MEETING OF THE
BOARD OF DIRECTORS OF THE
MUNICIPAL WATER DISTRICT OF ORANGE COUNTY
Jointly with the
PLANNING & OPERATIONS COMMITTEE
December 14, 2015, 8:30 a.m.
MWDOC Conference Room 101

P&O Committee:
Director Osborne, Chair
Director Barbre
Director Hinman

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

Ex Officio Member: L. Dick

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 ITEM

1. BUREAU OF RECLAMATION WATERSMART GRANT RESOLUTION

2. RECOMMENDATION ON RATE STUDY RFP

DISCUSSION ITEMS

3. STATUS UPDATE ON THE OC WATER RELIABILITY STUDY

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.)

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

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

ADJOURNMENT

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

Accommodations for the Disabled. Any person may make a request for a disability-related modification or accommodation needed for that person to be able to participate in the public meeting by telephoning Maribeth Goldsby, District Secretary, at (714) 963-3058, or writing to Municipal Water District of Orange County at P.O. Box 20895, Fountain Valley, CA 92728. Requests must specify the nature of the disability and the type of accommodation requested. A telephone number or other contact information should be included so that District staff may discuss appropriate arrangements. Persons requesting a disability-related accommodation should make the request with adequate time before the meeting for the District to provide the requested accommodation.

Item No. 1

ACTION ITEM
December 14, 2015

TO: Board of Directors

FROM: **Planning & Operation Committee**
(Directors Osborne, Barbre, & Hinman)

Robert Hunter
General Manager

Staff Contact: J. Berg
WUE Programs Manager

SUBJECT: **Bureau of Reclamation WaterSMART Grant Resolution**

STAFF RECOMMENDATION

Staff recommends the Board of Directors adopt the proposed resolution in support of MWDOC's 2016 WaterSMART: Water and Energy Efficiency grant application to be submitted to the Bureau of Reclamation by January 20, 2016.

COMMITTEE RECOMMENDATION

Committee recommends (To be determined at Committee Meeting)

DETAILED REPORT

In November 2015, the Bureau of Reclamation released its "WaterSMART: Water and Energy Efficiency Grants for FY2016" Funding Opportunity Announcement (FOA). The objective of this announcement is to invite proposals to leverage investments and resources by cost sharing with Reclamation on projects that save water, improve energy efficiency, address endangered species and other environmental issues, and facilitate water transfers to new uses. A total of $23.3 million is available for project awards within the 17 western states. The Bureau has established two funding groups: Group 1 includes projects that will be awarded up to $300,000 each; and Group 2 includes projects that will be awarded up to $1 million each.

Staff will be submitting an application for a funding Group 1 project. The FOA requires all applications to include an official Board Resolution supporting the grant application. The proposed Resolution containing the required content is attached for your consideration.

Budgeted (Y/N): N/A	Budgeted amount: **N/A**	Core __	Choice _X_
Action item amount: N/A	Line item: **N/A**		
Fiscal Impact (explain if unbudgeted): N/A			

RESOLUTION NO _____
RESOLUTION OF THE BOARD OF DIRECTORS OF MUNICIPAL WATER DISTRICT OF ORANGE COUNTY SUPPORTING A BUREAU OF RECLAMATION 2015 WATER SMART: WATER AND ENERGY EFFICIENCY GRANT APPLICATION

WHEREAS, the Municipal Water District of Orange County submitted an application to the Bureau of Reclamation requesting funding for an Water Smart Landscape Program: Comprehensive Landscape Water Use Efficiency Program to improve urban landscape water use efficiency and expanded use of recycled water in the Municipal Water District of Orange County service area,

WHEREAS, the Municipal Water District of Orange County is committed to developing and implementing a comprehensive water use efficiency program designed to meet our local water supply reliability goals, comply with the Best Management Practices for urban water conservation in California, exceed the Governor's call for a 20% reduction in urban per capita water use by 2020, and respond to the unprecedented drought we are currently experiencing,

NOW, THEREFORE, BE IT RESOLVED, that the Municipal Water District of Orange County Board of Directors designates Robert J. Hunter, General Manager, as the official who has reviewed and supports the application submittal and the legal authority to enter into an agreement on behalf of the District, and designates Joseph M. Berg, Director of Water Use Efficiency, as the District's representative to sign the progress reports and approve reimbursement claims.

NOW, THEREFORE, BE IT FURTHER RESOLVED, that the Municipal Water District of Orange County Board of Directors assures its capability to provide the amount of funding and in-kind contributions specified in the funding plan.

NOW, THEREFORE, BE IT FURTHER RESOLVED, that the Municipal Water District of Orange County will work with Reclamation to meet established deadlines for entering into a cooperative agreement.

Said Resolution was adopted on December 16, 2015, by the following roll call vote:

AYES:
NOES:
ABSENT:
ABSTAIN:

I HEREBY CERTIFY the foregoing is a full, true, and correct copy of Resolution No. ____ adopted by the Board of Directors of Municipal Water District of Orange County at its meeting held on December 16, 2015.

_____
Maribeth Goldsby, Secretary
Municipal Water District of Orange County

MUNICIPAL WATER DISTRICT OF ORANGE COUNTY

Item No. 2

ACTION ITEM
December 16, 2015

TO: Board of Directors

FROM: **Planning & Operations Committee**
(Directors Osborne, Barbre, Hinman)

Robert Hunter
General Manager

Staff Contact: Hilary Chumpitazi
Accounting Mgr.

SUBJECT: **RECOMMENDATION ON RATE STUDY RFP**

STAFF RECOMMENDATION

Staff recommends the Board of Directors: Staff will provide a recommendation at the December 14, 2015 Planning & Operations Committee meeting.

COMMITTEE RECOMMENDATION

Committee recommends (To be determined at Committee Meeting)

SUMMARY

The Request for Proposals (RFP) for the Rate Study was issued on October 29, 2015, with responses/proposals due November 15, 2015.

The District received four responses (proposals) and staff has selected two firms to interview; these interviews will be held on December 10, 2015. A committee consisting of four staff members reviewed each proposal and will participate in the interviews. As a result of this timing, a more detailed report will be presented at the Committee and Board meetings, with a staff recommendation.

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

MUNICIPAL WATER DISTRICT OF ORANGE COUNTY

Item No. 3

INFORMATION ITEM
December 14, 2015

TO: **Planning & Operations Committee**
(Directors Osborne, Barbre, Hinman)

FROM: **Robert Hunter, General Manager**

Staff Contact: Karl Seckel

SUBJECT: **Status Update on the OC Water Reliability Study – December 2015**

STAFF RECOMMENDATION

Staff recommends the Planning & Operations Committee receives and files the report.

COMMITTEE RECOMMENDATION

Committee recommends (To be determined at Committee Meeting)

OVERVIEW

The last regular OC Water Reliability Study Workgroup meeting was held on Nov 5 to reconsider the Supply Gap Analysis previously discussed and to review the List of Potential OC Projects generated in this phase of the study. Other items discussed included the role of demand curtailment in the planning process, the SWRCB regulations, probability vs plausibility of the three scenarios, the California WaterFix, Climate variability and the meeting schedule to vet the Phase 1 work.

The first of the Phase 1 extended Workgroup meetings took place on November 30. MWDOC invited all agencies to send representatives to the meeting, especially agency representatives who had not made the prior workgroup meetings. In all, 21 agencies attended the three-hour meeting held at the City of Santa Ana. The agenda covered in detail the modeling and analysis to date. Subsequent meetings have been scheduled for:

- Dec 14 – System Reliability Planning

Budgeted (Y/N): n/a	Budgeted amount: n/a	Core ✓	Choice __
Action item amount: n/a	Line item:		
Fiscal Impact (explain if unbudgeted):			

- Jan 4 – Supply Reliability, GAPS, Illustration of Strategies to Reduce the GAPs and Economic Methods for Comparison of strategies
- Jan 18 – Discussion of Policy Issues and Scope for Phase 2. This should allow the Phase 2 work to begin in February and proceed over the subsequent three months.

Other recent outreach presentations have included:

- OCBC Infrastructure Committee on Dec 8
- WACO on Dec 11

Attachments:

1. **OC Water Reliability Study, Outreach Meeting #1 PowerPoint, November 30, 2015**

OC Water Reliability Study Outreach Workshop #1

Review Phase 1 Results

November 30, 2015

Municipal Water District of Orange County

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Agenda

- Overview of OC Reliability Study
  - Need for Study
  - Phase 1 vs Phase 2
  - Decision-making
- Outreach Workshops
  - Engage Agencies
  - Develop information to support future decisions
- Phase 1 Results
- Proposed Topics and Dates for Future Workshops

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Overview of OC Reliability Study

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Need for Study

Drivers:

- MET supply reliability has been compromised in three out of the last seven years; 8 of past 10 years both the CRA and SWP supplies have been below average in each watershed
- Evidence that SWP supplies will continue to degrade due to environmental restrictions and climate change is mounting in the absence of a California Fix to the Delta
- OC Basin is in overdraft and recent drought has exacerbated the situation
- South County agencies face additional challenges due to both high reliance on MET supplies and seismic risk
- Future water demands, and regional/local supplies are uncertain, especially given climate change

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Need for Study

Questions Study will Help Answer:

- What are the implications of California Fix to Delta to OC reliability?
- What are the implications to OC reliability if OC agencies just rely on MET for future supply needs?
- What are the impacts of climate change and seismic risks on OC reliability?
- What policy recommendations can be made to MET's IRP process to improve OC reliability?

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Phase 1 vs Phase 2

- Phase 1 (completed)
  - Forecast water demands based on latest assumptions regarding demographic growth, economy and conservation
  - Estimate water supply gap under three scenarios of future supply and demands for MET and OC
  - Estimate system reliability needs for OC
  - Identify possible MET and OC supply options for meeting supply gap and system reliability needs
- Phase 2 (proposed)
  - Evaluate the overall economics of various portfolios of options (both MET and OC) in meeting supply gap and system reliability needs
  - Portfolios will be illustrative in nature to show the possible range of strategies; but decisions rest with local agencies and this study is not making recommendations as to which portfolios should be implemented

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Where is the Study Headed

- Provide fully vetted information for future decision-making on potential supply gaps and strategies to close those gaps
- Decisions left open for all agencies and all elected officials
- Decisions will occur at both the MET level and the local level

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Outreach Workshops

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Purpose of Outreach Workshops

- Ensure common understanding of Phase 1 results – this is a major effort due to the complexity of the modeling process
  - Receive and respond to input from all agencies
  - Document process
- Collaborate on development of scope for Phase 2
- Collaborate on how to communicate Study to others (elected officials, other stakeholders)

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Phase 1 Results

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An OC-Reliability Model is Needed

- Simulates 93 years of historical hydrology (including an extreme 25-year dry period) with future water demands
- Simulates OC Basin operations
- Incorporates impacts of climate change
- Tests MET's IRP assumptions on OC reliability
- Rapidly tests various scenarios and impacts of new supply investments on OC reliability

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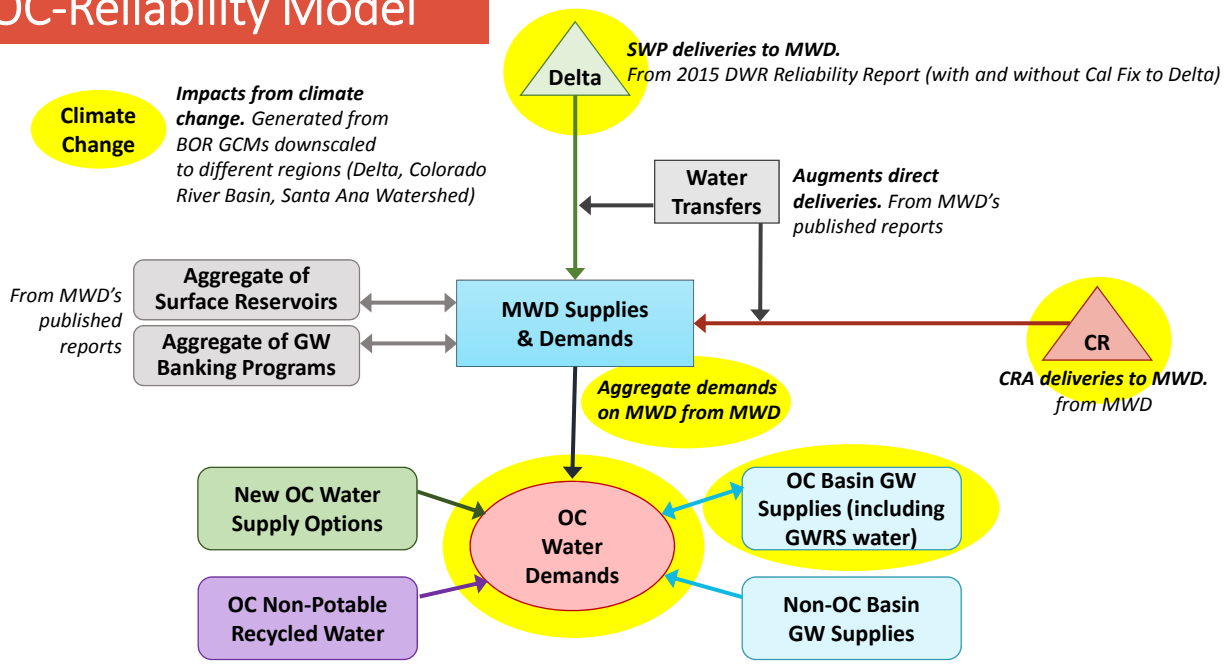
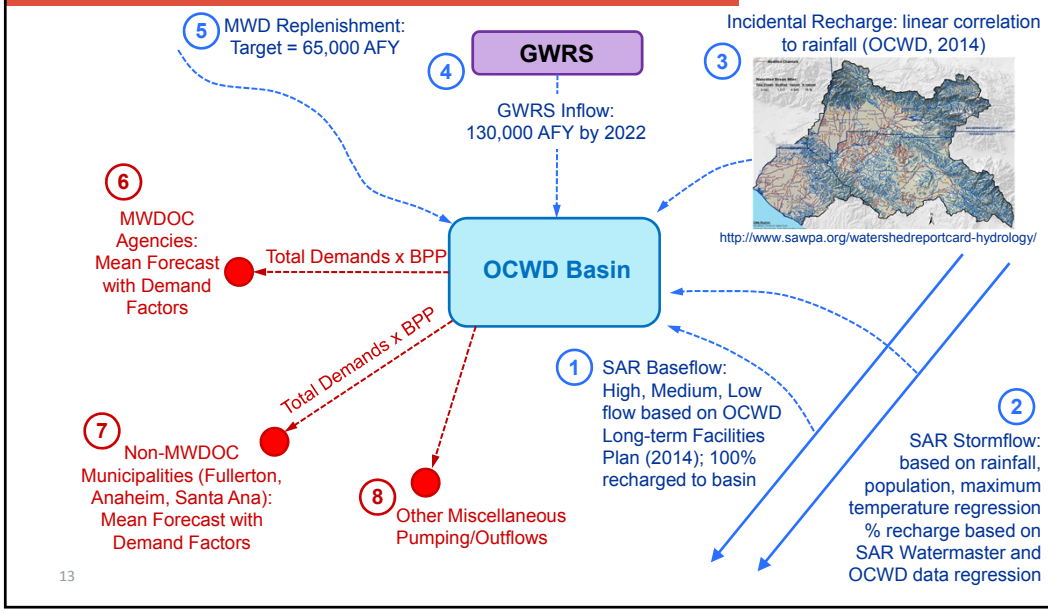
OC-Reliability Model



