors authorize:

1. A one-time payment of \$10,000 to become a Professional Certifying Organization through the Sonoma-Marín Saving Water Partnership, and
2. The General Manager to enter into a professional services agreement with Blue Watchdog Conservation, Inc. in an amount not to exceed \$40,000 for program coordination and classroom instruction.

The BWC professional services agreement will be time and materials based. Staff projects that approximately 90 classes or 10 series of classes will be taught over the next two years. Fifteen to 30 participants are targeted for each class.

Exhibit A

| Summary of Commercial Landscape Maintenance Contractor Training Programs Evaluated by the Project Advisory Committee |
|---|
| Qualified Water Efficient Landscaper |
| <p>QWEL provides graduates with knowledge in water efficient and sustainable landscape practices, including water management and preservation of other valuable resources. QWEL is recognized as a <u>WaterSense</u> labeled Professional Certification Program for Irrigation System Audits. Upon successful completion, graduates will be listed as a Certified Professional on the WaterSense website. Since 2007, the QWEL program has been adopted by over 20 Professional Certifying Organizations (PCOs) throughout the US. The QWEL professional certification contains 12 classes, with 21 total hours of education on principles of proper plant selection for the local climate, irrigation system design and maintenance, irrigation system programming and operation, and sustainable landscaping. In order to obtain the QWEL certification, an individual must demonstrate their ability to perform an irrigation system audit as well as pass the QWEL exam. In order to keep the QWEL Professional Certification current, professionals need to submit two (2) hours of continuing education units (CEUs) each calendar year.</p> |
| Watershed Wise Landscape Professional Certification |
| <p>Green Gardens Group's (G3) US EPA WaterSense recognized Watershed Wise Landscape Professional Certification (WWLP) qualifies conservation, water quality, and landscape professionals to evaluate irrigation systems and factor rainwater use efficiency into outdoor water efficiency analysis. The WWLP workshop is a 2 day (16 hour) course that provides its participants with a deeper understanding of the plant/soil/water relationship, plant water requirements, landscape water budgeting, irrigation management, and using rainwater as a resource to reduce landscape water and resource use, regardless of the climate in which the landscape is situated. An irrigation audit, Certification Exam, Whole Landscape Site Evaluation, and annual Continuing Education Units (CEUs) are all requirements of the WWLP Certification.</p> |
| Certified Landscape Irrigation Auditor |
| <p>The Irrigation Association's Certified Landscape Irrigation Auditor (CLIA) is a US EPA WaterSense recognized Certification that gives landscape professionals a competitive edge. Becoming a CLIA certified professional improves credibility with customers and employers, increases job opportunities, and demonstrates commitment to efficient water management. CLIA professionals quantify and analyze landscape irrigation water use, collect site data, make maintenance recommendations and perform minor repairs, perform field measurements and observations, determine irrigation uniformity and efficiency, develop a basic irrigation schedule, and work with a water manager or property owner to manage overall irrigation water use. In order to obtain the CLIA certification, an individual must register for the exam, pass the irrigation auditor exam, submit a landscape irrigation audit, and remain in good standing by submitting 20 continuing education units (CEUs) per two-year cycle.</p> |

Water Management Certification Program

The California Landscape Contractors Association's (CLCA) Water Management Certification Program was established in 2007 and helps the green industry reduce landscape water usage by certifying individuals through performance-based water budgeting. This unique program carries the WaterSense label from the U.S. Environmental Protection Agency. Attendance at the one-day workshop and completion of the irrigation audit introduction, passing the written test, and successful completion of the Performance Program or management of at least one landscape site for a rolling 12 months are the requirements to becoming a Certified Water Manager (CWM).

Bilingual Training Institute

Bilingual Training Institute's (BTI) training focuses on Irrigation System Troubleshooting and Water Management. Attendees will learn how each component of the irrigation system functions and the appropriate operating conditions for optimum performance. This is the foundation that will enable the attendees to follow a method of elimination to effectively troubleshoot and repair the various components of the irrigation system in an orderly and timely manner. Instructors will ensure a thorough understanding of the operation of the specific equipment discussed, such as friction loss charts, performance charts, irrigation valves (both forward-flow and reverse-flow valves), electrical wires, waterproof splices, volt-ohm meters, controllers, sprinklers, pressure gauges, etc.

Attendees will also be taught the importance of managing the irrigation in a sustainable manner to promote a thriving soil environment that will contribute to plant health and appearance. A thorough understanding of water management principles and the soil moisture depletion method will ensure the health of the landscape environment and will minimize pests, diseases, water waste, and the contamination of both ground and surface water.



ACTION ITEM
March 21, 2018

TO: Board of Directors

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

Robert Hunter, General Manager

Staff Contact: Damon Micalizzi

SUBJECT: SOUTHERN CALIFORNIA WATER COALITION WATERFIX OUTREACH – PHASE 2

STAFF RECOMMENDATION

Staff recommends the Board of Directors: Consider authorizing funding for the Southern California Water Coalition for the second phase of California WaterFix Outreach.

COMMITTEE RECOMMENDATION

Committee recommends (To be determined at Committee Meeting)

SUMMARY

Charley Wilson, Executive Director of the Southern California Water Coalition (SCWC) will provide a presentation on past and upcoming activities related to the Coalition's efforts promoting the California WaterFix. He will discuss the progress the SCWC has made to date, and plans and funding for the second phase of outreach.

The SCWC was established in 1984 to advocate for a permanent solution for the San Joaquin-Sacramento Delta. SCWC is a nonprofit, nonpartisan public education organization dedicated to informing Southern Californians about the region's water needs and the state's water resources. The agency has membership and reach in Los Angeles, Orange, San Diego, San Bernardino, Riverside, Ventura, Kern and Imperial counties. SCWC's 200 member organizations include leaders from business, regional and local government, agricultural groups, labor unions, environmental organizations, water agencies, and the general public.

Staff recommends the Board consider participating in the SCWC's second phase of California WaterFix outreach and advise staff regarding budget or expenditure. MWD OC provided \$30,000 towards the Phase 1 effort.

| | | | |
|---|----------------------|-----------------|------------------|
| Budgeted (Y/N): No | Budgeted amount: \$0 | Core <u>X</u> | Choice <u> </u> |
| Action item amount: TBD | | Line item: None | |
| Fiscal Impact (explain if unbudgeted): TBD by the Board | | | |



INFORMATION ITEM

March 5, 2018

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

FROM: Robert Hunter, General Manager

Staff Contact: Karl Seckel

SUBJECT: Update RE Emergency Planning for SOC Agencies

STAFF RECOMMENDATION

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

COMMITTEE RECOMMENDATION

Committee recommends (To be determined at Committee Meeting)

SUMMARY

Attached is a presentation provided on February 22 to South Coast Water District. It summarizes the recent discussions on emergency supply needs held with the South Orange County (SOC) agencies on January 18 at MWDOC. This presentation updates the prior numbers provided to the SOC agencies and updates the information shared at our January 2nd P&O Committee. This update has now been shared with all SOC agencies. The results have been changed to units of million gallons per day (MGD) in case they seem different.

The SOC agencies have been requested to review and provide feedback. MWDOC's interest is to have each agency provide information as to what they believe their emergency needs are above what they can currently supply. The following should be noted:

- The slide on slide 16 indicates that collectively the SOC Recovery Needs are between 20 and 27 MGD of emergency supplies (less whatever IRWD can provide)

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

via the SOC Interconnection less any NEW local potable projects agencies might be considering).

- Key columns are 1, 5 & 9 on slide 15.
 - Column 1 is MWDOC's attempt at estimating average annual demand today (under normal weather).
 - Column 5 is 65% of the demands in column 1.
 - Column 9 is 2040 indoor demands at 55 gallons per capita per day (gpcd) + estimated Commercial, Industrial, Institutional (CII) demands for business needs.
 - MWDOC is suggesting using demand levels somewhere between columns 5 & 9 for emergency planning, but are seeking input from the agencies.

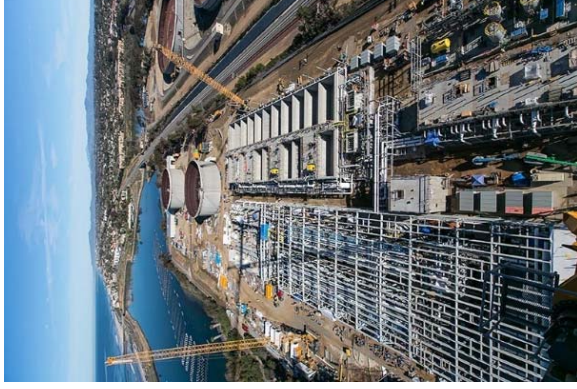
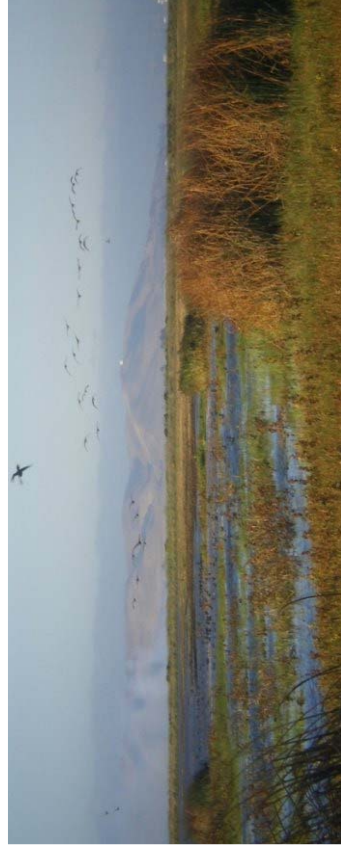
In addition, MWDOC has issued an RFP to consultants to help evaluate the ability of the IRWD system via the existing emergency interconnection to provide emergency supplies to the SOC agencies. This effort will determine whether the system can be expanded or extended further out into the future in meeting the needs of SOC. The study is expected to take about 6 months. Once proposals are received and reviewed, the award will be brought to the P&O Committee for consideration. Workshops with the SOC agencies as part of the study. Staff will keep the P&O Committee apprised as the work proceeds.



CALIFORNIA
ECO RESTORE
A STRONGER DELTA ECOSYSTEM.



CALIFORNIA
WATERFIX
RELIABLE. CLEAN. WATER.



Update to South Coast Water District Board OCWD/SOC Emergency Supplies

February 22, 2018
REVISED 2-27-18



What is Water Reliability?

