

**MEETING OF THE
BOARD OF DIRECTORS OF THE
MUNICIPAL WATER DISTRICT OF ORANGE COUNTY**
Jointly with the
PLANNING & OPERATIONS COMMITTEE
December 1, 2014, 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, P. Meszaros, 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 ITEMS

1. TERMS AND OPTIONS FOR A NEW TEN-YEAR PURCHASE ORDER BETWEEN MWDOC AND METROPOLITAN WATER DISTRICT

DISCUSSION ITEMS

2. UPDATE REGARDING WATER SUPPLY CONDITIONS AND MET'S ALLOCATION PLAN REVISIONS (to be emailed separately)
3. MWDOC COMMENT LETTER ON CLEAN ENERGY REPORT ON THE POSEIDON HUNTINGTON BEACH PROJECT

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. DOHENY OCEAN DESALINATION PROJECT STATE PARKS LEASE AND UPDATE ON THE FOUNDATIONAL ACTION PROGRAM UPDATE
5. WEROC EXERCISE ROLLING THUNDER AFTER ACTION/CORRECTIVE ACTION REPORT
6. 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
7. 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.



INFORMATION ITEM

December 1, 2014

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

FROM: Robert Hunter, General Manager

Staff Contact: Harvey De La Torre

**SUBJECT: Terms and Options for a New Ten-Year Purchase Order between
MWDOC and Metropolitan Water District**

STAFF RECOMMENDATION

Staff recommends the Planning & Operations Committee to receive and file the information provided below

REPORT

Background

In 2002 Metropolitan (MWD) established Purchase Order agreements with its member agencies, which are a financial contract between MWD and a member agency to voluntarily commit to purchasing a minimum amount of imported water over a 10-year period. In exchange for this commitment an agency can purchase water from MWD at the lower Tier 1 supply rate on water purchased up to 90% of their Base (Agency's "Base" is their highest annual purchase of firm treated and untreated water since 1990). Any purchases above the 90% base amount will be at the Tier 2 supply rate. Those agencies that choose not to sign a purchase order can only purchase Tier 1 supplies up to 60% of their Base.

The intent of the Purchase Orders are to encourage member agencies to better manage their imported water demands within a Tier rate structure while providing MWD with a measure of secure revenue and it passes on its costs of supplies in excess of the Tier 1 cost of supplies to MWD.

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

In 2011, the MWD Board extended the initial purchase orders for an additional two years to expire at the end of December 31, 2014 in order to allow more time to discuss and evaluate its performance and effectiveness.

For the past six months, MWD and the member agencies have discussed the merits and purpose of the Purchase Orders. Based on these discussions there was general agreement that the Tier 2 Supply Rate continues to encourage water use efficiency and local resource development; and MWD indicated having purchase commitments does provide a measure of revenue security. Therefore, there is value in renewing the purchase orders for another ten-years, but some terms needed to be updated and modified to provide more flexibility.

New MWD Purchase Order Terms

On November 18, 2014, the MWD Board approved the following new MWD Purchase Order (PO) terms with the member agencies, (Effective January 1, 2015 to December 31, 2025):

- **Base Period Options:** Member agencies can choose between retaining their current base year firm demand and existing commitment level (highest imported purchase amount year of FY1990 through FY 2002); **OR** select their highest imported purchase amount year of FY 2003 through FY 2014. Both calculations include past Interim Agricultural Water Program and Replenishment Program sales
 - Member agencies that execute a PO will have their Tier 1 maximum amount will be set at 90% of their respective Base year they choose
 - The member agencies purchase commitment will be 60% of their respective Base year they choose times 10 (years of the PO).
 - If a member agency chooses not to execute a PO their Tier 1 maximum amount will be set at 60% of their current base period
- **Tier 2 Applicability:** Tier 2 would apply to a member agency if their cumulative sales for the term of the PO exceeds its cumulative Tier 1 maximum; which is consistent with the methodology currently utilized to meet the 60% purchase order commitment. Member agencies with Tier 2 obligations may choose:
 - To have their obligation calculated at the end of the 10-year term and pay any Tier 2 obligations at that time, which will be based on the average of the difference between the Tier 1 and Tier 2 Supply Rate over the 10 year term.
 - To pay any Tier 2 obligations as they are incurred, with a “true-up” at the end of the 10-year term.
 - If after year 5, a member agency has accrued a Tier 2 obligation, the member agency will begin paying any future Tier 2 obligations annually. Any outstanding Tier 2 obligation owing from the initial 5-year period can be amortized over the next 5-calendar years or paid at termination of the PO.
- **Additional Aspects:**
 - POs are voluntary
 - The PO commitments will be over the ten-year period; agencies that do not use their minimum amount at the end of the term will pay the average of the Tier 1 Supply Rate in effect during the term for the amount of unpurchased water below 60% of their Base

- The PO will allow for an appeals process at the end of the 10-year term for agencies with unmet commitments who can demonstrate a reduction in demands as a result of the development of local resources. Each AF of unmet commitment will be reduced by the amount of production of a local resource that commences operation on or after January 1, 2014. Local resource production includes any project type as approved by the Board under the Local Resource Program (LRP).
- Commitment will be adjusted to exclude Water Supply Allocation Years
- MWD will not accommodate the exchange or sale of Tier 1 amounts between member agencies. There are no contractual rights tied to the PO. PO are a pricing tool.
- The POs are a Ten-year agreement, effective January 1, 2015 and expire December 31, 2025

MWDOC Analysis

Based on these new terms, MWDOC has the option between its Current Base year and an update Base year. Below is a table comparing MWDOC's the two options:

	"Current" Purchase Order¹	Optional Updated "New" Purchase Order²	Difference
Base Year Amount	311,769 AF	357,372 AF	+45,603 AF
Tier 1 Maximum (90% of the Base)	280,592 AF	321,635 AF	+41,043 AF
Purchase Order Commitment (60% of the Base)	148,616 AF	214,423 AF	+65,807 AF

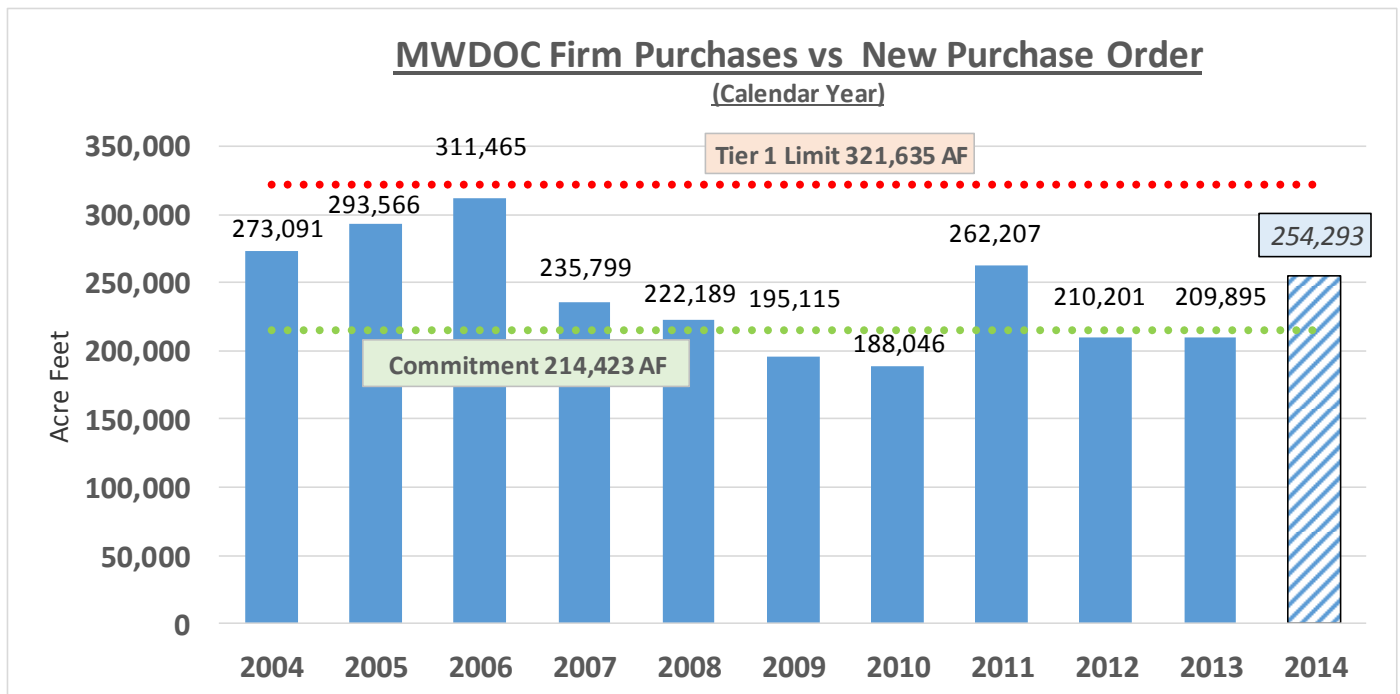
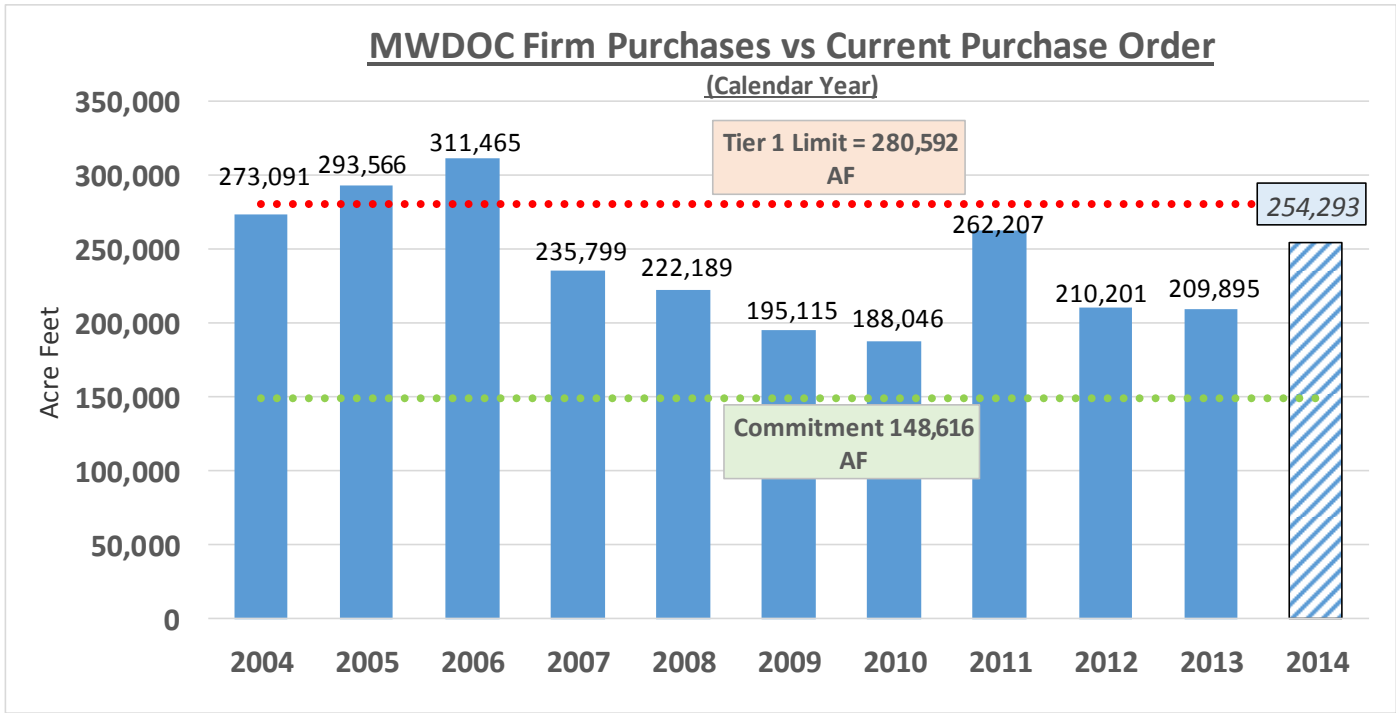
[1] "Current Base" is the highest purchases of imported water from the FY 1990 to 2002

[2] "Update Base" is the highest purchases of imported water from FY 2003 to 2014

Although the New Purchase Order offers MWDOC will a higher Tier 1 annual max of +41,043 AF, it may not be needed. As described in the new terms above, MWDOC can now exceed its annual Tier 1 max as long as we remain below our cumulative Tier 1 amount at the end of the ten-year term. This new provision of MWD not assessing Tier 2 rates in a single year, as long as MWDOC remain below their cumulative Tier 1 max, reduces our exposure to Tier 2 purchases and give us flexibility to make large purchases of MWD water.

The New Purchase Order also comes with an additional +65,807 AF of an annual purchase commitment. Based on our table below, in the past six year MWDOC has only exceeded this new purchase order minimum commitment amount of 214,423 AF twice. With the aggressive calls for long-term water use efficiency, the State 20% \times 2020 retail agency mandate, the recent increase in the MWD LRP incentive rate, and the expected 30,000 AFY expansion of GWR, MWDOC's future imported water needs will be at a lower level. As a result, it will make it difficult for MWDOC to commit to the new purchase order's minimum amount of 214,423 AF on a consistent basis.

Below are two tables illustrating the Current and New Purchase Orders' Tier 1 and Purchase Commitment amounts compared to the last ten years of actual MWDOC water sales:



MWDOC Recommendation

As illustrated above, based on the past ten-years of water sales MWDOC easily achieves the current purchase order's annual commitment amount while providing enough Tier 1 room to manage high demand years. Unless OCWD indicates they will need to make large purchases of recharge water on a consistent basis over the next ten years, signing the terms of New Purchase Order is not the recommended option. With the GWRS expansion coming on-line next year and increase water use efficiency in the MWDOC service area, MWDOC staff recommends signing a new ten-year under the current Purchase Order terms.

Next Steps

Last month, the MWD Board authorized the MWD General Manager to execute new ten-year purchase orders with member agencies agreeing to sign purchase commitments in exchange for purchasing MWD water at the Tier 1 supply rate. MWD would like to have signed purchase order agreements from the member agencies before the end of the year; however, due to the holidays signed agreements can be submitted by the end January.

Next Month, MWDOC staff will seek Board approval to authorize the General Manager and General Counsel to execute a new Purchase Order with MWD with the terms under either the New Purchase Order or the Current Purchase Order

Exhibits:

Current Purchase Order Terms Agreement

New Purchase Order Terms Agreement

**PURCHASE ORDER FOR SYSTEM WATER TO BE PROVIDED BY
THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA**

PURCHASER: MUNICIPAL WATER DISTRICT OF ORANGE COUNTY	TERM 10 years: January 1, 2015 – December 31, 2024
INITIAL BASE PERIOD DEMAND: 311,769 acre-feet	EFFECTIVE DATE: January 1, 2015
INITIAL TIER 1 MAXIMUM—Annual Average: 280,592 acre-feet	INITIAL TIER 1 MAXIMUM—Cumulative: 2,805,920 acre-feet
PURCHASE ORDER COMMITMENT— Annual Average: 148,616 acre-feet	PURCHASE ORDER COMMITMENT— Cumulative: 1,486,160 acre-feet

Definitions of capitalized terms used in this Purchase Order are provided in Attachment 1. Terms used in this Purchase Order and not defined in Attachment 1 are defined in Metropolitan's Administrative Code.

COMMITMENT TO PURCHASE:

In consideration of Purchaser's commitment to purchase System Water pursuant to this Purchase Order, Metropolitan agrees to sell such System Water to Purchaser during the Term at the Tier 1 Supply Rate in an amount up to the Tier 1 Maximum—Cumulative. All System Water sold to Purchaser during the Term in an amount greater than the Tier 1 Maximum—Cumulative shall be sold to the Purchaser at the Tier 2 Supply Rate. In connection with the purchase of System Water, the Purchaser also agrees to pay all other applicable rates and charges, as established by Metropolitan from time to time. The rates and charges applicable to System Water as of the Effective Date are shown in Attachment 2.

If Purchaser's applicable System Water purchases during the Term exceed Purchaser's Tier 1 Maximum, Purchaser may elect to:

- a.) Subject to the provisions of paragraph c) below, pay any Tier 2 Supply Rate obligations at the end of the Term, in an amount equal to the difference between the Purchaser's applicable System Water purchases and the Tier 1 Maximum—Cumulative during the Term times the average of the Tier 2 Supply Rate in effect during the Term; or,
- b.) Pay any Tier 2 Supply Rate obligations annually as purchases are incurred, in an amount equal to the difference between the Purchaser's applicable annual System Water purchases and the Tier 1 Maximum—Annual times the Tier 2 Supply Rate in effect during the calendar year. A true-up at the end of the Term will be performed to ensure that the Purchaser has received all Tier 1 Maximum—Cumulative purchases allowed by the Purchase Order.

- c.) If, after the end of the first five years, Purchaser has accrued a cumulative Tier 2 Supply Rate obligation, Purchaser may elect to pay the initial five year cumulative Tier 2 Supply Rate obligation (i) in full at the end of year five of the Term, (ii) amortize it in five equal installments over the remaining five calendar years of the Term, or (iii) pay it at the end of the Term. Commencing in year 6 of the Term, Purchaser shall pay any additional Tier 2 Supply Rate obligation annually.

Purchaser agrees to purchase System Water from Metropolitan during the Term in an amount not less than the Purchase Order Commitment. If Purchaser's applicable System Water purchases during the Term are less than the Purchase Order Commitment, each acre-foot of unmet commitment will be reduced by the amount of production from a local resource project, measured in acre-feet, that commences operation on or after January 1, 2014. A local resource project includes any project type as approved by the Board.

Purchaser agrees to pay Metropolitan an amount equal to the difference between the sum total in acre-feet of water of the Purchase Order Commitment (minus the amount reduced by the amount of production from a local resource project) and the sum total in acre-feet of water of Purchaser's applicable System Water purchases during the Term, times the average of the Tier 1 Supply Rate in effect during the Term.

Purchaser agrees to pay all amounts owing to Metropolitan, whether to satisfy a Purchase Order Commitment or a Tier 2 Supply Rate obligation, within the next regular billing cycle following the reconciliation of all certifications for special programs that the Purchaser may participate in. The Purchaser may elect to pay such amount in twelve equal monthly payments over the course of the next twelve months beginning with the first regular billing cycle following the reconciliation of all outstanding certifications for special programs. If the Purchaser elects to pay such amount over the course of the next twelve months following the regular billing cycle any outstanding balance shall bear interest at Metropolitan's then current investment portfolio average yield. All other amounts payable under this Purchase Order shall be billed and paid in accordance with the Administrative Code.

WATER SERVICE:

Conditions of water service by Metropolitan to the Purchaser, including but not limited to (i) delivery points, (ii) water delivery schedules, and (iii) water quality, will be determined in accordance with Chapter 5 (Section 4500 through 4514, inclusive, as applicable) of Metropolitan's Administrative Code.

In accordance with its Administrative Code, Metropolitan shall use its reasonable best efforts to supply System Water in the quantities requested by the Purchaser, but is not obligated to dedicate any portion of System capacity for the conveyance, distribution, storage or treatment of System Water for the benefit of the Purchaser or any other member agency. Metropolitan shall use its reasonable best efforts to deliver the System Water when needed by the Purchaser during the Term; provided however, there shall be no default under this Purchase Order if Metropolitan fails to deliver water to the Purchaser in accordance with any such schedule of deliveries during the Term.

By execution of this Purchase Order, the Purchaser recognizes and agrees that it acquires no interest in or to any portion of the System or any other Metropolitan facilities or supplies, or any right to receive water delivered through the System, excepting the right to purchase up to Purchaser's Tier 1 Maximum—Cumulative at the Tier 1 Supply Rate provided that System Water is available. This Purchase Order governs pricing of the System Water delivered to the Purchaser pursuant to this Purchase Order and does not confer any entitlement to receive System Water.

System Water provided to the Purchaser under the terms of this Purchase Order shall be subject to reduction in accordance with the shortage allocation provisions of the Water Surplus and Drought Management Plan (the "WSDM Plan") or other such policies and principles governing the allocation of System Water as adopted by the Board.

In the event that Metropolitan's Board or General Manager determines to reduce, interrupt or suspend deliveries of System Water, any outstanding balance of the Purchase Order Commitment at the end of the Term shall be reduced by the Purchase Order Commitment—Annual Average for each and every fiscal or calendar year that a reduction, interruption or suspension occurred.

MISCELLANEOUS:

This Purchase Order will be interpreted, governed and enforced in accordance with the laws of the State of California.

This Purchase Order will apply to and bind the successors and assigns of the Purchaser and Metropolitan.

No assignment or transfer of the rights of the Purchaser under this Purchase Order will be valid and effective against Metropolitan or the Purchaser without the prior written consent of Metropolitan and the Purchaser.

If at any time during the Term, by reason of error in computation or other causes, there is an overpayment or underpayment to Metropolitan by the Purchaser of the charges provided for under this Purchase Order, which overpayment or underpayment is not accounted for and corrected in the annual re-determination or reconciliation of said charges, the amount of such overpayment or underpayment shall be credited or debited, as the case may be, to the Purchaser. Metropolitan will notify the Purchaser in writing regarding the amount of such credit or debit, as the case may be. In no case will credits or debits for charges provided for under this Purchase Order be administered beyond the limit for billing adjustments as specified in Metropolitan's Administrative Code.

IN WITNESS WHEREOF, this Purchase Order is executed by the duly authorized officers of the Metropolitan Water District of Southern California and Municipal Water District of Orange County, as of December __, 2014.

THE METROPOLITAN WATER DISTRICT OF
SOUTHERN CALIFORNIA

MUNICIPAL WATER DISTRICT OF
ORANGE COUNTY

By: _____
Jeffrey Kightlinger
General Manager

By: _____
[Title] _____

APPROVED AS TO FORM AND CONTENT:

General Counsel

General Counsel

By: _____

By: _____

Attachment 1
Purchase Order for System Water
DEFINITIONS

“Act” means the Metropolitan Water District Act, California Statutes 1969, Chapter 209, as amended and supplemented from time to time.

“Demand” means the Purchaser’s purchases of System Water supplies, including full service, seasonal shift, Conjunctive Use Program, Surface Storage Operating Agreement water, Recharge and Recovery Operating Agreement water, or any other water program deemed to be a purchase of System Water.

“Effective Date” means the effective date of this Purchase Order as specified above.

“Metropolitan” means The Metropolitan Water District of Southern California.

“Purchase Order Commitment” means:

i). if the Purchaser elects option a) under the Base Period Demand as defined in section 4122 of the Administrative Code, then 60% of the Purchaser’s Initial Base Firm Demand times 10; or

ii). if the Purchaser elects option b) under the Base Period Demand, then 60% of the Purchaser’s highest fiscal year Demand during the period from fiscal year 2002/03 through fiscal year 2013/14, times 10.