OC Basin Model Component



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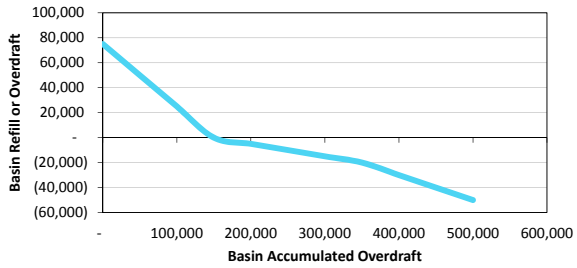
Basis for Setting the BPP in the Model

1) Start with existing conditions (e.g., overdraft of ~500,000 AF), after totaling all sources of recharge into basin, set BPP by refilling basin using this formula (see graph below):

   $y = -0.2x + 50{,}000$

2) OCWD will receive recharge from MWD according to the following methodology:
   If MWD is in allocation, OCWD always gets 25,000 AFY
   If MWD is not in allocation, OCWD gets 65,000 AFY
   If total of other basin inflows exceed 350,000 AFY OCWD takes no MWD recharge.
3) The change in BPP between two years may be no greater than 5%.



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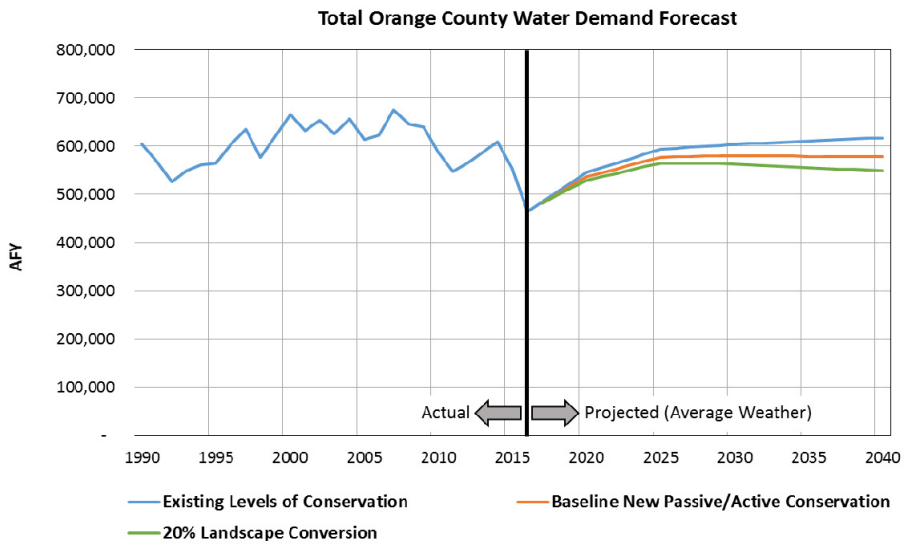
OC Water Demand Forecast



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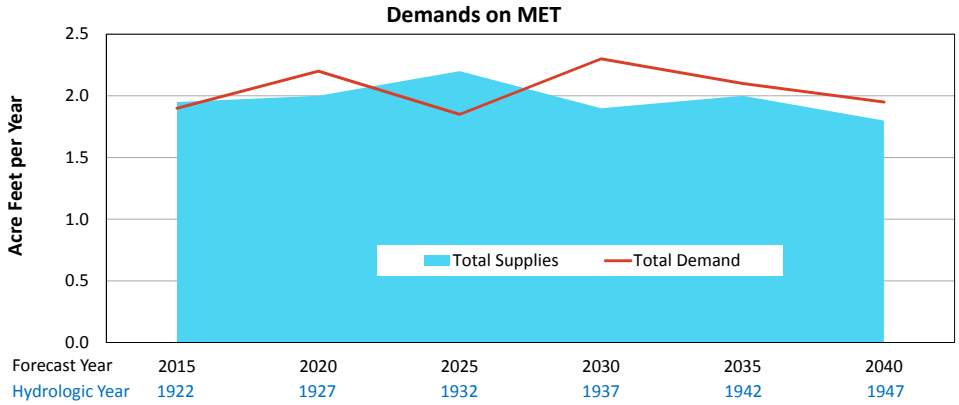
Explanation of Indexed Sequential Method for Supply Simulation



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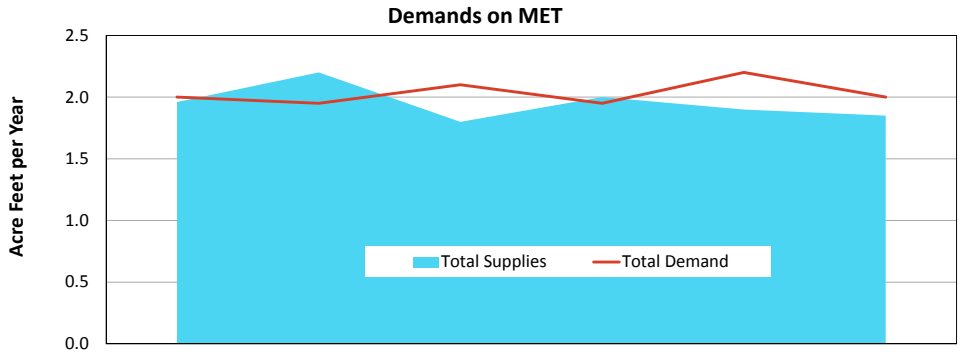
Explanation of Indexed Sequential Method for Supply Simulation



Forecast Year	2015	2020	2025	2030	2035	2040
Hydrologic Year	1923	1928	1933	1938	1943	1948

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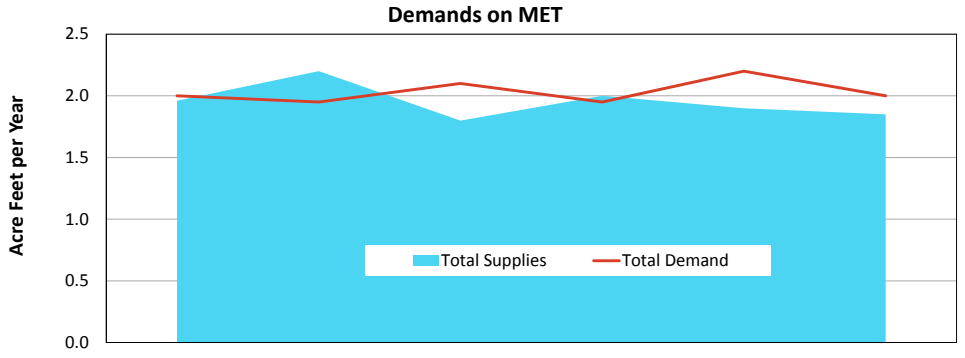
Explanation of Indexed Sequential Method for Supply Simulation



Forecast Year	2015	2020	2025	2030	2035	2040
Hydrologic Year	1923	1928	1933	1938	1943	1948
Hydrologic Year	1924	1929	1934	1939	1944	1949
Hydrologic Year	1989	1994	1999	2004	2009	2014

93 hydrologic sequences for any forecast year

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Major Assumptions

Water Demands (AFY)	FY 2014 Actual	FY 2015 Estimated	2040 Projected
MET Demands*	2,300,000	1,850,000	2,028,000
OCWD Basin Demands**	453,000	410,000	434,000
OC Total Demands**	610,000	554,000	579,000

* With future passive conservation only ** With future passive and baseline new active conservation

OC Groundwater (AFY)	Brea/La Habra	Net OC Basin	South County	Total
Average Inflows/Safe Yield	15,000	188,500*	10,000	213,500

* Net of misc. pumping and includes MET replenishment

Orange County Recycled Water (AFY)	2015	2040
Groundwater Replenishment System	100,000	130,000
Basin Recycled Water (non-potable)	22,000	27,700
South County Recycled Water (non-potable)	23,900	41,800
Total	145,900	199,500

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Major Assumptions (cont.)

OCWD Net Groundwater (AFY)*	Near-Term	Long-Term	Range Within Model
SAR Baseflow (mid level assumption)	53,000	53,000	34,000 to 53,000
SAR Stormflow (average of all hydrologies)	53,000	53,000	6,000 to 150,000
SAR Incidental Recharge (average of all hydrologies)	59,000	59,000	20,000 to 140,000
MET Replenishment (average of all hydrologies)**	54,000	34,000	0 to 65,000
BEA Outflows	-22,000	-9,000	-22,000 to -9,000
Misc. Pumping (golf courses, etc.)	-8,500	-8,500	-8,500
Net Groundwater for OC Agencies	**188,500**	**181,500**	**68,000 to 325,000**

* Not including GWRS, which is shown as recycled water in previous slide.
** While OCWD replenishment target is 65,000 AFY, replenishment water is not assumed to be taken during very wet years when SAR stormflows are high, and only a portion of replenishment water is available during years in which MET is in allocation of imported water.

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Major Assumptions (cont.)

Simulation Assumptions	MET IRP	OC Reliability Study
Period of Simulation	1922-2012 (91 years)	1922-2014 (93 years)
Year that additional Cal Fix Delta supplies begins*	2020	2030
Climate Change Impacts on Supplies	Minimal Impacts on SWP Supply (other impacts will be tested under policy portion of IRP)	Moderate to Significant Impacts on Water Demands; and SWP, CRA, SAR Supplies
Allocation of MET Shortages to Orange County	Not Applicable (MET's IRP does not show member agency details)	Based on Drought Formula: (12-15% of MET shortages allocated to Orange County)

* Although MET assumes construction of Cal Fix to Delta will occur around year 2030, MET assumes regulatory relief will provide additional SWP supplies by 2020. For OC Reliability Study, a more conservative viewpoint was assumed and that additional SWP supplies would occur only after the Cal Fix is fully implemented.

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Planning Scenarios

Planning Scenario *	Local Water Supplies	Water Demands	Climate Change Impacts	OCWD Baseflows
1) Planned Conditions: Essentially representing MET assumptions for IRP GAP without new investments	• Planned MET local supplies • Planned OC local supplies	• MET demands without new active conservation • OC demands with new baseline active conservation	• Minimal impacts on SWP supplies	• Medium levels of Santa Ana baseflows
2) Moderately Stressed Conditions: Lower local supplies, higher demands, moderate climate change impacts	• Lower-than-planned MET local supplies • Planned OC local supplies	• 4% higher MET demands (growth & climate change related) • 4% higher OC demands (growth & climate change related)	• Moderate impacts on SWP supplies • Moderate impacts on CRA supplies • Moderate impacts on Santa Ana River	• Medium levels of Santa Ana baseflows
3) Significantly Stressed Conditions: Planned local supplies, higher demands, significant climate change impacts	• Planned MET local supplies • Planned OC local supplies	• 8% higher MET demands (growth & climate change related) • 8% higher OC demands (growth & climate change related)	• Significant impacts on SWP supplies • Significant impacts on CRA supplies • Significant impacts on Santa Ana River	• Low levels of Santa Ana baseflows

* All scenarios run without (a) and with California Fix to Delta (b), thus providing six scenarios

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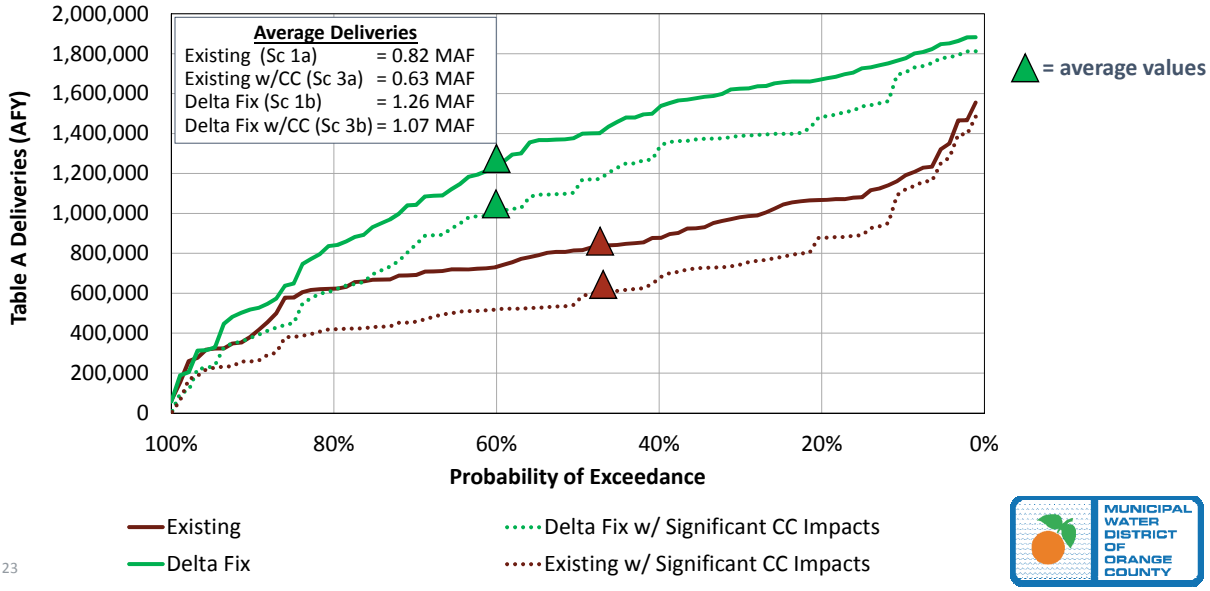
SWP Deliveries to MET (2040)