Supply Reliability

- How often are you short water supplies and how much are you short? (Mandatory Reductions)



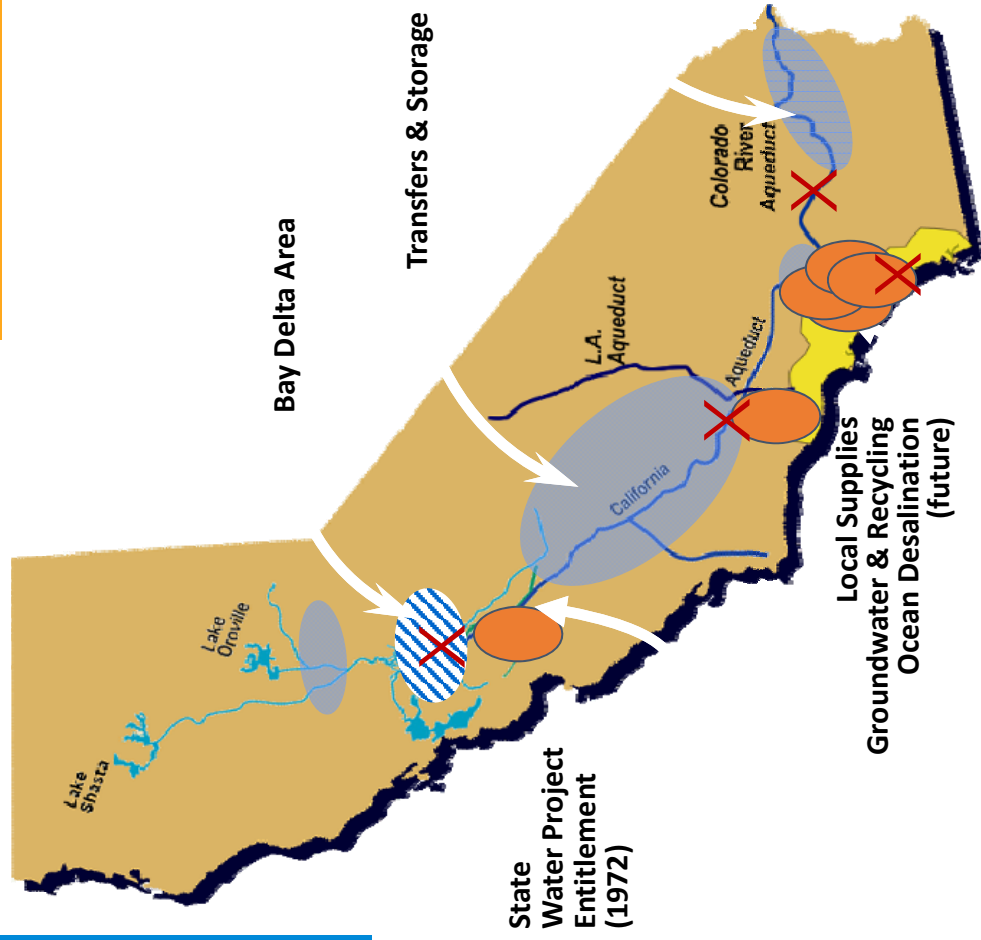
System Reliability

- How reliable is your system (can demands be met) under different emergency situations?



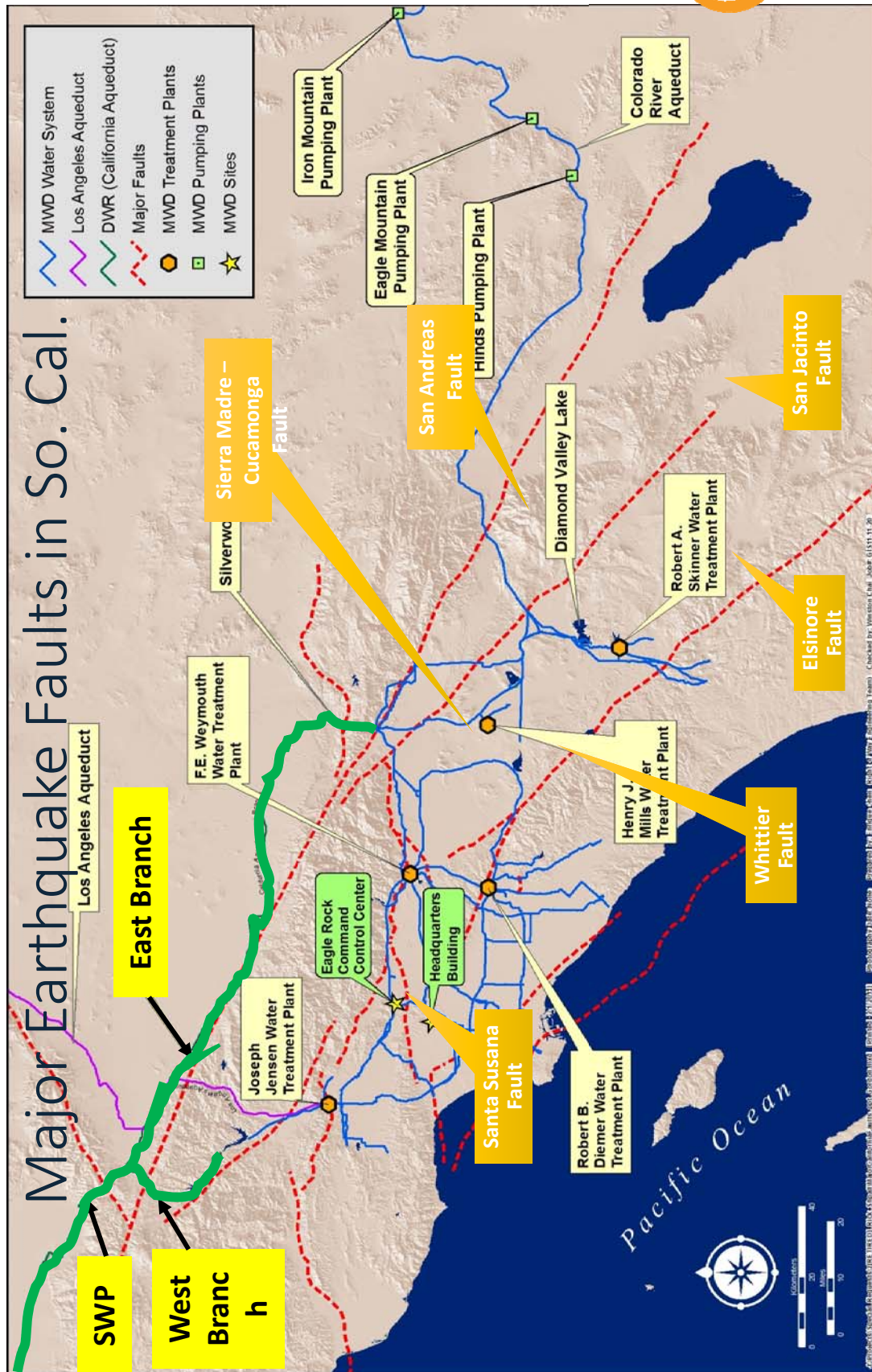
EMERGENCY GAP Analysis (System Reliability)

- Primary Risks:**
 - Earthquakes
 - Power Outages



X = Potential Earthquake Locations

Colorado River Aqueduct (1941)



MET Seismic Performance Expectations Estimated Outage Durations

60 days
without
MET

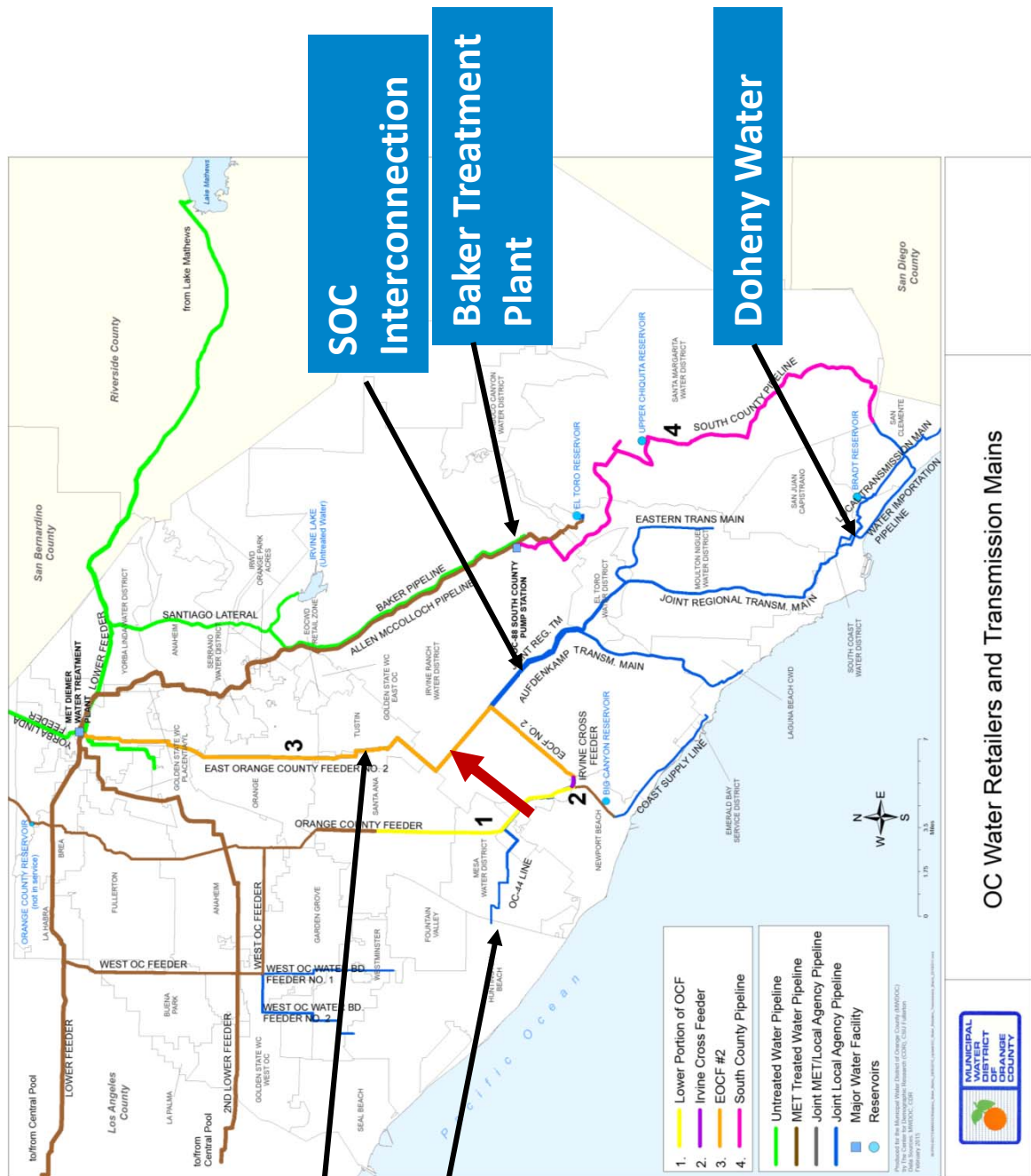
Seismic Resilience Water Supply Task Force – MET/DWR/LADWP

Preliminary Findings June 2017 (just released) Regarding Potential Outage Durations:

- 1. Partial flows may be restored on the West
Branch of the SWP within 6-12 months**
- 2. Repairs to restore partial flows along the East
Branch of the SWP may exceed 12-24 months**

Expectations when the BIG Earthquake happens!