“Purchase Order” means this Purchase Order for System Water.

“Purchaser” means the member public agency specified above, a duly organized [city/water district/county water authority] of the State of California.

“System” means the properties, works and facilities operated and/or financed by Metropolitan necessary for the supply, development, storage, conveyance, distribution, treatment or sale of water.

“System Water” means water supplies developed by Metropolitan and delivered to the Purchaser through the System or other means (e.g. conjunctive use storage).

“Term” means the term of this Purchase Order as specified above.

“Tier 1 Maximum—Annual” means an amount equal to 90% of the Base Period Demand.

“Tier 1 Maximum—Cumulative” means an amount equal to the sum of the Tier 1 Maximum—Annual amounts during the Term.

“Tier 1 Supply Rate” means Metropolitan’s per-acre-foot Tier 1 Supply Rate, as determined from time to time by Metropolitan’s Board of Directors. The Tier 1 Rate effective January 1, 2015, is \$158/AF.

“Tier 2 Supply Rate” means Metropolitan’s per-acre-foot Tier 2 Supply Rate, as determined from time to time by Metropolitan’s Board of Directors. The Tier 2 Rate effective January 1, 2015, is \$290/AF.

“Water Surplus and Drought Management Plan (WSDM)” means Metropolitan’s policy and procedures for managing supplies and drought conditions as adopted by the Board from time to time.

Attachment 2
Purchase Order for System Water
RATES AND CHARGES

	Effective January 1, 2015	Effective January 1, 2016
Tier 1 Supply Rate (\$/AF)	\$158	\$156
Tier 2 Supply Rate (\$/AF)	\$290	\$290
System Access Rate (\$/AF)	\$257	\$259
System Power Rate (\$/AF)	\$126	\$138
Water Stewardship Rate (\$/AF)	\$41	\$41
Full Service Untreated Rate (\$/AF):		
Tier 1	\$582	\$594
Tier 2	\$714	\$728
Treatment Surcharge (\$/AF)	\$341	\$348
Full Service Treated Rate (\$/AF):		
Tier 1	\$923	\$942
Tier 2	\$1,055	\$1,076
Readiness-to-Serve Charge (\$ millions)	\$158	\$153
Capacity Charge (\$/cfs)	\$11,100	\$10,900

**PURCHASE ORDER FOR SYSTEM WATER TO BE PROVIDED BY
THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA**

PURCHASER: MUNICIPAL WATER DISTRICT OF ORANGE COUNTY	TERM 10 years: January 1, 2015 – December 31, 2024
INITIAL BASE PERIOD DEMAND: 357,372 acre-feet	EFFECTIVE DATE: January 1, 2015
INITIAL TIER 1 MAXIMUM—Annual Average: 321,635 acre-feet	INITIAL TIER 1 MAXIMUM—Cumulative: 3,216,350 acre-feet
PURCHASE ORDER COMMITMENT— Annual Average: 214,423 acre-feet	PURCHASE ORDER COMMITMENT— Cumulative: 2,144,230 acre-feet

Definitions of capitalized terms used in this Purchase Order are provided in Attachment 1. Terms used in this Purchase Order and not defined in Attachment 1 are defined in Metropolitan's Administrative Code.

COMMITMENT TO PURCHASE:

In consideration of Purchaser's commitment to purchase System Water pursuant to this Purchase Order, Metropolitan agrees to sell such System Water to Purchaser during the Term at the Tier 1 Supply Rate in an amount up to the Tier 1 Maximum—Cumulative. All System Water sold to Purchaser during the Term in an amount greater than the Tier 1 Maximum—Cumulative shall be sold to the Purchaser at the Tier 2 Supply Rate. In connection with the purchase of System Water, the Purchaser also agrees to pay all other applicable rates and charges, as established by Metropolitan from time to time. The rates and charges applicable to System Water as of the Effective Date are shown in Attachment 2.

If Purchaser's applicable System Water purchases during the Term exceed Purchaser's Tier 1 Maximum, Purchaser may elect to:

- a.) Subject to the provisions of paragraph c) below, pay any Tier 2 Supply Rate obligations at the end of the Term, in an amount equal to the difference between the Purchaser's applicable System Water purchases and the Tier 1 Maximum—Cumulative during the Term times the average of the Tier 2 Supply Rate in effect during the Term; or,
- b.) Pay any Tier 2 Supply Rate obligations annually as purchases are incurred, in an amount equal to the difference between the Purchaser's applicable annual System Water purchases and the Tier 1 Maximum—Annual times the Tier 2 Supply Rate in effect during the calendar year. A true-up at the end of the Term will be performed to ensure that the Purchaser has received all Tier 1 Maximum—Cumulative purchases allowed by the Purchase Order.

- c.) If, after the end of the first five years, Purchaser has accrued a cumulative Tier 2 Supply Rate obligation, Purchaser may elect to pay the initial five year cumulative Tier 2 Supply Rate obligation (i) in full at the end of year five of the Term, (ii) amortize it in five equal installments over the remaining five calendar years of the Term, or (iii) pay it at the end of the Term. Commencing in year 6 of the Term, Purchaser shall pay any additional Tier 2 Supply Rate obligation annually.

Purchaser agrees to purchase System Water from Metropolitan during the Term in an amount not less than the Purchase Order Commitment. If Purchaser's applicable System Water purchases during the Term are less than the Purchase Order Commitment, each acre-foot of unmet commitment will be reduced by the amount of production from a local resource project, measured in acre-feet, that commences operation on or after January 1, 2014. A local resource project includes any project type as approved by the Board.

Purchaser agrees to pay Metropolitan an amount equal to the difference between the sum total in acre-feet of water of the Purchase Order Commitment (minus the amount reduced by the amount of production from a local resource project) and the sum total in acre-feet of water of Purchaser's applicable System Water purchases during the Term, times the average of the Tier 1 Supply Rate in effect during the Term.

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In accordance with its Administrative Code, Metropolitan shall use its reasonable best efforts to supply System Water in the quantities requested by the Purchaser, but is not obligated to dedicate any portion of System capacity for the conveyance, distribution, storage or treatment of System Water for the benefit of the Purchaser or any other member agency. Metropolitan shall use its reasonable best efforts to deliver the System Water when needed by the Purchaser during the Term; provided however, there shall be no default under this Purchase Order if Metropolitan fails to deliver water to the Purchaser in accordance with any such schedule of deliveries during the Term.

By execution of this Purchase Order, the Purchaser recognizes and agrees that it acquires no interest in or to any portion of the System or any other Metropolitan facilities or supplies, or any right to receive water delivered through the System, excepting the right to purchase up to Purchaser's Tier 1 Maximum—Cumulative at the Tier 1 Supply Rate provided that System Water is available. This Purchase Order governs pricing of the System Water delivered to the Purchaser pursuant to this Purchase Order and does not confer any entitlement to receive System Water.

System Water provided to the Purchaser under the terms of this Purchase Order shall be subject to reduction in accordance with the shortage allocation provisions of the Water Surplus and Drought Management Plan (the "WSDM Plan") or other such policies and principles governing the allocation of System Water as adopted by the Board.

In the event that Metropolitan's Board or General Manager determines to reduce, interrupt or suspend deliveries of System Water, any outstanding balance of the Purchase Order Commitment at the end of the Term shall be reduced by the Purchase Order Commitment—Annual Average for each and every fiscal or calendar year that a reduction, interruption or suspension occurred.

MISCELLANEOUS:

This Purchase Order will be interpreted, governed and enforced in accordance with the laws of the State of California.

This Purchase Order will apply to and bind the successors and assigns of the Purchaser and Metropolitan.

No assignment or transfer of the rights of the Purchaser under this Purchase Order will be valid and effective against Metropolitan or the Purchaser without the prior written consent of Metropolitan and the Purchaser.

If at any time during the Term, by reason of error in computation or other causes, there is an overpayment or underpayment to Metropolitan by the Purchaser of the charges provided for under this Purchase Order, which overpayment or underpayment is not accounted for and corrected in the annual re-determination or reconciliation of said charges, the amount of such overpayment or underpayment shall be credited or debited, as the case may be, to the Purchaser. Metropolitan will notify the Purchaser in writing regarding the amount of such credit or debit, as the case may be. In no case will credits or debits for charges provided for under this Purchase Order be administered beyond the limit for billing adjustments as specified in Metropolitan's Administrative Code.

IN WITNESS WHEREOF, this Purchase Order is executed by the duly authorized officers of the Metropolitan Water District of Southern California and Municipal Water District of Orange County, as of December __, 2014.

THE METROPOLITAN WATER DISTRICT OF
SOUTHERN CALIFORNIA

MUNICIPAL WATER DISTRICT OF
ORANGE COUNTY

By: _____
Jeffrey Kightlinger
General Manager

By: _____
[Title] _____

APPROVED AS TO FORM AND CONTENT:

General Counsel

General Counsel

By: _____

By: _____

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i). if the Purchaser elects option a) under the Base Period Demand as defined in section 4122 of the Administrative Code, then 60% of the Purchaser’s Initial Base Firm Demand times 10; or

ii). if the Purchaser elects option b) under the Base Period Demand, then 60% of the Purchaser’s highest fiscal year Demand during the period from fiscal year 2002/03 through fiscal year 2013/14, times 10.

“Purchase Order” means this Purchase Order for System Water.

“Purchaser” means the member public agency specified above, a duly organized [city/water district/county water authority] of the State of California.

“System” means the properties, works and facilities operated and/or financed by Metropolitan necessary for the supply, development, storage, conveyance, distribution, treatment or sale of water.

“System Water” means water supplies developed by Metropolitan and delivered to the Purchaser through the System or other means (e.g. conjunctive use storage).

“Term” means the term of this Purchase Order as specified above.

“Tier 1 Maximum—Annual” means an amount equal to 90% of the Base Period Demand.

“Tier 1 Maximum—Cumulative” means an amount equal to the sum of the Tier 1 Maximum—Annual amounts during the Term.

“Tier 1 Supply Rate” means Metropolitan’s per-acre-foot Tier 1 Supply Rate, as determined from time to time by Metropolitan’s Board of Directors. The Tier 1 Rate effective January 1, 2015, is \$158/AF.

“Tier 2 Supply Rate” means Metropolitan’s per-acre-foot Tier 2 Supply Rate, as determined from time to time by Metropolitan’s Board of Directors. The Tier 2 Rate effective January 1, 2015, is \$290/AF.

“Water Surplus and Drought Management Plan (WSDM)” means Metropolitan’s policy and procedures for managing supplies and drought conditions as adopted by the Board from time to time.

Attachment 2
Purchase Order for System Water
RATES AND CHARGES

	Effective January 1, 2015	Effective January 1, 2016
Tier 1 Supply Rate (\$/AF)	\$158	\$156
Tier 2 Supply Rate (\$/AF)	\$290	\$290
System Access Rate (\$/AF)	\$257	\$259
System Power Rate (\$/AF)	\$126	\$138
Water Stewardship Rate (\$/AF)	\$41	\$41
Full Service Untreated Rate (\$/AF):		
Tier 1	\$582	\$594
Tier 2	\$714	\$728
Treatment Surcharge (\$/AF)	\$341	\$348
Full Service Treated Rate (\$/AF):		
Tier 1	\$923	\$942
Tier 2	\$1,055	\$1,076
Readiness-to-Serve Charge (\$ millions)	\$158	\$153
Capacity Charge (\$/cfs)	\$11,100	\$10,900



Metropolitan's Terms for New Purchase Orders

MWDOC Planning & Operation Committee
December 1, 2014

Municipal Water District of Orange County

Purchase Order Terms with MET



- 💧 New Purchase Order for a ten-year term
 - 📅 January 1, 2015 through December 31, 2024
- 💧 Resets commitment for member agencies executing a Purchase Order
- 💧 Base Period Demand option:
 - 📅 Retain current Revised Base Firm Demand and existing commitment level
 - 📅 Update to highest year in the most recent 12- fiscal year period of FY 2003 through FY 2014; higher Tier 1 Maximum and higher commitment
 - 📅 Base Period Demand can reset based on a 5-fiscal year rolling average of purchases



Additional Terms



- 💧 Tier 1 maximum is cumulative
 - 💡 Consistent with calculation of the commitment
 - 💡 Member agencies may choose to pay any Tier 2 obligation at the end of the 10-year term or pay annually with a true-up
- 💧 If a Tier 2 obligation at the end of five years, begin paying any Tier 2 Supply Rate annually
- 💧 Unmet commitment paid at end of 10-year term
- 💧 Commitment adjusted to exclude Water Supply Allocation Plan years, local resource program production
- 💧 Executed Purchase Orders due by December 30, 2014



No Purchase Order

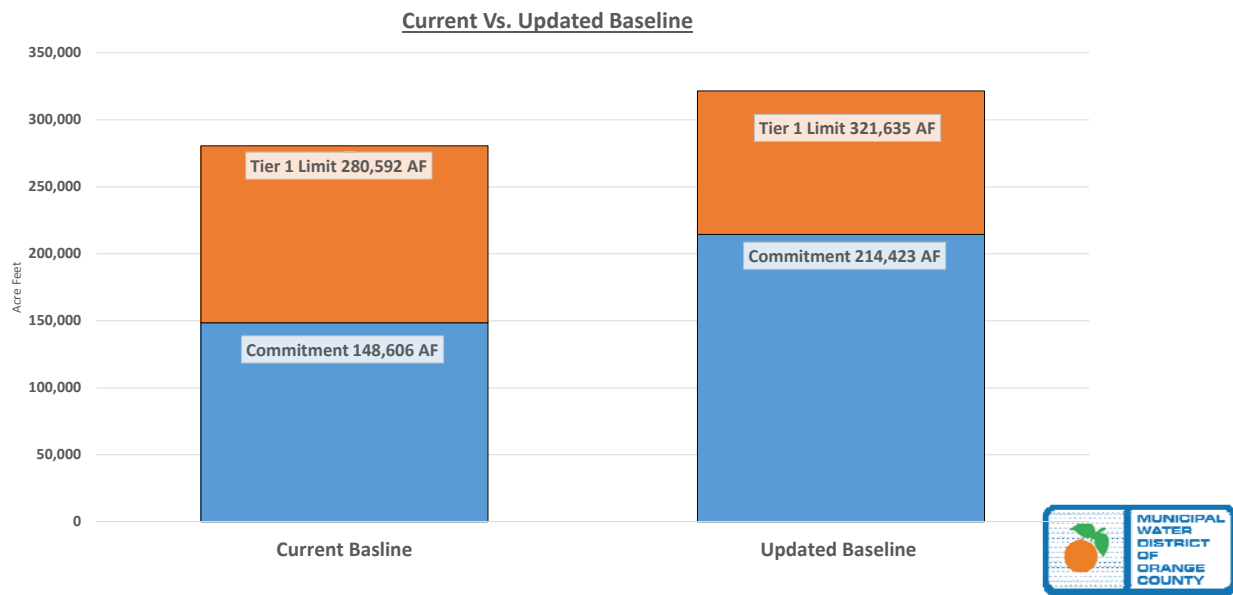


If MWD OC elects not to execute one of the two options:

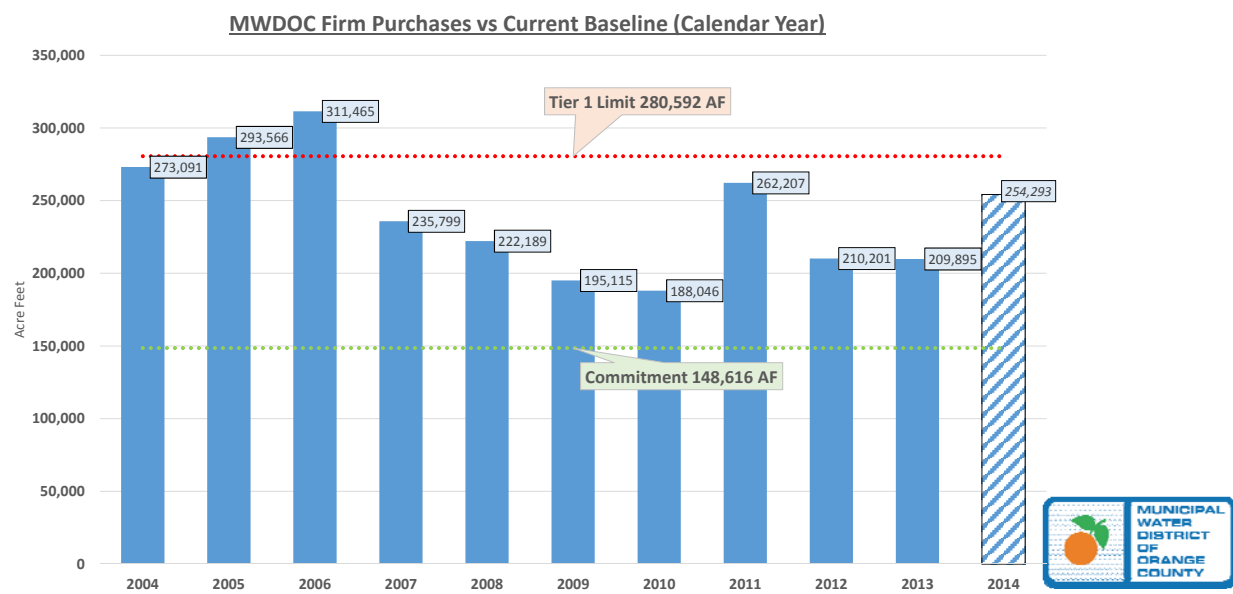
- 💧 Tier 1 Maximum is 60 percent of Revised Base Firm Demand
 - 💡 Defined in the Administrative Code Section 4122
- 💧 Maximum is applied annually; no cumulative calculation or true-up
- 💧 No purchase commitment



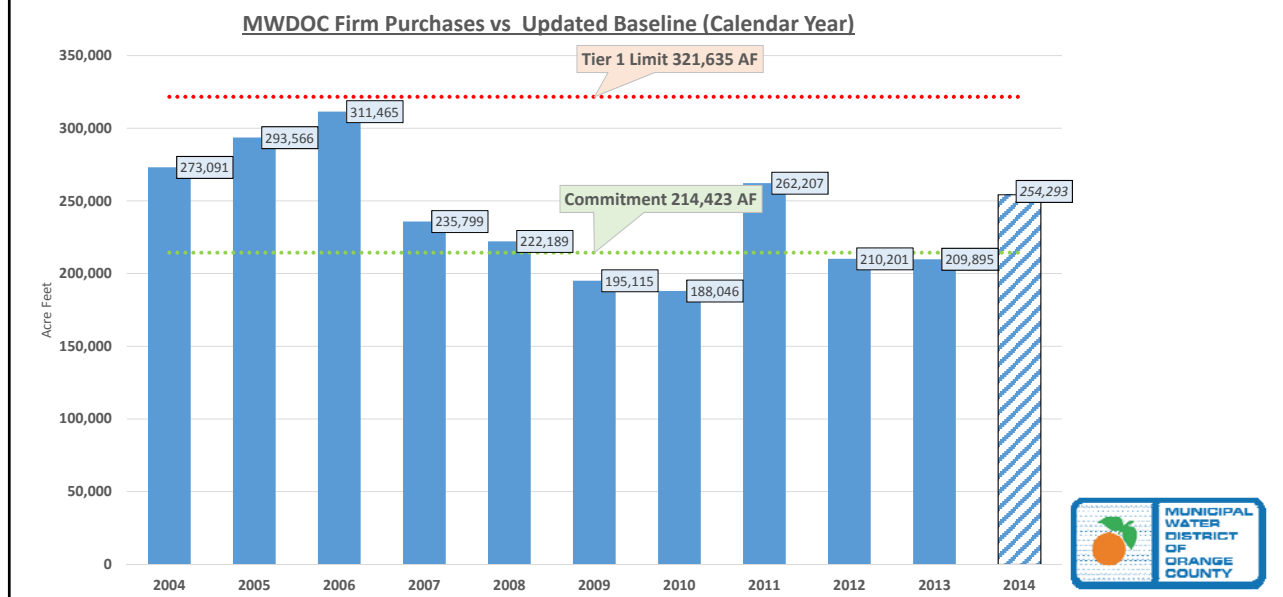
MWDOC Current Base Vs. Updated Base



MWDOC Analysis



MWDOC Analysis



Staff Recommendation

Based on the new terms and MWDOC's historic purchases, MWDOC staff recommends:

- 💧 Signing a ten-year Purchase Order with MWD
- 💧 Selecting the "Current Purchase Order" with a Tier 1 amount of 280,592 AF and a Purchase Commitment of 148,616 AF





DISCUSSION ITEM

December 1, 2014

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

FROM: **Robert Hunter, General Manager**

Staff Contact: Karl Seckel and Richard Bell

SUBJECT: MWDOC Comment Letter on Clean Energy Capital (CEC) Report on the Poseidon Huntington Beach Project

STAFF RECOMMENDATION

Staff recommends the Planning & Operations Committee receive and file this report and provide input as appropriate.

COMMITTEE RECOMMENDATION

Committee recommends (To be determined at Committee Meeting)

SUMMARY

Attached is a comment letter submitted by staff to OCWD regarding the DRAFT Clean Energy Capital (CEC) report prepared by OCWD. Overall, the report is well done and concludes that OCWD can help to reduce the costs of the project by lending their financial strength in the event they are willing to take on the Poseidon Project risk. However, one of the areas that was beyond the scope of the study is the context for decision-making with respect to the project. The following paragraphs briefly discuss several of the issues facing us regarding decision-making for the project. MWDOC anticipates using our consultant and Workgroup for the OC Water Reliability Study to address these issues.

1. Evaluation of imported water reliability – A current unknown facing Southern California is a better understanding of the long range reliability of MET's Integrated Resources Plan (IRP). The IRP accounts for all local supplies, imported supplies and the use of MET storage to determine a resulting reliability of water supplies for

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

Southern California. If we absolutely knew today either (A) that we would be fully reliable in future years under the existing IRP or (B) we knew we would be unreliable to a significant extent under the existing IRP, then the decision on investing in the Poseidon Project would be easier to make. MET's IRP is dependent on completion of the BDCP, development of a large number of local projects and being successful in reducing water consumption based on large investments in WUE among other issues. MET's IRP is also dependent on Adaptive Management, meaning that if they foresee not being successful in any of their major initiatives, they can make a course correction. Decisions regarding regional reliability investments in Orange County should be made in the context of MET's IRP, otherwise we could collectively be over or under investing as a region.

Another related issue is one of timing on the major initiatives. MET is planning on the BDCP coming to fruition, but this goal may not be realized for 15 or 20 years. Emphasis should be placed on what can be done in the interim to provide a high degree of reliability.