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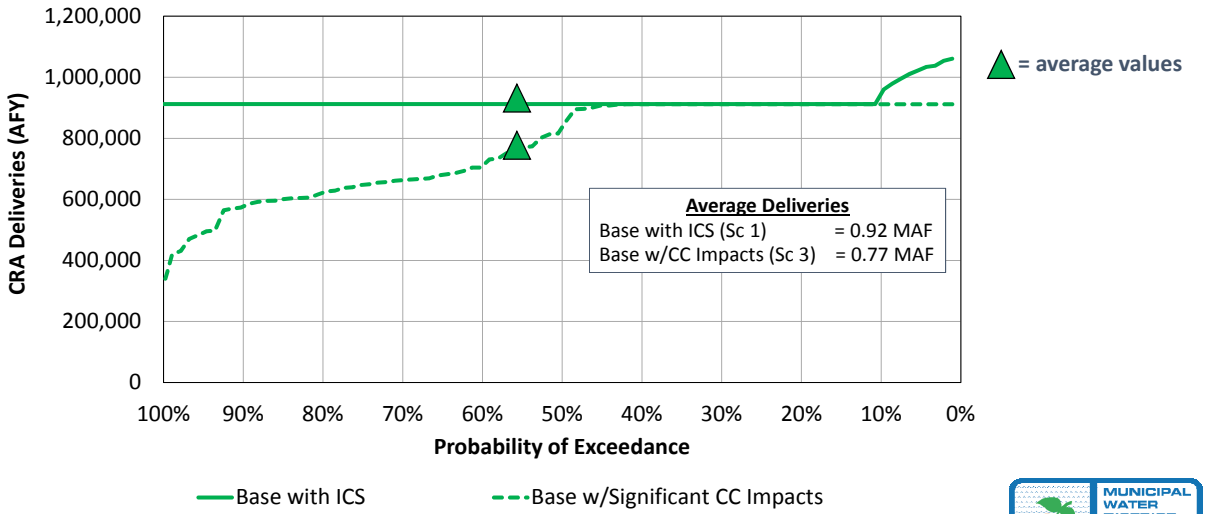
CRA Deliveries to MET (2040)



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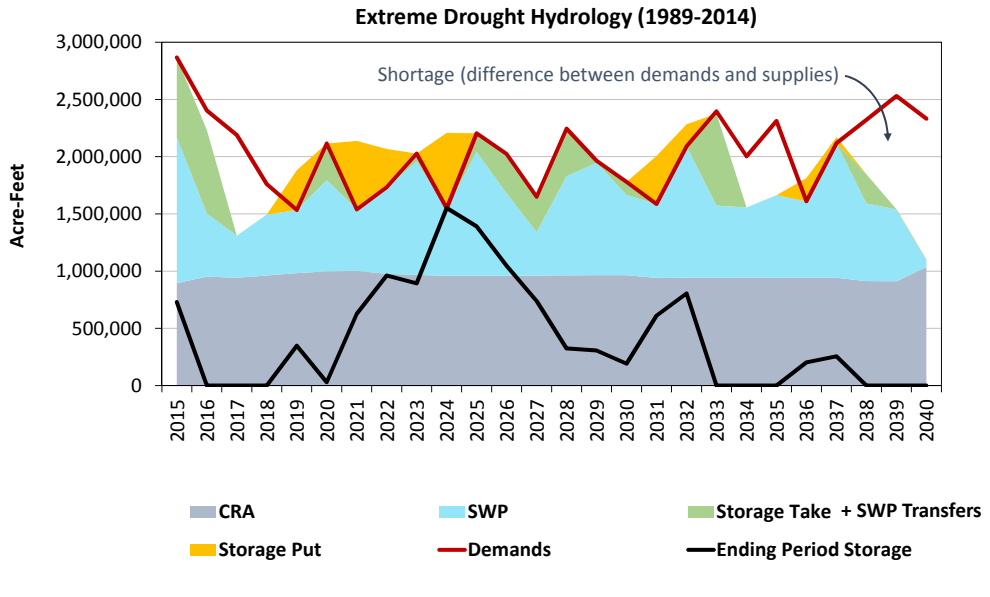
Example Water Balance – MET Scenario 1 – No Cal Fix to Delta



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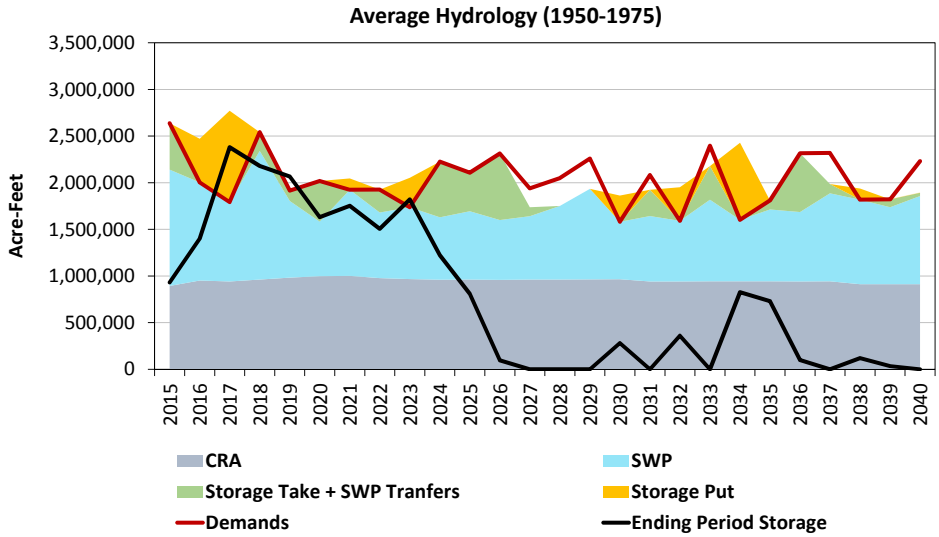
Example Water Balance – MET Scenario 1 – No Cal Fix to Delta



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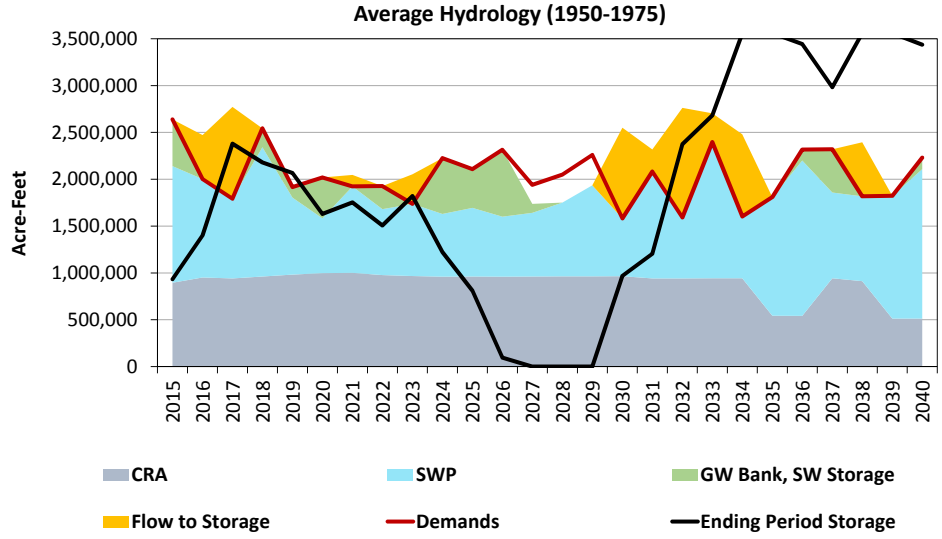
Example Water Balance – MET Scenario 1 – with Cal Fix to Delta



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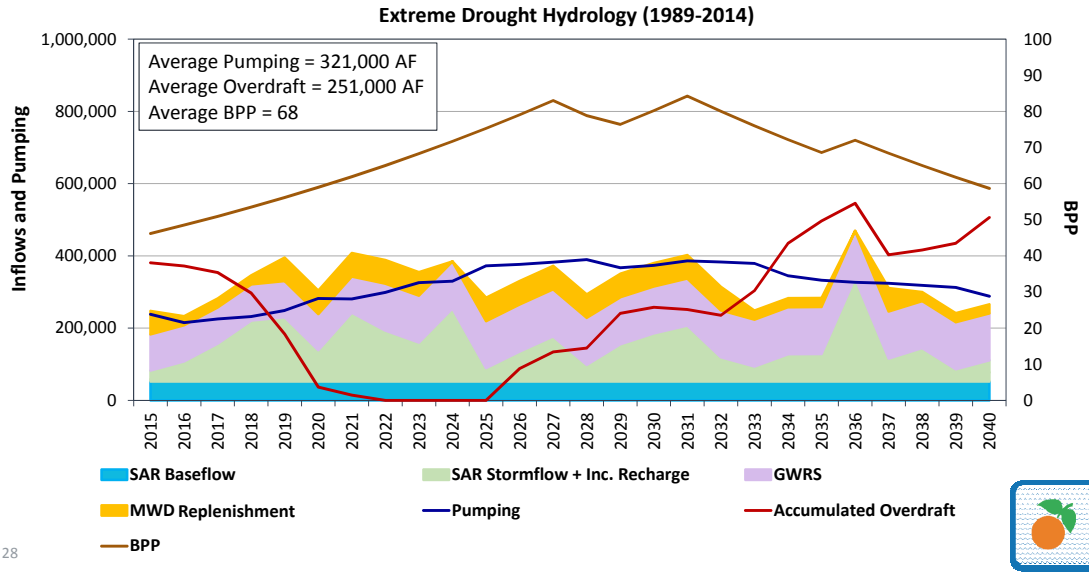
Example Water Balance – OCWD Scenario 1 – No Cal Fix to Delta

Updated OCWD Basin Run



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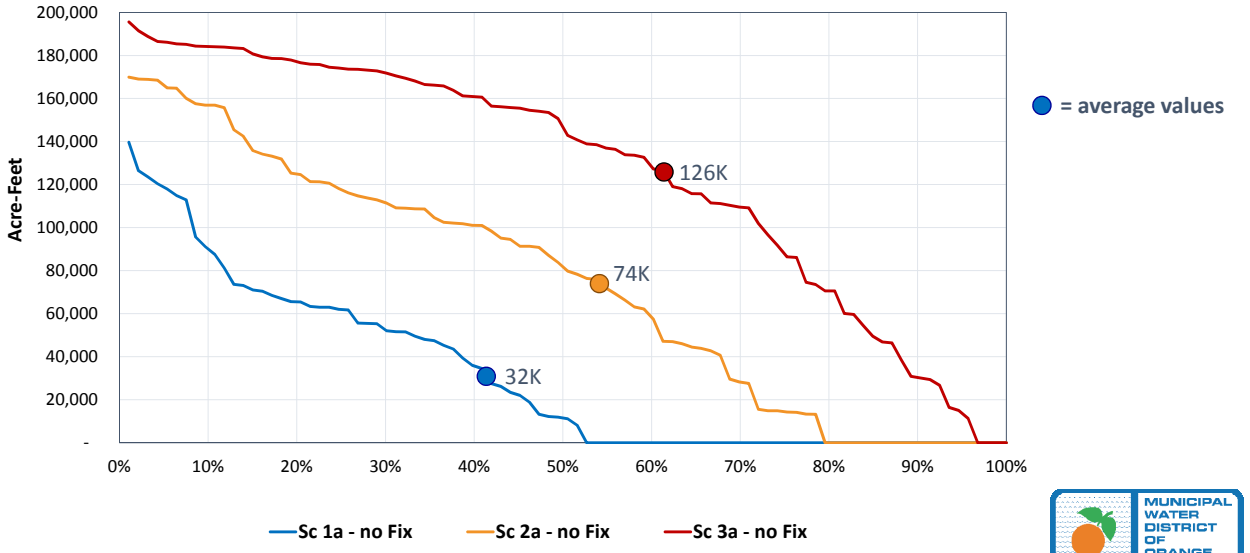
OC Total Supply Gap in 2040 – Probability



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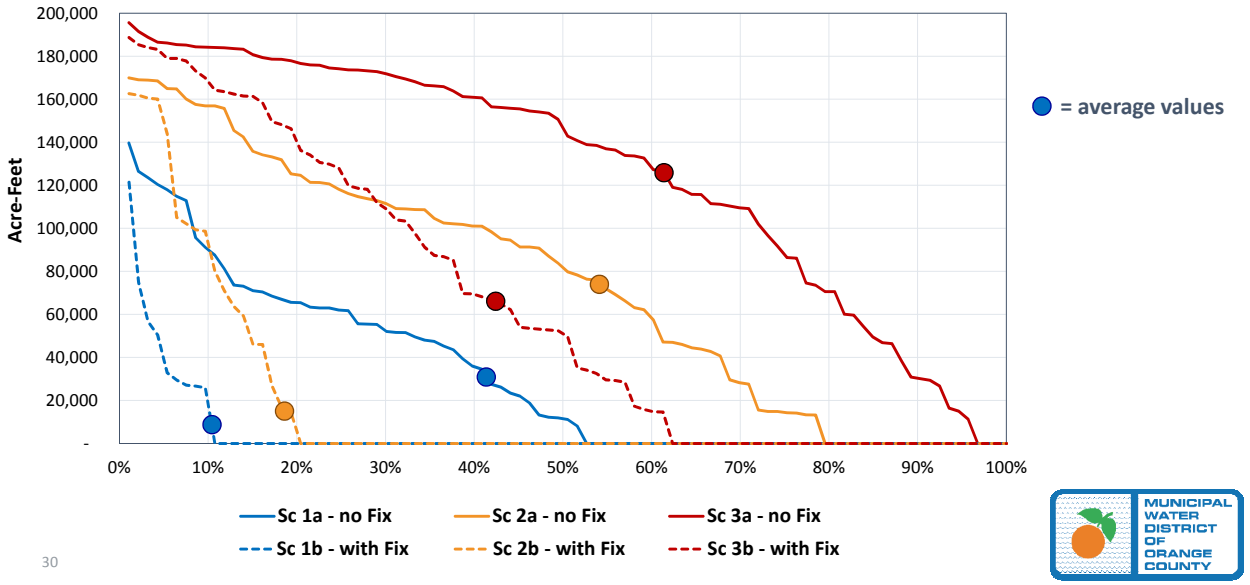
OC Total Supply Gap in 2040 – Probability