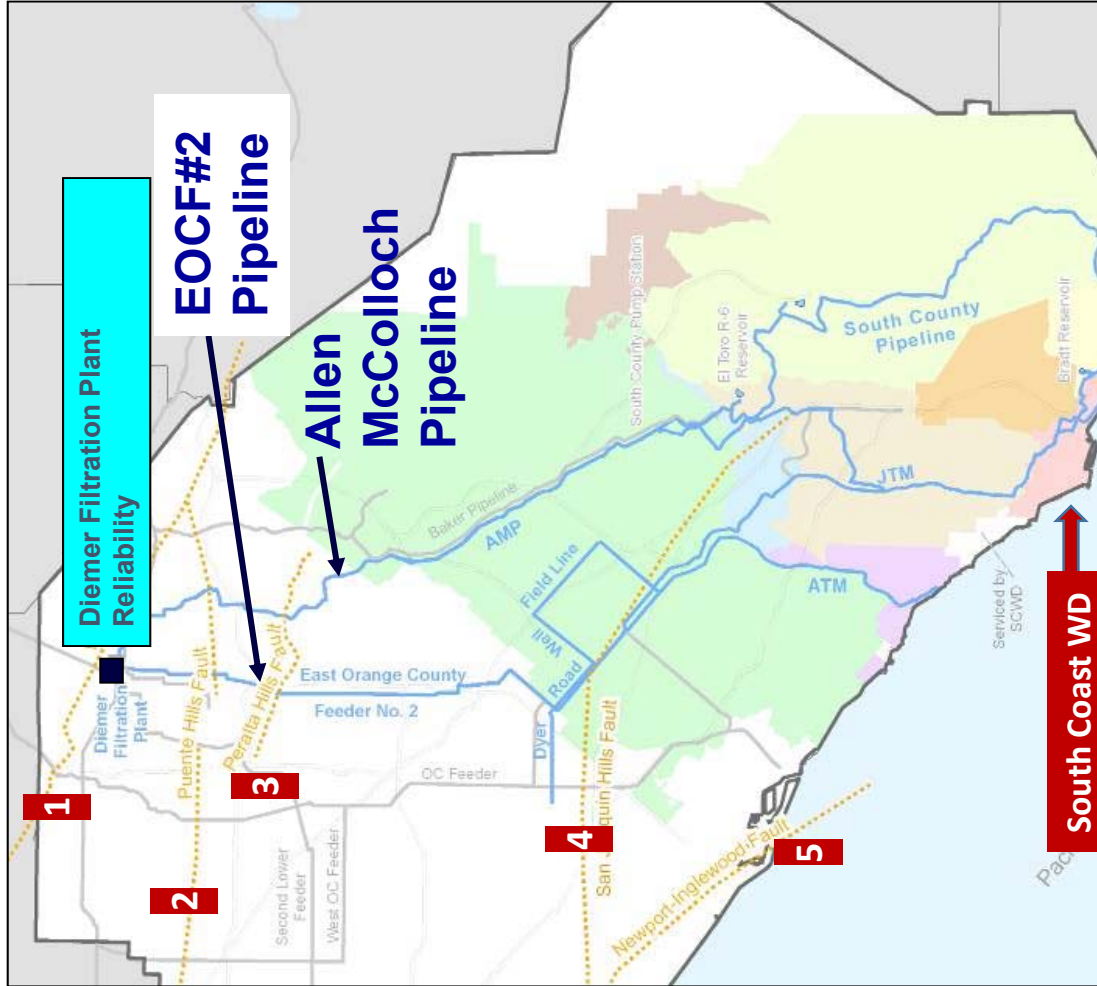
- 💧 Recommended that Local Agencies plan for up to 60-days without MET and 7 days or more without the power grid
- 💧 MET/DWR planning for greater than 60 days
 - 💧 MET retains minimum of 630,000 AF in emergency storage
 - 💧 DWR is working on Emergency Flow Pathway in Delta
- 💧 Assume reduced consumer demand based on emergency conditions



MWDOC system Reliability Modeling Assumptions

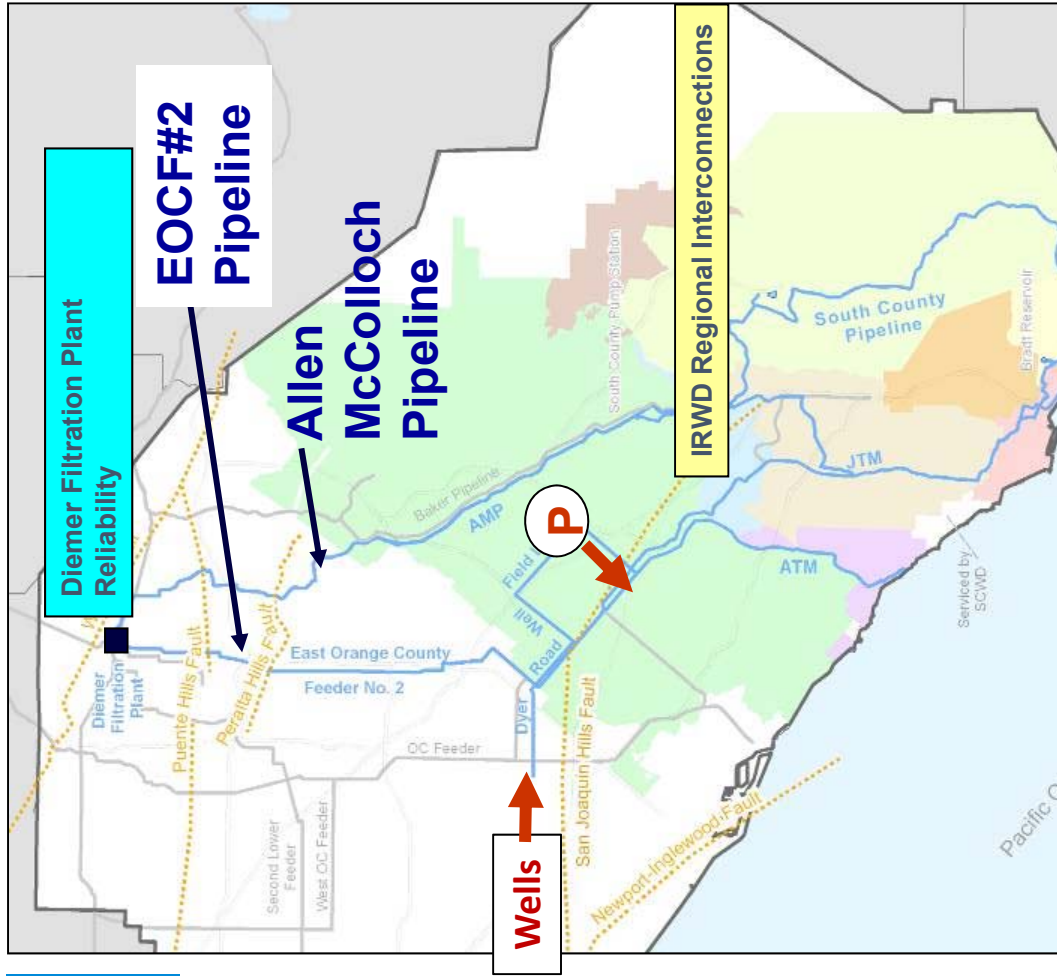
- Assumes curtailment in demands – but what level of demands should we be planning for and what are customer expectations?
- Assumes locally produced water and water in their storage reservoirs can be moved throughout their distribution system
- Water in storage reservoirs is utilized over 60 days
- The goal of the modeling is to identify system GAPS in product water or storage to meet a reduced consumptive demand for up to 60 days without the MET system.*

Earthquake Faults Within Orange County



Emergency Services Program from 2006

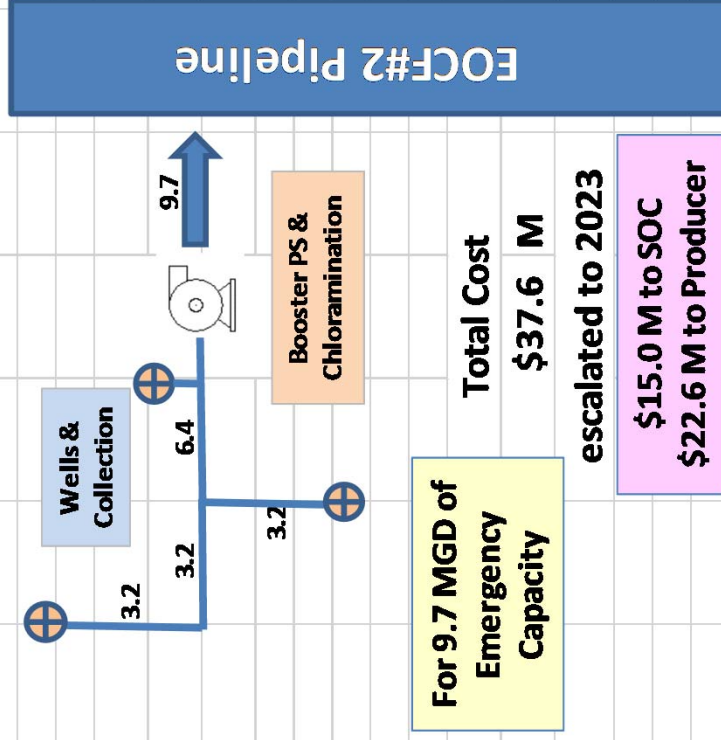
- Approved in 2006 by MWDOC, OCWD & IRWD
- Allows Emergency Needs to be supplied, up to 32 MGD for up to 30 days max
- By 2009 IRWD and SOC Agencies constructed \$25 M in facilities to deliver up to 19 MGD from IRWD Zone 1 to SOC
- IRWD excess capacity goes to zero in 2030
 - IRWD examining options
 - MWDOC examining EOCF#2 Pump-in option



EOCF#2 Pump-In Concept

- Conceptual at this time; similar to MET's Conjunctive Use Program
- Wells can be used by Producer's until needed by SOC during emergency
 - Cost sharing & other terms to be determined
- Max SOC need = 27 MGD; depends on IRWD System evaluation
- As an example, assumed SOC Pays:
 - 1/3 cost of wells
 - Full cost of booster pump station & connection to pipeline
 - Full cost of replacement water + 5%
 - \$100 per AF fee to OCWD

Generic 9.7 mgd Wellfield and Collector/Transmission System (Flows in mgd)



Recent OCWD Discussions Regarding Groundwater Storage

- 💧 MNWD approached OCWD seeking a groundwater storage account (more than just emergency & more controversial)
- 💧 MWDOC has continued seeking an expansion of the Emergency Storage Program from 2006 (simpler program)
- 💧 At Feb 14 meeting, it was agreed that the OCWD staff & Groundwater Producers would take about 4 months to study:
 - 💧 Capacity of the basin?
 - 💧 Value of the basin?
 - 💧 Storage accounts for groundwater producers before any outside agencies?
 - 💧 Does capacity exist for others and what are terms?



Recent OCWD Discussions (con't.)

- 💧 In addition, OCWD requested MWDOC to:
 - 💧 Secure approval from MET to move local supplies in the EOCF#2
 - 💧 Negotiate an early termination of the MET Conjunctive Use Account
- 💧 MWDOC is starting a study with IRWD regarding expansion or extension of the existing SOC Interconnection Agreement
- 💧 Comments by OCWD & Producer staff that Emergency only Programs are much easier to put into place
- 💧 Needs to come back to Producers & OCWD Board for decision-making before emergency expansion can occur



Various Demand Scenarios

| SOC Agency Potable Demand Scenarios in gallons per minute (MGD) | | | | | | | | | |
|---|-----------------------------------|----------------------------------|--------------------------------------|------------------------------------|---------------------------------------|---------------------|--|----------------------------|-----------------------------------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| | Normalized Potable Demand 2017-18 | Wet Potable Demand December 2014 | Very Wet Potable Demand January 2017 | Dry/Hot Potable Demand August 2012 | 75% Normalized Potable Demand 2017-18 | 2040 Potable Demand | SWRCB Potable Demand During Recent Drought | Summer 2015 Potable Demand | 2040 Indoor at 55 gpcd + 2040 CII |
| El Toro WD | 7.0 | 4.3 | 3.7 | 10.6 | 5.3 | 7.2 | 6.5 | 7.8 | 6.5 |
| Moulton Niguel WD | 22.0 | 15.6 | 13.8 | 32.2 | 16.5 | 22.7 | 20.0 | 23.7 | 19.2 |
| San Clemente | 7.1 | 4.6 | 3.9 | 10.5 | 5.3 | 7.5 | 6.2 | 7.3 | 6.1 |
| San Juan Capistrano | 7.2 | 3.7 | 3.1 | 10.0 | 5.4 | 5.2 | 5.4 | 7.0 | 4.7 |
| Santa Margarita WD | 21.5 | 13.5 | 9.9 | 33.6 | 16.1 | 17.8 | 18.9 | 23.5 | 18.0 |
| South Coast WD | 4.9 | 3.7 | 3.3 | 7.2 | 3.7 | 4.7 | 4.5 | 4.8 | 4.3 |
| Trabuco Canyon WD | 2.2 | 1.5 | 0.6 | 3.8 | 1.7 | 2.3 | 1.9 | 2.3 | 1.2 |
| Total Potable Demand (MGD) | 72.0 | 46.9 | 38.3 | 107.9 | 54.0 | 67.4 | 63.4 | 76.5 | 60.1 |

| Table 1 Estimated System Emergency Recovery Needs for SOC Agencies Under Two Scenarios (MGD) | | |
|---|--|---|
| | 1 | 2 |
| | 60-Day Recovery Needs Using 75% of Normalized 2017-18 Demands (MGD) | 60-Day Recovery Needs Using 2040 Indoor Demands at 55 gpcd + 2040 CII Demands (MGD) |
| Agency | | |
| El Toro WD | 0.3 | 1.7 |
| Laguna Beach CWD | 0.0 | 0.0 |
| Moulton Niguel WD | 2.7 | 5.7 |
| San Clemente | 2.8 | 3.7 |
| San Juan Capistrano | 2.7 | 2.0 |
| Santa Margarita WD | 2.3 | 4.4 |
| South Coast WD | 2.4 | 3.1 |
| Trabuco Canyon WD | 0.0 | 0.0 |
| | | |
| Subtotal | 13.2 | 20.7 |
| Assumed SOC Interconnection Capacity | 6.5 | 6.5 |
| Total Needs (MGD) | 19.7 | 27.2 |
| Volume of water over 60 days in AF | 3,635 | 4,999 |
| | | |
| 1. Assumes 2016-17 was wet and 2017-18 projected trend is dry & averages the two times 75% | | |
| 2. From OC Water Reliability Study - 2040 population * 55 gpcd = indoor + adds estimated 2040 CII | | |