2. Completion of a GAP analysis for both SYSTEM and SUPPLY reliability for various regions of Orange County, including evaluation of future demands in OC – The Poseidon Project brings the potential of two benefits to OC, (A) a SYSTEM benefit to help meet demands during emergency outages of up to 60 days, and (B) a SUPPLY benefit to help with annual reliability. In conjunction with the first comment above, a clear understanding of OC expectations from MET combined with an OC GAP analysis for these two types of benefit will help us to better understand what types of investments are needed in OC.
3. Evaluation of options for filling the SYSTEM and SUPPLY GAPS – The Poseidon Project is one of several options for providing 56,000 AF per year of highly reliable water supply to OC; the project also brings 77 cfs of SYSTEM capability to deal with emergency outages. The cost to secure these benefits is about \$900 million in present costs. There are other options to secure the same or similar benefits which should be examined relative to the costs and benefits provided by the Poseidon Project.
4. How MET policies influence the decision-making process from the perspective of OC rate payers who will be paying for the project via water rates – There are several issues that arise:
 - From a SUPPLY reliability perspective, it is unlikely that the water from the Poseidon Project will be needed in Orange County on average 10 years out of every 10 years (this assumes MET will be reliable for a certain number of years – yet to be determined in our study efforts). Some would say that MET's reliability may be sufficient for 7 or 8 years out of every 10 years (this needs to be analyzed, see #1 above). Once the Poseidon Project is built and becomes operational, it will likely be operated 10 out of every 10 years – so what happens to the water in years if it is not needed in OC? The Poseidon water would go to offset purchases of imported MET water into the County which would result in MET selling less water and storing an equivalent amount of water in their storage reserves. This could continue to occur unless MET's storage reserves are full

and then MET would forego other water available to them. Any water accruing in MET's storage accounts would be for the benefit of the entire MET service area. In this manner, a local investment in OC will result in more storage accruing in the MET system, at the expense of OC.

- Under the scenario that OC fully or predominantly funds the Poseidon Project, where do the benefits accrue? It is anticipated that MET funding will flow to the project via the Local Resources Program, but the substantial portion of funding is anticipated to come from OC. The example above would indicate that the MET service area would be a substantial beneficiary of the project; the question becomes is the MET service area is equitably sharing the costs?
- In addition, in future years under a MET allocation in the event MET is short of being able to meet full demands OC's reliability would be better off from having invested in the project, but not in the full amount of the project capacity of 56,000 AF (based on how MET has allocated supplies in the past and is planning on allocating supplies in the near future). OC's reliability would be improved by a proportion of the project capacity based on the level of shortage we are in at the time the allocation is made. In **rough numbers**, the following percentages apply for any 56,000 AF local potable project such as the Poseidon Project:

<u>Approximate</u> Reliability Improvement in OC Based on Implementation of a 56,000 AF Local Project Under MET's Allocation Plan	
MET Shortage Level	<u>Approximate</u> Reliability Improvement
10%	3,700 AF
20%	7,400 AF
30%	11,100 AF
40%	14,800 AF

- This occurs because MET's water allocation mechanism is based on the "need" for imported water and OC's need for imported water would be less with the Poseidon Project under operations – thus MET would allocate less water to OC. In this manner the entire MET service area benefits by way of an investment made here in OC at the predominant cost of OC rate payers.
- Can these issues be corrected? Corrections are not entirely under OC's control – they would involve decisions to be made at the MET Board level. It would

- appear they should be corrected or at least considered prior to making binding commitments to the Poseidon Project and other projects being considered in OC.
5. Economic consequences of water shortages – An appropriate goal for future investments in OC water projects should be that we strive to not over or under invest to a great extent and we tailor the investment with what can reasonably be known about the occurrence of future events. Based on work completed by MWDOC with the OCBC in 2004, and based on more recent work completed by others, we know there are large economic impacts that occur when we have water shortages. Thus, OC investments should be implemented in a manner to mitigate reasonably foreseeable shortages.

These and other issues are being considered within the scope of work for the OC Water Reliability Study. Staff will continue to report on these activities as we move forward.

Attached is MWDOC's Comment Letter along with several other comment letters received by OCWD.



November 21, 2014

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City of Westminster
Yorba Linda Water District

John Kennedy,
Orange County Water District
18700 Ward Street
Fountain Valley, CA 92708

Dear Mr. Kennedy:

Comments on the OCWD Clean Energy Capital Report on the Poseidon Project

The Municipal Water District of Orange County (MWDOC) appreciates the time and effort put forth by the OCWD Board, staff and Consultants in preparation of the Clean Energy Capital Report "Financial Analysis of Proposed Poseidon Huntington Beach Ocean Water Desalination Project" and in holding the informational meetings and workshops on the draft report's key findings. Our overall comment is that the report does a good job of completing the task it was intended to complete and that was to determine if OCWD could utilize their financial capabilities to lower the cost of the project – and the answer to that question was undoubtedly yes, based on OCWD taking on additional aspects of the project risk.

While considering the report, MWDOC has raised several questions that might help us and others to better understand the implications of the report, especially with the risk-transfer issue. We would suggest providing clarifying information on the following issues:

1. The report discusses risk and risk transfer to a large degree. The report indicates that if OCWD steps into the project to lend its financial strength, OCWD would also take on considerable risk, but then goes on to say that some of that risk can be appropriately handled via contracting while other risk would remain with OCWD. It also seems to us that successful start-up of the Carlsbad Project in late 2015 would further reduce the risk to OCWD. The draft report does not attempt to quantify the level of risk being transferred or retained by Poseidon and OCWD under the comparisons. We would ask CEC and OCWD's Financial Advisors if they might attempt to quantify the risk issues and how those risks might be further reduced. We have posed several questions below:
 - a. OCWD has successfully designed, constructed and operated the GWRS project (and is now expanding it) and has taken all of the associated risks – how do the Poseidon Project risks compare to what OCWD has already done?

- b. Can the cost of completing the Poseidon Project be estimated assuming OCWD takes it over and completes it today and would that be substantially the same as the reduced cost option with OCWD financing the project as outlined in the report or would it be significantly different and why?
 - c. The draft report calculates the impact on the OCWD RA at a groundwater production level of 327,000 AF per year. Given potential future variations in supplies, the draft report should consider a range of groundwater production that is lower than the 327,000 AF per year for estimating the impact to the RA under future conditions. The report could also consider an option where the 56,000 AF of production out of the plant is spread beyond just the groundwater basin, which would lower the impact on the RA.
 - d. What would the difference in cost be between a conventional Design-Bid-Build project delivery method compared to a more conventional Design-Build-Operate delivery method than was included in the report (we pose this question, because the project analyzed in the report involves a hybrid project delivery involving OCWD, Poseidon, the Poseidon EPC contractor and Poseidon's Operator)?
 - e. The potential maximum savings outlined in the report with OCWD financing the entire project including providing the equity is \$471 per AF (excludes a \$21 per AF savings to OCWD with a levelized debt repayment). The accumulated savings at this level over 30 years is about \$800 million with a present value of about \$400 million (using a 5% discount rate). We would ask CEC and OCWD's Financial Advisors to comment whether this calculation helps to characterize the cost/risk transfer aspect of the Poseidon Proposal or if there is a better methodology to characterize the cost/risk issues? The report simply notes that OCWD would be taking on additional risk without also accounting for the cost saving benefits that would accrue to OCWD and its customers.
2. Page 31 notes that preservation of OCWD's historic senior-lien coverage ratios might result in a significant increase in revenues through the replenishment assessment (but not costs), but requires considerably more work to quantify. The additional work needed may help to better understand whether the coverage ratios actually pose a problem or not.
3. Our understanding is that the long term rate of inflation assumed for energy costs of 2% has been questioned by some. Can this assumption be bolstered by comparison to the long-term historical increase in energy costs at the 66 kva level? What has that inflation been for SCE? How will current policy in the energy sector affect both short-term and long-term energy rates? What sensitivity in energy costs were included in the Monte Carlo Simulation? Was current energy policy considered in the distribution shaping and simulation?
4. The report should note that the \$475 per AF incentive offered by Metropolitan under its local resources program lasts for 15 years, but requires a 25 year commitment to keep producing the water.

Our last comment involves the process for decision-making with respect to the Poseidon Project and other projects that might be needed to improve water reliability in Orange County. We realize that this is beyond the scope of the CEC Study, but will ultimately be necessary to put the costs and benefits of the Poseidon Project into context with other potential projects. We would note that MWDOC, our consultant (CDM-Smith) and our Member Agencies will be completing work in the Orange County Water Reliability Study to analyze the reliability of Orange County's imported and local water resources, and compare them to future demands under a number of hydrologic and demand management scenarios. This will serve as the basis for a future needs or GAP analysis for both emergency and drought conditions, as well as consideration for future base-loaded supply. The study will compile information on how the GAPS might be met including via implementation of the Poseidon Huntington Beach Project. The study will also consider a number of policy issues at the Metropolitan Water District level that can influence project decision-making in OC. These include seeking Metropolitan as a potential partner, examination of Metropolitan's local projects incentives, examination of Metropolitan's water shortage allocation policies and understanding how local supplies work in conjunction with Metropolitan's use of storage to balance supplies between wet and dry years, how that can be influenced by local decisions in Orange County and how the benefits accrue from implementation of local projects within Metropolitan. The study may also consider additional evaluation of the economic consequences of water shortages beyond what was completed by MWDOC and OCBC in 2004.

Thank you again for leading this effort to examine the Poseidon Huntington Beach project to help all of us to better understand our future water investment options for Orange County. If MWDOC can be of further assistance, do not hesitate to contact me or my staff.

Sincerely,

A handwritten signature in blue ink that reads "Robt J. Hunter (for)".

Robert J. Hunter
General Manager



*Dedicated to
Satisfying our Community's
Water Needs*

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**Bowie, Arneson,
Wiles & Giannone**
Legal Counsel

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MesaWater.org

November 20, 2014

Shawn Dewane, President
Board of Directors
Orange County Water District
18700 Ward Street
Fountain Valley, CA 92728

Re: Orange County Water District (OCWD) – Poseidon Resources City of Huntington Beach Ocean Desalination Project Analysis Conducted by Clean Energy Capital (CEC)

Dear President Dewane:

Mesa Water District (Mesa Water) has long understood the value of a healthy and sustainable groundwater basin and has continually supported Orange County Water Districts' (OCWD) efforts to keep the groundwater basin at capacity, to reliably provide a 75% Basin Pumping Percentage, and to research the benefits of the Huntington Beach Ocean Desalination project.

In May of 2013, OCWD's Board of Directors unanimously resolved to consider and develop a variety of local water resources – including seawater desalination - to ensure sufficient water supply. Through its 2014 Long-Term Facilities Plan, OCWD identified a future local water supply gap of up to 108,200 AFY that is presently satisfied with Metropolitan Water District (MET) provided water. Since MET currently finds itself in a de-facto rationing situation, able to deliver only 100 cfs of the requested 180 cfs, and is discussing further water supply reductions; and the OC Groundwater Basin is recently over drafted by 400,000 AF, Mesa Water believes now is the time to generate solutions to these situations.

To ease dependency and abate reliability concerns, OCWD's Long-Term Facilities Plan identifies six local water supply projects as "priority projects" including the Huntington Beach Desalination Project. Mesa Water offers these six projects should be further studied and prioritized as to their supply potential and economic feasibility. On one of these projects, OCWD consulted with the firm of CEC to research the price of desalinated water.

After further review of CEC's findings and in compliance with our Board's 2014 Strategic Plan and our district's December 2013 Policy Positions, Mesa Water recommends that OCWD broaden CEC's response as it relates to the following three topics:



*Dedicated to
Satisfying our Community's
Water Needs*

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Legal Counsel

1. In reference to the water supply gaps listed above, we would recommend a high level review by CEC to evaluate the water supply projects listed within OCWD's Long-Term Facilities Plan to put into context the costs, available supply and reliability associated with each.
2. The CEC report should provide an overview of the threshold issues associated with supplying desalinated water into the groundwater basin including injecting water into the seawater barriers and mid-basin injection.
3. Furthermore, we hope CEC will clearly identify prospective issues for OCWD, the groundwater producers, and the South County agencies, in regards to the institutional arrangements needed to distribute desalinated water including the pros and cons of major delivery alternatives.

In closing, Mesa Water credits the staff and management of OCWD for actively pursuing resolutions and furthering policies that reliably meet the water supply needs of our region. If you have any questions, or if we can be of further assistance to your district, please don't hesitate to contact Mesa Water®.

Sincerely,

A handwritten signature in blue ink, appearing to read 'James R. Fisler', is written over a faint, larger version of the same signature.

James R. Fisler
President, Board of Directors

C: Mesa Water Board of Directors
OCWD Board of Directors
Paul E. Shoenberger, P.E., Mesa Water® General Manager
Mike Markus, OCWD General Manager

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IRVINE RANCH WATER DISTRICT

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November 21, 2014

Mr. Mike Markus, P.E.
General Manager
Orange County Water District
18700 Ward Street
Fountain Valley, CA 92708

Subject: Comments on Clean Energy Capital's "Financial Analysis of Proposed Huntington Beach Ocean Water Desalination Project" Prepared for OCWD

Dear Mr. Markus: *MIKE*

Thank you for the opportunity to review and comment on the Clean Energy Capital report entitled "*Financial Analysis of Proposed Huntington Beach Ocean Water Desalination Project*" (Clean Energy Report) prepared for the Orange County Water District (OCWD).

IRWD recognizes OCWD's work in managing the Orange County groundwater basin and investing in solid, core basin management projects and programs that have allowed the basin's sustainable yield to increase over the years. While OCWD has invested in groundwater supply and quality projects and monitoring, it remains unclear how OCWD's participation in the Poseidon desalination project will provide a direct benefit to the basin.

As an Orange County water purveyor that remains partially dependent on imported supplies, the Irvine Ranch Water District (IRWD) has a vested interest in California's water supply reliability as well as the implementation of local water supply reliability projects. IRWD supports the investigation and implementation of cost-effective alternative supplies of water. We appreciate that locally available brackish and ocean water sources may provide alternative supplies of water and support the development of desalination technologies. ***Nevertheless, desalination projects should only be implemented when costs for treatment and distribution are competitive with existing reliable supplies and/or with other reliability improvement options.***

After careful review of the Clean Energy Report, IRWD urges OCWD and other interested water agencies to carefully evaluate the assumptions used in the report's analysis and to thoroughly examine the appropriateness of the report's conclusions. The District offers the following comments on the report for your consideration before it is finalized. It is important to note that at this time IRWD has not evaluated the proposed conveyance facilities or any technical aspects of the proposed project.

IRWD submits these comments and questions with the caveat that neither it nor the other Orange County Groundwater Producers (Producers) have been provided with the financial models, list of assumptions, or

other documents referenced in the Clean Energy Report. ***The District requests that the Clean Energy financial model, list of assumptions, summary of risks assumed by parties, and other referenced documents be provided to the Producers so that we can all better understand the benefits and costs of the proposed Huntington Beach Ocean Water Desalination Project to OCWD, the Orange County groundwater basin, and any other interested water agencies.***

Summary of Key Comments:

The following summary is provided to assist in developing an understanding of IRWD’s key comments.

The project will substantially increase the cost of water for the Groundwater Producers, who will need to raise rates accordingly.

1. A minimum \$96 increase in the Replenishment Assessment (RA) paid by the Orange County Groundwater Producers to subsidize the proposed project would result in the Producers having to substantially raise rates without any demonstrated benefit to the basin.
2. As proposed, the Producers will bear the cost of the project irrespective of which agencies take delivery of the project’s water.
3. If OCWD opts to recharge the basin with water from the Poseidon project, either directly or through an in lieu method, the RA will have to increase substantially more than the \$96 currently proposed.

Alternative water supply projects should be analyzed relative to the Poseidon project.

1. The proposed project needs to be compared against other water supply projects, including alternative ocean desalination projects, on a net present value basis; a comparative cost-benefit analysis should be performed.
2. The project should be evaluated using the full cost of project water during early years so a meaningful comparison with alternative projects could be made prior to OCWD committing to any project.
3. The Clean Energy Report should include a study to identify the most cost-effective and least risky method for implementing an ocean desalination project, and should evaluate the costs and methods of delivery of the design, construction and operation of desalination facilities by a public agency (or agencies) as compared to a private, for-profit corporation.
4. It has been stated that the project’s water may be used for recharge within the Orange County groundwater basin. OCWD does not purchase MWD full service, treated Tier 1 water for its operations. Other than during periods of a MWD Water Supply Allocation, sufficient untreated water has been and is expected to remain available from MWD for recharge, and facilities are available to utilize it. In evaluating the possible cost of project water when used for recharge

eventually being less than the cost of MWD water, the report should compare costs to the MWD full service, untreated rate instead of treated rate.

Cost assumptions for the project understate the potential total cost to be borne by the Producers.

1. The evaluation of the cost of construction, operation, and maintenance of the desalination project should consider the risks and uncertainties associated with significant project features (e.g., the intake and brine disposal facilities) and operational cost drivers that have a wide range of variability (e.g., electricity prices).
2. During the November 12, 2014, Workshop with staff from the Producer agencies, Clean Energy stated that energy costs, which are already about half of the project’s total non-capital costs of project water, were assumed to increase at a rate of two percent per year. It is highly unlikely that future electricity rates would increase at this low of a rate, especially given the loss of low-cost power from the San Onofre Nuclear Generation Station and the compounding effect of other rate increases expected from Orange County’s ongoing electricity supply challenges. Furthermore, the report does not appear to include the impact of potential future peak hour rates on the cost of project water. Regardless of whether the assumed future cost of energy increases or remains flat, it is unlikely that project water costs will come close to the MWD untreated rates during the life of the project.
3. The report should evaluate future operational cost reductions associated with improvements to efficiencies of membrane technologies and how the savings from these improvements would be shared among all participants in the project.
4. Capital costs should correctly assume cost impacts due to potential prevailing wage and public works contracting rules that may be invoked due to public financing contributions or public-private partnership arrangements.
5. The financing of ocean desalination projects should occur using methods that result in the lowest cost of water and debt to the participating agencies. Project costs should not be "back-loaded" to initially understate the true cost of desalinated water.
6. The Clean Energy Report does not evaluate or reflect the effective increase in regional water costs that will be borne by the Orange County community as a result of the proposed project during a MWD Water Supply Allocation.
7. The report should disclose the effect of the current MWD Water Supply Allocation rules, which offset local supplies during periods of allocation. The net effect appears to be that project supplies would result in lower MWD delivers to Orange County, affecting a substantial transfer of any potential gain in water reliably attributable to the project from Orange County to the other MWD agencies.

8. During all times other than when in allocation, MWD appears able to deliver all of the untreated water necessary to supplement the OCWD basin. With flows in the Santa Ana River steadily decreasing, OCWD will have sufficient capacity in its facilities to recharge all of the MWD water necessary for basin sustainability.
9. The report assumes continued delivery of Santa Ana River flows down to the judgment level, which appears unlikely given the added growth in population and the resulting decrease in wastewater flows in the river. The report should revise its Santa Ana River flow assumptions.
10. OCWD’s participation in the proposed project could impair its ability to finance, implement, and operate the projects in its Long Term Facilities Plan.

The conditions of and risks associated with LRP funding were not assessed sufficiently.

1. The General Requirements of the Metropolitan Water District of Southern California’s (MWD) Local Resource Program (LRP) state that to qualify for LRP funding a project cannot be new water, but it must *replace* imported water. As long as this is a requirement, an ocean desalination project must not be considered a new water supply to Orange County but instead recognized as a project to replace imported water if it seeks to receive a LRP subsidy.
2. The Clean Energy Report should include an assessment of the risk that MWD LRP funding may not be available for the project.
3. In evaluating the potential that project water costs will eventually be less than MWD rates, the report should assume that the MWD LRP subsidy will stop at the end of the contract period.
4. Replacing water available from MWD with the higher cost of water from the proposed ocean desalination project will not improve Orange County’s water supply reliability, but will instead improve the reliability of MWD deliveries to its other member agencies.

Benefits of the project to the basin should be understood and accepted by the Groundwater Producers before OCWD commits to the project on their behalf.

1. Any OCWD investment in ocean desalination must demonstrate and provide direct, tangible benefits to the Orange County Groundwater Producers to justify the Producers subsidizing the desalination program through an increase in the RA.
2. Currently there are no contractual arrangements for Producers or others to purchase water from the proposed project. If OCWD is not able to contract for the sale of the water, OCWD’s Producers would be responsible for paying for all of OCWD’s stranded costs over the next 30 years due to a lack of demand for the water or an inability of OCWD to sell the water. The final report should analyze the impact of this possibility on OCWD and the Producers.

3. In evaluating the project, careful attention should be given to maintaining OCWD’s credit rating and resulting cost of debt. The report should analyze the coverage rate impacts of current debt, the future cost of the final expansion of the Groundwater Replenishment System (GWRs) and other projects identified in OCWD’s Long Term Facilities Plan, and the long-term lease or financing of the project. An increase of up to an additional \$900 million in fixed obligations should be carefully evaluated.

Participation in the project should be voluntary.

1. Ocean desalination projects should be funded exclusively by the retail water agencies that voluntarily participate in the projects *depending on each agency’s water supply reliability needs* based on a finding by each agency that it does not consider supplies from MWD to be fully reliable.
2. Retail agencies that elect to participate in an ocean desalination project should form an acceptable financial participation mechanism, such as a voluntary joint powers authority, to appropriately recover and allocate past and future costs associated with an ocean desalination project.

Limitations in the OCWD District Act need to be resolved for OCWD to sell water from the project.

1. It is unclear that OCWD has the legal authority to become essentially a surface water supplier or that OCWD is the appropriate entity to contract of the project water.
2. OCWD’s District Act provides the district with a number of enumerated powers to protect and replenish the groundwater basin within its district boundaries, to augment and protect the quality of the common water supplies of the district, and incidental purposes. Before OCWD can proceed forward with a water treatment, purification or other project, the district must determine that the project is “feasible and necessary and of general benefit to the lands in the district.” OCWD should provide an analysis of whether the proposed Huntington Beach Ocean Water Desalination Project provides benefits to lands within the district.
3. OCWD should establish which enumerated power(s) in its District Act it would be invoking to carry out investment in the proposed project and the selling of project water.

Using the RA to subsidize the Poseidon Project may generate Proposition 218 challenges.

1. Selling the water from the proposed ocean desalination project at the cost of MWD full service, Tier 1 treated water and subsidizing the costs via an increase in the RA to all Orange County Groundwater Producers could result in challenges based on the cost of service and proportionality requirements of Proposition 218.
2. The subsidy component of the RA proposed for the ocean desalination project could require voter approval as a tax. OCWD should examine, as part of the Clean Energy Report, the constitutional issues raised by increasing the RA to subsidize the water costs of the project.

Detailed Comments on the Clean Energy Report:

Following are IRWD’s detailed comments on the Clean Energy Report.

A. An alternatives analysis should be completed as part of the Clean Energy Report to determine the cost-benefit effectiveness of an investment in the proposed Huntington Beach Ocean Water Desalination Project and other local resources projects.