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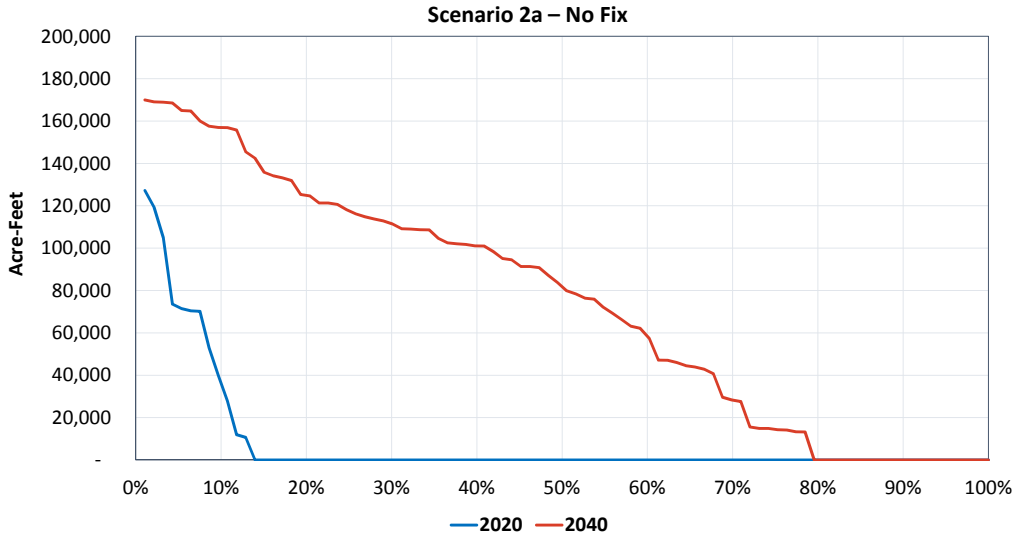
OC Total Supply Gap Overtime



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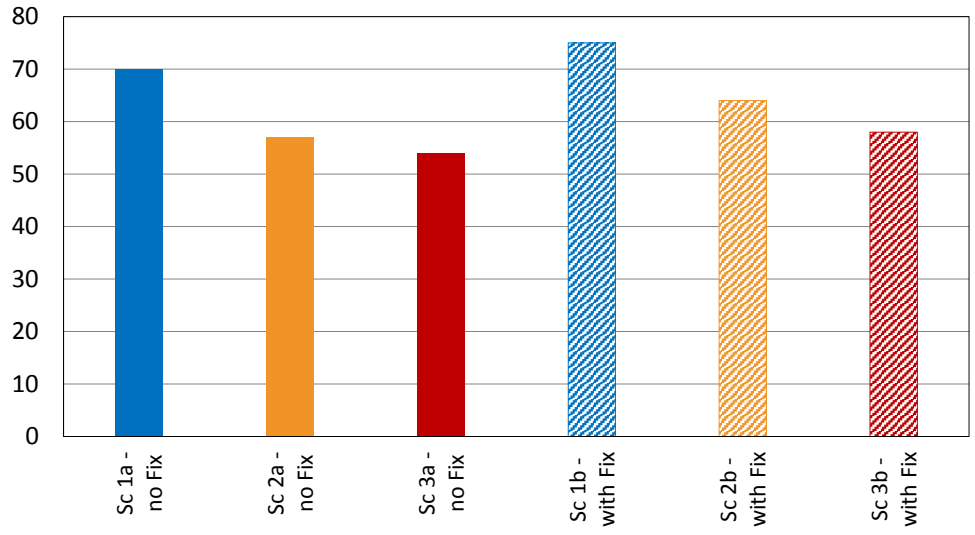
OCWD Average BPP (over all hydrologies)

Updated OCWD Basin Run



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Supply Gap – Average Shortage (AFY) *Possible* Proxy for Base-loaded Need*

Updated OCWD Basin Run

Area	Scenario 1		Scenario 2		Scenario 3	
Brea / La Habra	**a – no Fix**	**b – with Fix**	**a – no Fix**	**b – with Fix**	**a – no Fix**	**b – with Fix**
2020	110	110	160	160	250	250
2040	820	130	1,800	430	3,100	1,600
OC Basin	**a – no Fix**	**b – with Fix**	**a – no Fix**	**b – with Fix**	**a – no Fix**	**b – with Fix**
2020	3,800	3,800	5,300	5,300	9,300	9,300
2040	19,000	2,800	49,000	11,000	85,000	42,000
South County	**a – no Fix**	**b – with Fix**	**a – no Fix**	**b – with Fix**	**a – no Fix**	**b – with Fix**
2020	2,100	2,100	3,000	3,000	4,800	4,800
2040	12,000	1,900	23,000	5,600	38,000	20,000
OC Total	**a – no Fix**	**b – with Fix**	**a – no Fix**	**b – with Fix**	**a – no Fix**	**b – with Fix**
2020	6,000	6,000	8,500	8,500	14,000	14,000
2040	32,000	4,800	74,000	17,000	126,000	64,000

* Examples of base-loaded supplies include additional active conservation, desalination, non-potable reuse, indirect potable reuse, agricultural land fallowing, and take or pay water transfers that are implemented by MET and/or OC.

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MUNICIPAL WATER DISTRICT OF ORANGE COUNTY

Probability vs Plausibility

- For any given scenario, we can determine the probability of shortages based on 93 hydrologic observations.
- But what can we say about the likelihood of Scenarios 1a-3a, or 1b-3b happening? All scenarios are plausible, but can we assign a probability to these scenarios?
- At the Nov 5 workgroup meeting, some participants suggested the following characterization of the scenarios:
  - Scenario 1 = Likely
  - Scenario 2 = Less Likely
  - Scenario 3 = Remote

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MUNICIPAL WATER DISTRICT OF ORANGE COUNTY

Probability vs Plausibility

- Global Climate Models in some ways are all equally plausible. If forced to make a characterization, our climate consultant Dr. Yates suggested the following:
  - Most climate and water experts believe some climate change by 2040 is virtually a 100% probability, but how much is the key question?
  - Some Climate Models are better at reproducing historical climate and some are more outliers than others—which we might be able to use to assess likelihood
- Assessing probability of California Fix is more difficult (subjective)
- Based on this, a more reasonable likelihood for scenarios might be:
  - Scenario 1 = Less Likely (supplies are too optimistic without climate change)
  - Scenario 2 = Most Likely
  - Scenario 3 = Less Likely (supplies may be too pessimistic)

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MUNICIPAL WATER DISTRICT OF ORANGE COUNTY

Sensitivity of the Modeling

The most sensitive model parameters are:

- Whether or not the California Fix is in place, and by when
- The extent that climate change impacts our supply reliability, which can take many forms:
  - Loss of the snow pack in the Sierras and Rocky's affecting imported water
  - Higher reservoir evapotranspiration
  - Reduced groundwater recharge statewide and locally
  - Increased water demands for irrigation and cooling from higher temperatures

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MUNICIPAL WATER DISTRICT OF ORANGE COUNTY

Supply GAP Findings

- Under Scenario 1a (no Fix, no CC), shortages are fairly manageable, with average shortages in 2040 being about 6% of demand with an occurrence of about 4 in 10 years
- Under Scenario 2a (no Fix, moderate CC), shortages require moderate levels of new investments, with average shortages in 2040 being about 13% of demands with an occurrence of about 5 in 10 years
- Under Scenario 3a (no Fix, significant CC), shortages require significant levels of new investments, with average shortages in 2040 being about 21% of demands with an occurrence of about 6 in 10 years
- Scenarios with Cal Fix **significantly reduce average shortages** by 85% for Scenario 1, by 77% for Scenario 2, and by 50% for Scenario 3 in 2040

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MUNICIPAL WATER DISTRICT OF ORANGE COUNTY

Supply GAP Findings

- Decision-making must take into account the large influence of the California Fix. MET and OC are much more reliable with the Fix; however, the following questions are posed:
  - What is the implication for triggering investments as long as the California Fix is an uncertainty?
  - How long should we wait to see where the California Fix is headed? 3, 5 or 10 years?
  - What types of supply decisions would be beneficial whether or not the California Fix proceeds ahead?
- MET is potentially undertaking a NEW Indirect Potable Reuse project – what are the implications of this project for decision-making?

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MUNICIPAL WATER DISTRICT OF ORANGE COUNTY

Proposed Future Outreach Workshops

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Open Agenda Discussion

- What questions do you have?
- What additional analyses or graphics would you like to see?
- What future topics to add for discussion?

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Proposed Outreach Workshops

- Dec 14, 2015: Detailed review of results, illustration of strategies to reduce supply gap
- Jan 4, 2016: System reliability and method for economic comparison of strategies
- Jan 18, 2016: Discussion of policy issues (MET and OC) and scope for Phase 2

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MUNICIPAL WATER DISTRICT OF ORANGE COUNTY

Status of Ongoing MWDOC Reliability and Engineering and Planning Projects

December 8, 2015

Description	Lead Agency	Status % Complete	Scheduled Completion Date	Comments
Baker Treatment Plant or Expansion of Baker Water Treatment Plant	IRWD, MNWD, SMWD, ETWD Trabuco CWD		On line date is summer 2016	No NEW Information; construction is proceeding towards a start-up in 2016
Doheny Desalination Project	South Coast Water District, Laguna Beach CWD			South Coast Water District and its consulting team is continuing to pursue the Doheny Desal Project. Major items scheduled over the next year include: • Historical Doc Summary TM1 • Environmental & Permitting Roadmap TM2 • Brine Outfall Analysis TM3 • Preliminary Design Report and Cost Estimate TM5 • EIR Process • Environmental Permitting Approvals & Hearings • Public Outreach TM4 • Project Funding • Project Delivery Method TM6 • Economic Analysis TM7 Key among those, probably for the April/May timeframe will be the updated cost estimate and the economic analysis.

Description	Lead Agency	Status % Complete	Scheduled Completion Date	Comments
Poseidon Resources Ocean Desalination Project in Huntington Beach				OCWD has continued work on evaluating where the product water produced from the Poseidon Project would be utilized, either for the seawater barrier operations, injection or replenishment in the groundwater basin, for direct delivery to other agencies or some combination thereof. OCWD's report on the costs involved in using 100% of the Poseidon water to replenish the groundwater basin will be presented to the OCWD Board on January 6. The report will also have the other delivery options included, but the main focus of the report is what it will take to replenish all 50 mgd into the groundwater basin. Karl Seckel has been participating with OCWD in meetings on the report.
Orange County Water Reliability Study				The last regular Study Workgroup meeting was held on Nov 5 to reconsider the Supply Gap and to review the List of Potential OC Projects generated in this phase of the study. Other items discussed included the role of demand curtailment in the planning process, the SWRCB regulations, probability vs plausibility of the three scenarios, the California WaterFix, Climate variability and the meeting schedule to vet the Phase 1 work. The first of the Phase 1 extended Workgroup meetings took place on November 30. MWDOC invited all agencies to send representatives to the meeting, especially agency representatives who had not made the prior workgroup meetings. In all, 21 agencies attended the three-hour meeting held at the City of Santa Ana. The agenda covered in detail the modeling and analysis to date. Subsequent meetings have been scheduled for: • Dec 14 – System Reliability Planning • Jan 4 – Supply Reliability, GAPS, Illustration of Strategies

Description	Lead Agency	Status % Complete	Scheduled Completion Date	Comments
				to Reduce the GAPs and Economic Methods for Comparison of strategies • Jan 18 – Discussion of Policy Issues and Scope for Phase 2 This should allow Phase 2 to begin in February and proceed over the subsequent three months.
Other Meetings/Work				
				Rob Hunter and Dan Ferons from SMWD met with Jeff Kightlinger and Debra Man from MET to discuss the process for reviewing work for integrating the Cadiz project into the CRA flows. MET had questions whether the project could be fit into MET's operations for the CRA on a consistent basis.
				Karl Seckel met with Paul Weghorst from IRWD on the Reliability Study IRWD is conducting for their system. The IRWD and MWDOC work are being coordinated, but approached somewhat differently. We have stayed in contact on the study progress.
				Karl Seckel, Director Sat Tamaribuchi and Jonathan Volzke attended the December meeting of the Orange County Business Council Infrastructure Committee to discuss the interim results of the Phase 1 GAP analysis.
				Karl Seckel and Director Susan Hinman met with the San

Description	Lead Agency	Status % Complete	Scheduled Completion Date	Comments
				Clemente City Manager, James Makshanoff and Mayor Bob Baker to discuss who MWDOC is and what we do (an introduction for the City Manager of 14 months). We also discussed the Doheny Desal Project, the OC Water Reliability Study, Emergency Response Planning and WEROC.
				Director Susan Hinman attended the December San Juan Basin Authority meeting where the discussions centered on the on-going work for the basin. Not discussed, but underway by the San Juan Basin Authority is a governance study, being conducted by Rich Atwater. Rich has special expertise in other groundwater basins working on strategic and policy resolution.
				Karl Seckel, Keith Lyon and Kevin Hostert continued working with EOCWD staff and MET staff to discuss a flow testing process along with a visual inspection of a check valve and a venturi meter at the OC-70 service connection. The work is intended on locating an apparent flow discrepancy between the EOCWD system and the MET meter. Complicating factors include a check valve that may be malfunctioning and the potential for hydraulic swirls to be causing metering discrepancies at the facility. The work was rescheduled to January to provide time for EOCWD to move an existing meter to improve the accuracy for comparison purposes.
				Director Sat Tamaribuchi, Rob Hunter, Karl Seckel and Harvey De La Torre conducted a conference call with Steve Arakawa at MET to get a better understanding of the California Fix and the Emergency Flow Path Project as well as the politics of the

Description	Lead Agency	Status % Complete	Scheduled Completion Date	Comments
				Tunnels Project moving forward.