Other scenarios ranged from 50% to 140% of Annual Average

This assumes the SOC Interconnection Project can provide 6.5 MGD beyond 2030

Need Input from the SOC Agencies based on their own evaluation of their emergency needs

Emergency Planning Questions

1. What are IRWD capabilities at the SOC Interconnection? What can be done to augment? Should “counting on IRWD’s good will” be part of our robust planning process?
2. Accuracy of planning? Will demands be as low as expected?
3. During emergencies will operations go as planned?
4. Should flexibility be included in demand



Emergency Planning Questions

5. Think about 60 days in the summer – what are the expectations of customers and businesses (commercial, resorts, restaurants, etc)?
6. Should the criteria be adjusted based on the cost of securing emergency supplies, i.e., if a less expensive alternative is available, should we take advantage of supplies?
7. Does it make a difference in the outcome if we examine SYSTEM and SUPPLY projects in a different order
8. Accommodating additional base loaded projects in SOC may be difficult in low demand periods.
9. Others???



Input from Jan 18 Meeting

1. In a large emergency, some felt demands should be able to get lower than 75% of annual average. One agency indicated their normal winter use is about 56% of annual average demands and is probably a good target for emergency needs.
2. It is anticipated that Direct Potable Reuse in SOC would not have a large impact on emergency needs, because the level of DPR will be limited.
3. The consensus appeared to be that “our planning should not be based on the assumption that IRWD will have plenty of water to provide to SOC agencies in the event of a large emergency”, although it was acknowledged that all agencies are always willing to assist their neighboring agencies if they can

Input from Jan 18 Meeting

4. One agency advocated for planning for longer than a 60-day outage duration.
5. Basic input was that demand scenarios should be updated since demands have been drastically reduced. “Demand hardening” will also make it harder to achieve demand reductions upon requests to consumers in the future.
6. Planning only to meet indoor residential demands in the event of a 60-day outage is probably not a robust enough emergency plan. Several thought planning to ensure businesses businesses (commercial, resorts, restaurants, etc) can operate, especially in the event of a 60 day outage, would be good.

Input from Jan 18 Meeting

7. Agencies indicated they would review their planning information and get back to MWD OC on minimum and maximum additional emergency needs. They would also provide input as to whether they believe 60 days is the right period to be planning for.
8. A question was raised about the Carson project and whether we should be evaluating the project NOW as the supply reliability improvement provided by the Carson Project may be more beneficial than other projects currently being considered. MWD OC indicated that the upcoming supply reliability evaluation would consider the WaterFix along with the Carson projects as well as other projects being considered within OC and so the discussion on the various projects is coming.

Next Steps

- Review work & issues with member agencies and others
- Participate in emergency and other storage discussions with OCWD and SOC
- Continue with the “Supply” reliability update – May 2018
- Seek input from agencies
- Complete Study with IRWD in Summer 2018

Schedule to Expand Emergency Services Program

1. Complete evaluation of IRWD system capabilities
2. Complete conceptual planning for pump-in to East Orange County Feeder No. 2
3. OCWD and Groundwater Producers Study
4. Seek EOCF#2 Agreement Amendment with MET
5. Agree to financial cost-sharing details
6. Update Emergency Services Agreement with OCWD
 - ⚠ Retain max capacity of 50 cfs
 - ⚠ Expand duration from 30 days to 60 days
 - ⚠ Max volume = 6,000 acre-feet
7. Complete improvements

6 Months

6 - 12 Months

2-3± Years

Questions???





DISCUSSION ITEM

March 5, 2018

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

FROM: Robert Hunter, General Manager

Staff Contact: Harvey De La Torre
Chris Lingad

SUBJECT: QUARTERLY UPDATE REGARDING IN-LIEU DELIVERIES

STAFF RECOMMENDATION

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

COMMITTEE RECOMMENDATION

Committee recommends (To be determined at Committee Meeting)

BACKGROUND

On July 19, 2017, the MWDOC Board of Directors authorized the General Manager to enter into Cyclic Agreements with the Metropolitan Water District (Metropolitan), Orange County Water District (OCWD), and the cities of Anaheim, Fullerton, and Santa Ana in the implementation of a one-time Metropolitan In-Lieu Program, as adopted by the Metropolitan Board on July 11, 2017. The purpose of this program is to replenish local groundwater storage that was severely depleted during the recent drought and optimize the storage of the excess imported supplies available to Metropolitan last year.

The In-Lieu Program directly puts water into the Orange County Groundwater Basin by allowing groundwater producers to take additional Metropolitan treated imported water at a cost-neutral price "In-Lieu" of pumping groundwater. OCWD committed to purchase up to 100 thousand acre-feet (TAF) of In-Lieu water by the end of Fiscal Year 2017-18, if available; which would refill the Orange County Basin to an estimated 60% (Note: OCWD's ideal basin operating range is 70% to 80% full).

| | | | |
|---|----------------------|-------------------|--------------------|
| Budgeted (Y/N): N/A | Budgeted amount: N/A | Core <u> X </u> | Choice <u> </u> |
| Action item amount: None | | Line item: | |
| Fiscal Impact (explain if unbudgeted): | | | |

In coordination with OCWD staff and the eighteen participating groundwater producers, MWDOC staff is administering the operations of the program and submitting monthly certification forms to Metropolitan. The purpose of this report is to provide the MWDOC Board with the third quarter certification update and progress toward achieving the storage goal of 100 TAF by the end of the fiscal year.

QUARTERLY UPDATE

This third quarter certification update is comprised of the imported water requested to be certified as In-Lieu by Metropolitan for the month of **January** for MWDOC's member agencies and the Cities of Anaheim, Fullerton, and Santa Ana. For the month of January, 7,751 AF of imported water has been requested to Metropolitan to be certified as In-Lieu water. **Since the start of the program (July 2017), In-Lieu deliveries total 72,994 AF.**

SUSPENSION OF THE MET/MWDOC CYCLIC IN-LIEU PROGRAM

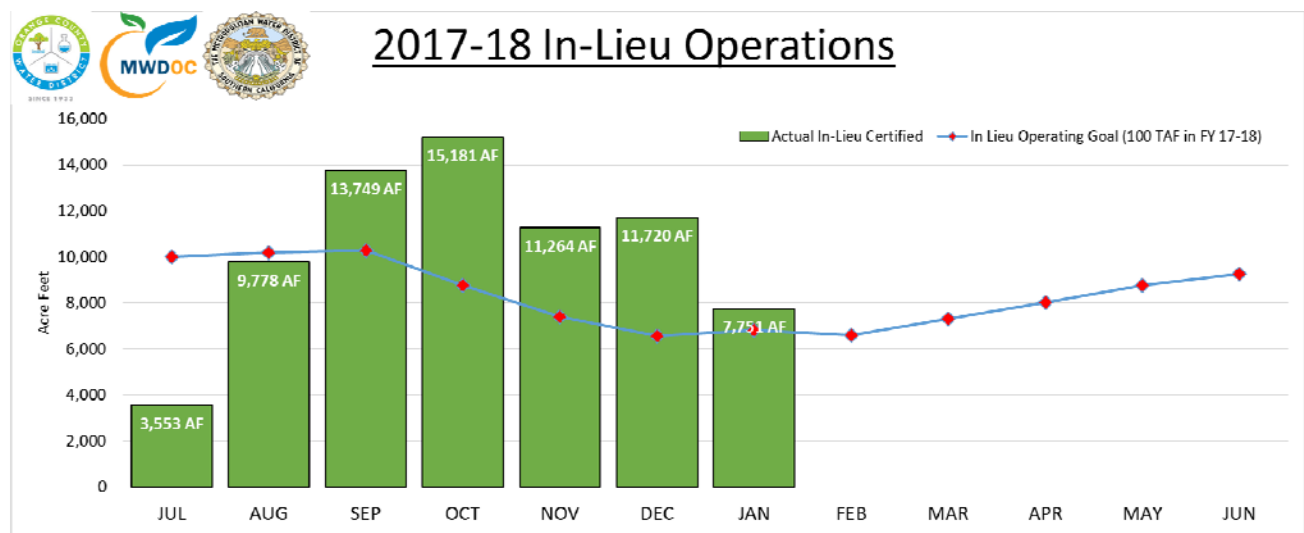
On December 28, MWDOC staff received notification from Metropolitan staff that due to the low initial SWP "Table A" allocation (currently at 20%) and the very dry conditions statewide this winter season, Metropolitan suspended the Cyclic Storage In-Lieu Program on January 31, 2018. Should hydrologic conditions dramatically improve on the SWP, Metropolitan could possibly resume Cyclic Storage In-Lieu deliveries in Fiscal Year 2017-18.

Therefore, this quarterly update is likely to be the last report to the Board on In-Lieu deliveries.