While IRWD agrees that Orange County water agencies should invest in local water reliability projects, a proposed investment in any water infrastructure project should be analyzed and compared with alternative supply reliability projects as part of a cost-benefit analysis. Because this analysis has not been done, the Clean Energy Report cannot determine if OCWD participation in the Poseidon project is beneficial or justifiable from a cost-benefit standpoint. All investments in water infrastructure should be cost-effective and provide a high level of measurable benefit to ratepayers. Cost-effective projects that provide both system and supply reliability should be given the highest priority for implementation.

In determining the cost-benefit and justifiability of any reliability premium associated with water supply projects, the need for ocean desalination projects and other supply improvement projects should be identified considering the frequencies, magnitudes, timing and durations associated with events that could affect the reliability of existing and future alternative, cost-effective supplies. Projects should be selected on the basis of meeting specific reliability criteria and should demonstrate that they are cost-effective. Comparison of the cost of construction, operation, and maintenance of alternative water supply reliability projects needs to occur on a present value basis, which should also be analyzed on a total project life cost and cost per acre-foot bases.

IRWD has consistently advocated that ocean desalination projects should be considered when costs for treatment and distribution are competitive with existing reliable supplies, alternative supplies under development, or supplies expected to be available in the future.

In addition to an alternatives/cost-benefit analysis, the Clean Energy Report should include a comprehensive study to identify the most cost-effective and least risky method for implementing an ocean desalination project. This study should evaluate the costs and methods of delivery of the design, construction and operation of desalination facilities by public agencies as compared to a private, for-profit corporation.

B. In order to properly analyze the Proposed Huntington Beach Ocean Water Desalination Project, the assumptions used in the Clean Energy Report should be updated to reflect current and historic cost trends, and should consider the risk associated with MWD’s LRP program.

The Clean Energy Report finds that the estimated first-year cost of water as stated in the Poseidon proposal is \$1,871 per acre-foot in 2014 dollars and concludes that that estimated cost is a reasonable basis for evaluation of Poseidon’s proposal, even though its own Monte Carlo simulations found the median starting price to be \$1,922 per acre-foot in 2014 dollars. Given Clean Energy Capital’s simulation

results, it is unreasonable for the report to use the \$1,871 price per acre-foot as a basis for determining the benefit and costs of the project, the impact of the project on OCWD and its Producers, and OCWD’s debt and equity options. (For comparison purposes, the current cost of MWD Tier 1 full service, treated water is \$890 per acre-foot; MWD full service untreated water is \$593 per acre-foot.) Clean Energy Capital’s analysis should be redone using a more reasonable cost per acre-foot to provide a better evaluation of the project’s impact on OCWD.

Furthermore, the Clean Energy Report accepts the other assumptions used in the Poseidon proposal related to construction costs, construction timing, capital needs, energy costs, and operation and maintenance costs. The report does not challenge the assumptions or test their appropriateness. In most cases, the report compares the proposed project with the assumptions used by Poseidon in its Carlsbad desalination plant proposal to determine the assumptions’ reasonableness instead of actual costs and historical trends from the Orange County area.

Additionally, many of the assumptions use incorrect escalation factors and do not account for changes in cost due to modifications in the project construction timeline. A modification in the project’s timeline is highly likely given that the project must still obtain a number of regulatory permits and approvals, including obtaining approval from the California Coastal Commission. A delay in the construction start date will likely result in higher construction costs and capital needs.

Cost escalation is a large risk factor for an \$892 million project and should be examined more closely. OCWD should carefully evaluate the assumptions used in the report’s analysis and ask Clean Energy Capital to use assumptions that are more appropriate in its final report as the basis for the conclusions it draws despite Poseidon’s use of different assumptions.

The evaluation of the cost of construction, operation, and maintenance of the desalination project should consider the risks and uncertainties associated with significant project features (e.g., the intake and brine disposal facilities) and operational cost drivers that have a wide range of variability (e.g., electricity prices). It should also evaluate future operational cost reductions associated with improvements to efficiencies of membrane technologies and how those should be shared among all participants in a desalination project. Clean Energy Capital should evaluate these uncertainties and risks as part of its report.

Specifically, IRWD believes that the final report should address the following assumptions and escalation factor issues. These assumptions feed directly into the project’s capital and financing costs, and operations and maintenance charges, which contribute to the cost of water from the project.

- 1) Construction Costs – The construction costs included in Poseidon’s proposal and used in the Clean Energy Report are in 2013 dollars, and assume an annual construction cost escalation of 2.5 percent. Historically, the construction index over the past 10 years has increased at a rate of approximately three percent. While 50 basis points may seem like a small amount in the assumed escalation, it has a large impact on the cost of any large capital project and ultimately on project financing costs. Clean Energy Capital should use the historical construction price index escalation factor in its analysis. The report also does not address whether the capital costs correctly assume

cost impacts due to potential prevailing wage and public works contracting rules that may be invoked due to public financing contributions or public-private partnership arrangements.

- 2) Project Design Assumptions and Construction Timeline – The Clean Energy Report fails to consider the full range of risk and uncertainty associated with the cost of an intake and outfall for the project. The report assumes that the project will rely on a screened intake system and does not consider the potential costs of having to implement a subsurface intake solution. The Monte Carlo simulations of the project need to be modified to reflect the significant cost risk associated with the potential requirement for a subsurface intake. Without this analysis, the true uncertainty of the cost of water from the project cannot be presented. The report should also examine construction timeline change risk and how changes in schedule could impact the cost of water from the project. The final report should also analyze Poseidon’s ability to construct the project given OCWD’s consideration of making a debt and/or equity contribution to the project.
- 3) Post-2022 Project Changes – The Clean Energy Report notes that Poseidon will add the cost of modifying the AES plant intake and discharge facilities required after the AES plant’s decommission in 2022 to the project cost. In the report, this is shown in 2013 dollars at \$41.655 million. The report also notes that the changes will result in a substantial increase in operations, maintenance, and electricity costs after 2022. The Clean Energy Report does not provide a clear basis for these costs, and it is unclear, at this time, as to how AES plant re-commissioning efforts will affect the proposed project and the proposed cost of water.
- 4) Capital Charges – The report also fails to reflect the true cost for the project when comparing an upward-sloping debt profile to a level debt service. Comparisons should be made on a net present value basis so that the true costs or savings from a change in the capital charge and debt structure are understood. The financing of desalination projects should employ methods that result in the lowest cost of water and debt to the participating agencies. Project costs should not be "back-loaded" to initially understate the true cost of desalinated water.
- 5) Operating Expenses – The variability of the proposed cost of water from the project does not adequately demonstrate the risks and uncertainties associated with the cost of electricity for the project. The future electricity cost increases assumed in the Clean Energy Report vary with a mean of two percent and a standard deviation of 0.75 percent. The report also depicts that electricity will make up about 23 percent of the cost of water from the project and nearly 50 percent of the total non-capital costs. Since 2006, rate increases for electricity have varied greatly in Orange County. In 2006 and 2013, IRWD experienced increases in electricity costs of 18 percent and 11 percent, respectively, which indicates a much greater degree of variability in electricity prices than provided for with the 0.75 percent standard deviation used by Clean Energy Capital. In addition, IRWD has not experienced reductions in electricity prices of the same magnitude, which indicates that a normal distribution for electricity price escalations is not applicable.

Electricity prices will increase in the future depending on regional changes that have occurred in generating resources, natural gas prices, electricity efficiency and demand, state and federal

environmental and emission policy, and transmission expenses. In Southern California, other factors will affect electricity prices in the future. These factors include the shutdown of the San Onofre Generating Station, the expected retirement of outdated natural gas power plants, and the potential for reduced performance from existing plants required to comply with State Water Resources Control Board once-through cooling regulations. A detailed study needs to be performed on the risk and uncertainty of future electricity prices and their impact on the proposed desalination project. It is IRWD’s expectation, along with most in the utility industry, that electricity rates will rise much higher than Poseidon’s assumptions.

The Clean Energy Report should take into consideration the risk that the proposed project could be subject to new greenhouse gas (GHG) emission-reducing policies for water sector investments as described in the *First Update to the Climate Change Scoping Plan – Building on the Framework Pursuant to AB 32, The California Global Warming Solutions Act of 2006*. Such policies are expected to be released in 2015, and will likely encourage energy efficient and less GHG intensive water projects. The California Public Utilities Commission will also be completing water-energy nexus rulemaking by 2016 that could have an effect on the cost of electricity to water projects. The Clean Energy Report should take into consideration any expected energy and GHG related policies and rules that could affect the project, especially as the regulations could be applied to a private corporation. The report should also consider the risk that sometime in the future the project could be subject to GHG offset credit requirements for continued operations.

The Clean Energy report should also identify and quantify the project costs associated with any franchise and/or wheeling fees charged by the owners of the local transmission mains through which the water produced by the Poseidon project would be conveyed. The Report should also quantify the cost impact to the other Groundwater Producers for subsidizing the cost of Poseidon project water to the City of Huntington Beach, which is reportedly being provided water at approximately the same rate as MWD Tier 1 treated water.

- 6) Availability of LRP Funding – Public presentations on the findings of the Clean Energy Report imply that LRP funding would be available to bring the cost of project water to below the MWD full-service Tier 1 water rate. The report correctly identifies that the subsidy would be reduced to zero when the unsubsidized water is equal to the cost of MWD water. Public presentations should reflect the findings of the report and not misrepresent the project. The consideration of LRP incentives from MWD for a desalination project should take into consideration that the sliding scale and fixed incentives would only be available to the extent that the incentives reduce the cost of water from the project towards the cost of treated water from MWD. The subsidy cannot reduce the cost of water below the MWD Tier 1 treated rate.

Additionally, the Clean Energy Report assumes that the proposed project will receive LRP funding. MWD’s LRP was revised on October 14, 2014. The recently approved MWD program only has funding capacity for an additional 63,000 acre-feet of local water supplies. Given the 56,000 acre-feet of water assumed to be produced by the proposed desalination project, it is possible that the existing LRP program will be oversubscribed by the time the project is eligible for funding, or that a new program with new requirements and funding levels will be approved.

The Monte Carlo simulations in the Clean Energy Report should acknowledge this risk and reflect the range of uncertainties in the availability of LRP funding for the project.

In addition, MWD’s LRP General Requirements state that, unless otherwise approved by MWD, projects must replace an existing demand or prevent a new demand on MWD’s imported water deliveries through direct replacement of potable water or increased regional groundwater production. The 56,000 acre-feet of imported water demand that the Poseidon project proposes to replace is not OCWD’s imported water demand, but demand from other water retailers within Orange County. The Clean Energy Report does not identify which water agencies or the quantities of imported water that are proposed to be replaced. In fact, it is unclear if there are agencies willing to take the project’s water to reduce their MWD demands.

Furthermore, the LRP General Requirements state that to qualify for LRP funding, the project cannot be new water but must *replace* imported water. As long as this is the case, the desalination project cannot be considered as a new water supply to Orange County, and must be recognized as a project to replace imported water in order to receive a LRP subsidy. Replacing water available from MWD with the higher cost of water from the proposed ocean desalination project will only improve the reliability of MWD deliveries to its other member agencies.

- 7) Future Technology Changes – The Clean Energy Report also fails to reflect a reduction in the cost of water from the project that will result from the inevitable future improvements in desalination technology. Future operational cost reductions associated with improvements to efficiencies of membrane technologies should be allocated among all participants in a desalination project.

C. OCWD, and therefore the Orange County Groundwater Producers, bear the risk for the cost of all 56,000 acre-feet of water produced by the plant each year regardless of OCWD’s ability to sell the water.

The Clean Energy Report states that OCWD will “only pay for desalinated water that is actually produced and delivered.” This statement dismisses the risk OCWD would be assuming if it enters into a Water Purchase Agreement (WPA) with Poseidon. By signing a WPA, OCWD is agreeing to a 30-year take-or-pay contract and regardless of OCWD’s ability to sell the 56,000 acre-feet of water over the next 30 years, the district must pay Poseidon for the water.

Currently, there are no contractual arrangements identified for Producers or others to purchase water from the proposed project. If OCWD is not able to contract for the sale of the water, it would mean that OCWD’s Producers would be responsible for paying for all of OCWD’s stranded costs over the next 30-year due to a lack of need for the water or an inability of OCWD to sell the water. The Producers would have to pay for any costs that OCWD experiences in selling the water for less than OCWD’s cost of the water and would have to pay the costs associated with unsold water even if OCWD has access to less expensive water supply sources. The Clean Energy Report makes the assumption that OCWD will be able to sell all of the water it contracts for and that there will be no default in those sales. The final report should analyze the impact on OCWD if there is no need for the water or an inability to sell the water.

Recent statements have also asserted that OCWD could simply take the 56,000 acre-feet and use it to recharge the Orange County groundwater basin. If OCWD opts to recharge the basin with the project’s water, the RA will have to increase substantially more than the \$96 per acre-foot increase currently proposed. The report should recognize that under such circumstances the cost of water from the desalination project should be compared against the costs of full service, untreated water from MWD. The final report should also analyze how this would affect the RA and OCWD’s recharge costs compared with the use of untreated MWD water.

D. The Clean Energy Report assumes that Orange County Groundwater Producers will bear the cost for the desalination project. It does not explain the direct and tangible benefits Producers will receive for subsidizing the project. Only those agencies that voluntarily take the project water should pay for the project.

Over the last few years, a working group of agencies that are interested in participating in the Huntington Beach project met on a regular basis at the Municipal Water District of Orange County (MWDOC) to review project study results, and to discuss the proposed attributes and costs of the proposed project. This working group process ended in 2013 with limited interest among agencies to participate in the proposed project. Subsequently, Poseidon approached OCWD to consider purchasing the entire amount of water to be produced by the proposed Huntington Beach Ocean Desalination Project.

A key issue in Orange County affecting the implementation and acceptance of ocean desalination is cost recovery. Some retail agencies may receive greater benefit from ocean desalination than others. Moreover, some agencies may have other more cost-effective supply options and may not want to participate in the development of a desalinated supply. It is important to note that the current reliability needs of Orange County rely on the development of extraordinary supplies to backfill requirements during a MWD Water Supply Allocation and providing water to South Orange County during events such as a Diemer Plant outage or other major system and supply problems.

Projects utilizing ocean desalination as a new base water supply should be funded exclusively by the retail water agencies that voluntarily participate in the projects. Because Orange County water agencies have different water supply needs, the participation in countywide desalination project should be available to agencies on a voluntary basis. An individual agency’s participation in this project will depend on its own water supply reliability needs based on a finding of the agency that it does not consider supplies from MWD to be fully reliable. OCWD has expressed its willingness to allow water agencies from outside its service area to voluntarily participate in the Poseidon project; yet OCWD has not indicated a willingness to allow its own member agencies to participate on a voluntary basis.

Given the current diversification of its water supply portfolio, IRWD has made a strategic decision not to invest in local base-loaded supply projects that exceed the cost of imported water from MWD over extended time horizons when imported water is projected to be largely available from MWD. IRWD understands that some Orange County retail water agencies with limited supply diversification opportunities may be willing to invest in expensive ocean desalination projects and pay a high reliability premium.

IRWD encourages retail agencies that elect to participate in an ocean desalination project to form an acceptable financial participation mechanism, such as a voluntary joint powers authority, to appropriately recover and allocate past and future costs associated with an ocean desalination project. This will not only resolve cost recovery issues related to these projects, but will build focused support at the retail level for implementation of desalination projects. In the alternative, MWD should consider the development of cost-effective regional desalination projects that provide benefits to all of MWD’s service area in an equitable fashion.

As for an OCWD investment in desalination projects, any OCWD investment must demonstrate and provide direct, tangible benefits to the Orange County Groundwater Producers. OCWD cannot justify Producer subsidization of the desalination program through an increase in the RA by simply stating that an RA at \$390 per acre-foot is still significantly lower than the cost of imported water and, therefore, acceptable. A \$96 per acre-foot increase in the RA due to Orange County Groundwater Producers subsidizing the proposed project will result in Producers having to raise rates to their customers. If the Basin Production Percentage (BPP) was lower than the BPP assumed in the Clean Energy report, then the increase to the RA would be proportionally higher. Such a subsidy and the corresponding rate increases would disproportionately benefit other Orange County retail water agencies over the Producers.

E. The Clean Energy Report should evaluate how the proposed project will impact Orange County’s water supply reliability under MWD Water Supply Allocation scenarios.

The Clean Energy Report does not evaluate the effective increase in regional water costs that will incur to the Orange County community as a result of the proposed project during a MWD Water Supply Allocation. Under MWD’s current allocation formula adopted April 14, 2009, the proposed project’s water would likely be considered a local supply similar to groundwater and not an extraordinary supply. As a result, the proposed project will reduce the amount of imported water allocated to MWDOC during a Water Supply Allocation.

Based on MWD’s 2009 Allocation Model, during a supply allocation scenario MWD calculates supply allocations by looking at total retail demands and local supplies. The MWD member agency’s water supply allocation is based on a calculated formula taking into account all of MWD’s available supplies and all of the other demands on MWD. Before determining a region’s allocation, MWD takes into account a number of other factors such as conservation credits, Retail Impact Adjustment, and availability of extraordinary supplies. Therefore, Orange County water agencies may be less reliable, resulting in a reduction in the total water available to the county in a 30 percent regional shortage percentage situation.

MWD’s Water Supply Allocation Plan formulas for sharing reliability during periods of allocation should be taken into consideration when evaluating the water supply benefits of desalination projects and in making estimates of the costs of water from the projects to its participants.

F. OCWD should perform a thorough evaluation on how an OCWD debt or equity investment in the proposed Huntington Beach Ocean Water Desalination Project would impact its ability to financing and complete other projects in its Long Term Facilities Plan.

The financing of desalination projects should occur using methods that result in the lowest cost of water and debt to the participating agencies. According to the Clean Energy Report, OCWD’s current debt service is \$33.3 million annually or 25 percent of its budget. If OCWD were to provide \$500 million in debt to participate in the Poseidon project, it would increase its annual debt service by 96.7 percent to \$65.8 million per year.

The financing savings gained by OCWD through a debt or equity investment in the proposed project comes at a great risk to OCWD and its future projects; such an investment requires thoughtful consideration by OCWD. OCWD should fully explain how such an investment in the proposed project would affect its ability to maintain its credit rating and finance future projects, as this would limit OCWD’s ability to implement the projects in its Long Term Facilities Plan.

G. OCWD’s District Act may need to be amended to allow OCWD to invest in and sell water from the proposed project.

Per its District Act, OCWD cannot proceed with a project unless the OCWD Board of Directors makes a determination that the project is necessary to carry out an OCWD power. OCWD’s District Act provides the district with a number of enumerated powers to protect and replenish the groundwater basin within its district boundaries, to augment and protect the quality of the common water supplies of the district, and incidental purposes. Before OCWD can proceed with a water treatment, purification, or other project, the district must determine that the project is “feasible and necessary and of general benefit to the lands in the district” (OCWD District Act Section 20.6). As discussed above, an analysis needs to be completed to determine if the proposed Huntington Beach Ocean Water Desalination Project provides benefits to lands in the district and the Producers.

IRWD also asks that OCWD stipulate which enumerated power(s) in its District Act it is invoking to carry out investment in the proposed project and the selling of project water to non-OCWD producers. If the proposal is not within OCWD’s legal powers, an amendment to the OCWD District Act may be necessary.

H. An increase in the RA to cover the incremental cost impact on OCWD likely violates Proposition 218, and could violate Proposition 26.

OCWD’s District Act also limits the application of RA proceeds to specific authorized purposes. The RA proceeds may only be used “for the benefit of all who rely directly or indirectly upon the ground water supplies of such district for the benefit of all who rely directly or indirectly upon the ground water supplies of such district” and “shall be used to acquire water and to pay the costs of initiating, carrying on, and completing any of the powers, projects, and purposes for which this district is organized” (OCWD District Act Sections 23 and 27.b). Using the RA to subsidize the proposed project without demonstrating the benefit of the subsidy not only violates OCWD’s District Act but also presents a Proposition 218 problem.

Selling project water at the cost of MWD full service, Tier 1 treated water and subsidizing the costs via an increase in the RA for all the Producers will result in challenges based on the cost of service and

proportional to their basin use, and some may not even be basin producers. As such, it will be difficult for the inclusion of this component in the RA to satisfy the proportionality requirement of Proposition 218. Furthermore, the Clean Energy Report contains no explanation as to how this subsidization is justified.

If the RA is not a property-related fee subject to Article XIII D, there is an issue as to whether the product-water subsidy component is a tax, requiring voter approval, as a result of its inability to come within the Proposition 26 carve outs. There may also be a gift of public funds issue by initiating a subsidization structure as has been proposed in the Clean Energy Report. OCWD should examine, as part of the Clean Energy Report, the constitutional issues raised by increasing the RA to subsidize the water costs of the project.

I. The water quality of any water produced by the project must meet all applicable drinking water standards.

The Clean Energy Report notes that the proposed terms between OCWD and Poseidon would place a large portion of the water quality risk onto OCWD. IRWD would like to emphasize again its position that desalination product water must meet all applicable drinking water standards, and must not create water quality impacts that impair the production of recycled water, reduce the quality of potable water delivered to IRWD customers or result in corrosive impacts to facilities.

Conclusion:

The development of a secure and reliable water supply for the residents of Orange County is important to the economic vitality of our region but, as with any infrastructure investment, investments in water supply reliability must be cost-effective. IRWD encourages OCWD to carefully reconsider the assumptions of the Clean Energy Report and the conclusions drawn from its analysis for the purpose of developing an accurate understanding of the costs and risks associated with the Poseidon Desalination Project.

Thank you in advance for considering our comments. Also attached to this letter are IRWD’s policy principles on Desalination Projects, as adopted by the IRWD Board of Directors on November 10, 2014. Please contact me at (949) 453-5590 with any questions you may have regarding IRWD’s comments or if you would like to discuss the matter further.

Sincerely,



Paul A. Cook, P.E.
General Manager

Enclosure.

IRVINE RANCH WATER DISTRICT POLICY POSITION ON DESALINATION PROJECTS

Revised: November 10, 2014

Issue Summary:

Locally available brackish and ocean water sources may provide alternative supplies of water once treated to acceptable standards. Desalination projects should be implemented when costs for treatment and distribution are competitive with existing reliable supplies or with other supplies or alternative supplies under development. Funding should be recovered on a beneficiary pays basis. Efforts to develop desalination projects, technologies, and outside funding sources should move forward consistent the policy principles described below.

Background:

Desalination is the process of converting water with high salts and mineral concentrations into water usable for potable use or irrigation. The process typically involves treatment with membrane systems (such as reverse osmosis), ion exchange, or thermal distillation. Using current technology, desalination could provide southern California with supplemental supplies of high quality drinking water that are reliable, though expensive. This water supply would be locally available, and less vulnerable to hydrological and other uncertainties. Developing desalination facilities would diversify the region's water supply portfolio leading to greater overall reliability. Metropolitan Water District of Southern California (MWD) recognizes desalination in its Integrated Resources Plan as a key future water supply component for the region only after exhausting other options.