Status of Ongoing WEROC Projects
November 2015

Description	Comments
General Activities	Director McKenney provided WEROC staff the November 20 Inspection Trip of Edmonston Pumping Plant and Joseph Jensen Treatment Plant as an opportunity to invite emergency managers from Orange County to learn more about water infrastructure. Approximately 15 attendees from the emergency management field attended. Brandon Stock attended the Operations Section Training at Operational Area (OA) Emergency Operations Center (EOC) and Karl attended the OA EOC Introduction Class and Management Section Class. These classes are to assist staff who may respond to the OA EOC to understand how the County EOC works and what their role will be. Kelly Hubbard attended the International Association of Emergency Manager's Annual Conference. The conference offers a great selection of breakout sessions and plenary sessions that bring lessons learned from the National and International emergency response community. Some great information on low-cost EOC solutions, whole community planning and some flood response vendors were highlights of the information brought back to share with member agencies.
Coordination with Member Agencies	Kelly was asked to participate in the Moulton Niguel Water District El Nino Tabletop Planning Exercise. MNWD staff spent an afternoon reviewing their known risk areas for flooding, response protocols and resource needs. Kelly provided staff an update on the County's planning and how WEROC can assist in a disaster. WEROC held its Quarterly Emergency Coordinator's Meeting on November 13. The main topic discussed was El Nino Preparations of member agencies. Each agency gave a quick report on what their agency was doing or has done to prepare for the upcoming storm season. The topic allowed for agencies to discuss, collaborate and adopt best practices developed by other agencies. Kelly also provided a presentation on the Damage Assessment and FEMA declaration

Description	Comments
	process to prepare agencies for the potential need to track emergency response costs this winter season. WEROC staff held its first Potable Water Trailer Agency Meeting on November 3. The purpose of the meeting was to review grant requirements, share operations and maintenance lessons learned, develop public outreach materials and discuss mutual aid response protocols. The meeting was well attended with many deliverables and concepts for improvement. The County of Orange Dam/Reservoir Annex includes dams or reservoirs that are owned by water utilities. Brandon is working with those dam owners that are water agencies to facilitate receiving key points of information such as dam inundation notification plans and inundation maps which have not been included in the County plan previously. The agencies involved are: City of Brea, City of Newport Beach, Metropolitan Water District of Southern California, El Toro Water District, South Coast Water District, Santa Margarita Water District, Irvine Ranch Water District, Serrano Water District, Trabuco Canyon Water District and the City of Anaheim. Kelly sat on an interview panel for South Coast Water District for their Environmental Health and Emergency Services Coordinator position. Kelly coordinated a Department of Water Resources Flood Fight Class for Member Agency staff. The class is a full day training with a classroom component on protection of infrastructure techniques and then a field component on how to best create protection barriers. Additionally, Kelly arranged for three vendors to provide samples and brochures for flood response resources that will be needed.
Coordination with the County of Orange	At the Social Services Agency in Anaheim on November 5, Brandon and Kelly attended the Orange County Emergency Management Organization (OCEMO) meeting. The main presentation was a member from Los Angeles Fire Urban Search and Rescue Team (USAR) and the lessons learned from responding to the Nepal earthquake. The LA USAR team is one of two international teams in the Nation. Their deployment to Nepal was the longest trip (22 days) in

Description	Comments
	history to date from a US based team. The Operational Area Manager Report emphasized preparations for El Nino and specifically the complex coordination of working with the increased homeless population in the river channels. Brandon and Kelly also attended the OCEMO Exercise Design Committee meeting. The Committee is developing a 2-year exercise and training plan for all agencies in the county. WEROC is tying in a water specific exercise and training program with this county program to target the water agencies and their specific needs. Brandon attended the 4th Quarter Orange County Homeland Security Urban Area Working Group (UAWG) Meeting. The primary presentation was on the rollout of the 2015 Urban Areas Security Initiative (UASI) Grant Program. A program binder was provided, which included an award letter, transfer agreements, grant guides and reimbursement documents for the Portable Fuel Trailers and Camlocks and Cabling projects. On November 18, Brandon attended the Emergency Management Council (EMC) and Operational Area Executive Board Quarterly meeting. The following plans were approved: 2015 County of Orange Hazard Mitigation Plan, 2015 Silverado Canyon Debris Flow Annex, OC OA Dam and Reservoir Failure Annex and the Health Care Agency Medical Countermeasures Annex. Todd Spitzer, County Supervisor and EMC Chairperson, announced the hiring of a staff person to work on issues related to the increased homeless population in the river channels and the expectation of a major El Nino season. Other topics of discussion were the counties efforts to identify a second EOC location, County-wide El Nino preparations and a new funding agreement with SONGS for continued emergency management support. Brandon provided an updated of emergency preparedness activities from ISDOC member agencies. The Orange County Fire Authority (OCFA) received grant funding to develop 20 Wildland Urban Interface (WUI) Fire Response Plans. The purpose of these plans is to provide the first response agencies immediate information that is needed for an initial response (first 4-6 hours of a major fire). They include concepts of burn history, evacuation routes, hazards, water supply etc. They are meant to be short and concise for “initial fire attack operations.” Kelly requested

Description	Comments
	that the water utilities within each fire planning zone be included in the plan process. Significant time has been dedicated to ensuring the water utilities are involved in the planning process and that critical information about water supply and critical facilities is included in these plans. Kelly and Brandon participated in the Orange County Intelligence Assessment Center Cyber Security Exercise that was facilitated by FEMA. Kelly was an exercise evaluator and Brandon was a participant. Staff invited an IT staff person from MNWD to attend as well. The three will be working together to create a Water Cyber Security Workgroup to facilitate the sharing of information, as well as to host meetings and trainings similar to the one attended this month.
Coordination with Outside Agencies	Kelly provided a presentation to California Office of Emergency Services Southern Region staff on coordination of water utility impacts during a disaster and how Cal WARN can assist the state in those efforts. She also addressed concepts of preparation and concern for the coming storm season.
WEROC Emergency Operations Center (EOC) Readiness	Brandon conducted the WEROC Radio Test on 11/24/15 from the MWDOC offices. Kelly checked in on the Operational Area Radio check this month from the MWDOC office. All radios were operational. Besides regular maintenance services (cleaning and pest control) at both EOC's, the annual minor generator service for the NEOC was conducted. Brandon completed an update of the WEROC Agency Contact Information. The task is scheduled to be performed every six months, however, staff is constantly updating contact info as they are notified of staffing changes.

Status of Water Use Efficiency Projects

November 2015

Description	Lead Agency	Status % Complete	Scheduled Completion or Renewal Date	Comments
Smart Timer Rebate Program	MWDSC	Ongoing	Ongoing	For October 2015, 1 residential and 0 commercial smart timers were installed in Orange County. For program water savings and implementation information, see MWDOC Water Use Efficiency Program Savings and Implementation Report.
Rotating Nozzles Rebate Program	MWDSC	Ongoing	Ongoing	For October 2015, 3,709 rotating nozzles were installed in Orange County. For program savings and implementation information, please see MWDOC Water Use Efficiency Program Savings and Implementation Report.
Water Smart Landscape Program	MWDOC	On-going	June 2016	In October 2015, a total of 12,677 meters received monthly irrigation performance reports comparing actual water use to a landscape irrigation budget customized to each meter. For program savings and implementation information, please see MWDOC Water Use Efficiency Program Savings and Implementation Report.
SoCal Water$mart Residential Indoor Rebate Program	MWDSC	On-going	On-going	In October 2015, 532 high efficiency clothes washers and 2,337 high efficiency toilets were installed through this program. For program savings and implementation information, please see MWDOC Water Use Efficiency Program Savings and Implementation Report.

SoCal Water$mart Commercial Rebate Program	MWDSC	On-going	On-going	In October 2015, 746 high efficiency toilets, 187 multi-family high efficiency toilets, 1,822 premium high efficiency toilets, and 12 zero water urinals were installed through this program. For program savings and implementation information, please see MWDOC Water Use Efficiency Program Savings and Implementation Report.
Industrial Process Water Use Reduction Program	MWDOC	95%	September 2016	A total of 41 Focused Surveys and 19 Comprehensive Surveys have been completed or are in progress. To date, 15 companies have signed Incentive Agreements. Updated discharger lists have been obtained, and outreach is continuing to sites with feasible water savings potential. As a result of this program, 359 AFY of water savings is being achieved.
MWDOC Conservation Meeting	MWDOC	On-going	Monthly	This month's meeting was held on December 3, 2015 at MWDOC. The next meeting will be on February 4, 2016 at MWDOC.
Metropolitan Conservation Meeting	MWDSC	On-going	Monthly	This month's meeting was held on November 19, 2015. The next meeting will be December 17, 2015 at Metropolitan.
Water Smart Hotel Program	MWDOC	95%	December 2015	MWDOC was awarded a Bureau of Reclamation grant, to be matched with Metropolitan funds, to conduct up to 30 commercial and landscape audits of hotels. Enhanced financial incentives will be provided to augment the current SoCal Water$mart rebates. All grant funding for this program has all been fully allocated. A final invoice will be submitted to the Bureau in December 2015, with the final grant report due March 2016.
Turf Removal Program	MWDOC	On-going	Ongoing	In November 2015, 3,904 rebates were paid, representing $2,030,283 in rebates paid this month in Orange County. To date, the Turf Removal Program has removed approximately 10,000,000 square feet of turf. For program savings and implementation information, please see MWDOC Water Use Efficiency Program Savings and Implementation Report.

California Sprinkler Adjustment Notification System – Base Irrigation Schedule Calculator	MWDOC	55%	December 2015	MWDOC was awarded an additional grant from the Bureau of Reclamation to develop the Base Irrigation Schedule Calculator in support of the California Sprinkler Adjustment Notification System (CSANS). This system will e-mail or "push" an irrigation index to assist property owners with making global irrigation scheduling adjustments. Participants will voluntarily register to receive this e-mail and can unsubscribe at any time. EcoLandscape California (ELC) was selected and approved by the Board to develop the Base Irrigation Schedule Calculator and instructional videos. Development of the calculator is well under way, and production of the promotional and how-to videos will start by year's end.
Public Spaces Program	MWDOC	87%	December 2015	This program targets publicly-owned landscape properties located in the South Orange County IRWM Plan area and encourages the removal of non-functional turfgrass, the upgrade of antiquated irrigation timers, and the conversion of high-precipitation-rate fixed spray irrigation to low-precipitation-rate rotating nozzles and/or drip irrigation. To date, 12 cities, water districts, or other special districts (i.e., school districts) have applied for funding through this program, of which eight have followed through with projects. Three of those projects were funded in August 2015, with the remaining five to be funded at the end of Calendar Year 2015.
Landscape Irrigation Survey Program	MWDSC	Ongoing	June 2016	Through this program, Metropolitan offers, at no cost, the services of a certified landscape irrigation auditor who will survey and provide written recommendations for qualifying non-residential properties within Metropolitan's service area. To date, 147 sites in the MWDOC service area have contacted Metropolitan to request surveys.

Spray to Drip Conversion Pilot Program	MWDOC	68%	April 2016	This is a pilot program designed to test the efficacy of replacing conventional spray heads in shrub beds with low-volume, low-precipitation drip technology. Through a rebate program format, residential and commercial sites will be encouraged to convert their existing spray nozzles to drip. To date, 142 residential sites and 35 commercial sites have completed spray to drip conversion projects.
CII Performance-Based Water Use Efficiency Program	MWDOC	20%	December 2017	This program will provide enhanced rebate incentives to commercial, industrial, and institutional sites and large-landscape properties (landscapes $\geq$ 1 acre). The program is in the process of providing incentives to commercial, industrial, and institutional sites
Landscape Training and Outreach	MWDOC & County Stormwater	Ongoing	Ongoing	The Orange County Garden Friendly (OCGF) Pilot Program promotes the use of climate appropriate plants and water efficient irrigation practices, with the overall goals of reducing water runoff and improving outdoor water use efficiency. The OCGF Pilot Program is a collaborative effort of the Orange County Stormwater Program (OCSP) and the University of California Cooperative Extension (UCCE). Each partner plays a role in planning and implementing the Program. Fall OCGF events included October 3rd at the Home Depot in Orange, October 10th at the Home Depot in Brea, and October 24th at the Home Depot in Tustin. At these events, more than 250 customers engaged in discussions with MWDOC staff relating to ways they could implement water savings. Rebate eligible products purchased at these events included rotating sprinkler nozzles, drip irrigation, weather-based irrigation controllers, and rain barrels.