2017-18 In-Lieu Deliveries by Retail Agency

| Actual In-Lieu Credits (AF) | JUL | AUG | SEP | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | Total |
|------------------------------------|----------------|----------------|-----------------|-----------------|-----------------|-----------------|----------------|------------|------------|------------|------------|------------|-----------------|
| City of Anaheim | 0.0 | 0.0 | 2,963.3 | 3,559.6 | 3,421.8 | 1,300.0 | 643.6 | | | | | | 11,888.3 |
| City of Buena Park | 0.0 | 0.0 | 766.9 | 0.0 | 0.0 | 0.0 | 0.0 | | | | | | 766.9 |
| East Orange County Water District | 77.2 | 80.7 | 68.9 | 71.4 | 37.0 | 25.0 | 31.1 | | | | | | 391.4 |
| City of Fountain Valley | 0.0 | 382.1 | 320.7 | 355.1 | 257.3 | 172.9 | 158.8 | | | | | | 1,646.8 |
| City of Fullerton | 0.0 | 0.0 | 163.9 | 643.1 | 133.8 | 367.2 | 243.3 | | | | | | 1,551.3 |
| City of Garden Grove | 66.9 | 391.7 | 351.9 | 211.4 | 432.1 | 483.2 | 415.2 | | | | | | 2,352.3 |
| Golden State Water Company | 490.9 | 1,095.0 | 989.8 | 1,378.7 | 1,012.4 | 1,236.4 | 547.0 | | | | | | 6,750.2 |
| City of Huntington Beach | 1,279.1 | 1,837.9 | 1,921.2 | 1,917.3 | 874.7 | 692.6 | 558.3 | | | | | | 9,081.2 |
| Irvine Ranch Water District | 777.7 | 2,123.0 | 1,828.8 | 1,852.6 | 1,603.8 | 1,623.9 | 1,089.6 | | | | | | 10,899.4 |
| Laguna Beach County Water District | 21.6 | 190.2 | 230.0 | 258.2 | 188.6 | 211.5 | 112.3 | | | | | | 1,212.4 |
| Mesa Water District | 47.1 | 927.0 | 891.6 | 1,179.2 | 778.1 | 1,064.0 | 1,043.9 | | | | | | 5,930.9 |
| City of Newport Beach | 426.9 | 448.3 | 400.1 | 907.8 | 0.0 | 712.6 | 0.0 | | | | | | 2,895.7 |
| City of Orange | 0.0 | 390.0 | 642.1 | 719.8 | 881.2 | 833.2 | 454.8 | | | | | | 3,921.0 |
| City of Santa Ana | 0.0 | 234.4 | 601.6 | 579.3 | 253.6 | 1,435.3 | 1,278.5 | | | | | | 4,382.7 |
| City of Seal Beach | 37.0 | 62.8 | 92.8 | 215.0 | 267.4 | 216.8 | 49.6 | | | | | | 941.4 |
| City of Tustin | 208.4 | 706.9 | 690.9 | 678.6 | 608.3 | 736.9 | 737.9 | | | | | | 4,367.9 |
| City of Westminster | 95.5 | 277.4 | 277.2 | 104.6 | 92.4 | 158.3 | 202.4 | | | | | | 1,207.7 |
| Yorba Linda Water District | 24.3 | 630.8 | 547.1 | 549.2 | 421.1 | 449.8 | 184.6 | | | | | | 2,807.0 |
| Total OCWD Agencies | 3,552.5 | 9,778.2 | 13,748.8 | 15,180.8 | 11,263.6 | 11,719.6 | 7,751.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 72,994.4 |
| Total MWD/OC Agencies | 3,552.5 | 9,543.8 | 10,020.0 | 10,398.8 | 7,454.4 | 8,617.1 | 5,585.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 55,172.1 |

2017-18 Total In-Lieu Deliveries VS. Operating Goal



| ENGINEERING & PLANNING | |
|---|--|
| Orange County Reliability Study | <p>MWDOC staff and consultant CDM Smith continue to work on the 2018 OC Reliability Study update which looks at both supply (drought supply) reliability and system (emergency) reliability. The update uses modeling assumptions based on more recently available information on future assumptions for the Colorado River, and State Water Project (SWP). The update looks to include modeling of SWP supplies once the California WaterFix volumes are determined. MWDOC staff will be meeting with MET staff to seek their input on the new modeling.</p> <p>Karl gave a presentation to the South Coast WD Board on February 22nd to provide an update on the emergency reliability portion of the Study. MWDOC has recommended that local agencies plan for up to 60 days without MET and requested input from SCWD and the other south Orange County (SOC) water agencies on their view of their own agency's emergency reliability needs.</p> <p>A final SUPPLY reliability report is expected in the Spring 2018; the SYSTEM reliability report timing is linked to evaluation of the ability of IRWD to expand or extend the existing SOC Interconnection capacity (see RFP below).</p> |
| South Orange County Emergency Service Program | <p>A Request For Proposals (RFP) was released on February 23rd, as part of a possible renewal/extension of the SOC Emergency Services Program with IRWD. The RFP is to study the ability/constraints of IRWD's system to move water through their system to SOC agencies into the future.</p> <p>The current Emergency Services Program Agreement is in effect through 2029. The agreement defines minimum monthly flow rate 'reservations' through IRWD's system for SOC agencies in the event of a planned or emergency short term outage. The agreement acknowledges IRWD has a diminishing ability to deliver water to SOC over time as IRWD's service area is built out; with zero flow available in the months of July through September beginning in 2020.</p> <p>Once proposals have been received and reviewed by MWDOC and IRWD staff, a recommendation to award the study contract will be brought to the MWDOC Board for consideration.</p> |
| North and Central O.C. Integrated Regional Watershed Management Area | <p>Charles Busslinger attended the February 22nd Ad Hoc committee meeting for the IRWM Plan (OC Plan). Agencies have submitted more than 50 projects for inclusion into the OC Plan. The Ad Hoc committee is reviewing the scoring of each submitted project as required Department of Water Resources (DWR) and will then submit the projects to Santa Ana Watershed Project Authority (SAWPA) for inclusion under the One Water One Watershed (OWOW) Plan.</p> |

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|---|---|
| | <p>The OC Plan is a sub-regional plan for the Santa Ana Funding Area. As the OC Plan is not a DWR-approved plan for the Santa Ana Funding Area, all projects submitted to the OC Plan will be submitted to the SAWPA under the OWOW Plan.</p> |
| San Juan Basin Authority | <p>Charles Busslinger and Karl Seckel attended the February 13th SJBA Board meeting.</p> <p>The February 13th SJBA Board meeting included a short workshop on the mission and future of the Authority. County Public Works staff presented an overview of the most recent reorganization of the OC Public Works Department. SBJA Board was interested in hearing how County efforts align with SBJA. Attendees were asked to provide input on whether or not the Authority should take a more active role in South Orange County regarding water resources, and ecosystem health; and whether the Authority should expand its jurisdictional boundaries. The workshop focused on seeking participant input on SJBA's future and '3 Questions':</p> <ol style="list-style-type: none"> 1. Water Resources -- Should SJBA, or another agency, take a more active role in improving water supply reliability and emergency supply for South County, beyond managing San Juan Basin groundwater? 2. Ecosystems and Channels -- Should SJBA be more involved in management of the San Juan Basin ecosystems and channel, beyond simply monitoring potential pumping impacts, in order to improve water quality and storage? 3. Geography -- Should SJBA take a broader geographic view of watersheds and expand its jurisdictional boundaries to other watershed areas within the San Juan Hydrologic Unit? <p>Results of attendee input will be presented at the next meeting.</p> |
| Service Connection CM-1 Cost Issues with MET | <p>A meeting was held on February 8th between staff from MWDOC and senior MET staff to discuss a series of alternatives for CM-1 and the concurrent ability to deliver MET water and groundwater to LBCWD through Newport Beach's water system. MWDOC staff will continue to work with MET staff to identify/explore alternatives.</p> |
| Use of East Orange County Feeder No. 2 for Conveyance of Groundwater | <p>MWDOC has been discussing concepts for pumping groundwater into the EOCF No. 2 for conveyance to SOC during an emergency event. MWDOC staff had a preliminary discussion with MET senior staff at the February 8th meeting. MWDOC staff will continue this discussion once MET staff have had a chance to review details.</p> |
| Scheduled Lake Mathews Forebay Shutdown | <p>The February 12th – 18th shutdown of the Lake Mathews Forebay to refurbish the Outlet Tower was completed and returned to service as scheduled.</p> |

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|--|---|
| Poseidon Resources | Karl Seckel attended the February 9th Santa Ana Regional Water Quality Control Board Meeting. SARWQCB staff provided an overview of the required analyses that must be considered for the permit renewal for desalination facilities pursuant to Water Code section 13142.5(b) and the Ocean Plan. The Regional Board will next consider renewal of the Poseidon Permit for the project in 2018, and finally the California Coastal Commission will then consider approval of a Coastal Development Permit. OCWD is still working on the system integration concepts. |
| Doheny Ocean Desalination Project | <p>Department of Water Resources (DWR) released the draft funding awards for the fourth round of Proposition 1 Desalination Grants (Water Desalination Grant Program). 8 projects out of 30 proposals are recommended for funding to receive a total of \$34.4 million of available funds. Doheny is listed as one of three projects to receive the maximum of \$10 million each for construction funding.</p> <p>GHD is developing a Scope of Work for a 3rd party legal firm to assist with Design-Build-Operate (DBO) contract development. A Request For Proposals (RFP) for 3rd party legal firms is anticipated to be released in early March/April 2018.</p> <p>The release of the draft South Coast Water District EIR for public comments is anticipated in March 2018 with the final adoption scheduled for June:</p> <ul style="list-style-type: none"> • 3/5/18 - 3/30/18 Draft EIR Production • 4/2/18 - 5/16/18 45 day Public Review Period• • 5/17-6/15/18 Prepare Final EIR (Response to Comments)• • 6/28/18 South Coast Board Meeting |
| | Rob Hunter, Director Sat Tamaribuchi, and Karl Seckel participated in the continuing discussion regarding the fisheries habitat issues associated with the Bay Delta and the California WaterFix. The final report prepared by Dr. Peter Moyle for Orange County Coastkeeper is moving into a publication phase; a session is also being planned for the Spring ACWA meeting. |
| | Rob Hunter, Karl Seckel and Harvey de la Torre participated in a discussion with LAFCO representatives Carolyn Emery and Debra Kurita regarding the update of the MWDOC's MSR process that is scheduled to be prepared within the next few years. LAFCO has begun meeting with retail agencies and recently met with both MWDOC and OCWD as regional wholesale agencies. |
| | Karl Seckel, Charles Busslinger, and Kelly Hubbard celebrated the retirement of the Marilyn Thoms from the County by taking her to lunch and thanking her for all the years of great coordination between the two agencies. |
| | Karl Seckel and Kelly Hubbard met with OCSD General Manager Jim Herbert and OCSD director of human resources Celia Chandler to discuss WEROC activities in the budget for the coming year. OCSD remains very supportive of the WEROC activities and budget. |
| | |

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|--|--|
| | <p>Rob Hunter & Karl Seckel attended a meeting to discuss the Water UCI Industry-University Cooperative Research Center (IUCRC) regarding Water Resilience and Sustainability Center:</p> <p>Participating Universities: University of California, Irvine and University of Nevada, Reno, Sacramento State University (potential)</p> <p>Potential Industry Partners: Moulton Niguel, OCWD, IRWD, MWDOC, Santa Margarita</p> <p>Research thrusts (potential research areas- actual thrusts to be determined in partnership with Industry Advisory Board):</p> <ul style="list-style-type: none"> • Reverse osmosis membrane research • Potable water treatment optimization • Potable reuse water quality monitoring technology • Brine concentration and management • Wetland treatment operations and design • Natural treatment systems • Emerging contaminant/pharmaceuticals related research • Potential for direct potable reuse in Orange County • Storm water capture and use • Water use efficiency • Water supply reliability planning including climate variability implications • Unintended consequences water use efficiency programs have on recycled water quality and supply development, wastewater systems, and treatment processes <p>MWDOC's Participation will be discussed as part of the budget process.</p> |
|--|--|