Without substantial outside subsidies, ocean desalination is generally not cost effective at this time. Much less expensive water supply options are available including water transfers, treatment of impaired groundwater and water recycling. As technological improvements reduce the cost of reverse osmosis membranes and the amount of energy used by the membrane process, the cost of desalinated ocean water may decline. This is why the water industry, including IRWD, should support development of desalination technologies, regulatory streamlining, and public acceptance.

Poseidon Resources Corporation, a private company, is proposing to develop an ocean water desalination facility in Huntington Beach. The project concept advanced by Poseidon envisions development of a 50 MGD ocean water desalination plant at the AES power plant in Huntington Beach. Poseidon Resources Corporation is soliciting interest from local water agencies for commitments to purchase desalinated water from the Huntington Beach Plant.

Over the last few years, a working group of agencies that are interested in participating in the Huntington Beach project met on a regular basis at the Municipal Water District of Orange County (MWDOC) to review project study results and to discuss the proposed attributes and costs of the proposed project. This working group process ended in 2013 with limited interest among agencies to participate in the project. Since then, the Orange County Water District

(OCWD) has been considering taking action related to the proposed Huntington Beach Ocean Desalination Project. The MWDOC is also investigating the feasibility of developing the proposed Doheny ocean water desalination project in Dana Point and could take action on the project at some point in the future. The policy principles provided below address policy areas that will be important in providing comments on reports and analyses being prepared by OCWD and/or MWDOC related to the projects.

A key issue in Orange County affecting the implementation and acceptance of ocean desalination is cost recovery. Some retail agencies may receive greater benefit from ocean desalination than others. Moreover, some agencies may have other more cost effective supply options and may not want to have any participation in a desalinated supply. As such, an acceptable financial participation mechanism, such as a voluntary Joint Powers Authority (JPA), needs to be established to appropriately recover and allocate past and future costs associated with an ocean desalination project. This will not only resolve cost recovery issues related to these projects, but will build focused support at the retail level for implementation of desalination projects.

Following are policy principles related to potential desalination projects.

Policy Principles:

- IRWD supports the investigation of cost effective alternative supplies of water. IRWD also supports the development of desalination technologies, regulatory streamlining, public acceptance and the pursuit of regional, state, and federal funding programs to ensure the feasibility of future water supplies.
- Based upon the diversity and reliability of IRWD's existing and planned water supplies and IRWD's current and projected cost of water, the IRWD may consider participation in ocean desalination projects when economics become more favorable and delivered costs to IRWD's system become comparable to alternative supplies then available to IRWD.
- IRWD's consideration of participation in desalination projects shall be consistent with the Board's adopted Potable Water Supply Reliability Policy Principles.
- The need for ocean desalination projects should be identified considering the frequencies, magnitudes, timing and durations associated with events that could affect the reliability of existing and future alternative cost effective supplies.
- Projects utilizing ocean desalination for a new water supply should be funded exclusively by the retail water agencies that voluntarily participate in the projects. Participation in county wide desalination projects should be available to agencies on an optional basis.
- Desalination projects that exceed the cost of import water from Metropolitan Water District of Southern California (MWD) should not be considered when imported water is available from MWD, unless an agency determines that imported water supplies from

MWD are not reliable. Such projects would disproportionately benefit other agencies over agencies participating in the projects.

- MWD's Water Supply Allocation Plan formulas for sharing reliability during periods of allocation should be taken into consideration when evaluating the water supply benefits of desalination projects and in making estimates of the costs of water from the projects to its participants.
- The evaluation of the cost of construction, operation and maintenance of desalination projects should take into consideration the risks and uncertainties associated with significant features including intake and brine disposal facilities as well as uncertainties associated with rates of increases in electricity that are expected in the future.
- Future operational cost reductions associated with improvements to efficiencies of membrane technologies should be shared among all participants in a desalination project.
- The consideration of Local Resources Program incentives from MWD for a desalination project should take into consideration that the sliding scale and fixed incentives would only be available to the extent that the incentives reduce the cost of water from the project towards the cost of treated water from MWD (i.e., the subsidy cannot reduce the cost of water below the MWD treated rate).
- MWD should provide LRP incentives to desalination projects through separate funding initiatives that do not impair the ability of non-desalination related local projects to receive funding under existing MWD limits for LRP investments.
- Local and regional partnerships for the construction, operation and maintenance of ocean desalination projects should rely on the experience of local agencies with proven track records constructing and operating desalination facilities.
- Agencies volunteering to participate in ocean desalination projects should take into consideration comparisons of the costs and methods of delivery of the design, construction and operation of desalination facilities by public agencies with the costs and methods of delivery of the design, construction and operation through private partnerships. Participant should select the most cost effective and least risk method of project implementation.
- Comparisons of the cost of water from a desalination project should not be made against the cost of full service treated water from MWD when the water from the desalination project is displacing purchases of available untreated water from MWD.
- The financing of desalination projects should occur using methods that result in the lowest cost of water and debt to the participating agencies. Project costs should not be "back-loaded" to initially understate the true cost of desalinated water.

- Potential participating retail agencies in Orange County should continue efforts to evaluate an ocean desalination project at the Huntington Beach site while less expensive sites located inland from the beach should be considered as an alternative to expensive beach-front sites.
- MWD should consider the development of cost effective regional desalination projects that provide benefits to all MWD's service area in an equitable fashion.
- Desalination product water must meet all applicable drinking water standards, and must not create water quality impacts that impair the production of recycled water, reduce the quality of potable water delivered to IRWD customers or result in corrosive impacts to facilities.



City of Huntington Beach

2000 Main Street ♦

PO Box 190 ♦

CA 92648

Travis K. Hopkins, PE
Director

Department of Public Works
(714) 536-5431

November 21, 2014

Mr. Shawn Dewane, President
Orange County Water District
18700 Ward Street
Fountain Valley, CA 92708

Subj.: Comments on Clean Energy Capital's Financial Analysis of Proposed
Huntington Beach Ocean Water Desalination Project Draft Report

President Dewane,

The City of Huntington Beach appreciates the opportunity to review and provide comments on Clean Energy Capital's financial draft report on the proposed Poseidon Ocean Water Desalination Project. As the host city for this proposed facility and one of the major users of the Orange County Groundwater Basin, the City of Huntington Beach is particularly interested in ensuring that all aspects of the proposed project are thoroughly analyzed and addressed.

Based on our review of the draft report, our questions and comments are as follows:

1. The City of Huntington Beach's Conditions of Approval with Poseidon includes the City receiving 3,360 acre-feet of project water each year at a cost of 95% of the MWD tier one rate. Did the financial analysis take the 3,360 acre-feet of water and its cost into account?
2. The first bullet on Page 5 under Key Findings states that "The additional expenditure would increase the District's operating budget by approximately 78%, from the District's current \$134.1 million to \$238.9 million." From a financial standpoint, it could be perceived that one of the purposes of the District would be the resale of desalinated water, in addition to the management of the groundwater basin. Questions have been asked of OCWD as to whether the District Act includes the authority to undertake many of the activities being proposed and whether the OCWD can enter into such an agreement/partnership with Poseidon. Has your legal counsel completed the evaluation of these questions?

3. The third bullet on Page 5 notes “the incremental impact on the District would be approximately \$96 per acre-foot, increasing the replenishment assessment from its current level of \$294 per acre-foot to \$390 per acre foot.” However, the facility will not come on line for a number of years, and the replenishment assessment will continue to increase and will most likely not remain at \$294. The report should indicate if the difference between the Replenishment Assessment and in the incremental increase will remain at \$96 per acre foot or if the Replenishment Assessment could increase at a faster rate, thereby resulting in a smaller incremental assessment increase.
4. Page 5 (and throughout the document) references the potential \$340/AF MWD Local Resource Program (LRP) subsidy, which would further lower the cost of desalinated water for the District. However, the \$340 amount has not as of yet been approved by the MWD Board, and the San Diego County Water Authority is opposing the LRP as a whole and has threatened legal action against the program. Should OCWD chose to move forward and purchase the project water or participate as an equity partner, what will OCWD do to protect itself in the event that SDCWA sues MWD over the LRP program? How will the time delay resulting from a lawsuit and the possible elimination of the LRP be addressed with regard to a delay of entering into an Agreement with Poseidon?
5. On Page 8 in the second bullet in the Key Findings in the Comparison to MWD Rate Projection, the subsidized cost of the Product Water will reach parity with MWD water costs in 2035-2036. At what point will the actual cost of the Product Water equal the MWD water cost?
6. Page 8 notes that if MWD rates only increase by 3% annually, they will remain lower than desalination rates. This is a large risk that must be fully considered and evaluated as part of the question of the cost of water supply reliability.
7. At the top of Page 13 at the end of Section 2A – Overview of Poseidon Proposal, it indicates that Poseidon will finance, construct, own and operate the Plant and construct the Pipeline. It does not indicate who will own the Pipeline.
8. On Page 13 in the Water Purchase Agreement section it indicates that Poseidon will permit, design and build Pipeline by a date certain and that it is OCWD’s obligation to operate and maintain the Pipeline. It does not indicate who will actually pay for and who will own the pipeline.
9. What provisions will be in the WPA to protect OCWD should the Pipeline fail and some or all of the project water cannot be delivered? The answer should address whether Poseidon owns and operates the Pipeline or if OCWD owns and operates the Pipeline.
10. On October 10, 2010, the Huntington Beach City Council adopted Ordinance 3891 granting a non-exclusive Pipeline Franchise to Poseidon Resources to construct, own, and operate a new water pipeline in the public right-of-way to deliver desalinated water. Section 15 – Assignment states that “In addition, if Franchisee requests to assign this agreement to a public utility and or any entity not required by law to pay franchise fees, City may withhold consent until Franchisee agrees to pay the value of the franchise fee through the term of the Franchise”.

Should OCWD become the owner of the Pipeline, how will the agreement between the City and Poseidon pertaining to paying the City all future franchise fees in an up-front lump sum payment be addressed in the financial analysis?

11. Should the Pipeline improvements rely on the use of West Orange County Water Board facilities (jointly owned by the Cities of Seal Beach, Westminster, Garden Grove and Huntington Beach) or the OC-44 pipeline (jointly owned by Mesa Water and the City of Huntington Beach), it should be noted that at this time there are no agreements in place for the use of these facilities.
12. If the facilities in Item 11 are not made available for the distribution of the project water, what other options and their associated costs have been analyzed and what would the impact be on the cost of the water?
13. On Page 14 in the Construction and Operation section, Poseidon will take energy "off the grid." Is this certain? Would they have to pay City of Huntington Beach Utility User Tax? HBMC 3.36.030(E) exempts electricity from the UUT if it is used in the pumping of water. The City believes this is intended for well water; Poseidon claims that it is for the production of all water. Poseidon feels that the UUT tax should be approximately \$50,000 per year while the City believes the tax would be approximately \$840,000 per year. How was this as yet unresolved issue addressed in the financial analysis?
14. On Page 14 under the Plan of Finance the Pipeline costs are to be funded by pipeline (governmental) bonds and OCWD will agree to pay debt service on the bonds. Who will actually issue the bonds and own and operate the Pipeline?
15. Page 16 notes water quality will be produced as specified by the water purchase agreement. We assume that it will be similar to the water quality requirements in the Poseidon-Carlsbad/Poseidon agreement.
16. On Page 17 under Proposed Risk Allocation:
 - Will only Poseidon benefit from improvements in technology/operations that reduce costs such as electricity, replacement of RO filters and chemicals? Can these cost savings be shared?
 - How are the risks of Pipeline failure being addressed?
 - How is the OCWD Risk associated with "System integration risk for Product Water received" defined? If one or more systems are negatively impacted by the Product Water, who will bear the responsibility and costs to identify the cause of the problem(s) and the solution(s)?
17. Page 18 cites the "Option 2 – Northern Delivery System" Brady technical memorandum report as the source for the Pipeline costs. This report is only one of many possible distribution options that have not been adopted or approved by the City of Huntington Beach or any other city or agency.

The City of Huntington Beach's Conditions of Approval with Poseidon includes the City receiving 3,360 acre-feet of project water each year at a cost of 95% of the MWD tier one rate. There is no agreement in place for the City to take additional Product Water or to use its transmission or distribution system to move Product Water to other agencies or to take additional Product Water as part of a transfer agreement with another city or agency. Other more conservative alternatives should be addressed/considered as part of the analysis.

18. Page 19 in the first paragraph compares the Carlsbad project's EPC Pipeline costs to the HB costs and refers to "existing regional facilities". How are these "regional facilities" defined for this project?
19. Page 19 in the first paragraph states "Pending final selection of delivery system configuration by OCWD". What is the expected time frame for the selection of the delivery system (Pipeline)? Formal discussions and agreements addressing the issue and the final configuration could have a substantial impact on the final project costs as well as the project timeline.
20. On Page 20, what number was used for the "connection fee" to the City of Huntington Beach and Mesa Water District?
21. Page 20 addresses connection fees that include the City of Huntington Beach and Mesa Water. If the Brady report is the basis of the connection fees, how are the West Orange County Board facilities addressed?
22. Pages 23 and 24 address the electricity assumptions which includes an escalation rate at 2.0 percent. We believe that 2.0 percent is optimistic and should be reevaluated at this time.
23. Page 23 includes items relating to Poseidon's operating assumptions for non-electrical activities. With regard to the O&M charge being a component of the water unit price, the report indicates that the first year's operating budget will be utilized to establish the O&M charge and "So established, the O&M charge escalates at the assumed consumer price index ("CPI") set forth above for the term of the WPA". It appears that only the first year's operational data will be used to set the O&M charge and it cannot be changed through the course of the contract. Is this the case? Other sections of the report allow Poseidon to increase the O&M charge but are there provisions for the O&M charges to decrease and if so, under what circumstances?
24. Page 24 relates to the intake system. The report assumes that Poseidon will need to modify the intake and discharge systems when the AES power plant cooling water system is decommissioned. However, the Coastal Commission could require Poseidon to construct a subsurface intake facility as part of their permitting process. These costs are unknown at this time, but would likely be substantial. How is OCWD addressing these potential costs as part of this analysis?
25. Page 27, misspells "Santa Ana."
26. Page 27 addresses the MWD Local Resources Program subsidy. See our comments in Item No. 4.
27. Pages 30 and 31 address the issue of OCWD Additional Debt Capacity. As the report notes, increasing an additional \$500 million of debt would double OCWD's current annual debt service of \$33 million and increase the RA by \$100 per AF. In order to preserve the OCWD's historic senior-lien ratio coverage and it's AAA credit ratings the RA may need to be increased by a significantly greater amount. The report recommends a more detailed analysis if OCWD is interested in issuing debt to lower project cost. Will OCWD do this before making any commitments to move forward as an equity partner and if so, is there an expected schedule when this work will occur?
28. On Page 68 in Section 6D – Southern Delivery System, the report notes that "The District has not determined that water delivery via the Northern Delivery System (as defined in the technical

memorandum on delivery capital cost estimate prepared by Richard Brady & Associates) is its preferred delivery protocol. An alternative Southern Delivery System (as defined in the same report) is also under consideration. Please see our response in Item No. 17 above. We feel that other alternatives should be evaluated to provide a true range of potential distribution challenges and costs.

29. With the project water receiving a MWD LRP subsidy, should MWD begin water allocations while the project is operational, what will the overall impact to the basin's MWD allocation be?

30. In Section 7A – MWD Rates, how do the MWD rates address/include the projected costs of the Bay Delta improvements?

We appreciate your acceptance of our questions and comments and look forward to the development and release of the final report that addresses the comments and concerns of other cities, water agencies, independent organizations and members of the public.

Sincerely,

A handwritten signature in dark ink that reads "Brian A. Ragland". The signature is written in a cursive, flowing style.

Brian A. Ragland, P.E.
Utilities Manager
City of Huntington Beach

c: Travis Hopkins, Director of Public Works, City of Huntington Beach

City of Fullerton's Comments on the draft Clean Energy Capital (CEC) financial Report regarding the proposed Poseidon Resources City of Huntington Beach Ocean Desalination project:

- Project should be evaluated against other local supply projects based on the true cost of water without the use of disproportional financing methods.
- Project costs should be proportionally shared throughout Orange County based on MWD imported water reliance.
- OCWD should not make any financial commitments until the Carlsbad desalination project is on – line; to be able to benefit from true costs experienced at that site.
- A Desalination regional workshop should be conducted much like the Fracking Workshop held at Cal State Fullerton to educate the Public on the science, environmental challenges and costs of this project.



City of Anaheim PUBLIC UTILITIES DEPARTMENT

November 21, 2014

John Kennedy
Assistant General Manager
Orange County Water District
18700 Ward Street
Fountain Valley, California 92708

**Re: Orange County Water District's Draft Financial Analysis of
Proposed Huntington Beach Ocean Water Desalination Project**

Dear Mr. Kennedy:

Anaheim Public Utilities (APU) staff is responding to the invitation to review the draft "Financial Analysis of Proposed Huntington Beach Ocean Water Desalination Project" (Financial Analysis), which was prepared by Clean Energy Capital, and provide written comments by November 21, 2014.

1. APU encourages the Orange County Water District (OCWD) Board to consider existing rate pressures on the Producers and hold off on commitments of significant future costs that would result in further rate increases to our customers. The Financial Analysis confirms that a significant cost (and risk) would be placed on OCWD and its Producers, yet the broader region would benefit indirectly from the new drought-proof supply without having to pay any of the Project's costs.
2. Further discussions with water agencies outside of OCWD should proceed. Serious consideration should be given to other implementation alternatives, such as the Project being developed as a: (i) Metropolitan Water District of Southern California (MWD) regional project; or (ii) Orange Countywide-led project (where costs are proportionately shared by all Orange County water agencies based on MWD water reliance). Either approach would result in a significantly lower cost impact to the Producers, while still providing reliability benefits to the County and the region.
3. APU staff is concerned with the potential downgrade of OCWD's financial rating and increased debt from the Project, and a potential additional Replenishment Assessment increase to mitigate the above financial risks.

4. Project funding was not evaluated and compared to other alternatives using a "Present Worth" analysis, which therefore makes the analysis incomplete.
5. The report states that MWD's published rate forecast for the next 10 years (2014 through 2024) generally follows a 3% average annual increase. This statement should be further highlighted in the Executive Summary and subsequent OCWD subject staff report(s). Under the 3% average annual increase scenario, the Poseidon and MWD unit cost lines never cross.

If you have any questions, please feel free to contact Rick Shintaku, Water Resources and Planning Manager at (714) 765-4181.

Respectfully submitted,



Donald C. Calkins
Assistant General Manager of Water Services

c: Rick Shintaku, Water Planning & Resources Manager



INFORMATION ITEM

December 1, 2014

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

FROM: **Robert Hunter, General Manager**

Staff Contact: Karl Seckel and Richard Bell

**SUBJECT: Doheny Ocean Desalination Project State Parks Lease and Update on
the Foundational Action Program Update**

STAFF RECOMMENDATION

Staff recommends the Planning & Operations Committee receive and file this report and provide input as appropriate.

COMMITTEE RECOMMENDATION

Committee recommends (To be determined at Committee Meeting)

SUMMARY

At the direction of the Project Participants Committee, MWDOC staff has been working with State Parks, State Lands Commission and the Coastal Commission to extend the term of the Phase 3 Extended Pumping and Test Facilities Lease for an additional 5 years. We now have all permits in hand and are in the process of executing a new lease with State Parks. The new lease will be good for five years, allowing one year lease extensions from the effective date of the lease. The lease can be terminated by either MWDOC or the State Parks during the term of the lease by giving notice to the other party in writing one hundred and eighty (180) days prior to the date when such termination shall become effective. All equipment must be removed and the site restored prior to termination. MWDOC has retained \$356,000 in reserves from the five participating agencies for this purpose.

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

The MET Foundational Action Program work with South Coast Water District and San Juan Basin Authority is proceeding. Work under the SCWD “Overcoming Barriers to Slant Well Seawater Desalination” study is focused on five tasks. Work under the SJBA “Groundwater and Desalination Optimization Program” effort is focused on investigating the feasibility for augmenting basin water supply and protecting the basin from seawater intrusion. The feasibility investigation includes work in three main areas: (1) capture and recharge of storm water, (2) treatment and recharge of recycled water, and (3) seawater intrusion control alternatives.

DETAILED REPORT

New Lease with State Parks for Phase 3 Test Facilities

At the direction of the Project Participants Committee, MWDOC staff has been working with State Parks, State Lands Commission and the Coastal Commission to extend the term of the Phase 3 Extended Pumping and Test Facilities lease for an additional 5 years. The Doheny State Beach Right-of-Entry permit, State Lands Commission Lease and California Coastal Commission Coastal Development Permit expired last May 31, 2014; State Parks policy allows a month to month extension of the ROE permit during the lease development period.

We now have the State Lands Commission extended lease and Coastal Commission Coastal Development permit extension, and are in the process of executing a new lease with State Parks. The new lease from State Parks will become effective when executed by State Parks, now expected by February 1, 2015. The new lease will extend the term for five years, with one year extensions given annually upon 30 day written notice from MWDOC to extend the lease.

Pro-rata monthly payments going back to June 1 are due until the new lease is effective at which time the annual lease payment is due at the same rate as in prior years. The pro-rata monthly rate is \$2,000 per month and \$24,000 per year for the first year with five percent escalation per year thereafter. The lease can be terminated by either party upon a 180 day written notice. All facilities must be removed and the site restored within the 180 days. Removal of the test facilities is prohibited during the period between Memorial Day and Labor Day. MWDOC has retained \$356,000 in reserves from the five participating agencies for this purpose.

South Coast WD Foundational Action Work

The MET Foundational Action Program work with South Coast Water District is proceeding. Work under the SCWD “Overcoming Barriers to Slant Well Seawater Desalination” study is focused on five tasks:

1. Advancement of Slant Well Technology
2. Geologic, Seismic and Ocean Risk Analysis for Siting Slant Beach Wells
3. Prediction of Coastal/Ocean Groundwater Flow and Water Quality
4. Modeling Slant Well Feedwater Supply, Impacts and Mitigation Approaches
5. Coastal Environmental Drawdown Issues and Regulatory Strategies

Draft reports for Task 1 and 2 have been received from SCWD and are under review.

SJBA Foundational Action Work

Work under the SJBA “Groundwater and Desalination Optimization Program” effort is focused on investigating the feasibility for augmenting basin water supply and management through the capture and recharge of storm water, indirect potable reuse through basin recharge of recycled water, and protection of the lower basin from seawater intrusion. The work falls under three main tasks:

1. Develop Preliminary Alternatives for Each Program Element
2. Evaluate Feasibility of All Program Elements
3. Develop Implementation Plan

The work specifically would include the following main work:

1. Groundwater Modeling Studies for Proposed Seawater Extraction Barrier
2. Hydraulic Investigation to Increase Storm Water Recharge
3. Hydraulic Investigations to Recycled Water Recharge
4. Develop Adoptive Production Management

This work follows from the recent adoption of the San Juan Basin Groundwater Management and Facilities Plan on November 4, 2014.