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	October-15	532	1.53	2,244	16.15	105,611	3,644	20,708
Smart Timer Program - Irrigation Timers	2004	October-15	1	0.00	371	15.65	13,438	4,655	28,933
Rotating Nozzles Rebate Program	2007	October-15	3,709	14.83	18,064	135.73	478,934	2,422	9,721
SoCal Water$mart Commercial Plumbing Fixture Rebate Program	2002	October-15	2,767	7.65	3,622	18.06	51,788	3,518	34,157
Water Smart Landscape Program [1]	1997	October-15	12,677	904.62	12,677	3,615.21	12,677	10,621	72,668
Industrial Process Water Use Reduction Program	2006	October-15	1	11.41	1	11.41	15	359	1,398
Turf Removal Program[3]	2010	November-15	947,615	11.05	2,868,923	68	10,386,596	1,454	2,982
High Efficiency Toilet (HET) Program	2005	October-15	2,337	8.28	8,102	114.87	54,376	2,010	11,439
Home Water Certification Program	2013	October-15	11	0.022	42	0.147	301	7.080	15.007
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				**959**	**2,914,046**	**3,995**	**12,435,571**	**44,064**	**365,841**

[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 06/07	FY 07/08	FY 08/09	FY 09/10	FY 10/11	FY 11/12	FY 12/13	FY13/14	FY14/15	FY15/16	Total	Current FY Water Savings Ac/Ft (Cumulative)	Cumulative Water Savings across all Fiscal Years	15 yr. Lifecycle Savings Ac/Ft
Brea	132	175	156	42	186	144	93	115	114	43	1,777	0.30	346.91	919
Buena Park	85	114	146	59	230	145	105	106	91	24	1,412	0.19	263.13	731
East Orange CWD RZ	18	22	17	3	23	10	10	8	8	4	185	0.03	38.21	96
El Toro WD	91	113	130	32	162	112	134	121	111	29	1,438	0.23	267.47	744
Fountain Valley	205	219	243	72	289	158	115	102	110	37	2,296	0.24	467.55	1,188
Garden Grove	238	304	332	101	481	236	190	162	165	42	3,227	0.36	641.93	1,670
Golden State WC	339	401	447	168	583	485	265	283	359	106	4,723	0.80	909.33	2,444
Huntington Beach	761	750	751	211	963	582	334	295	319	89	7,930	0.64	1,649.30	4,103
Irvine Ranch WD	1,972	2,052	1,844	1,394	2,621	2,170	1,763	1,664	1,882	676	22,448	4.63	4,161.08	11,615
La Habra	96	136	83	22	179	128	82	114	87	25	1,233	0.16	230.28	638
La Palma	33	35	51	25	76	46	34	25	34	10	429	0.07	78.92	222
Laguna Beach CWD	57	77	77	27	96	57	38	37	39	23	904	0.16	181.03	468
Mesa Water	239	249	246	73	232	176	114	86	89	27	2,352	0.21	498.68	1,217
Moulton Niguel WD	652	716	742	250	1,127	679	442	421	790	337	8,995	2.42	1,691.75	4,654
Newport Beach	245	270	259	57	197	142	116	92	95	36	2,533	0.28	540.91	1,311
Orange	366	365	403	111	349	262	218	163	160	54	3,748	0.44	781.73	1,939
Orange Park Acres	4	8	-	-	-	-	-	-	-	-	12	0.00	3.09	6
San Juan Capistrano	109	103	127	43	190	110	76	73	92	34	1,397	0.30	271.08	723
San Clemente	204	261	278	63	333	206	140	94	141	41	2,516	0.29	494.64	1,302
Santa Margarita WD	654	683	740	257	1,105	679	553	662	792	224	8,907	1.68	1,660.81	4,609
Seal Beach	47	46	57	7	81	51	31	29	38	12	582	0.10	113.15	301
Serrano WD	30	31	23	7	21	20	13	10	26	5	343	0.03	71.90	177
South Coast WD	107	130	148	43	183	112	89	79	68	25	1,522	0.18	297.39	788
Trabuco Canyon WD	69	60	62	28	82	62	30	45	47	19	755	0.14	146.53	391
Tustin	152	146	144	45	174	97	78	59	80	32	1,534	0.23	314.38	794
Westminster	213	171	233	74	329	208	121	82	109	30	2,383	0.20	480.73	1,233
Yorba Linda	288	350	367	117	394	273	181	167	156	64	3,637	0.47	750.09	1,882
MWDOC Totals	7,406	7,987	8,106	3,331	10,686	7,350	5,365	5,094	6,002	2,048	89,218	14.78	17,352.00	17,237
Anaheim	854	847	781	860	910	477	331	285	295	98	10,301	0.68	2,141.25	5,330
Fullerton	269	334	330	69	397	270	200	186	211	63	3,486	0.45	644.49	1,804
Santa Ana	236	235	257	87	355	190	163	131	132	35	2,606	0.25	570.33	1,348
Non-MWDOC Totals	1,359	1,416	1,368	1,016	1,662	937	694	602	638	196	16,393	1.37	3,356.08	3,167
Orange County Totals	8,765	9,403	9,474	4,347	12,348	8,287	6,059	5,696	6,640	2,244	105,611	16.15	20,708.07	20,404

SMART TIMERS INSTALLED BY AGENCY

through MWDOC and Local Agency Conservation Programs

Agency	FY 08/09		FY 09/10		FY 10/11		FY 11/12		FY 12/13		FY 13/14		FY 14/15		FY 15/16		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	Res	Comm.	
Brea	3	9	0	0	2	0	8	0	9	8	4	0	43	6	5	0	85	72	398.22
Buena Park	3	1	0	0	0	0	4	19	3	0	0	0	4	10	0	0	14	30	85.75
East Orange CWD RZ	0	0	0	0	1	0	5	0	2	0	0	0	2	0	0	0	13	0	3.55
El Toro WD	0	25	2	18	5	5	26	2	7	2	11	0	8	9	4	0	77	330	1,976.03
Fountain Valley	1	0	0	6	2	2	8	2	3	2	4	0	7	10	2	0	47	27	114.99
Garden Grove	2	1	6	0	5	4	7	0	5	2	9	0	10	14	3	3	63	30	106.46
Golden State WC	1	2	9	22	7	4	13	3	9	49	9	25	39	12	1	0	135	139	520.07
Huntington Beach	13	1	6	27	6	36	15	4	18	33	20	35	19	2	11	0	153	162	665.38
Irvine Ranch WD	29	56	14	145	28	153	267	71	414	135	71	59	67	310	9	0	1,195	1,659	7,923.73
La Habra	0	0	0	21	0	0	3	0	4	7	2	0	4	7	57	43	78	79	171.24
La Palma	0	0	0	0	0	0	1	0	1	0	2	0	2	0	1	1	7	1	1.60
Laguna Beach CWD	2	0	2	14	4	1	109	2	76	2	71	0	86	0	0	0	384	19	157.52
Mesa Water	6	7	13	7	7	22	21	0	10	2	15	2	17	28	5	0	138	101	486.67
Moulton Niguel WD	21	23	17	162	36	60	179	31	51	74	40	45	46	95	2	0	517	572	2,337.11
Newport Beach	10	27	7	58	6	0	275	12	242	26	168	75	11	9	53	25	1,033	379	1,957.82
Orange	5	2	2	13	5	8	25	0	20	24	13	9	18	31	4	0	169	142	667.97
San Juan Capistrano	10	0	7	49	13	1	103	2	14	18	6	11	6	19	4	2	184	111	448.73
San Clemente	81	20	13	209	46	11	212	17	26	7	28	2	28	24	16	6	1,004	364	2,056.38
Santa Margarita WD	25	44	10	152	61	53	262	7	53	171	64	93	53	321	8	0	647	1,015	3,563.97
Santiago CWD	0	0	0	0	0	0	0	0	0	0	0	0	0	0	31	1	31	1	2.10
Seal Beach	0	0	0	1	0	0	0	3	1	0	1	36	1	12	0	0	3	52	104.07
Serrano WD	0	0	11	0	4	0	3	0	1	0	0	0	4	0	1	0	24	0	5.95
South Coast WD	11	6	3	10	13	3	78	10	13	16	8	4	104	73	4	0	266	201	828.89
Trabuco Canyon WD	1	0	2	0	2	10	12	0	6	0	2	0	6	1	6	0	80	104	695.27
Tustin	7	9	10	14	10	0	11	0	8	4	9	1	18	14	8	0	85	49	211.62
Westminster	3	0	3	0	1	1	2	0	1	1	2	0	13	17	4	0	45	31	130.93
Yorba Linda	8	5	5	21	25	0	22	0	20	0	12	5	32	2	15	1	220	86	529.19
MWDOC Totals	242	238	142	949	289	374	1,671	185	1,017	583	571	402	648	1,026	254	82	6,697	5,756	26,151.20
Anaheim	9	59	5	46	12	11	23	60	19	10	9	26	7	52	6	7	133	420	1,949.05
Fullerton	2	2	2	39	9	33	22	51	9	29	8	0	40	26	5	6	119	186	641.99
Santa Ana	2	4	1	8	8	0	6	5	8	19	7	8	9	27	10	1	55	72	190.50
Non-MWDOC Totals	13	65	8	93	29	44	51	116	36	58	24	34	56	105	21	14	307	678	2,781.54
Orange County Totals	255	303	150	1,042	318	418	1,722	301	1,053	641	595	436	704	1,131	275	96	7,004	6,434	28,933

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

Agency	FY 10/11			FY 11/12			FY 12/13			FY 13/14			FY 14/15			FY 15/16			Total Program			Cumulative Water Savings across all Fiscal Years
	Small		Large	Small		Large	Small		Large	Small		Large	Small		Large	Small		Large	Small		Large	
	Res	Comm.	Comm.	Res	Comm.	Comm.	Res	Comm.	Comm.	Res	Comm.	Comm.	Res	Comm.	Comm.	Res	Comm.	Comm.	Res	Comm.	Comm.	
Brea	32	0	0	130	0	0	65	120	0	84	0	0	157	45	0	0	842	0	498	1,107	0	13.71
Buena Park	29	0	0	32	0	0	65	0	0	53	0	0	248	0	0	0	0	0	464	75	2,535	450.81
East Orange	0	0	0	340	0	0	55	0	0	30	0	0	221	0	0	0	0	0	751	0	0	9.60
El Toro	174	0	0	357	76	0	23	6,281	0	56	3,288	0	1,741	28,714	0	90	4,457	0	2,674	45,980	890	635.80
Fountain Valley	83	0	0	108	0	0	35	0	0	0	0	0	107	0	0	18	0	0	506	0	0	7.95
Garden Grove	38	0	0	119	0	0	95	0	0	80	0	0	88	50	0	44	0	0	812	201	0	17.16
Golden State	303	943	0	294	0	0	257	2,595	0	192	0	0	583	1,741	0	65	0	0	2,218	5,308	0	102.89
Huntington Beach	203	625	0	458	0	0	270	0	0	120	0	0	798	1,419	0	198	1,432	0	2,501	7,760	2,681	746.72
Irvine Ranch	2,411	2,861	0	1,715	4,255	0	25,018	1,014	0	11,010	4,257	0	1,421	632	0	171	1,110	0	44,984	81,113	2,004	2,656.37
La Habra	0	0	0	33	90	0	0	0	0	15	0	0	109	338	0	21	0	0	202	1,236	900	217.49
La Palma	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	0	0	0.24
Laguna Beach	156	0	0	763	0	0	3,596	0	0	2,948	878	0	2,879	1,971	0	46	0	0	10,795	2,896	0	164.61
Mesa Water	118	0	0	297	277	0	270	0	0	361	0	0	229	0	0	77	0	0	1,828	385	343	117.26
Moulton Niguel	1,578	0	0	1,225	0	0	512	1,385	0	361	227	0	1,596	4,587	0	473	233	0	6,702	13,435	2,945	906.15
Newport Beach	337	1,208	0	640	3,273	0	25,365	50	0	19,349	6,835	0	460	3,857	0	250	0	0	46,580	20,743	0	947.31
Orange	135	30	0	343	0	0	264	0	0	245	120	0	304	668	0	271	0	0	2,810	981	0	58.18
San Clemente	2,612	851	0	4,266	117	1,343	631	172	0	415	5,074	0	326	0	0	279	0	0	9,842	7,538	1,343	387.00
San Juan Capistrano	1,452	0	0	949	0	0	684	30	0	370	0	0	495	737	0	15	0	0	5,125	8,136	0	239.81
Santa Margarita	3,959	3,566	0	4,817	0	0	983	0	0	389	0	0	1,207	1,513	0	711	107	0	15,041	6,191	611	415.93
Seal Beach	0	0	0	0	0	0	0	0	0	0	0	0	40	5,261	0	0	0	0	155	5,552	0	50.97
Serrano	364	0	0	58	0	0	190	0	0	105	0	0	377	0	0	291	0	0	3,001	0	0	48.15
South Coast	318	1,772	0	688	359	0	435	0	0	70	0	0	4,993	13,717	0	116	179	0	6,809	16,160	0	213.13
Trabuco Canyon	0	0	0	379	0	0	34	0	0	0	0	0	56	0	0	77	0	0	2,033	791	0	52.43
Tustin	512	0	0	476	1,013	0	378	0	0	329	0	0	408	0	0	120	45	0	3,109	1,058	0	60.05
Westminster	0	0	0	26	0	0	15	0	0	0	0	0	54	0	0	57	0	0	343	0	0	5.47
Yorba Linda	529	0	0	559	0	0	730	0	0	40	990	0	921	0	0	636	0	0	4,789	4,359	500	255.63
MWDOC Totals	15,343	11,856	0	19,072	9,460	1,343	59,970	11,647	0	36,622	21,669	0	19,818	65,250	0	4,026	8,405	0	174,582	231,005	14,752	8,780.80
Anaheim	372	382	0	742	38,554	0	459	813	0	338	0	0	498	712	0	152	5,221	0	3,231	45,846	105	575.88
Fullerton	416	0	0	409	0	0	119	0	0	107	0	0	684	1,196	0	260	0	0	2,584	1,260	1,484	306.37
Santa Ana	53	0	0	22	65	0	99	0	0	86	2,533	0	310	0	0	0	0	0	859	3,226	0	57.47
Non-MWDOC Totals	841	382	0	1,173	38,619	0	677	813	0	531	2,533	0	1,492	1,908	0	412	5,221	0	6,674	50,332	1,589	939.71
Orange County Totals	16,184	12,238	0	20,245	48,079	1,343	60,647	12,460	0	37,153	24,202	0	21,310	67,158	0	4,438	13,626	0	181,256	281,337	16,341	9,720.51

SOCAL WATER$MART COMMERCIAL PLUMBING FIXTURES REBATE PROGRAM[1]
INSTALLED BY AGENCY
through MWDOC and Local Agency Conservation Programs