**Status of Ongoing WEROC Projects
February 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 received first drafts of Section One and Two of the plan for initial review. A complete first draft will be distributed to the planning team on March 26.</i></p> <p>Kelly provided a presentation on the WEROC program and its draft budget considerations to Orange County Sanitation District. WEROC funding agencies include: the Cities of Anaheim, Santa Ana, and Fullerton, as well as Orange County Water District, South Orange County Wastewater Authority, Orange County Sanitation District, and MWDOC.</p> <p>The WEROC Emergency Coordinator Quarterly meeting was February 13. The group discussed lessons learned from assisting with the response to Montecito Water District. Although the water trailers were not used for the response after all, the response still triggered very valuable conversations on the logistical aspects of sharing the trailers during a disaster.</p> |
| Training and Programs | <p>Kelly attended All Hazard Incident Management Team (AHIMT) introductory training. This class was hosted with Homeland Security Funds and is the first class required for Kelly to assist at Incident Command Posts in the field during disasters. This will allow her to represent our agencies directly to the field.</p> <p>Kelly provided training for the WEROC EOC Staff and Member Agency staff on fulfilling the role of Finance and Administration Section in the EOC during a disaster. She also provided a Refresher Training on the Emergency Water Quality Sample Kit.</p> |
| Coordination with the County of Orange | <p>Kelly and Francisco attended the February Orange County Emergency Management Organization (OCOMO) meeting and Exercise Design meeting that took place in Newport Beach. Kelly, along with Officer Troy Zeeman (Newport Beach PD) presented on their experience at Route 91 Vegas Shooting and lessons learned for emergency planning. Staff also attended the OCOMO Exercise Design meeting.</p> <p>Kelly attended the Urban Area Working Group (UAWG) meeting. UAWG is the County's grant review and approval body. Kelly is in discussions with the group about funding for generators.</p> |

| | |
|---|--|
| | <p><i>Ongoing: WEROC staff participation in the OA Agreement Revision Working Group.</i> Update: Francisco attended the OA Agreement meeting which reviewed the updated Sections One, Two, and Seven. A first draft of the full OA Agreement will be distributed for review before March 26. Kelly provided a short presentation to WACO on the OA Agreement Revision process on February 2nd.</p> <p>Kelly attended the OA Executive Board meeting as the representative for ISDOC. Primary discussion topics included the approval of several OA Annexes (including the Canyon 2 Fire Debris Flow Plan) and recent mutual aid responses.</p> <p>Francisco attended the WebEOC/Communications meeting. WEROC will be assisting the county to beta test some new forms within the system to see how they work for various jurisdictions.</p> <p>Francisco provided feedback to the County for the draft Tsunami Annex. Feedback consisted of clarifying notification procedures from the County to MWDOC member agencies in tsunami zones and WEROC.</p> <p>Francisco attended the Ready OC/See Something Say Something Steering Committee meeting which discussed updates and community events since the last meeting was held and future advertising campaigns and strategies for preparedness.</p> |
| EOC Readiness | <p>Janine met with cleaning crews to have the WEROC EOC's cleaned.</p> <p>Staff participated in both the OC 800 MHz radio test and the MET MARS radio test.</p> <p>Staff worked with County Parks to have the fire singed trees around the WEROC North EOC removed. These were removed both for safety purposes, as well as to enhance the defensible space around the facility.</p> |
| Coordination with Outside Agencies | <p>Kelly attended the CalOES Catastrophic Earthquake Plan – Critical Lifelines meeting in Riverside. The CalOES is writing an update to their So Cal Catastrophic Plan and is asking for local government involvement in the process. This meeting specifically focused in on utilities and infrastructure. The goal of the plan is to have pre-scripted playbooks available for a major event.</p> <p>Francisco attended the first quarter meeting for the Southern California Critical Lifelines Workgroup. The presentations explained the fundamentals from production to consumption of water, electricity, telecommunications, and natural gas. Each presentation provided the interdependencies that each sector has on one another during emergencies.</p> |

Status of Water Use Efficiency Projects

February 2018

| Description | Lead Agency | Status % Complete | Scheduled Completion or Renewal Date | Comments |
|--|--------------------|--------------------------|---|---|
| Smart Timer Rebate Program | MWDSC | Ongoing | Ongoing | <p>In January 2018, 212 residential and 38 commercial smart timers were installed in Orange County.</p> <p>For program water savings and implementation information, see MWDOC Water Use Efficiency Program Savings and Implementation Report.</p> |
| Rotating Nozzles Rebate Program | MWDSC | Ongoing | Ongoing | <p>In January 2018, 412 rotating nozzles were installed in Orange County.</p> <p>For program savings and implementation information, please see MWDOC Water Use Efficiency Program Savings and Implementation Report.</p> |
| SoCal Water\$mart Residential Indoor Rebate Program | MWDSC | Ongoing | Ongoing | <p>In January 2018, 376 high efficiency clothes washers and 52 premium high efficiency toilets were installed through this program.</p> <p>For program savings and implementation information, please see MWDOC Water Use Efficiency Program Savings and Implementation Report.</p> |
| SoCal Water\$mart Commercial Rebate Program | MWDSC | Ongoing | Ongoing | <p>In January 2018, 327 premium high efficiency toilets and one pH conductivity controller were installed through this program.</p> <p>For program savings and implementation information, please see MWDOC Water Use Efficiency Program Savings and Implementation Report.</p> |

| Description | Lead Agency | Status % Complete | Scheduled Completion or Renewal Date | Comments |
|---|--------------------|--------------------------|---|---|
| Industrial Process/ Water Savings Incentive Program (WSIP) | MWDSC | 30% | June 2020 | <p>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.</p> <p>Total water savings to date for the entire program is 582 AFY and 2,706 AF cumulatively.</p> |
| Turf Removal Program | MWDOC | Ongoing | Ongoing | <p>In January 2018, 79 rebates were paid, representing \$19,631.40 in rebates paid this month in Orange County. To date, the Turf Removal Program has removed approximately 21.3 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, 220 residential sites and 55 commercial sites have completed spray to drip conversion projects.</p> |
| Landscape Design Assistance Program (LDAP) | MWDOC | 80% | April 2018 | <p>This is a pilot program designed to offer free front yard landscape design assistance to customers who are participating in MWDOC's Turf Removal Rebate Program.</p> <p>To date, MWDOC has received and approved 96 questionnaires, and 89 site consultations have been</p> |

| Description | Lead Agency | Status % Complete | Scheduled Completion or Renewal Date | Comments |
|---|-------------|-------------------|--------------------------------------|---|
| Landscape Design Assistance Program (LDAP) (cont.) | | | | performed. Of the 89 sites, 82 have received their custom designs and have been sent their Letters To Proceed to begin their projects. MWDOC will be visiting these sites to take photos once each project is complete. Photos will also be taken at six and twelve months after installation. |
| Recycled Water Retrofit Program | MWDSC | 15% | 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 \$160,700.00 in funding to 22 sites irrigating over 68 acres of landscape, and MWDOC has paid a total of \$10,686.00 in grant funding to eight of those sites irrigating over 54 acres of landscape. The total potable water savings achieved by these projects is 164 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 | January-18 | 376 | 1.08 | 2,428 | 28.83 | 115,340 | 3,979 | 26,949 |
| Smart Timer Program - Irrigation Timers | 2004 | January-18 | 250 | 3.01 | 1,848 | 103.20 | 22,333 | 7,965 | 46,482 |
| Rotating Nozzles Rebate Program | 2007 | January-18 | 412 | 1.65 | 1,206 | 4.82 | 564,024 | 2,762 | 18,325 |
| Commercial Plumbing Fixture Rebate Program | 2002 | January-18 | 328 | 1.17 | 4,005 | 47.62 | 89,284 | 4,828 | 44,262 |
| Industrial Process/Water Savings Incentive Program (WSIP) | 2006 | January-18 | 0 | 0.00 | 0 | 0.00 | 28 | 582 | 2,706 |
| Turf Removal Program ^[3] | 2010 | January-18 | 65,665 | 0.77 | 410,261 | 18.04 | 21,315,862 | 2,985 | 10,243 |
| High Efficiency Toilet (HET) Program | 2005 | January-18 | 52 | 0.18 | 335 | 8.41 | 59,982 | 2,217 | 16,722 |
| 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 | | | | 8 | 420,083 | 211 | 23,511,677 | 51,321 | 422,192 |

⁽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.

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 | 31 | 1,898 | 0.30 | 449.60 | 982 |
| Buena Park | 145 | 105 | 106 | 91 | 76 | 54 | 33 | 1,551 | 0.41 | 351.67 | 803 |
| East Orange CWD RZ | 10 | 10 | 8 | 8 | 8 | 3 | 1 | 193 | 0.00 | 48.58 | 100 |
| El Toro WD | 112 | 134 | 121 | 111 | 65 | 47 | 32 | 1,553 | 0.32 | 354.01 | 804 |
| Fountain Valley | 158 | 115 | 102 | 110 | 76 | 65 | 31 | 2,431 | 0.38 | 598.00 | 1,258 |
| Garden Grove | 236 | 190 | 162 | 165 | 251 | 127 | 52 | 3,615 | 0.63 | 845.60 | 1,871 |
| Golden State WC | 485 | 265 | 283 | 359 | 260 | 138 | 102 | 5,117 | 1.21 | 1,196.29 | 2,648 |
| Huntington Beach | 582 | 334 | 295 | 319 | 225 | 180 | 92 | 8,338 | 1.08 | 2,088.31 | 4,314 |
| Irvine Ranch WD | 2,170 | 1,763 | 1,664 | 1,882 | 1,521 | 1,373 | 853 | 25,519 | 10.14 | 5,639.77 | 13,204 |
| La Habra | 128 | 82 | 114 | 87 | 66 | 53 | 36 | 1,363 | 0.42 | 307.81 | 705 |
| La Palma | 46 | 34 | 25 | 34 | 29 | 10 | 9 | 467 | 0.13 | 106.38 | 242 |
| Laguna Beach CWD | 57 | 38 | 37 | 39 | 32 | 19 | 15 | 947 | 0.19 | 229.00 | 490 |
| Mesa Water | 176 | 114 | 86 | 89 | 113 | 80 | 33 | 2,551 | 0.41 | 637.62 | 1,320 |
| Moulton Niguel WD | 679 | 442 | 421 | 790 | 688 | 575 | 339 | 10,260 | 3.94 | 2,255.64 | 5,309 |
| Newport Beach | 142 | 116 | 92 | 95 | 66 | 61 | 34 | 2,658 | 0.42 | 679.12 | 1,375 |
| Orange | 262 | 218 | 163 | 160 | 124 | 80 | 46 | 3,944 | 0.56 | 993.34 | 2,041 |
| Orange Park Acres | - | - | - | - | - | - | - | 12 | 0.00 | 3.76 | 6 |
| San Juan Capistrano | 110 | 76 | 73 | 92 | 63 | 33 | 20 | 1,479 | 0.27 | 351.19 | 765 |
| San Clemente | 206 | 140 | 94 | 141 | 75 | 70 | 57 | 2,677 | 0.72 | 636.42 | 1,385 |
| Santa Margarita WD | 679 | 553 | 662 | 792 | 466 | 367 | 197 | 9,713 | 2.20 | 2,199.59 | 5,026 |
| Seal Beach | 51 | 31 | 29 | 38 | 23 | 9 | 15 | 617 | 0.17 | 146.20 | 319 |
| Serrano WD | 20 | 13 | 10 | 26 | 8 | 11 | 5 | 362 | 0.04 | 90.50 | 187 |
| South Coast WD | 112 | 89 | 79 | 68 | 43 | 44 | 28 | 1,612 | 0.35 | 380.95 | 834 |
| Trabuco Canyon WD | 62 | 30 | 45 | 47 | 34 | 28 | 15 | 813 | 0.18 | 189.79 | 421 |
| Tustin | 97 | 78 | 59 | 80 | 66 | 44 | 31 | 1,643 | 0.34 | 402.44 | 850 |
| Westminster | 208 | 121 | 82 | 109 | 149 | 84 | 39 | 2,625 | 0.50 | 623.82 | 1,358 |
| Yorba Linda | 273 | 181 | 167 | 156 | 123 | 56 | 36 | 3,788 | 0.42 | 952.56 | 1,960 |
| MWDOC Totals | 7,350 | 5,365 | 5,094 | 6,002 | 4,726 | 3,668 | 2,182 | 97,746 | 25.73 | 22,757.96 | 18,884 |

| | | | | | | | | | | | |
|-------------------------|------------|------------|------------|------------|------------|------------|------------|---------------|-------------|-----------------|--------------|
| Anaheim | 477 | 331 | 285 | 295 | 266 | 213 | 110 | 10,792 | 1.43 | 2,606.75 | 5,584 |
| Fullerton | 270 | 200 | 186 | 211 | 165 | 107 | 63 | 3,758 | 0.76 | 809.43 | 1,944 |
| Santa Ana | 190 | 163 | 131 | 132 | 259 | 141 | 73 | 3,044 | 0.90 | 775.12 | 1,575 |
| Non-MWDOC Totals | 937 | 694 | 602 | 638 | 690 | 461 | 246 | 17,594 | 3.10 | 4,191.31 | 3,399 |

| | | | | | | | | | | | |
|-----------------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|----------------|--------------|------------------|---------------|
| Orange County Totals | 8,287 | 6,059 | 5,696 | 6,640 | 5,416 | 4,129 | 2,428 | 115,340 | 28.83 | 26,949.27 | 22,283 |
|-----------------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|----------------|--------------|------------------|---------------|