Looking Ahead

Staff is of the opinion that completion of both of these efforts will allow a regional project to move forward in a few years that includes:

- Enhanced management of the groundwater basin
- Augmentation of groundwater supplies and basin yield through the use of treated recycled water
- Protection of the basin from seawater intrusion
- Production of potable water from an ocean desalination project

Completion of this work should be substantially done about a year from now. The project deliverable schedule is currently being revised by SJBA. Task reports will be issued throughout the project period.



INFORMATION ITEM

December 1, 2014

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

FROM: Robert Hunter, General Manager

Staff Contact: Kelly Hubbard, WEROC Program Manager

SUBJECT: WEROC Exercise Rolling Thunder After Action/ Corrective Action Report

STAFF RECOMMENDATION

Staff recommends the Planning & Operations Committee review the WEROC Exercise Rolling Thunder After Action/ Corrective Action Report.

COMMITTEE RECOMMENDATION

Committee recommends (To be determined at Committee Meeting)

SUMMARY

The WEROC Exercise Rolling Thunder After Action/ Corrective Action Report is attached for the board's review. This report was completed by the staff of the Water Emergency Response Organization of Orange County (WEROC), in coordination with MWDOC staff, MET staff, and the WEROC Member Agencies. The report will also be shared with the WEROC Member Agencies, Metropolitan Water District of Southern California, the Orange County Operational Area and the Southern Region OES.

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

EXERCISE ROLLING THUNDER
AFTER ACTION / CORRECTIVE ACTION REPORT
WATER EMERGENCY RESPONSE ORGANIZATION OF ORANGE COUNTY

Event Name

Exercise Rolling Thunder

Event Summary

This exercise involved multiple agencies operating with the same simulated disaster scenario, for the purpose of allowing Metropolitan Water District of Southern California (MET), MET member agencies, the WEROC Emergency Operations Center (EOC) and WEROC member agencies to facilitate role play that would encourage and improve collaboration and communication between these agencies, as they will need to coordinate in a real event. While the scenario remains the same, participating agencies are playing at different levels to facilitate the best learning environment for their particular agency. Below is a chart of the participating organizations and their level of participation.

Participating Organizations	
Functional Exercises	
Diemer Filtration Plant ICC	
MET Eagle Rock EOC	
Laguna Beach County Water District	
Moulton Niguel Water District	
Santa Margarita Water District	
WEROC South EOC	
Tabletop Exercises	
El Toro Water District	
Irvine Ranch Water District	
Mesa Water District	
Orange County Sanitation District	
South Coast Water District	
Yorba Linda Water District	
SimCell Participants	
City of Anaheim	
City of Fullerton	
City of Orange	
City of Santa Ana	
Orange County Operational Area	
Observers	
MWDOC Director Susan Hinman	

Exercise Scenario Summary

In the early hours of November 2, 2014 a tempest blew into Orange County due to the remnants of Hurricane Vance. Three storms in total traveled along the atmospheric river of moisture created by the hurricane in the tropics, bringing wind and rain to Southern California that lasted

for several days. The storms caused flood control channels to quickly fill with years of debris left by the 3-year drought “sludging up” flow within the channels. The 5-20 inches of rainfall throughout the region pushed high flowing streams, storm channels, and creeks, over their banks in many locations. Saturated soils gave way to local landslides and recent burn areas experience debris and mud flows. The National Weather Service issued Urban and Canyon Flash Flood Warnings and a Tornado Watch was in effect for parts of southwest California due to the severe thunderstorms, damaging downburst winds, hail and the possibility of tornadoes for coastal and inland regions. Fire Departments responded to numerous swift-water rescues in both urban areas and at stream crossings. Response agencies across the region activated their Emergency Operations Centers (EOC), including MET, several Orange County water utilities, and the Water Emergency Response Organization of Orange County (WEROC).

WEROC’s Preparedness and Response Summary

WEROC implemented a new training program this year with the intent to train all of the MWDOC staff who respond to the WEROC EOC with the right knowledge to be able to run the EOC without the assistance of the WEROC Program Manager or the MWDOC Assistant General Manager who have the most real event response experience. To meet that goal the WEROC Program Manager developed a series of short topic specific trainings that all of the WEROC EOC staff and Member Agencies were invited to. The four trainings provided were:

- WEROC’s Role as a Liaison
- Situation Status Collecting and Reporting
- WebEOC basic training
- WEROC EOC Physical Site training.

The trainings were received positively and have been noted as a great improvement in the WEROC program.

Another aspect of preparing for the exercise was WEROC’s participation in the MET Exercise Design Committee and the facilitation of a WEROC Member Agency Exercise Design Committee. These committee meetings facilitated the development of exercise objectives, the exercise scenarios, documents used for simulation, and other aspects of exercise planning. The MET committee met monthly starting in May and the WEROC Committee met monthly starting in August (once the exercise date was set).

WEROC conducted Exercise Rolling Thunder as a functional exercise on November 5, 2014 at its South Emergency Operations Center (EOC) from 9:00 am to 1:00 pm. EOC staff were each assigned a role that they have not previously held with the intent of cross-training staff to other areas of EOC Functions. Several staff were a bit nervous about this prospect, but it was a key step in making sure staff understand all aspects of EOC operations. This turned out to be a great learning experience for all and contributed to the overall success of WEROC’s exercise.

The WEROC Manager conducted an after-action briefing with the EOC staff immediately following the exercise and asked all staff to complete a feedback form. WEROC and its Member Agencies conducted an after-action meeting on November 17th. And MET conducted an exercise debriefing on November 17th with the MET Exercise Design Team. All of the comments and

suggestions received as part of these processes that pertain to the WEROC program are reflected in this report.

Activation Status

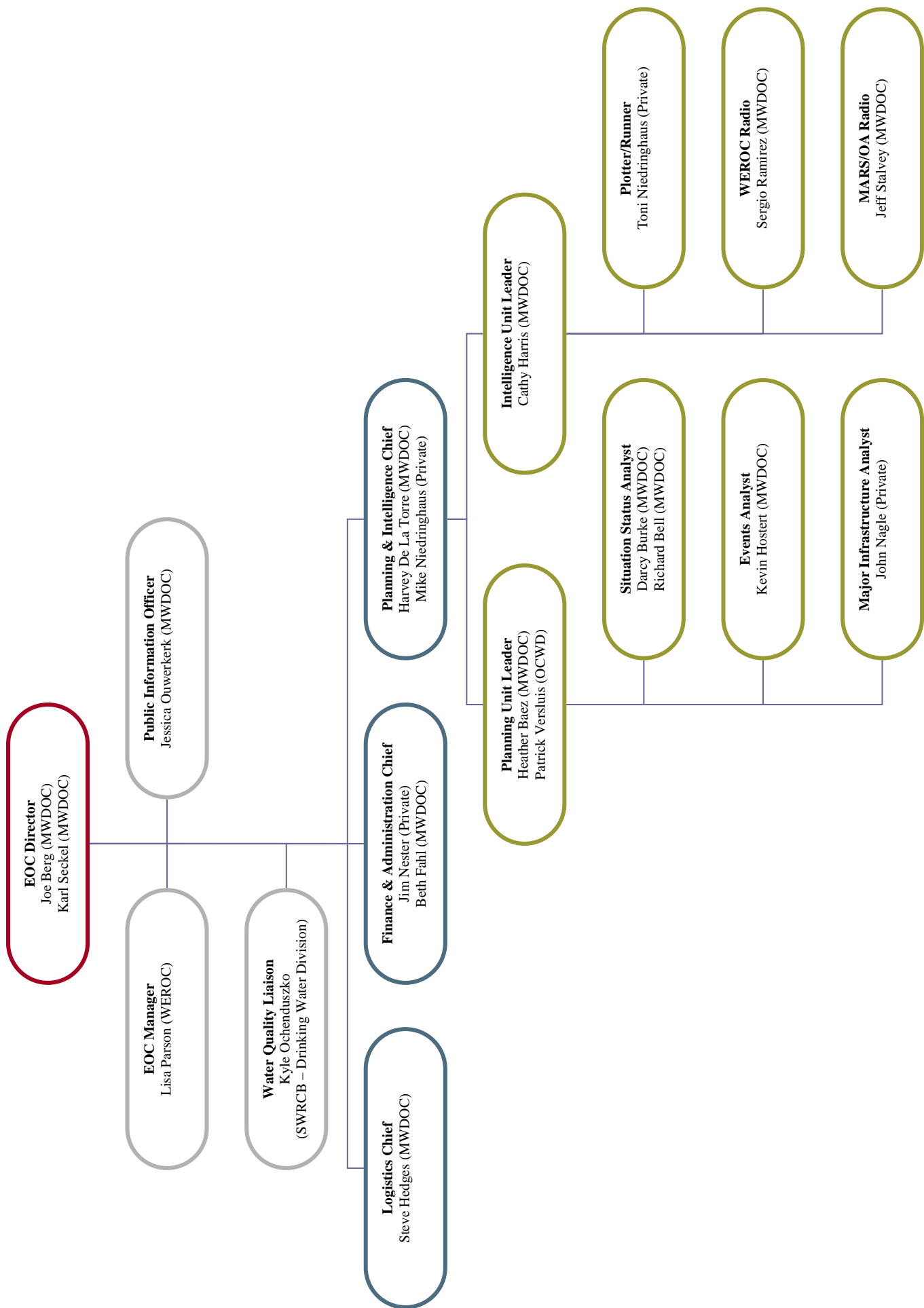
WEROC activated its South Emergency Operations Center (EOC) with 22 EOC staff participants. Volunteer staff received information from 7 participating water and wastewater utilities during the exercise, and communicated with the Operational Area and MET on their behalf. WEROC EOC staff were assigned positions for which they have not filled before to continue cross-training and familiarization of EOC operations. Information was collected, sorted, assessed, posted, shared, and responded to from the following sources:

- Staff operated two radios (the OA radio was not used for this exercise), using the revised WEROC Radio System Standard Operating Procedures;
- the PIO reviewed social media sources;
- as appropriate to their position staff utilized emails, phone calls and WebEOC; and
- all staff utilized 6 EOC information tracking boards to display and share information with others in the EOC.

Most importantly this format of exercise enhanced the WEROC EOC's understanding of their specific positions, the WEROC member agencies, WEROC's mission and goals during a disaster, and general disaster response concepts.

Responding Staff

Special thanks must be given to the WEROC staff that comes from MWDOC, the WEROC Member agencies and the private sector (see the organizational chart below for staff and their assignments). There were 14 MWDOC staff, 4 private sector volunteers, 1 California State Water Resources Control Board, Division of Drinking Water representative, and 1 WEROC Member Agency mutual aid staff assigned to operate within the WEROC South EOC. Lastly Vicki Osborn, Orange County Operational Area Emergency Manager, provided exercise facilitation and evaluation support to the WEROC Program Manager who was acting as the Exercise Director.



SEMS/NIMS Evaluation

The WEROC EOC and EOP were developed based on SEMS, NIMS and ICS principles. Following the Golden Guardian Exercise in 2008 significant changes in the WEROC EOC organizational structure and physical facility were made. These changes resulted in the removal of an Operations Section (because WEROC is not an operational entity) and the addition of more staff positions to handle information analysis within the Planning and Intelligence Section. Sometime after that the integration of WebEOC became vital to efficient EOC operations and pushed for further changes in process and protocol. The EOC operated under the SEMS standard for Area Command by utilizing the ICS functions of Management, Planning & Intelligence, Logistics, and Finance and Administration. In addition to these functions the WEROC EOC also utilizes positions that are specific to the water industry, such as a water quality advisor. Refer to the following image to see the full organizational chart. This exercise was a great success in demonstrating to staff their knowledge and understanding of the WEROC structure as it has evolved, its role within emergency response and the physical tools available to support their response.

In addition to the organizational structure within the EOC, WEROC operates within the 5 SEMS levels of coordination. WEROC acts as the Operational Area coordinator for water and wastewater utilities. MET has an EOC, as well as 5 Incident Command Centers (treatment plants) in just as many counties. The Diemer Filtration Plant is Orange County's primary treatment facility and within the Orange County Operational Area, but reports to the MET EOC within the Los Angeles Operational Area. How each of these hierarchical relationship relates to and integrates with each other is still a concept that needs review and development.

Evaluation of Core Capabilities and Lessons Learned

WEROC Member Agencies and WEROC Staff also conducted an informal hot wash immediately after the WEROC EOC Operation Rolling Thunder exercise and an information after action review was a component of the WEROC Emergency Coordinator's Quarterly Meeting. Comments and lessons learned originating from all post-exercise meetings and pertaining to WEROC's participation in the Operation Rolling Thunder exercise and the strengthening of the program have been incorporated into the WEROC Master Corrections List for further consideration. The WEROC EOC met all of its Core Capabilities and Objectives it was looking to test. The following is a list of these and some comments in regards to each, a complete list of corrective actions are further in the document.

<u>Core Capabilities and Objectives</u>	<u>Comments</u>
Operational Communications and Coordination Exercise players shall follow established WEROC/MET procedures to communicate exercise information between each of the participating EOCs (WEROC, MET EOC Eagle Rock, and participating agencies) and ICC (MET Incident Command Centers- Diemer) throughout the exercise.	
1. Each WEROC/MET Member Agency will request at least one significant MET flow change during the exercise using only the WEROC radio system to communicate the request.	Successfully utilized the WEROC radio to receive and transmit significant MET flow changes from participating member agencies, and developed an efficient method for tracking these requests. WEROC & MET failed to confirm the changes requested and will need to clean up protocol.
2. All participating WEROC/MET Member Agencies will submit an Agency Status Report (WebEOC or JIMS Forms) to the WEROC EOC within the first hour of the exercise.	All participating agencies submitted initial status reports within WebEOC. Training on where additional information is reported and details of information reported is needed.
3. WEROC Planning and Intelligence will develop a Water/Wastewater Status Report and share it with the Operational Area, it's Member Agencies and MET within the first 2 hours.	Two Situation Status Reports were reported through WebEOC. Protocol should be added to have these reports also emailed or notified to coordinating partners as being available as well.
Public Information and Warning Exercise Players will utilize internal protocols and Joint Information System concepts to coordinate with all other exercise participants.	
1. WEROC will facilitate a Virtual Joint Information Center with its member agencies utilizing the OC Operational Area JIC Plan and disseminate at least 2 press releases.	Public Information Officers (PIO) from WEROC, MET, and Member Agencies, worked together via a Virtual Joint Information Center (JIC) to create a joint information process for this exercise. The JIC was working on the production of two joint press releases and a theoretical joint agency interview with a demanding news media anchor.

2. WEROC staff will utilize social media for messaging and damage assessment. Possibly creating an exercise Hashtag (#) for all agencies to utilize during the exercise.	The WEROC Public Information Officer utilized Social Media to announce the exercise, but was otherwise limited in her time to do more in this area. Consideration should be given regarding how to facilitate social media in the future.
Jurisdictional Roles and Responsibilities MET EOC staff will coordinate with MET Member Agencies and other external partners, under the provisions of the WEROC Agreement, MARS agreement, each participating agency's Emergency Operations Plan, and Cal WARN Operations Plan and each to coordinate emergency resource requests and clarify each agency's roles and responsibilities.	
1. Utilize and assess MET Draft Operational Guidelines.	This document requires more review then time allowed during this exercise. Further review and refinement with MET may be necessary to incorporate concepts such as coordination with MET's EOC versus ICC, and use of WebEOC.
2. Utilize WEROC In Case of Crisis application to facilitate Member Agency Coordination and assess information provided within the app.	Agencies are still in the process of downloading the application and exploring the content available. Although not used during the exercise, many agencies are providing feedback after the exercise.
Common Operating Picture Exercise players will utilize available technology, tools, and other resources to gain situation awareness to form a common operating picture of the given event, and share this information, as appropriate, with other stakeholders via a formal Situation Report.	
1. All Participants will utilize WebEOC to report and monitor impacts throughout the county.	Agencies utilized WebEOC throughout the exercise. Areas of improvement have been identified in the WEROC Corrective Action List (attached). It was also identified that additional communication means should be used in tandem with WebEOC.
Emergency Operations Center Training and Resources MWDOC Staff that fulfill a WEROC EOC position will rotate into various roles to facilitate cross-training throughout the organization.	

Exercise actions and assistance provided by the staff includes:

- Coordinating mutual aid resources for member agencies including a generator delivery to OC-70, large animal rescue from Bradt Reservoir, and an agency employee rescue from mudslide.
- Facilitation of flow change requests through the WEROC radio to the Diemer Filtration Plant.

Other successes:

- Staff were assigned to different positions than which some have worked in the past. This led to an evaluation of information processing and staff assignments. New and more efficient ideas were presented and will be discussed further for implementation.
- The newly created WEROC Emergency Plan Smartphone App was downloaded to participant phones for reference during the exercise.
- The scenario provided staff with a better sense of how their roles and responsibilities in the WEROC EOC contribute to the successful coordination of an emergency response effort.
- The roll out of robust pre-exercise training sessions on specific aspects of WEROC and the EOC functions provided staff with a strong foundation of skills prior to the actual exercise, which led to better integration, communication, and awareness of key functions during the exercise.
- The PIO was able to access press release templates and other documents via Prepare OC.

A few actions of concern include:

- The development of a common operating picture across MET, the OA, and WEROC had a new complexity with WebEOC. This resulted in a critical piece of information being “missed” by WEROC. While staff was able to use back up means of communication (phones and faxes) to check on missing information to shape a general sense of situational awareness, information update protocols between MET and WEROC utilizing WebEOC need further discussion.
- Due to staff being assigned new positions, they were initially slow to determine the importance or significance of information, and what actions or considerations each piece of information should receive. After a period of time, the Planning and Intelligence staff determined a more effective manner for processing and receiving information, and staff published regular updates in WebEOC for member agencies.
 - However, in addition to WebEOC activity logs and event logs, WEROC should have been providing summaries to WEROC’s member agencies, to the Operational Area EOC, to MET, and to individual agencies of importance, such as OC HCA.
- WEROC staff were unable to view the Initial Damage Estimates posted into WebEOC by WEROC member agencies due to a system glitch. While staff were successful in collecting the available information via other means (phone, email) the estimates were delayed significantly. This was a good reminder for staff that technology is a great new tool, but we need to continue to learn how to use back-up paper methods for data collection and communication.

This exercise was also intended to assess participants’ ability to create a common operating picture by using available technology and tools to share and collect information. A large portion of this process was handled via WebEOC. Below are the key findings regarding WebEOC during this exercise:

- Participants found WebEOC to be a useful tool for logging information that was received, and for viewing the information posted by member agencies.

- The Plans/Intel Chief found the process of compiling and posting the situational status report in the first two hours helpful as a means of driving them to collect the information needed to develop a clear understanding of the event.
- There was a lack of clarity regarding posting information to the Operational Area because:
 - At times staff was unsure if the information they intended to share was made visible to the OA, and expressed a need for a confirmation mechanism.
 - At other times, reports that were intended to be pushed up to the OA were left in pending status, awaiting the approval of the Plans/Intel Chief. Consideration should be made regarding whether this responsibility should be assigned to an alternate member of the Planning Unit, given the heavy workload of the Plans/Intel Chief.
 - Participants met the stated goal of using WebEOC to report and monitor impacts throughout the county, but didn't post out overall summary of actions and events.

Corrective Actions and Process Evaluation

The WEROC Rolling Thunder Corrective Action List, Attachment A, is a list of problems or issues identified during the WEROC response. The corrective action list is a comprehensive process in which staff review EOC Activity Logs, White Board postings, WebEOC postings, feedback forms and more to develop a list of ways to improve our training, preparedness and response. For each problem statement possible solutions or corrective actions are identified, the lead agency responsible for each solution, additional agencies or departments that may coordinate with the lead agency, and a designated time frame which this corrective action should be addressed by. The timeframes are defined as the following:

- Immediate 1 to 4 weeks
- Short 1 to 6 months
- Long 6 months to 1 year
- On Going Continual process
- Parking Lot Recognition of the issue/problem, but no plausible solution is available at this time.

This corrective action list will be added to a WEROC Master Corrective Action List that includes all corrective actions identified during actual or simulated response. As items are addressed they are either adjusted or removed from the master list. The WEROC Master Corrective Action List serves as a working list of actions required for WEROC to respond in the most efficient way possible during the next exercise or disaster.

Report Completed

This report was completed by the staff of the Water Emergency Response Organization of Orange County (WEROC), in coordination with MWDOC staff, MET staff, and the WEROC Member Agencies. The report was submitted to the MWDOC Board, the WEROC Member Agencies, the Orange County Operational Area and the Southern Region OES in December 2014.