Agency	FY 07/08	FY 08/09	FY 09/10	FY 10/11	FY 11/12	FY 12/13	FY 13/14	FY 14/15	FY 15/16	Totals	Cumulative Water Savings across all Fiscal Years
Brea	27	113	24	4	1	234	0	10	53	**593**	**346**
Buena Park	153	432	122	379	290	5	23	56	94	**1,859**	**908**
East Orange CWD RZ	0	0	0	0	0	0	0	0	0	**0**	**0**
El Toro WD	0	92	143	1	137	0	212	6	1	**760**	**512**
Fountain Valley	17	35	0	2	314	0	0	1	0	**623**	**517**
Garden Grove	5	298	130	22	0	4	1	167	160	**1,525**	**1,304**
Golden State WC	46	414	55	68	135	0	1	0	182	**1,986**	**1,685**
Huntington Beach	48	104	126	96	156	104	144	7	451	**1,981**	**1,368**
Irvine Ranch WD	121	789	2,708	1,002	646	1,090	451	725	894	**11,702**	**5,898**
La Habra	191	75	53	4	0	0	0	0	109	**652**	**478**
La Palma	0	140	21	0	0	0	0	0	0	**166**	**74**
Laguna Beach CWD	20	137	189	0	0	0	27	0	0	**446**	**281**
Mesa Water	141	543	219	669	41	6	0	79	269	**3,080**	**1,817**
Moulton Niguel WD	9	69	151	6	0	0	0	3	0	**583**	**722**
Newport Beach	98	27	245	425	35	0	0	566	0	**1,834**	**1,144**
Orange	18	374	67	1	73	1	271	81	62	**1,966**	**1,560**
San Juan Capistrano	2	1	1	0	0	0	14	0	0	**260**	**367**
San Clemente	2	18	43	0	19	0	0	1	0	**432**	**350**
Santa Margarita WD	6	23	11	0	0	0	0	2	0	**117**	**182**
Santiago CWD	0	0	0	0	0	0	0	0	0	**0**	**0**
Seal Beach	1	2	124	0	0	0	0	0	0	**354**	**383**
Serrano WD	0	0	0	0	0	0	0	0	0	**0**	**0**
South Coast WD	9	114	56	422	84	148	0	382	0	**1,320**	**441**
Trabuco Canyon WD	0	4	0	0	0	0	0	0	0	**11**	**14**
Tustin	115	145	25	230	0	0	0	75	0	**832**	**720**
Westminster	40	161	16	63	35	1	28	0	20	**835**	**899**
Yorba Linda	10	24	8	30	0	1	0	0	135	**420**	**498**
MWDOC Totals	**1,079**	**4,134**	**4,537**	**3,424**	**1,966**	**1,594**	**1,172**	**2,161**	**2,430**	**34,337**	**22,466**
Anaheim	766	3,298	582	64	48	165	342	463	959	**11,331**	**6,099**
Fullerton	133	579	29	4	0	94	0	178	55	**1,736**	**1,427**
Santa Ana	493	815	728	39	12	16	17	5	178	**4,384**	**4,166**
Non-MWDOC Totals	**1,392**	**4,692**	**1,339**	**107**	**60**	**275**	**359**	**646**	**1,192**	**17,451**	**11,691**
Orange County Totals	**2,471**	**8,826**	**5,876**	**3,531**	**2,026**	**1,869**	**1,531**	**2,807**	**3,622**	**51,788**	**34,157**

[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.

Water Smart Landscape Program

Total Number of Meters in Program by Agency

Agency	FY 06-07	FY 07-08	FY 08-09	FY 09-10	FY 10-11	FY 11-12	FY 12-13	FY 13-14	FY 14-15	FY 15-16	Overall Water Savings To Date (AF)
Brea	0	0	0	0	0	22	22	22	22	22	64.37
Buena Park	0	0	0	17	103	101	101	101	101	101	462.69
East Orange CWD RZ	0	0	0	0	0	0	0	0	0	0	0.00
El Toro WD	227	352	384	371	820	810	812	812	812	812	4,856.93
Fountain Valley	0	0	0	0	0	0	0	0	0	0	0.00
Garden Grove	0	0	0	0	0	0	0	0	0	0	0.00
Golden State WC	0	14	34	32	34	32	32	32	32	32	200.59
Huntington Beach	0	0	0	31	33	31	31	31	31	31	148.43
Irvine Ranch WD	646	708	1,008	6,297	6,347	6,368	6,795	6,797	6,769	6,780	38,304.89
Laguna Beach CWD	0	0	57	141	143	141	124	124	124	124	733.07
La Habra	0	0	23	22	24	22	22	22	22	22	136.72
La Palma	0	0	0	0	0	0	0	0	0	0	0.00
Mesa Water	138	165	286	285	288	450	504	511	514	515	2,943.57
Moulton Niguel WD	113	180	473	571	595	643	640	675	673	661	4,120.71
Newport Beach	23	58	142	171	191	226	262	300	300	300	1,501.19
Orange	0	0	0	0	0	0	0	0	0	0	0.00
San Clemente	204	227	233	247	271	269	269	299	407	459	2,368.77
San Juan Capistrano	0	0	0	0	0	0	0	0	0	0	0.00
Santa Margarita WD	618	945	1,571	1,666	1,746	1,962	1,956	2,274	2,386	2,386	14,178.10
Seal Beach	0	0	0	0	0	0	0	0	0	0	0.00
Serrano WD	0	0	0	0	0	0	0	0	0	0	0.00
South Coast WD	0	62	117	108	110	118	118	118	164	164	829.91
Trabuco Canyon WD	0	12	49	48	62	60	60	60	60	60	350.52
Tustin	0	0	0	0	0	0	0	0	0	0	0.00
Westminster	0	10	18	18	20	18	18	18	18	18	116.46
Yorba Linda WD	0	0	0	0	0	0	0	0	0	0	0.00
MWDOC Totals	**1,969**	**2,733**	**4,395**	**10,025**	**10,787**	**11,273**	**11,766**	**12,196**	**12,435**	**12,487**	**71,316.9**
Anaheim	0	0	0	142	146	144	190	190	190	190	1,351.53
Fullerton	0	0	0	0	0	0	0	0	0	0	0.00
Santa Ana	0	0	0	0	0	0	0	0	0	0	0.00
Non-MWDOC Totals	**0**	**0**	**0**	**142**	**146**	**144**	**190**	**190**	**190**	**190**	**1,351.53**
Orange Co. Totals	**1,969**	**2,733**	**4,395**	**10,167**	**10,933**	**11,417**	**11,956**	**12,386**	**12,625**	**12,677**	**72,668.45**

INDUSTRIAL PROCESS WATER USE REDUCTION PROGRAM

Number of Process Changes by Agency

Agency	FY 07/08	FY 08/09	FY 09/10	FY 10/11	FY 11/12	FY 12/13	FY 13/14	FY 14/15	FY 15/16	Overall Program Interventions	Annual Water Savings[1]	Cumulative Water Savings across all Fiscal Years[1]
Brea	0	0	0	0	0	0	0	0	0	0	0	0
Buena Park	0	1	0	0	0	0	0	0	0	1	54	369
East Orange	0	0	0	0	0	0	0	0	0	0	0	0
El Toro	0	0	0	0	0	0	0	0	0	0	0	0
Fountain Valley	0	0	0	0	0	0	0	0	0	0	0	0
Garden Grove	0	0	0	0	0	0	0	0	0	0	0	0
Golden State	1	0	0	0	0	0	0	0	0	1	3	22
Huntington Beach	0	0	0	0	0	2	0	1	0	3	127	245
Irvine Ranch	0	0	2	1	1	1	1	0	0	6	98	374
La Habra	0	0	0	0	0	0	0	0	0	0	0	0
La Palma	0	0	0	0	0	0	0	0	0	0	0	0
Laguna Beach	0	0	0	0	0	0	0	0	0	0	0	0
Mesa Water	0	0	0	0	0	0	0	0	0	0	0	0
Moulton Niguel	0	0	0	0	0	0	0	0	0	0	0	0
Newport Beach	0	0	0	0	0	0	0	1	0	1	21	19
Orange	1	0	0	0	0	0	0	0	1	2	45	334
San Juan Capistrano	0	0	0	0	0	0	0	0	0	0	0	0
San Clemente	0	0	0	0	0	0	0	0	0	0	0	0
Santa Margarita	0	0	0	0	0	0	0	0	0	0	0	0
Seal Beach	0	0	0	0	0	0	0	0	0	0	0	0
Serrano	0	0	0	0	0	0	0	0	0	0	0	0
South Coast	0	0	0	0	0	0	0	0	0	0	0	0
Trabuco Canyon	0	0	0	0	0	0	0	0	0	0	0	0
Tustin	0	0	0	0	0	0	0	0	0	0	0	0
Westminster	0	0	0	0	0	0	0	0	0	0	0	0
Yorba Linda	0	0	0	0	0	0	0	0	0	0	0	0
MWDOC Totals	2	1	2	1	1	3	1	2	0	14	348	1364
Anaheim	0	0	0	0	0	0	0	0	0	0	0	0
Fullerton	0	0	0	0	0	0	0	0	0	0	0	0
Santa Ana	0	0	0	0	0	0	0	0	1	1	11	34
OC Totals	2	1	2	1	1	3	1	2	1	15	359	1398

[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.

HIGH EFFICIENCY TOILETS (HETs) INSTALLED BY AGENCY

through MWDOC and Local Agency Conservation Programs

Agency	FY05-06	FY 06-07	FY 07-08	FY 08-09	FY 09-10	FY 10-11	FY 11-12	FY 12-13	FY 13-14	FY 14-15	FY 15-16	Total	Cumulative Water Savings across all Fiscal Years
Brea	0	2	7	43	48	8	0	0	38	146	115	407	**56.69**
Buena Park	0	1	2	124	176	7	0	0	96	153	75	634	**126.10**
East Orange CWD RZ	0	0	10	12	1	0	0	0	13	26	16	78	**12.77**
El Toro WD	0	392	18	75	38	18	0	133	218	869	159	1,920	**346.39**
Fountain Valley	0	69	21	262	54	17	0	0	41	132	144	740	**169.64**
Garden Grove	0	14	39	443	181	24	0	0	63	350	276	1,390	**281.36**
Golden State WC	2	16	36	444	716	37	80	2	142	794	385	2,654	**514.92**
Huntington Beach	2	13	59	607	159	76	0	0	163	1,190	455	2,724	**443.98**
Irvine Ranch WD	29	1,055	826	5,088	2,114	325	0	1,449	810	1,777	1,398	14,871	**3,784.91**
Laguna Beach CWD	0	2	17	91	28	11	0	0	45	112	42	348	**66.56**
La Habra	0	3	18	296	34	20	0	0	37	94	52	554	**139.13**
La Palma	0	1	10	36	26	13	0	0	21	59	34	200	**36.73**
Mesa Water	0	247	19	736	131	7	0	0	147	162	116	1,565	**441.29**
Moulton Niguel WD	0	20	104	447	188	46	0	0	400	2,497	1,455	5,157	**593.83**
Newport Beach	0	5	19	163	54	13	0	0	49	168	141	612	**110.87**
Orange	1	20	62	423	79	40	0	1	142	978	329	2,075	**326.05**
San Juan Capistrano	0	10	7	76	39	11	0	0	35	140	143	461	**69.71**
San Clemente	0	7	22	202	66	21	0	0	72	225	178	793	**141.13**
Santa Margarita WD	0	5	14	304	151	44	0	0	528	997	721	2,764	**350.18**
Seal Beach	0	678	8	21	12	1	0	2	17	50	45	834	**311.28**
Serrano WD	2	0	1	13	5	0	0	0	2	40	37	100	**12.47**
South Coast WD	2	2	29	102	41	12	23	64	102	398	175	950	**133.04**
Trabuco Canyon WD	0	0	4	23	23	0	0	0	10	108	107	275	**31.24**
Tustin	0	186	28	387	479	17	0	0	64	132	137	1,430	**393.93**
Westminster	0	17	25	541	167	23	0	0	35	161	287	1,256	**287.02**
Yorba Linda WD	0	14	89	323	96	18	0	0	40	280	278	1,138	**223.99**
MWDOC Totals	38	2,779	1,494	11,282	5,106	809	103	1,651	3,330	12,038	7,300	45,930	**9,405.17**
Anaheim	0	255	78	2,771	619	114	0	0	156	1,188	400	5,581	**1,433.43**
Fullerton	0	4	28	286	60	23	0	0	61	293	193	948	**174.49**
Santa Ana	0	11	25	925	89	23	0	0	33	602	209	1,917	**425.93**
Non-MWDOC Totals	0	270	131	3,982	768	160	0	0	250	2,083	802	8,446	**2,033.86**
Orange County Totals	**38**	**3,049**	**1,625**	**15,264**	**5,874**	**969**	**103**	**1,651**	**3,580**	**14,121**	**8,102**	**54,376**	**11,439.03**