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 | 28 | 0 | 159 | 80 | 521.72 |
| Buena Park | 4 | 19 | 3 | 0 | 0 | 0 | 4 | 10 | 7 | 4 | 10 | 7 | 13 | 3 | 44 | 44 | 147.67 |
| East Orange CWD RZ | 5 | 0 | 2 | 0 | 0 | 0 | 2 | 0 | 1 | 0 | 11 | 1 | 6 | 0 | 31 | 1 | 18.80 |
| El Toro WD | 26 | 2 | 7 | 2 | 11 | 0 | 8 | 9 | 9 | 17 | 33 | 8 | 24 | 4 | 139 | 359 | 2,476.50 |
| Fountain Valley | 8 | 2 | 3 | 2 | 4 | 0 | 7 | 10 | 13 | 1 | 33 | 12 | 17 | 16 | 108 | 56 | 178.65 |
| Garden Grove | 7 | 0 | 5 | 2 | 9 | 0 | 10 | 14 | 13 | 11 | 28 | 0 | 22 | 0 | 123 | 38 | 173.20 |
| Golden State WC | 13 | 3 | 9 | 49 | 9 | 25 | 39 | 12 | 35 | 16 | 56 | 37 | 75 | 5 | 300 | 197 | 812.43 |
| Huntington Beach | 15 | 4 | 18 | 33 | 20 | 35 | 19 | 2 | 42 | 12 | 88 | 94 | 39 | 30 | 311 | 298 | 1,061.60 |
| Irvine Ranch WD | 267 | 71 | 414 | 135 | 71 | 59 | 67 | 310 | 239 | 207 | 344 | 420 | 369 | 56 | 2,138 | 2,342 | 11,330.93 |
| La Habra | 3 | 0 | 4 | 7 | 2 | 0 | 4 | 7 | 3 | 1 | 12 | 7 | 4 | 0 | 40 | 44 | 203.18 |
| La Palma | 1 | 0 | 1 | 0 | 2 | 0 | 2 | 0 | 3 | 2 | 1 | 0 | 4 | 0 | 14 | 2 | 5.98 |
| Laguna Beach CWD | 109 | 2 | 76 | 2 | 71 | 0 | 86 | 0 | 86 | 1 | 27 | 0 | 10 | 0 | 507 | 20 | 235.04 |
| Mesa Water | 21 | 0 | 10 | 2 | 15 | 2 | 17 | 28 | 36 | 12 | 149 | 41 | 31 | 0 | 349 | 154 | 733.07 |
| Moulton Niguel WD | 179 | 31 | 51 | 74 | 40 | 45 | 46 | 95 | 163 | 100 | 236 | 129 | 257 | 16 | 1,171 | 817 | 3,577.28 |
| Newport Beach | 275 | 12 | 242 | 26 | 168 | 75 | 11 | 9 | 28 | 43 | 30 | 12 | 24 | 0 | 1,062 | 409 | 2,615.40 |
| Orange | 25 | 0 | 20 | 24 | 13 | 9 | 18 | 31 | 51 | 13 | 69 | 10 | 54 | 14 | 339 | 179 | 936.09 |
| San Juan Capistrano | 103 | 2 | 14 | 18 | 6 | 11 | 6 | 19 | 20 | 8 | 22 | 8 | 20 | 5 | 242 | 130 | 642.45 |
| San Clemente | 212 | 17 | 26 | 7 | 28 | 2 | 28 | 24 | 26 | 3 | 37 | 13 | 22 | 0 | 1,073 | 374 | 2,655.49 |
| Santa Margarita WD | 262 | 7 | 53 | 171 | 64 | 93 | 53 | 321 | 189 | 136 | 326 | 221 | 239 | 192 | 1,393 | 1,564 | 5,671.10 |
| 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 | 5,119.58 |
| Serrano WD | 3 | 0 | 1 | 0 | 0 | 0 | 4 | 0 | 11 | 2 | 4 | 0 | 3 | 0 | 41 | 2 | 13.96 |
| South Coast WD | 78 | 10 | 13 | 16 | 8 | 4 | 104 | 73 | 9 | 11 | 7 | 0 | 10 | 2 | 288 | 214 | 1,147.62 |
| Trabuco Canyon WD | 12 | 0 | 6 | 0 | 2 | 0 | 6 | 1 | 16 | 50 | 13 | 3 | 18 | 0 | 121 | 157 | 950.38 |
| Tustin | 11 | 0 | 8 | 4 | 9 | 1 | 18 | 14 | 33 | 8 | 33 | 23 | 23 | 1 | 166 | 81 | 339.47 |
| Westminster | 2 | 0 | 1 | 1 | 2 | 0 | 13 | 17 | 7 | 1 | 17 | 12 | 16 | 0 | 81 | 44 | 197.20 |
| Yorba Linda | 22 | 0 | 20 | 0 | 12 | 5 | 32 | 2 | 61 | 27 | 72 | 71 | 55 | 12 | 393 | 195 | 827.01 |
| MWDOC Totals | 1,671 | 185 | 1,017 | 583 | 571 | 402 | 648 | 1,026 | 1,123 | 3,136 | 1,691 | 1,137 | 1,388 | 356 | 10,645 | 10,303 | 42,591.78 |

| | | | | | | | | | | | | | | | | | |
|-----------------------------|--------------|------------|--------------|------------|------------|------------|------------|--------------|--------------|--------------|--------------|--------------|--------------|------------|---------------|---------------|-----------------|
| Anaheim | 23 | 60 | 19 | 10 | 9 | 26 | 7 | 52 | 30 | 34 | 87 | 10 | 47 | 0 | 291 | 457 | 2,606.44 |
| Fullerton | 22 | 51 | 9 | 29 | 8 | 0 | 40 | 26 | 32 | 12 | 53 | 7 | 49 | 0 | 248 | 199 | 933.90 |
| Santa Ana | 6 | 5 | 8 | 19 | 7 | 8 | 9 | 27 | 22 | 26 | 15 | 3 | 8 | 0 | 90 | 100 | 350.07 |
| Non-MWDOC Totals | 51 | 116 | 36 | 58 | 24 | 34 | 56 | 105 | 84 | 72 | 155 | 20 | 104 | 0 | 629 | 756 | 3,890.41 |
| Orange County Totals | 1,722 | 301 | 1,053 | 641 | 595 | 436 | 704 | 1,131 | 1,207 | 3,208 | 1,846 | 1,157 | 1,492 | 356 | 11,274 | 11,059 | 46,482 |

**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 | Comm. | | | |
| | Res | Comm. | | Res | Comm. | | Res | Comm. | | Res | Comm. | | Res | Comm. | | | Res | 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 | 30 | 0 | 781 | 0 | 0 | 19.29 |
| El Toro | 56 | 3,288 | 0 | 1,741 | 28,714 | 0 | 730 | 4,457 | 0 | 55 | 242 | 0 | 0 | 0 | 0 | 3,369 | 46,222 | 890 | 1,191.53 |
| Fountain Valley | 0 | 0 | 0 | 107 | 0 | 0 | 222 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 710 | 0 | 0 | 17.21 |
| Garden Grove | 80 | 0 | 0 | 88 | 50 | 0 | 110 | 0 | 0 | 55 | 98 | 0 | 0 | 0 | 0 | 933 | 299 | 0 | 32.52 |
| Golden State | 192 | 0 | 0 | 583 | 1,741 | 0 | 1,088 | 0 | 0 | 207 | 6,008 | 0 | 74 | 0 | 0 | 3,522 | 11,316 | 0 | 242.07 |
| Huntington Beach | 120 | 0 | 0 | 798 | 1,419 | 0 | 1,345 | 2,836 | 0 | 149 | 3,362 | 0 | 0 | 0 | 0 | 3,797 | 12,526 | 2,681 | 1,310.95 |
| Irvine Ranch | 11,010 | 4,257 | 0 | 1,421 | 632 | 0 | 1,989 | 5,047 | 0 | 335 | 9,511 | 0 | 286 | 0 | 0 | 47,423 | 94,561 | 2,004 | 4,745.62 |
| La Habra | 15 | 0 | 0 | 109 | 338 | 0 | 300 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 481 | 1,236 | 900 | 365.97 |
| La Palma | 0 | 0 | 0 | 0 | 0 | 0 | 46 | 505 | 0 | 0 | 2,385 | 0 | 0 | 0 | 0 | 56 | 2,890 | 0 | 26.08 |
| Laguna Beach | 2,948 | 878 | 0 | 2,879 | 1,971 | 0 | 1,390 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12,139 | 2,896 | 0 | 301.19 |
| Mesa Water | 361 | 0 | 0 | 229 | 0 | 0 | 166 | 0 | 0 | 113 | 0 | 0 | 36 | 0 | 0 | 2,066 | 385 | 343 | 195.29 |
| Moulton Niguel | 361 | 227 | 0 | 1,596 | 4,587 | 0 | 5,492 | 1,441 | 0 | 153 | 5,872 | 0 | 468 | 0 | 0 | 12,342 | 20,515 | 2,945 | 1,690.28 |
| Newport Beach | 19,349 | 6,835 | 0 | 460 | 3,857 | 0 | 348 | 670 | 0 | 0 | 0 | 0 | 45 | 0 | 0 | 46,723 | 21,413 | 0 | 1,584.28 |
| Orange | 245 | 120 | 0 | 304 | 668 | 0 | 631 | 91 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3,170 | 1,072 | 0 | 109.25 |
| San Juan Capistrano | 370 | 0 | 0 | 495 | 737 | 0 | 310 | 593 | 0 | 75 | 123 | 0 | 0 | 0 | 0 | 5,495 | 8,852 | 0 | 445.50 |
| San Clemente | 415 | 5,074 | 0 | 326 | 0 | 0 | 426 | 0 | 0 | 0 | 0 | 0 | 83 | 0 | 0 | 10,072 | 7,538 | 1,343 | 799.92 |
| Santa Margarita | 389 | 0 | 0 | 1,207 | 1,513 | 0 | 1,820 | 837 | 0 | 15 | 0 | 0 | 104 | 0 | 0 | 16,269 | 6,921 | 611 | 824.37 |
| Seal Beach | 0 | 0 | 0 | 40 | 5,261 | 0 | 0 | 2,300 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 155 | 7,852 | 0 | 127.44 |
| Serrano | 105 | 0 | 0 | 377 | 0 | 0 | 695 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3,405 | 0 | 0 | 93.29 |
| South Coast | 70 | 0 | 0 | 4,993 | 13,717 | 0 | 1,421 | 2,889 | 0 | 16 | 0 | 0 | 0 | 0 | 0 | 8,130 | 18,870 | 0 | 472.75 |
| Trabuco Canyon | 0 | 0 | 0 | 56 | 0 | 0 | 130 | 0 | 0 | 0 | 4,339 | 0 | 0 | 0 | 0 | 2,086 | 5,130 | 0 | 131.59 |
| Tustin | 329 | 0 | 0 | 408 | 0 | 0 | 317 | 386 | 0 | 65 | -341 | 0 | 30 | 0 | 0 | 3,401 | 1,058 | 0 | 120.83 |
| Westminster | 0 | 0 | 0 | 54 | 0 | 0 | 73 | 0 | 0 | 105 | 0 | 0 | 50 | 0 | 0 | 514 | 0 | 0 | 11.18 |
| Yorba Linda | 40 | 990 | 0 | 921 | 0 | 0 | 1,715 | 0 | 0 | 213 | 0 | 0 | 0 | 0 | 0 | 6,081 | 4,359 | 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 | 1,206 | 0 | 0 | 194,201 | 278,833 | 14,752 | 16,181.02 |