Glossary of Acronyms & Terms

EOC	Emergency Operations Center
EOP	Emergency Operations Plan
ICC	Incident Command Center (MET Term)
ICS	Incident Command System
MET	Metropolitan Water District of Southern California
MWDOC	Municipal Water District of Orange County
NIMS	National Information Management System (Federal)
OA	Operational Area
PIO	Public Information Officer
SEMS	Standard Emergency Management System (California)
SWRCB-DDW	California State Water Resources Control Board, Division of Drinking Water
WebEOC	An internet based information management system
WEROC	Water Emergency Response Organization of Orange County

Attachment A: WEROC Rolling Thunder Corrective Action List

Issue or Problem Statement	Recommended Solution(s)	Lead Agency	Coordinating Partners	Timeline and Expected Due Date	Action Taken
Staff didn't fully understand which position was responsible for each aspect of WebEOC. This was a problem for ensuring staff completed tasks assigned to them, but also to make sure they knew what others were doing so concepts were not dropped or duplicated.	<p>1. Roles and responsibilities for WebEOC are clearly defined within each position checklist. Staff will need more training on position specific functions and responsibilities. As well as training on the roles of others.</p> <p>2. Add WebEOC responsibilities to the Position Summary List.</p>	WEROC	County OA, MET, Member Agencies	Short Term	
Staff utilized the WebEOC Situation Status Report function to report the Water Utility Status. The report needed more detail on locations and actions, as people at OA may not understand water industry short hand. Include top three concepts: water quality issues, locations of events (such as leaks), needs.	<p>Staff did not realize that there is a WEROC Situation Status Report Form that is pre-formatted to include water details for the OA. Staff will need further training on forms, as well as how to share information with non-water entities.</p>	WEROC	County OA, MET, Member Agencies	Short Term	
5 of 113	1. Position and Section Specific Training	WEROC	Member Agencies	Short Term	

Attachment A: WEROC Rolling Thunder Corrective Action List

Issue or Problem Statement	Recommended Solution(s)	Lead Agency	Coordinating Partners	Timeline and Expected Due Date	Action Taken
Staff did not understand which position does what and how they need to work together within the EOC. It was really the nuances between positions within each Section that was not understood.	2. Clarify the roles of the Chief positions during training, with a reminder to have chiefs clearly state expectations, communication protocols, etc. to their staff.	WEROC	None	Short Term	
	3. Further develop the EOC position Summary list to assist staff understanding each position better. Consider adding a chart.				
Further work is needed on how to post information in WebEOC of behalf on the member agencies and for the member agencies themselves. Protocol on where certain types of information is posted and how to ensure that information is shared within the EOC is needed.	1. Training for Member Agencies and EOC staff. Training should walk through various simulated events and information to show possible ways to share the information.	WEROC	County OA, MET, Member Agencies	Short Term	

Attachment A: WEROC Rolling Thunder Corrective Action List

Issue or Problem Statement	Recommended Solution(s)	Lead Agency	Coordinating Partners	Timeline and Expected Due Date	Action Taken
the EOC and outside with others. Clarify what info goes where and who (MET, Agencies, WEROC) needs to see it. What to do with information only info?	2. Create a summary of the types of reports that need to go out to OA, MET, Agencies, etc.	WEROC	County OA, MET, Member Agencies	Immediate	
Staff would not always remember to go back and ensure tasks were tied up and completed. This could be making sure information was properly communicated, confirming that flow changes were made, that resources were provided, etc.	Consider ways to integrate "completion concepts" into the forms and white boards to provide a visual reminder to staff to follow-up on tasks.	WEROC	None	Immediate	
Radio traffic can be technical, quick and sometimes unclear. The radio staff did not have the	1. Have runner listen to radio messages to act as second ears and clarify messages being received.	WEROC	None	Immediate	
	2. Consider what level of water knowledge the radio staff should have if multiple staff are available to fulfill the position.	WEROC	None	On Going	

Attachment A: WEROC Rolling Thunder Corrective Action List

Issue or Problem Statement	Recommended Solution(s)	Lead Agency	Coordinating Partners	Timeline and Expected Due Date	Action Taken
expertise or experience to know what types of questions to ask to ensure that information received was complete and as detailed as needed.	3. Train Member Agency Staff on how to transmit more complete information in initial communications.	WEROC	Member Agencies	Short Term	
	4. Print a Poster for above radios with reminders on types of additional information that may be needed.	WEROC	None	Immediate	
Message Forms need to be redeveloped to reflect the changes in the EOC structure and use of technology.)	1. Consider whether form should specify "mandatory" content: who is the contact, what exactly is the issue (details), when did it or will it happen, where (address), contact information, priority for the agency, why is this important...	WEROC	None	Short Term	
	2. Incorporate WebEOC	WEROC	County OA	Immediate	
	3. Consider how we get individuals to note whether action has been completed and by whom.	WEROC	County OA	Immediate	

Attachment A: WEROC Rolling Thunder Corrective Action List

Issue or Problem Statement	Recommended Solution(s)	Lead Agency	Coordinating Partners	Timeline and Expected Due Date	Action Taken
	4. Need staff to fill form out in full. Very important to know who received each copy of the message.	WEROC	None	Immediate	
Radio staff did not know to do the Member Agency Roll Call on Pleasants Peak repeater, then switch to Blackjack repeater to pick up those agencies as needed.	1. Develop a Just In Time Training Quick Sheet for radio operators with limited experience, include tips such as switching repeaters.	WEROC	County OA, MET, Member Agencies	Immediate	
	2. Consider whether the radio forms for disaster response need to be seperated to show the repeater of preference for each agency.	WEROC	None	Immediate	
Staff felt that they need to better understand the flow of information around the WEROC EOC, into WebEOC, on the radio, and the whiteboards.	1. Consider a Communications Flow chart.	WEROC	None	Short Term	
	2. At minimum practice flow of communications during an exercise or training.	WEROC	None	Short Term	

Attachment A: WEROC Rolling Thunder Corrective Action List

Issue or Problem Statement	Recommended Solution(s)	Lead Agency	Coordinating Partners	Timeline and Expected Due Date	Action Taken
The development of a common operating picture across MET, the OA, and WEROC had a new complexity with WebEOC. This resulted in a critical piece of information being “missed” by WEROC. Staff was able to use back up means of communication (phones and faxes) to check on missing information to shape a general sense of situational awareness.	Clarify communication protocols with MET and WEROC for utilizing WebEOC as a means of communication. Confirm placement/method and types of information for sharing. Consider a policy that identifies critical information as "direct communication required".	WEROC	County OA, MET, Member Agencies	Long Term	
The MET Interconnection Flow Log that WEROC receives by email daily does not include information for Anaheim, Fullerton, and Santa Ana .	Contact MET staff to add these 3 agencies to the report.	WEROC	MET	Immediate	
Not all WEROC staff fully understood water systems, flow changes and other operational concepts. This occasionally resulted in not having the right information being requested when not	1. Communication protocols or guidelines will be created to help guide both those familiar with operational systems, as well as those who are not as familiar.	WEROC	County OA, MET, Member Agencies	Short Term	

Attachment A: WEROC Rolling Thunder Corrective Action List

Issue or Problem Statement	Recommended Solution(s)	Lead Agency	Coordinating Partners	Timeline and Expected Due Date	Action Taken
initially provided. For example with respect to flow control facilities, it was unclear who operates individual flow control valves.	2. A graphic for valves and controlling flows will be prepared to provide staff with better understanding of these connections.				
WebEOC activity logs could use more consistency for easier scanning	Maybe have a standard format or order that info is entered in. Consider formatting tricks to highlight important info, such as entering impacted agency in ALL CAPS on first line.	WEROC	County OA	Immediate	
The OA Significant Events were not approved for posting to the OA board and so were never shared with other agencies.	This responsibility was assigned to a position that was too busy to do this work. Need to reevaluate which position handles this task.	WEROC	None	Immediate	
The WebEOC Initial Damage Estimate Form	1. Notify the OA staff of the broken form and request repair.	WEROC	County OA	Immediate	Notified

Attachment A: WEROC Rolling Thunder Corrective Action List

Issue or Problem Statement	Recommended Solution(s)	Lead Agency	Coordinating Partners	Timeline and Expected Due Date	Action Taken
(Listed in WebEOC as "Damage") did not work. And staff were unsure how to collect the information without the system.	2. Need to train EOC staff and Member Agencies on the use of back up forms and methods for sharing them.	WEROC	Member Agencies	Short Term	
Clarification is needed on the differences between WebEOC, Alert OC and Prepare OC and when to use which system in regards to PIO duties.	Create a chart or diagram on their uses and how they integrate.	WEROC	None	Immediate	
The PIO needed more guidance on establishing communications with member agencies and protocols for when WEROC is involved.	Develop a communications protocol with the PAW group to identify a WEROC JIC plan and make sure all member agencies are aware of the plan.	PAW	WEROC, Member Agencies, Met, County OA	Long Term	
All positions or sections should take time to consider overall impacts and needs and then establish goals with timeframes.	This is a learning concept that takes time and practice.	WEROC	All EOC staff.	On Going	

Attachment A: WEROC Rolling Thunder Corrective Action List

Issue or Problem Statement	Recommended Solution(s)	Lead Agency	Coordinating Partners	Timeline and Expected Due Date	Action Taken
Writing press releases, monitoring the news and social media is too much for one person.	When staffing allows, the PIO should have an assistant or a Social Media position to monitor news and do social media. Consider the use of MWDOC interns for this type of position.	WEROC	PAW	Parking Lot	
The PIO needed a better system for getting pertinent info (public impacts) from other EOC staff or from the white board. What is important for the public to know? Classify as relevant and important to the public?	Consider who within the EOC the PIO should work with to achieve this goal. Probably the EOC Director.	WEROC	PAW	Immediate	
Staff and agencies do not realize the depth of information available in the In Case of Crisis App.	This is a learning concept that takes time and practice.	WEROC	County OA, Met, Member Agencies	Long Term	
Initial Damage Assessment Hard to get from Member Agencies.	Continued training for Member Agencies on this concept, as well as training for EOC staff to understand the timeline for this process.	WEROC	Member Agencies	Short Term	

Attachment A: WEROC Rolling Thunder Corrective Action List

Issue or Problem Statement	Recommended Solution(s)	Lead Agency	Coordinating Partners	Timeline and Expected Due Date	Action Taken
Clarify which position within the EOC is responsible to liaison to MET during response.	Add information to the Major Infrastructure Analyst position to clarify that they are the primary MET liaison.	WEROC	None	Short Term	
South Coast Groundwater Desalination facility is not shown on the WEROC maps. Location should show within San Juan Capistrano's boundaries.	Add to list of Map Corrections for next update.	WEROC	Member Agencies	Long Term	
Within the EOC, the Major Infrastructure, Events, Analyst, Plans and Intel Chief and EOC Director needed to get together earlier to set a plan for how to organize information and what to prioritize on the boards. This happened halfway through.	This is a learning concept that takes time and practice.	WEROC	County OA	Long Term	

Attachment A: WEROC Rolling Thunder Corrective Action List

Issue or Problem Statement	Recommended Solution(s)	Lead Agency	Coordinating Partners	Timeline and Expected Due Date	Action Taken
Staff need to remember to prioritize events as they occur and therefore their actions or goals. If a new significant event is communicated, staff need to determine what matters given this new information. This should include what have we been asked to do and what can we anticipate as coming up in the future.	1. Staff revised their method of putting information on white boards as the exercise progressed. They created priority levels by using color coded markers, magnets, etc. This color coding will be left on the board and evaluated after another functional exercise.	WEROC	None	Long Term	
	2. Remind staff during training the importance of re-assessing priorities and work efforts as new information is presented.	WEROC	None	Short Term	
Staff need to continue to work on their collection of information through various forms of communication to ensure all of the pertinent information is received the	1. WebEOC doesn't notify people when new information is entered, so staff need to remember that important/critical communications need to be communicated and verified via phone, email or radio as appropriate. Add to WebEOC quick guide.	WEROC	Member Agencies	Short Term	

Attachment A: WEROC Rolling Thunder Corrective Action List

Issue or Problem Statement	Recommended Solution(s)	Lead Agency	Coordinating Partners	Timeline and Expected Due Date	Action Taken
first time if possible.	2. Provide more training on communications and how to get all info before you hang up. Consider a list of key questions.	WEROC	Member Agencies	Short Term	
Use of personal cell phones is much easier and many times necessary. Suggest having recharge stations.	Look into and purchase multi-device charging units for each EOC.	WEROC	None	Short Term	
There is not enough space to lay out maps and review service areas.	Consider a mapping table or a wall mounted system of clips for map viewing.	WEROC	None	Short Term	
Consider where to save forms and resources electronically to be available for EOC staff during response. Consider the best method to allow for updating of materials.	1. Create a standard location, possibly a Goggle Drive, and add this to the resource location list. 2. Add agency emails and contact information to gmail accounts ahead of time.	WEROC	None	Immediate	
Many staff lacked experience using G-Mail and were unsure how to incorporate it into their actions.	Train staff on G-Mail and Google Drive.	WEROC	None	Short Term	

Attachment A: WEROC Rolling Thunder Corrective Action List

Issue or Problem Statement	Recommended Solution(s)	Lead Agency	Coordinating Partners	Timeline and Expected Due Date	Action Taken
The Function specific binders have become so full with materials that they are hard to turn the pages and to find resources within them.	1. Evaluate which binders need to be moved to larger sized binders.	WEROC	None	Immediate	
	2. Consider how to reorganize and tab the binders to make them easier to use.	WEROC	None	Short Term	
Staff appreciated the cross-training in other positions, noting that it helped them understand the greater picture of the EOC's purpose and their role.	In order to continue to do this effectively, send staff the positions and duties they are going to be assigned a few days prior to the exercise to allow them time to read upon their responsibilities for the upcoming exercise.	WEROC	None	On Going	
All staff requested more training. All staff noted the extreme value of the extra training prior to the exercise.	Suggestion for a monthly exercise: keep it simple, 2 hours max, held at the EOC. Use computers, log in to systems, review a pre-loaded scenario in WebEOC	WEROC	None	On Going	

Attachment A: WEROC Rolling Thunder Corrective Action List

Issue or Problem Statement	Recommended Solution(s)	Lead Agency	Coordinating Partners	Timeline and Expected Due Date	Action Taken
Update and clean up of general EOC resources, such as documents changed due to feedback and supplies used during the exercise.	WEROC Coordinator has a list of items requiring updates or replenishment.	WEROC	None	Immediate & On Going	

Status of Ongoing MWDOC Reliability and Engineering and Planning Projects

November 25, 2014

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 late 2016	MWDOC has been asked to help secure MET's concurrence on the quality of water being introduced into the South County Pipeline. MWDOC and MET have exchanged agreements and continue working on this issue. It is important to get it wrapped up by the end of the year to allow the actual construction tie-in of the new pipeline to the South County Pipeline to be made during a February 2015 shutdown.
Doheny Desalination Project	MWDOC			Work is continuing on the Foundational Action Program Studies for both the Doheny Desal and the SJBA. It is expected that the NEW information developed will provide an impetus for the project to move forward.
Poseidon Resources Ocean Desalination Project in Huntington Beach				MWDOC staff prepared a response to the DRAFT Clean Energy Capital (CEC) Report on the Poseidon Huntington Beach Project and has included a staff report for the December 1 P&O Committee. OCWD will be holding a joint meeting of its Water Issues Committee and the Groundwater Producers on December 10 at 8:00 am on the CEC Report.
Orange County Water Reliability Study				Kick-off meetings have been held with MWDOC, OCWD and the full Workgroup. The kick-off meeting with MET will take place on Nov 26 to determine what level of information will be provided by MET with respect to modeling of the SWP, CRA

Description	Lead Agency	Status % Complete	Scheduled Completion Date	Comments
				and supplies from MET's various storage accounts.
Other Meetings/Work				
				<p>Karl Seckel participated in the South Orange County IRWMP Management Group. The Management Group requested the various workgroups to convene meetings to discuss the prioritization of:</p> <ul style="list-style-type: none"> • Water supplies, including recycled supplies, stormwater capture and groundwater quality • Flood • Water Use Efficiency • Watershed Management • Water Quality <p>I agreed to convene the Water Supply Group. Each group is to meet and report back to the full Management Group on December 1.</p>
				<p>Karl Seckel participated in the Water-Energy Team Program Advisory Group meeting in November. This effort was initiated based upon the shutdown of SONGS to ensure that cooperative efforts between the energy and water groups occurred on operations, coordination, outreach, efficiency and reliability (water and energy). The meeting included a review of discussions and updates from past meetings, a review of the 2014 Annual Report for the group prepared by SCE, an update on the energy outlook and rate cases before the PUC and a</p>

Description	Lead Agency	Status % Complete	Scheduled Completion Date	Comments
				<p>discussion on the drought issues from around the table. The group will continue to work together. The collective input from the group has improved the work by SCE on energy efficiency and resulted in a greater offering of programs by SCE and has afforded them a better understanding of water operations and the cost of energy in the business of providing water. I was able to share with the group the prior work MWDOC had initiated with the South Coast Air Quality Management District related to energy shortages along with some of the corollary information being developed towards the Orange County Water Reliability Study. The next meeting of the group will be in February 2015.</p>
				<p>Karl Seckel and Richard Bell attended the 2014 NWRI Clark Prize Conference where a number of presentations were made on research and innovations in Urban Water Sustainability. Discussions were held on:</p> <ul style="list-style-type: none"> • Research involving continuous monitoring of pathogens and chemical risk that will ultimately help move Direct Potable Reuse forward • Impacts of agricultural and farm practices on receiving waters resulting in depressed oxygen levels • IEUA master planning issues related to water supply reliability and sustainability • Multi-drug resistant “super bugs” in wastewater systems and the concern for water recycling and direct potable reuse • Forward osmosis and associated issues in high saline

Description	Lead Agency	Status % Complete	Scheduled Completion Date	Comments
				<p>water such as fracking water and in zero liquid discharge types of applications for wastewater or brackish water treatment</p> <ul style="list-style-type: none"> • Nano materials in the environment • Energy-Water Nexus and the ability to generate energy based on constituent gradients in the water <p>The event is a wonderful opportunity to hear about research and innovation toward meeting our future needs.</p>
				<p>Karl Seckel, Pat Meszaros and Director Susan Hinman attended the dedication ceremony at MET for the dedication of the Courtyard in honor of Jack Foley, former MET Chair and MWDOC representative on the MET Board. MWDOC's four MET Directors (Barbre, Dick, Ackerman and McKenney) were also in attendance. Mary Jane Foley and Jack's son John spoke at the ceremony.</p>
				<p>Karl Seckel and Keith Lyon hosted the Poseidon staff with John Kennedy from OCWD to discuss recent meetings with MET and what is needed with respect for the integration of the Poseidon Water into the OC water system.</p>

**Status of Ongoing WEROC Projects
November 2014**

Description	Comments
General Activities	<p>Kelly Hubbard attended the California Emergency Services Association, State Board Meeting on November 11, 2014 via conference call. Kelly is the incoming State Board Treasurer for 2015.</p> <p>Kelly provided a short presentation to the Industrial Environmental Coalition of Orange County (IECOC). IECOC is a professional association that provides monthly programs supporting the Compliance, Environmental Health and Safety community. Kelly's presentation provided the group with an overview of water preparedness and response in Orange County. A representative of the City of Irvine also spoke about City preparedness.</p>
Member Agency Coordination	<p>Ongoing – Joint Met/WEROC Exercise – WEROC hosted the Rolling Thunder Exercise at the WEROC South Emergency Operations Center on November 5th. An After Action/ Corrective Action Report has been included in the MWDOC Planning and Operations agenda for Board review. Kelly shared a preliminary version of this report at the WEROC Quarterly meeting and the MWDOC Member Agency Manager's Meeting. Both groups will receive the final report via email.</p> <p>MWDOC staff (Darcy Burke, Jessica Ouwerkerk, and Lisa Parson) participated in a Virtual Joint Information Center Training that the County Operational Area hosted to prepare exercise participants for joint information communications during the exercise. MET and several MWDOC member agencies attended as well.</p> <p>Lisa and Kelly participated in MET's Exercise/Simulation Team After Action meeting via conference call. Participants provided the MET Emergency Management staff with feedback on the planning process, the exercise and disaster response protocols. It appears that MET had a great exercise overall and that MET had a lot of great lessons learned. Some of these are reflected in the WEROC report as joint lessons.</p>

Description	Comments
	<p>The WEROC Quarterly Emergency Coordinators meeting was held on Monday, November 17th. The Orange County Intelligence Assessment Center (OCIAC) sent two staff to provide a presentation on SCADA and IT security for water utilities. They provided information on the type of threats being observed against utilities, as well as resources for assessing an agency's security and threats. Additionally, attendees participated in an After-Action discussion for the Rolling Thunder Exercise. This discussion was very beneficial for all in regards to response and communications protocols. Lessons learned from this discussion as they apply to WEROC is included in WEROC's After Action Report.</p> <p>Lisa and Kelly received a tour of the Emerald Bay Service District and an update on their emergency response program. Emerald Bay Services District has a robust Community Emergency Response Team (CERT) program.</p>
<p><i>Coordination with the County of Orange</i></p>	<p>Kelly & Lisa attended the Orange County Emergency Management Organization (OCEMO) monthly meeting at the City of Brea. Dr. Cheung from the Orange County Health Care Agency provided a presentation on Ebola and US response protocols. She emphasized the greater probability of being infected from Influenza and the importance of vaccination.</p> <p>Kelly attended the quarterly Orange County Drought Task Force. The task force is working on response protocols for if the drought were to become a prolonged response and more of an emergency within Orange County. The task force is looking at how to define what are drought trigger points within Orange County that would make it an emergency response concept, and not just a water utility operations and public information campaign. The Operational Area (OA) in coordination with WEROC and the task force has developed a monthly reporting format to send to the State Office of Emergency Services. WEROC and MWDOC staff will contribute efforts and actions being taken in OC to that report.</p> <p>Kelly attended the County Emergency Management Council and OA Executive Board meeting on November 12th as the voting representative of the Independent Special Districts of Orange County. The group received a presentation on the Silverado Canyon Fire (September 2014) and the resulting Debris Flow Plan for the canyons due to this burn area. The canyon area is highly</p>

Description	Comments
	<p>susceptible to mud flows if the canyon area was to have intense rain for short periods of time. The OA will be sharing a GIS map of the potential debris flow area for Irvine Ranch Water District to assess any potential impacts to their system and therefore water supply. Updates were also provided about the County's preparedness actions, exercises that the county participated in, an update on the San Onofre Nuclear Generation Station (SONGS) decommissioning, and the OCIAC Terrorism Update. Lastly, the group approved updates to the Operational Area Weapons of Mass Destruction Annex and the Joint Information System Annex.</p>
<p><i>Coordination with Outside Agencies</i></p>	<p>Ongoing: Kelly was asked to join the California Office of Emergency Services Southern Region Drought Conference Calls as the Region 1 Mutual Aid Coordinator for the California Water and Wastewater Agency Response Network (CalWARN). This is now a bi-weekly conference call to provide an update to the Southern Region and the State Operations Center (SOC) on drought impacts, activities and needs. The conference calls are serving as a way to share methods for assisting this group within the southern region.</p> <p>Kelly participated in the Cal WARN State Steering Committee conference call. Cal WARN has been asked to provide 4 breakout session presentations for the upcoming AWWA ACE Conference in Anaheim this spring. Kelly will be presenting in several of these sessions. There is also an ongoing effort to create a better Standard Operating Procedure for the Cal WARN agreement signature process, including the keeping of the documents and updating of the website. This has been an ongoing process which was complicated by a new website for the organization. The group is close to finishing this effort which will result in water and wastewater utilities being able to coordinate mutual aid statewide in a much more efficient manner.</p>
<p><i>WEROC Emergency Operations Center (EOC) Readiness</i></p>	<p>The radio test for MARS and WEROC corresponded with the EOC exercise for the month of November.</p> <p>Annual generator service was provided at the North EOC.</p> <p>Lisa continues to assist WEROC EOC staff, member agency staff and coordinating partners in</p>

Description	Comments
	<p>the process of downloading the In Case of Crisis phone application. This application for smartphones is a very efficient method for keeping plans and contacts updated and available to all volunteers. She is also working on incorporating comments and suggestions as people start to use the application and feedback from the exercise.</p>

Status of Water Use Efficiency Projects

November 2014

Description	Lead Agency	Status % Complete	Scheduled Completion or Renewal Date	Comments
Smart Timer Rebate Program	MWDSC	Ongoing	September 2015	For October 2014, 87 smart timers were installed in the residential sector and 2 in the commercial sector. For program water savings and implementation information, please see MWDOC Water Use Efficiency Program Savings and Implementation Report.
Rotating Nozzles Rebate Program	MWDSC	Ongoing	June 2015	For October 2014, 1,307 residential and 3,453 commercial 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	November 2014	In September 2014, a total of 12,333 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	June 2015	In October 2014, 1,223 high efficiency clothes washers and 831 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 Indoor Rebate Program	MWDSC	On-going	On-going	In October 2014, no indoor commercial devices were installed through this program.