TURF REMOVAL BY AGENCY[1]

through MWDOC and Local Agency Conservation Programs

Agency	FY 11/12		FY 12/13		FY 13/14		FY 14/15		FY 15/16		Total Program		Cumulative Water Savings across all Fiscal Years
	Res	Comm.	Res	Comm.	Res	Comm.	Res	Comm.	Res	Comm.	Res	Comm.	
Brea	3,397	9,466	7,605	0	5,697	0	71,981	30,617	12,421	0	101,101	40,083	**46.12**
Buena Park	0	0	0	0	0	0	11,670	1,626	5,827	0	17,497	1,626	**4.54**
East Orange	0	0	0	0	1,964	0	18,312	0	6,921	0	27,197	0	**6.92**
El Toro	4,723	0	4,680	72,718	4,582	0	27,046	221,612	15,277	86,846	56,308	381,176	**132.49**
Fountain Valley	1,300	0	682	7,524	4,252	0	45,583	5,279	5,869	0	57,686	12,803	**22.35**
Garden Grove	14,013	0	4,534	0	8,274	0	67,701	22,000	13,443	0	107,965	68,177	**81.61**
Golden State	42,593	30,973	31,813	3,200	32,725	8,424	164,507	190,738	29,919	0	301,557	233,335	**192.04**
Huntington Beach	27,630	48,838	9,219	12,437	20,642	0	165,600	58,942	54,016	7,426	277,908	131,294	**149.53**
Irvine Ranch	6,450	1,666	32,884	32,384	36,584	76,400	234,905	317,999	70,450	1,174,609	386,696	1,615,852	**434.10**
La Habra	0	8,262	0	0	0	0	14,014	1,818	6,127	2,936	20,141	20,791	**18.02**
La Palma	0	0	0	0	0	0	4,884	0	500	57,400	5,384	57,400	**9.47**
Laguna Beach	2,533	0	2,664	1,712	4,586	226	13,647	46,850	2,693	0	27,101	48,788	**24.38**
Mesa Water	6,777	0	10,667	0	22,246	0	131,675	33,620	18,947	0	190,312	33,620	**68.99**
Moulton Niguel	4,483	26,927	11,538	84,123	14,739	40,741	314,250	1,612,845	80,041	127,043	426,007	1,907,818	**681.78**
Newport Beach	3,454	0	3,548	2,346	894	0	33,995	65,277	1,064	55,287	42,955	122,910	**41.78**
Orange	12,971	0	15,951	8,723	11,244	0	120,093	281,402	19,781	0	180,040	290,125	**142.80**
San Clemente	21,502	0	16,062	13,165	18,471	13,908	90,349	1,137	18,718	392,742	165,102	420,952	**128.24**
San Juan Capistrano	22,656	103,692	29,544	27,156	12,106	0	101,195	32,366	13,778	19,598	179,279	182,812	**167.35**
Santa Margarita	1,964	11,400	10,151	11,600	17,778	48,180	211,198	514,198	104,454	178,666	350,028	769,605	**300.42**
Seal Beach	0	0	3,611	0	0	0	15,178	504	2,159	0	20,948	504	**6.72**
Serrano	0	0	0	0	2,971	0	41,247	0	32,545	0	76,763	0	**17.35**
South Coast	6,806	0	9,429	4,395	15,162	116,719	84,282	191,853	46,342	0	162,021	329,291	**165.41**
Trabuco Canyon	272	0	1,542	22,440	2,651	0	14,771	0	5,436	66,964	24,672	89,404	**29.00**
Tustin	0	0	9,980	0	1,410	0	71,285	14,137	13,567	1,700	96,242	15,837	**32.24**
Westminster	0	0	0	0	0	0	14,040	34,631	11,354	0	25,394	34,631	**15.22**
Yorba Linda	0	0	0	0	0	0	112,136	12,702	51,470	54,587	174,955	67,289	**59.33**
MWDOC Totals	**183,524**	**241,224**	**216,104**	**303,923**	**238,978**	**304,598**	**2,195,544**	**3,692,153**	**643,119**	**2,225,804**	**3,501,259**	**6,876,123**	**2,978.20**
Anaheim	0	0	0	0	0	0	0	0	0	0	0	0	**-**
Fullerton	0	0	0	0	0	9,214	0	0	0	0	0	9,214	**3.87**
Santa Ana	0	0	0	0	0	0	0	0	0	0	0	0	**-**
Non-MWDOC Totals	**0**	**0**	**0**	**0**	**0**	**9,214**	**0**	**0**	**0**	**0**	**0**	**9,214**	**3.87**
Orange County Totals	**183,524**	**241,224**	**216,104**	**303,923**	**238,978**	**313,812**	**2,195,544**	**3,692,153**	**643,119**	**2,225,804**	**3,501,259**	**6,885,337**	**2,982**

[1]Installed device numbers are listed as square feet

HOME WATER SURVEYS PERFORMED BY AGENCY

through MWDOC and Local Agency Conservation Programs

Agency	FY 13/14		FY 14/15		FY 15/16		Total		Cumulative
	Surveys	Cert Homes	Surveys	Cert Homes	Surveys	Cert Homes	Surveys	Cert Homes	Water Savings
Brea	1	0	2	0	0	0	3	0	0.16
Buena Park	0	0	1	0	0	0	1	0	0.05
East Orange	19	0	1	0	0	0	20	0	1.39
El Toro	0	0	3	0	0	0	3	0	0.14
Fountain Valley	3	0	4	0	0	0	7	0	0.40
Garden Grove	0	0	6	0	1	0	7	0	0.31
Golden State	0	0	0	0	0	0	0	0	0.00
Huntington Beach	2	0	5	0	2	0	9	0	0.42
Irvine Ranch	1	0	3	0	5	0	9	0	0.33
La Habra	0	0	1	0	0	0	1	0	0.05
La Palma	0	0	0	0	0	0	0	0	0.00
Laguna Beach	4	0	8	0	1	0	13	0	0.68
Mesa Water	0	0	0	0	0	0	0	0	0.00
Moulton Niguel	4	0	4	0	0	0	8	0	0.47
Newport Beach	2	0	8	0	3	0	13	0	0.59
Orange	2	0	18	0	1	0	21	0	1.01
San Clemente	15	0	13	0	0	0	28	0	1.67
San Juan Capistrano	4	0	13	0	2	0	19	0	0.94
Santa Margarita	15	0	40	1	12	0	67	1	3.22
Seal Beach	0	0	1	0	1	0	2	0	0.07
Serrano	0	0	2	0	0	0	2	0	0.09
South Coast	6	0	4	0	1	0	11	0	0.64
Trabuco Canyon	0	0	4	0	0	0	4	0	0.19
Tustin	0	0	10	0	4	0	14	0	0.56
Westminster	0	0	0	0	0	0	0	0	0.00
Yorba Linda	0	0	13	0	8	0	21	0	0.80
MWDOC Totals	78	0	164	1	41	0	283	1	14.18
Anaheim	0	0	0	0	0	0	0	0	0.00
Fullerton	0	0	17	0	1	0	18	0	0.82
Santa Ana	0	0	0	0	0	0	0	0	0.00
Non-MWDOC Totals	0	0	17	0	1	0	18	0	0.82
Orange County Totals	78	0	181	1	42	0	301	1	15.007

SYNTHETIC TURF INSTALLED BY AGENCY[1]

through MWDOC and Local Agency Conservation Programs

Agency	FY 07/08		FY 08/09		FY 09/10		FY 10/11		Total Program		Cumulative Water Savings across all Fiscal Years
	Res	Comm.	Res	Comm.	Res	Comm.	Res	Comm.	Res	Comm.	
Brea	0	0	2,153	2,160	500	0	0	0	2,653	2,160	3.30
Buena Park	0	0	1,566	5,850	0	0	0	0	1,566	5,850	5.19
East Orange	0	0	0	0	983	0	0	0	983	0	0.55
El Toro	3,183	0	2,974	0	3,308	0	895	0	10,360	0	6.98
Fountain Valley	11,674	0	1,163	0	2,767	0	684	0	16,288	0	12.46
Garden Grove	1,860	0	0	0	3,197	0	274	0	5,331	0	3.47
Golden State	6,786	0	13,990	0	15,215	0	2,056	0	38,047	0	24.88
Huntington Beach	15,192	591	12,512	0	4,343	1,504	0	0	32,047	2,095	25.29
Irvine Ranch	11,009	876	13,669	0	2,585	0	0	0	27,263	876	21.00
La Habra	0	0	0	0	0	0	0	0	0	0	-
La Palma	429	0	0	0	0	0	0	0	429	0	0.36
Laguna Beach	3,950	0	3,026	0	725	0	0	0	7,701	0	5.84
Mesa Water	4,114	0	3,005	78,118	4,106	0	2,198	0	13,423	78,118	63.46
Moulton Niguel	14,151	0	25,635	2,420	7,432	0	0	0	47,218	2,420	35.69
Newport Beach	2,530	0	6,628	0	270	0	0	0	9,428	0	6.92
Orange	4,169	0	7,191	0	635	0	0	0	11,995	0	8.89
San Clemente	9,328	0	11,250	455	2,514	1,285	500	0	23,592	1,740	18.37
San Juan Capistrano	0	0	7,297	639	2,730	0	4,607	0	14,634	639	9.02
Santa Margarita	12,922	0	26,069	0	21,875	0	7,926	0	68,792	0	44.68
Seal Beach	0	0	817	0	0	0	0	0	817	0	0.57
Serrano	7,347	0	1,145	0	0	0	0	0	8,492	0	6.97
South Coast	2,311	0	6,316	0	17,200	0	1,044	0	26,871	0	16.43
Trabuco Canyon	1,202	0	9,827	0	0	0	0	0	11,029	0	7.89
Tustin	6,123	0	4,717	0	2,190	0	0	0	13,030	0	9.67
Westminster	2,748	16,566	8,215	0	890	0	0	0	11,853	16,566	22.47
Yorba Linda	11,792	0	12,683	0	4,341	5,835	0	0	28,816	5,835	24.48
MWDOC Totals	132,820	18,033	181,848	89,642	97,806	8,624	20,184	0	432,658	116,299	384.83
Anaheim	4,535	0	7,735	20,093	13,555	65,300	4,122	0	29,947	85,393	69.18
Fullerton	4,865	876	5,727	0	6,223	0	105	0	16,920	876	12.36
Santa Ana	0	0	2,820	0	525	0	0	0	3,345	0	2.27
Non-MWDOC Totals	9,400	876	16,282	20,093	20,303	65,300	4,227	0	50,212	86,269	83.81
Orange County Totals	142,220	18,909	198,130	109,735	118,109	73,924	24,411	0	482,870	202,568	468.63

[1]Installed device numbers are calculated in square feet

ULF TOILETS INSTALLED BY AGENCY

through MWDOC and Local Agency Conservation Programs

Agency	Previous Years	FY 95-96	FY 96-97	FY 97-98	FY 98-99	FY 99-00	FY 00-01	FY 01-02	FY 02-03	FY 03-04	FY 04-05	FY 05-06	FY 06-07	FY 07-08	FY 08-09	Total	Cumulative Water Savings across all Fiscal Years
Brea	378	189	299	299	122	144	867	585	341	401	26	48	17	4	0	**3,720**	**1,692.64**
Buena Park	361	147	331	802	520	469	524	1,229	2,325	1,522	50	40	18	9	0	**8,347**	**3,498.37**
East Orange CWD RZ	2	0	33	63	15	17	15	50	41	44	19	18	13	2	0	**332**	**138.23**
El Toro WD	1,169	511	678	889	711	171	310	564	472	324	176	205	61	40	0	**6,281**	**3,091.16**
Fountain Valley	638	454	635	858	1,289	2,355	1,697	1,406	1,400	802	176	111	58	32	0	**11,911**	**5,383.10**
Garden Grove	1,563	1,871	1,956	2,620	2,801	3,556	2,423	3,855	3,148	2,117	176	106	67	39	0	**26,298**	**12,155.41**
Golden State WC	3,535	1,396	3,141	1,113	3,024	2,957	1,379	2,143	3,222	1,870	167	116	501	43	0	**24,607**	**11,731.47**
Huntington Beach	3,963	1,779	2,600	2,522	2,319	3,492	3,281	2,698	3,752	1,901	367	308	143	121	0	**29,246**	**13,854.70**
Irvine Ranch WD	4,016	841	1,674	1,726	1,089	3,256	1,534	1,902	2,263	6,741	593	626	310	129	0	**26,700**	**11,849.23**
Laguna Beach CWD	283	93	118	74	149	306	220	85	271	118	32	26	29	6	0	**1,810**	**845.69**
La Habra	594	146	254	775	703	105	582	645	1,697	1,225	12	31	6	7	0	**6,782**	**2,957.73**
La Palma	65	180	222	125	44	132	518	173	343	193	31	27	20	17	0	**2,090**	**927.52**
Mesa Water	1,610	851	1,052	2,046	2,114	1,956	1,393	1,505	2,387	988	192	124	56	14	0	**16,288**	**7,654.27**
Moulton Niguel WD	744	309	761	698	523	475	716	891	728	684	410	381	187	100	0	**7,607**	**3,371.14**
Newport Beach	369	293	390	571	912	1,223	438	463	396	1,883	153	76	36	16	0	**7,219**	**3,166.77**
Orange	683	1,252	1,155	1,355	533	2,263	1,778	2,444	2,682	1,899	193	218	88	53	4	**16,600**	**7,347.93**
San Juan Capistrano	1,234	284	193	168	323	1,319	347	152	201	151	85	125	42	39	0	**4,663**	**2,324.42**
San Clemente	225	113	191	65	158	198	667	483	201	547	91	66	37	34	0	**3,076**	**1,314.64**
Santa Margarita WD	577	324	553	843	345	456	1,258	790	664	260	179	143	101	29	0	**6,522**	**3,001.01**
Seal Beach	74	66	312	609	47	155	132	81	134	729	29	10	6	12	0	**2,396**	**1,073.80**
Serrano WD	81	56	68	41	19	52	95	73	123	98	20	15	14	2	0	**757**	**338.66**
South Coast WD	110	176	177	114	182	181	133	358	191	469	88	72	32	22	0	**2,305**	**990.05**
Trabuco Canyon WD	10	78	42	42	25	21	40	181	102	30	17	20	12	14	0	**634**	**273.02**
Tustin	968	668	557	824	429	1,292	1,508	1,206	1,096	827	69	89	26	12	0	**9,571**	**4,423.88**
Westminster	747	493	969	1,066	2,336	2,291	2,304	1,523	2,492	1,118	145	105	70	24	0	**15,683**	**7,064.28**
Yorba Linda WD	257	309	417	457	404	1,400	759	1,690	1,155	627	158	136	81	41	0	**7,891**	**3,409.49**
MWDOC Totals	24,256	12,879	18,778	20,765	21,136	30,242	24,918	27,175	31,827	27,568	3,654	3,242	2,031	861	4	**249,336**	**113,878.61**
Anaheim	447	1,054	1,788	3,661	1,755	7,551	4,593	6,346	9,707	5,075	473	371	462	341	1	**43,625**	**18,359.52**
Fullerton	1,453	1,143	694	1,193	1,364	2,138	1,926	2,130	2,213	1,749	172	77	44	23	2	**16,321**	**7,435.23**
Santa Ana	1,111	1,964	1,205	2,729	2,088	8,788	5,614	10,822	10,716	9,164	279	134	25	5	0	**54,644**	**22,887.95**
Non-MWDOC Totals	3,011	4,161	3,687	7,583	5,207	18,477	12,133	19,298	22,636	15,988	924	582	531	369	3	**114,590**	**48,682.70**
Orange County Totals	27,267	17,040	22,465	28,348	26,343	48,719	37,051	46,473	54,463	43,556	4,578	3,824	2,562	1,230	7	**363,926**	**162,561.30**