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| | | | | | | | | | | | | | | | | | | | |
|-----------------------------|---------------|---------------|----------|---------------|---------------|----------|---------------|---------------|----------|--------------|---------------|----------|--------------|----------|----------|----------------|----------------|---------------|------------------|
| Agheim | 338 | 0 | 0 | 498 | 712 | 0 | 794 | 5,221 | 0 | 147 | 3,953 | 0 | 0 | 0 | 0 | 4,020 | 49,799 | 105 | 1,350.45 |
| Florton | 107 | 0 | 0 | 684 | 1,196 | 0 | 521 | 7,015 | 0 | 65 | 3,034 | 0 | 0 | 0 | 0 | 2,910 | 11,309 | 1,484 | 668.74 |
| Santa Ana | 86 | 2,533 | 0 | 310 | 0 | 0 | 0 | 1,420 | 0 | 0 | 1,106 | 0 | 0 | 0 | 0 | 859 | 5,752 | 0 | 124.46 |
| Non-MWDOC Totals | 531 | 2,533 | 0 | 1,492 | 1,908 | 0 | 1,315 | 13,656 | 0 | 212 | 8,093 | 0 | 0 | 0 | 0 | 7,789 | 66,860 | 1,589 | 2,143.65 |
| Orange County Totals | 37,153 | 24,202 | 0 | 21,310 | 67,158 | 0 | 22,198 | 38,290 | 0 | 1,768 | 39,692 | 0 | 1,206 | 0 | 0 | 201,990 | 345,693 | 16,341 | 18,324.67 |

COMMERCIAL PLUMBING FIXTURES REBATE PROGRAM^[1]
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 | Totals | Cumulative Water Savings across all Fiscal Years |
|-----------------------------|--------------|--------------|--------------|--------------|---------------|---------------|--------------|---------------|--|
| Brea | 1 | 234 | 0 | 10 | 91 | 734 | 0 | 1,365 | 494 |
| Buena Park | 290 | 5 | 23 | 56 | 591 | 133 | 0 | 2,489 | 1,217 |
| East Orange CWD RZ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| El Toro WD | 137 | 0 | 212 | 6 | 268 | 35 | 0 | 1,062 | 655 |
| Fountain Valley | 314 | 0 | 0 | 1 | 249 | 0 | 357 | 1,229 | 657 |
| Garden Grove | 0 | 4 | 1 | 167 | 676 | 410 | 0 | 2,451 | 1,644 |
| Golden State WC | 135 | 0 | 1 | 0 | 1,008 | 53 | 70 | 2,935 | 2,086 |
| Huntington Beach | 156 | 104 | 144 | 7 | 783 | 641 | 0 | 2,954 | 1,753 |
| Invine Ranch WD | 646 | 1,090 | 451 | 725 | 11,100 | 5,958 | 1,717 | 29,583 | 8,565 |
| 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 | 0 | 1,277 | 908 |
| Newport Beach | 35 | 0 | 0 | 566 | 0 | 0 | 0 | 1,834 | 1,414 |
| Orange | 73 | 1 | 271 | 81 | 275 | 2,851 | 0 | 5,030 | 2,035 |
| 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 | 0 | 950 | 283 |
| Santiago CWD | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Seal Beach | 0 | 0 | 0 | 0 | 0 | 184 | 0 | 538 | 471 |
| 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 | 0 | 1,138 | 1,093 |
| Yorba Linda | 0 | 1 | 0 | 0 | 226 | 84 | 0 | 595 | 616 |
| MWDOC Totals | 1,966 | 1,594 | 1,172 | 2,161 | 17,275 | 13,829 | 2,146 | 65,157 | 29,624 |
| Anaheim | 48 | 165 | 342 | 463 | 3,072 | 309 | 1,003 | 14,756 | 7,664 |
| 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-MWDOC Totals | 60 | 275 | 359 | 646 | 4,841 | 1,168 | 1,859 | 24,127 | 14,638 |
| Orange County Totals | 2,026 | 1,869 | 1,531 | 2,807 | 22,116 | 14,997 | 4,005 | 89,284 | 44,262 |

[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 | 0 | 5 | 132 |
| 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 | 0 | 4 | 88 |
| 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 | 0 | 27 | 571 |
| 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 | 0 | 28 | 582 |

[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 | 3,459 | 26,214 | 219,423 | 471,187 | 306.86 |
| Buena Park | 0 | 0 | 11,670 | 1,626 | 77,127 | 16,490 | 3,741 | 0 | 4,108 | 0 | 96,646 | 18,116 | 48.39 |
| 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 | 5,848 | 0 | 123,564 | 504,897 | 324.99 |
| Fountain Valley | 4,252 | 0 | 45,583 | 5,279 | 65,232 | 0 | 3,679 | 0 | 6,631 | 0 | 127,359 | 12,803 | 68.98 |
| 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 | 10,045 | 6,032 | 548,917 | 421,737 | 491.06 |
| Invine Ranch | 36,584 | 76,400 | 234,905 | 317,999 | 782,844 | 2,675,629 | 231,483 | 46,725 | 56,843 | 47,467 | 1,387,416 | 3,211,064 | 2,016.91 |
| La Habra | 0 | 0 | 14,014 | 1,818 | 49,691 | 72,164 | 0 | 0 | 1,450 | 0 | 65,155 | 90,019 | 77.05 |
| 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 | 220 | 0 | 75,301 | 48,788 | 65.38 |
| Mesa Water | 22,246 | 0 | 131,675 | 33,620 | 220,815 | 106,896 | 4,173 | 77,033 | 9,189 | 10,490 | 405,542 | 228,039 | 286.86 |
| Moulton Niguel | 14,739 | 40,741 | 314,250 | 1,612,845 | 889,748 | 1,059,279 | 220,749 | 0 | 61,224 | 0 | 1,517,687 | 2,840,054 | 2,137.22 |
| Newport Beach | 894 | 0 | 33,995 | 65,277 | 76,675 | 375,404 | 2,924 | 0 | 861 | 6,499 | 122,351 | 449,526 | 256.27 |
| Orange | 11,244 | 0 | 120,093 | 281,402 | 289,990 | 106,487 | 12,847 | 2,366 | 9,377 | 0 | 472,473 | 398,978 | 438.23 |
| San Clemente | 18,471 | 13,908 | 90,349 | 1,137 | 215,249 | 438,963 | 4,267 | 0 | 22,297 | 0 | 388,197 | 467,173 | 398.60 |
| 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 | 43,779 | 25,000 | 840,411 | 1,194,453 | 972.72 |
| 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 | 0 | 0 | 177,545 | 4,403 | 82.26 |
| South Coast | 15,162 | 116,719 | 84,282 | 191,853 | 181,102 | 128,290 | 14,967 | 0 | 10,795 | 7,806 | 322,543 | 465,387 | 420.25 |
| Trabuco Canyon | 2,651 | 0 | 14,771 | 0 | 42,510 | 88,272 | 1,465 | 0 | 2,579 | 0 | 65,790 | 110,712 | 86.24 |
| Tustin | 1,410 | 0 | 71,285 | 14,137 | 232,697 | 33,362 | 11,173 | 0 | 8,646 | 0 | 335,191 | 47,499 | 173.29 |
| Westminster | 0 | 0 | 14,040 | 34,631 | 71,833 | 23,902 | 11,112 | 0 | 6,540 | 0 | 103,525 | 58,533 | 71.49 |
| Yorba Linda | 0 | 0 | 112,136 | 12,702 | 360,279 | 116,985 | 19,420 | 0 | 7,927 | 3,696 | 511,111 | 133,383 | 290.13 |
| MWDOC Totals | 238,978 | 304,598 | 2,195,544 | 3,692,153 | 5,493,639 | 7,015,357 | 613,934 | 264,998 | 277,057 | 133,204 | 9,242,770 | 12,063,878 | 10,236.08 |

| | | | | | | | | | | | | | |
|-------------------------|----------|--------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|--------------|-------------|
| 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 |
| San 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 | 277,057 | 133,204 | 9,242,770 | 12,073,092 | 10,243 |
|-----------------------------|----------------|----------------|------------------|------------------|------------------|------------------|----------------|----------------|----------------|----------------|------------------|-------------------|---------------|

⁽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 | 3 | 453 | 96.91 |
| Buena Park | 0 | 0 | 96 | 153 | 112 | 13 | 2 | 686 | 186.07 |
| East Orange CWD RZ | 0 | 0 | 13 | 26 | 24 | 0 | 0 | 86 | 20.43 |
| El Toro WD | 0 | 133 | 218 | 869 | 264 | 12 | 3 | 2,040 | 524.50 |
| Fountain Valley | 0 | 0 | 41 | 132 | 220 | 7 | 8 | 831 | 243.61 |
| Garden Grove | 0 | 0 | 63 | 350 | 363 | 7 | 4 | 1,488 | 411.72 |
| Golden State WC | 80 | 2 | 142 | 794 | 512 | 9 | 10 | 2,800 | 758.66 |
| 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 | 182 | 17,091 | 5,299.24 |
| Laguna Beach CWD | 0 | 0 | 45 | 112 | 81 | 1 | 3 | 391 | 101.50 |
| La Habra | 0 | 0 | 37 | 94 | 83 | 5 | 1 | 591 | 190.75 |
| La Palma | 0 | 0 | 21 | 59 | 52 | 4 | 0 | 222 | 56.39 |
| Mesa Water | 0 | 0 | 147 | 162 | 162 | 7 | 2 | 1,620 | 581.14 |
| Moulton Niguel WD | 0 | 0 | 400 | 2,497 | 1,939 | 49 | 33 | 5,723 | 1,101.56 |
| Newport Beach | 0 | 0 | 49 | 168 | 243 | 11 | 5 | 730 | 177.34 |
| Orange | 0 | 1 | 142 | 978 | 416 | 17 | 3 | 2,182 | 515.48 |
| San Juan Capistrano | 0 | 0 | 35 | 140 | 202 | 3 | 2 | 525 | 116.91 |
| San Clemente | 0 | 0 | 72 | 225 | 246 | 11 | 1 | 873 | 218.33 |
| Santa Margarita WD | 0 | 0 | 528 | 997 | 1,152 | 114 | 26 | 3,335 | 652.39 |
| 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 | 5 | 1,026 | 222.92 |
| Trabuco Canyon WD | 0 | 0 | 10 | 108 | 169 | 2 | 0 | 339 | 62.73 |
| Tustin | 0 | 0 | 64 | 132 | 201 | 12 | 5 | 1,511 | 525.26 |
| Westminster | 0 | 0 | 35 | 161 | 359 | 3 | 4 | 1,335 | 403.72 |
| Yorba Linda WD | 0 | 0 | 40 | 280 | 379 | 12 | 6 | 1,257 | 335.28 |
| MWDOC Totals | 103 | 1,651 | 3,330 | 12,038 | 11,118 | 958 | 311 | 51,017 | 13,910.13 |

| | | | | | | | | | |
|-------------------------|----------|----------|------------|--------------|--------------|------------|-----------|--------------|-----------------|
| Anaheim | 0 | 0 | 156 | 1,188 | 614 | 70 | 17 | 5,882 | 1,941.76 |
| Fullerton | 0 | 0 | 61 | 293 | 286 | 14 | 7 | 1,062 | 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 | 24 | 8,965 | 2,811.54 |

| | | | | | | | | | |
|-----------------------------|------------|--------------|--------------|---------------|---------------|--------------|------------|---------------|------------------|
| Orange County Totals | 103 | 1,651 | 3,580 | 14,121 | 12,311 | 1,062 | 335 | 59,982 | 16,721.67 |
|-----------------------------|------------|--------------|--------------|---------------|---------------|--------------|------------|---------------|------------------|