Description	Lead Agency	Status % Complete	Scheduled Completion or Renewal Date	Comments
SoCal Water\$mart Commercial Rebate Program (cont.)				For program savings and implementation information, please see MWDOC Water Use Efficiency Program Savings and Implementation Report.
Industrial Process Water Use Reduction Program	MWDOC	84%	December 2014	<p>Survey scheduling is ongoing. A total of 41 Focused Surveys and 19 Comprehensive Surveys have been completed or are in progress. To date, 12 companies have signed Incentive Agreements. Updated discharger lists have been obtained, and outreach is continuing to sites with feasible water savings potential.</p> <p>Fabrica Fine Carpets has signed an Implementation Agreement for a water reuse project. The project is expected to complete in February 2015. Additionally, UCI Medical Center in Orange is in the process of signing an Implementation Agreement for water reduction devices. A focused survey was performed at Ricoh on September 25, 2014.</p>
MWDOC Conservation Meeting	MWDOC	On-going	Monthly	This month's meeting was held on November 6, 2014 and was hosted by the City of Garden Grove. The next meeting will be on December 4, 2014 in the City of Anaheim.
Metropolitan Conservation Meeting	MWDSC	On-going	Monthly	This month's meeting was held on November 20, 2014. The next meeting will be December 18, 2014 at Metropolitan.
Water Smart Hotel Program	MWDOC	75%	June 2015	<p>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.</p> <p>No surveys were scheduled in November. One hotel made a rebate reservation – the Newport Channel Inn - for high efficiency toilets.</p>
Turf Removal Program	MWDOC	On-going	Ongoing	In October 2014, 78 rebates were paid, representing 361,021 square feet of turf removed in Orange County. To date, the

Description	Lead Agency	Status % Complete	Scheduled Completion or Renewal Date	Comments
Turf Removal Program (cont.)				<p>Turf Removal Program has removed approximately 2,390,594 square feet of turf.</p> <p>For program savings and implementation information, please see MWDOC Water Use Efficiency Program Savings and Implementation Report.</p>
California Sprinkler Adjustment Notification System	MWDOC	100%	September 2014	<p>MWDOC was awarded a grant from the Bureau of Reclamation to develop 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.</p> <p>Staff is now gearing up to develop the Base Irrigation Schedule Calculator to be used in conjunction with CSANS.</p>
Public Spaces Program	MWDOC	15%	December 2015	<p>Through the Integrated Regional Watershed Management (IRWM) process, MWDOC is implementing a Proposition 84 grant to target the installation of comprehensive landscape improvements for publicly owned landscape properties throughout the South Orange County IRWM Plan area.</p> <p>The program 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.</p> <p>To date, 10 cities, water districts, or other special districts (i.e., school districts) have applied for funding through this program, and four project proposals have been received.</p>

Description	Lead Agency	Status % Complete	Scheduled Completion or Renewal Date	Comments
Home Certification Program	MWDOC	10%	July 2015	<p>This program provides single-family sites with indoor and outdoor audits to identify areas for water savings improvements and opportunities. The program also provides rebates for the installation of residential water efficiency devices, including smart timers and high efficiency rotating nozzles.</p> <p>In October 2014, MWDOC received forty-two (42) applications for the Home Certification Program. Fifty-three (53) surveys were conducted, and survey results are pending.</p>
Landscape Irrigation Survey Program	MWDSC	Ongoing	June 2016	<p>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. Eligible landscapes include commercial and industrial sites, homeowner association common areas, and institutional sites such as schools, parks, and government facilities.</p> <p>To date, 122 sites in the MWDOC service area have contacted Metropolitan to request surveys.</p>
Spray to Drip Conversion Pilot Program	MWDOC	28%	April 2016	<p>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 sites will be encouraged to convert their existing spray nozzles to drip.</p> <p>To date, 72 residential applications and 13 commercial applications have been received. Of these, 31 residential sites and two commercial sites have been completed.</p>
CII Performance-Based Water Use Efficiency Program	MWDOC	2%	December 2015	<p>This program will provide enhanced rebate incentives to commercial, industrial, and institutional sites and large-</p>

Description	Lead Agency	Status % Complete	Scheduled Completion or Renewal Date	Comments
CII Performance-Based Water Use Efficiency Program (cont.)				landscape properties (landscapes ≥ 1 acre). The program is scheduled to launch during the fourth Quarter of 2014.
Landscape Training and Outreach	MWDOC	15%	Ongoing	<p>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.</p> <p>After the completion of the Pilot Program, the steering committee met to review the Program's successes and lessons learned. The OCGF program held two events during Fall 2014 (October 12th and October 18th) and four more events are scheduled for Spring 2015.</p>

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-14	1,223	2.81	2,378	12.68	99,105	2,737	17,585
Smart Timer Program - Irrigation Timers	2004	October-14	89	0.51	842	96.50	12,074	4,177	23,879
Rotating Nozzles Rebate Program	2007	October-14	4,760	1.59	22,256	129.87	394,658	2,085	8,492
SoCal WaterSmart Commercial Plumbing Fixture Rebate Program	2002	October-14	0	0.00	603	4.89	45,962	3,420	30,400
Water Smart Landscape Program [1]	1997	September-14	12,333	880.07	12,333	2,643.22	12,333	10,333	60,469
Industrial Process Water Use Reduction Program	2006	September-14	0	0.00	0	0.00	11.00	252	1,004
Turf Removal Program [3]	2010	October-14	361,021	4.21	760,618	106	2,390,594	335	810
High Efficiency Toilet (HET) Program	2005	October-14	831	2.95	3,077	43.63	35,257	1,303	8,657
Home Water Certification Program	2013	October-14	53	0.104	75	0.080	153	3,599	1,835
Synthetic Turf Rebate Program	2007		0	0	0	0	685,438	96	469
Ultra-Low-Flush-Toilet Programs [2]	1992		0	0	0	0	363,926	13,452	162,561
Home Water Surveys [2]	1995		0	0	0	0	11,867	160	1,708
Showerhead Replacements [2]	1991		0	0	0	0	270,604	1,667	19,083
Total Water Savings All Programs			892	3,038	802,182	4,321,982	40,021	335,119	

(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 01/02	FY 02/03	FY 03/04	FY 04/05	FY 05/06	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	Total	Current FY Water Savings Ac/Ft (Cumulative)	Cumulative Water Savings across all Fiscal Years
Brea	17	107	178	132	143	132	175	156	42	186	144	93	115	43	1,663	0.25	293.52
Buena Park	9	45	88	81	84	85	114	146	59	230	145	105	106	38	1,335	0.20	218.27
East Orange CWD RZ	3	8	20	20	11	18	22	17	3	23	10	10	8	4	177	0.02	32.87
El Toro WD	21	88	108	103	83	91	113	130	32	162	112	134	121	48	1,346	0.23	221.31
Fountain Valley	36	127	209	196	178	205	219	243	72	289	158	115	102	36	2,185	0.22	400.54
Garden Grove	39	173	278	243	243	238	304	332	101	481	236	190	162	54	3,074	0.27	545.83
Golden State WC	37	195	339	374	342	339	401	447	168	583	485	265	283	124	4,382	0.66	762.02
Huntington Beach	114	486	857	738	680	761	750	751	211	963	582	334	295	105	7,627	0.62	1,425.58
Irvine Ranch WD	159	626	1,087	1,093	1,445	1,972	2,052	1,844	1,394	2,621	2,170	1,763	1,664	719	20,609	3.92	3,423.22
La Habra	8	40	86	81	66	96	136	83	22	179	128	82	114	32	1,153	0.19	190.71
La Palma	3	5	13	21	18	33	35	51	25	76	46	34	25	11	396	0.05	64.76
Laguna Beach CWD	17	88	119	84	68	57	77	77	27	96	57	34	37	8	850	0.04	156.00
Mesa Water	24	117	228	240	212	239	249	246	73	232	176	114	86	27	2,263	0.15	431.12
Moulton Niguel WD	158	630	841	640	570	652	716	742	250	1,127	679	442	421	200	8,068	0.84	1,417.01
Newport Beach	17	144	343	277	243	243	270	259	57	197	142	116	92	35	2,437	0.20	470.08
Orange	58	247	304	358	330	366	365	403	111	349	262	218	163	54	3,588	0.32	672.33
Orange Park Acres	-	-	-	-	-	4	8	-	-	-	-	-	-	-	12	0.00	2.76
San Juan Capistrano	16	95	120	107	102	109	103	127	43	190	110	76	73	39	1,310	0.21	229.34
San Clemente	32	182	235	170	136	204	261	278	63	333	206	140	94	48	2,382	0.26	421.19
Santa Margarita WD	140	510	743	573	592	654	683	740	257	1,105	679	553	662	316	8,207	1.70	1,380.90
Seal Beach	13	28	57	39	46	47	46	57	7	81	51	31	29	11	543	0.05	95.72
Serrano WD	9	16	54	39	39	30	31	23	7	21	20	13	10	8	320	0.05	62.14
South Coast WD	35	138	165	97	103	107	130	148	43	183	112	89	79	26	1,455	0.14	253.99
Trabuco Canyon WD	10	63	76	58	44	69	60	62	28	82	62	30	45	20	709	0.10	124.60
Tustin	21	89	152	138	127	152	146	144	45	174	97	78	59	20	1,442	0.11	269.54
Westminster	37	159	235	196	186	213	171	233	74	329	208	121	82	41	2,285	0.24	412.67
Yorba Linda	36	214	342	355	333	288	350	367	117	394	273	181	167	66	3,483	0.35	644.87
MWDOC Totals	1,069	4,620	7,277	6,453	6,424	7,406	7,987	8,106	3,331	10,686	7,350	5,365	5,094	2,133	83,301	11.39	14,622.88

Anaheim	917	677	904	1,364	701	854	847	781	860	910	477	331	285	119	10,027	0.63	1,911.36
Fullerton	40	196	369	289	263	269	334	330	69	397	270	200	186	88	3,300	0.47	568.21
Santa Ana	15	69	188	269	244	236	235	257	87	355	190	163	131	38	2,477	0.19	482.61
Non-MWDOC Totals	972	942	1,461	1,922	1,208	1,359	1,416	1,368	1,016	1,662	937	694	602	245	15,804	1.29	2,962.17

Orange County Totals	2,041	5,562	8,738	8,375	7,632	8,765	9,403	9,474	4,347	12,348	8,287	6,059	5,696	2,378	99,105	12.68	17,585.04
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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		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	3	9	0	0	2	0	8	0	9	8	4	0	31	5	68	71	344.61
Buena Park	3	1	0	0	0	0	4	19	3	0	0	0	2	10	12	30	64.81
East Orange CWD RZ	0	0	0	0	1	0	5	0	2	0	0	0	2	0	13	0	2.95
El Toro WD	0	25	2	18	5	5	26	2	7	2	11	0	1	5	66	326	1,747.34
Fountain Valley	1	0	0	6	2	2	8	2	3	2	4	0	3	0	41	17	87.74
Garden Grove	2	1	6	0	5	4	7	0	5	2	9	0	8	13	58	26	82.59
Golden State WC	1	2	9	22	7	4	13	3	9	49	9	25	28	3	123	130	413.71
Huntington Beach	13	1	6	27	6	36	15	4	18	33	20	35	11	0	134	160	547.56
Irvine Ranch WD	29	56	14	145	28	153	267	71	414	135	71	59	30	82	1,149	1,431	6,596.74
La Habra	0	0	0	21	0	0	3	0	4	7	2	0	0	4	17	33	112.26
La Palma	0	0	0	0	0	0	1	0	1	0	2	0	0	0	4	0	0.51
Laguna Beach CWD	2	0	2	14	4	1	109	2	76	2	71	0	3	0	301	19	123.18
Mesa Water	6	7	13	7	7	22	21	2	10	2	15	2	9	13	125	86	401.85
Moulton Niguel WD	21	23	17	162	36	60	179	31	51	74	40	45	16	53	485	530	1,898.58
Newport Beach	10	27	7	58	6	0	275	12	242	26	168	75	7	0	976	345	1,648.80
Orange	5	2	2	13	5	8	25	0	20	24	13	9	8	20	155	131	556.73
San Juan Capistrano	10	0	7	49	13	1	103	2	14	18	6	11	1	10	175	100	359.23
San Clemente	81	20	13	209	46	11	212	17	26	7	28	2	16	12	976	346	1,756.41
Santa Margarita WD	25	44	10	152	61	53	262	7	53	171	64	93	21	198	607	892	2,766.64
Santiago CWD	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00
Seal Beach	0	0	0	1	0	0	0	3	1	0	1	36	0	11	2	51	68.21
Serrano WD	0	0	11	0	4	0	3	0	1	0	0	0	0	0	19	0	4.66
South Coast WD	11	6	3	10	13	3	78	10	13	16	8	4	4	18	162	146	639.69
Trabuco Canyon WD	1	0	2	0	2	10	12	0	6	0	2	0	2	0	70	103	620.72
Tustin	7	9	10	14	10	0	11	0	8	4	9	1	8	14	67	49	174.25
Westminster	3	0	3	0	1	1	2	0	1	1	2	0	13	16	41	30	107.31
Yorba Linda	8	5	5	21	25	0	22	0	20	0	12	5	16	2	189	85	460.41
MWDOC Totals	242	238	142	949	289	374	1,671	185	1,017	583	571	402	240	489	6,035	5,137	21,587.50

Anaheim	9	59	5	46	12	11	23	60	19	10	9	26	3	51	123	412	1,659.35
Fullerton	2	2	2	39	9	33	22	51	9	29	8	0	28	0	102	154	493.25
Santa Ana	2	4	1	8	8	0	6	5	8	19	7	8	5	26	41	70	138.64
Non-MWDOC Totals	13	65	8	93	29	44	51	116	36	58	24	34	36	77	266	636	2,291.24
Orange County Totals	255	303	150	1,042	318	418	1,722	301	1,053	641	595	436	276	566	6,301	5,773	23,879

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

Agency	FY 09/10				FY 10/11				FY 11/12				FY 12/13				FY 13/14				FY 14/15				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.	Res	Comm.	Res	Comm.	Res	Comm.	Res	Comm.	Res	Comm.	Res	Comm.	Res	Comm.	Res	Comm.	Res	Comm.	Res	Comm.	Res	Comm.	Res	Comm.	Res	Comm.	
Brea	8	100	0	32	0	0	130	0	0	65	120	0	84	0	0	115	0	0	456	220	0	0	0	0	0	0	0	8.11	
Buena Park	0	0	2,535	29	0	0	32	0	0	65	0	0	53	0	0	56	0	0	272	75	2,535	0	0	0	0	0	0	448.58	
East Orange	0	0	0	0	0	0	340	0	0	55	0	0	30	0	0	170	0	0	700	0	0	0	0	0	0	0	8.18		
El Toro	145	2,874	890	174	0	0	357	76	0	23	6,281	0	56	3,288	0	44	8,684	0	887	21,493	890	0	0	0	0	0	0	370.40	
Fountain Valley	21	0	0	83	0	0	108	0	0	35	0	0	0	0	0	69	0	0	450	0	0	0	0	0	0	0	7.16		
Garden Grove	151	45	0	38	0	0	119	0	0	95	0	0	80	0	0	62	0	0	742	151	0	0	0	0	0	0	15.43		
Golden State	280	29	0	303	943	0	294	0	0	257	2,595	0	192	0	0	352	964	0	1,922	4,531	0	0	0	0	0	0	77.14		
Huntington Beach	39	3,420	305	203	625	0	458	0	0	270	0	0	120	0	0	173	0	0	1,678	4,909	2,681	0	0	0	0	0	721.60		
Irvine Ranch	1,034	54,441	1,479	2,411	2,861	0	1,715	4,255	0	25,018	1,014	0	11,010	4,257	0	627	55	0	44,019	79,426	2,004	0	0	0	0	0	2,472.43		
La Habra	0	273	0	0	0	0	33	90	0	0	0	0	15	0	0	17	338	0	89	1,236	900	0	0	0	0	0	215.19		
La Palma	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	0	0	0	0	0	0	0	0.24		
Laguna Beach	191	0	0	156	0	0	763	0	0	3,596	0	0	2,948	878	0	35	0	0	7,905	925	0	0	0	0	0	0	96.10		
Mesa Water	195	83	0	118	0	0	297	277	0	270	0	0	361	0	0	98	0	0	1,620	385	343	0	0	0	0	0	112.98		
Moulton Niguel	234	0	959	1,578	0	0	1,225	0	0	512	1,385	0	361	227	0	39	3,508	0	4,672	12,123	2,945	0	0	0	0	0	858.13		
Newport Beach	92	4,781	0	337	1,208	0	640	3,273	0	25,365	50	0	19,349	6,835	0	187	668	0	46,057	17,554	0	0	0	0	0	0	708.90		
Orange	129	0	0	135	30	0	343	0	0	264	0	0	245	120	0	163	668	0	2,398	981	0	0	0	0	0	0	50.13		
San Clemente	729	1,299	0	2,612	851	0	4,266	117	1,343	631	172	0	415	5,074	0	233	0	0	9,470	7,538	1,343	0	0	0	0	0	359.05		
San Juan Capistrano	656	5,709	0	1,452	0	0	949	0	0	684	30	0	370	0	0	92	732	0	4,707	8,131	0	0	0	0	0	0	228.86		
Santa Margarita	1,731	937	611	3,959	3,566	0	4,817	0	0	983	0	0	389	0	0	299	1,513	0	13,422	6,084	611	0	0	0	0	0	392.67		
Seal Beach	0	291	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	115	291	0	0	0	0	0	0	8.58		
Serrano	1,498	0	0	364	0	0	58	0	0	190	0	0	105	0	0	0	0	0	2,333	0	0	0	0	0	0	0	42.79		
South Coast	0	0	0	318	1,772	0	688	359	0	435	0	0	70	0	0	20	750	0	1,720	3,014	0	0	0	0	0	0	63.39		
Trabuco Canyon	1,357	791	0	0	0	0	379	0	0	34	0	0	0	0	0	0	0	0	1,900	791	0	0	0	0	0	0	51.53		
Tustin	314	0	0	512	0	0	476	1,013	0	378	0	0	329	0	0	182	0	0	2,763	1,013	0	0	0	0	0	0	54.03		
Westminster	80	0	0	0	0	0	26	0	0	15	0	0	0	0	0	54	0	0	286	0	0	0	0	0	0	0	4.97		
Yorba Linda	371	3,256	0	529	0	0	559	0	0	730	0	0	40	990	0	375	0	0	3,607	4,359	500	0	0	0	0	0	240.19		
MWDOC Totals	9,255	78,329	6,779	15,343	11,856	0	19,072	9,460	1,343	59,970	11,647	0	36,622	21,669	0	3,632	17,880	0	154,200	175,230	14,752	0	0	0	0	0	7,616.76		
Anaheim	273	164	105	372	382	0	742	38,554	0	459	813	0	338	0	0	314	0	0	2,895	39,913	105	0	0	0	0	0	539.53		
Fullerton	48	0	1,484	416	0	0	409	0	0	119	0	0	107	0	0	290	0	0	1,930	64	1,484	0	0	0	0	0	290.55		
Santa Ana	48	572	0	53	0	0	22	65	0	99	0	0	86	2,533	0	310	0	0	859	3,226	0	0	0	0	0	0	45.36		
Non-MWDOC Totals	369	736	1,589	841	382	0	1,173	38,619	0	677	813	0	531	2,533	0	914	0	0	5,684	43,203	1,589	0	0	0	0	0	875.44		
Orange County Totals	9,624	79,065	8,368	16,184	12,238	0	20,245	48,079	1,343	60,647	12,460	0	37,153	24,202	0	4,546	17,880	0	159,884	218,433	16,341	0	0	0	0	0	8,492.21		

SOCAL WATER\$MART COMMERCIAL PLUMBING FIXTURES REBATE PROGRAM^[1]

INSTALLED BY AGENCY

through MWDOC and Local Agency Conservation Programs

Agency	FY 02/03	FY 03/04	FY 04/05	FY 05/06	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	Totals	Cumulative Water Savings across all Fiscal Years
Brea	51	0	22	52	2	27	113	24	4	1	234	0	2	532	300
Buena Park	83	28	55	64	65	153	432	122	379	290	5	23	53	1,762	797
East Orange CWD RZ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
El Toro WD	23	73	42	5	2	0	92	143	1	137	0	212	0	753	452
Fountain Valley	94	2	59	35	63	17	35	0	2	314	0	0	0	622	463
Garden Grove	199	51	297	34	136	5	298	130	22	0	4	1	0	1,198	1,171
Golden State WC	197	34	232	80	531	46	414	55	68	135	0	1	0	1,804	1,522
Huntington Beach	191	73	185	82	209	48	104	126	96	156	104	144	5	1,528	1,213
Irvine Ranch WD	1,085	87	325	1,044	429	121	789	2,708	1,002	646	1,090	451	9	10,092	5,150
La Habra	37	52	45	60	16	191	75	53	4	0	0	0	0	543	429
La Palma	0	0	0	5	0	0	140	21	0	0	0	0	0	166	65
Laguna Beach CWD	30	2	18	9	12	20	137	189	0	0	0	27	0	446	250
Mesa Water	155	22	130	241	141	141	543	219	669	41	6	0	58	2,790	1,621
Moulton Niguel WD	74	65	172	3	0	9	69	151	6	0	0	0	0	580	659
Newport Beach	230	9	77	24	94	98	27	245	425	35	0	0	1	1,269	985
Orange	144	22	553	127	88	18	374	67	1	73	1	271	0	1,823	1,400
San Juan Capistrano	34	21	181	0	6	2	1	1	0	0	0	14	0	260	337
San Clemente	36	5	95	40	173	2	18	43	0	19	0	0	0	431	318
Santa Margarita WD	16	3	56	0	0	6	23	11	0	0	0	0	0	115	165
Santiago CWD	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Seal Beach	34	44	40	61	45	1	2	124	0	0	0	0	0	354	346
Serrano WD	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
South Coast WD	31	8	54	8	4	9	114	56	422	84	148	0	0	938	356
Triabuco Canyon WD	1	0	6	0	0	0	4	0	0	0	0	0	0	11	13
Tustin	114	16	82	14	7	115	145	25	230	0	0	0	75	832	647
Westminster	109	32	153	57	104	40	161	16	63	35	1	28	0	815	814
Yorba Linda	36	12	42	4	118	10	24	8	30	0	1	0	0	285	447
MWDOC Totals	3,004	661	2,921	2,049	2,245	1,079	4,134	4,537	3,424	1,966	1,594	1,172	203	29,949	19,921
Anaheim	400	947	362	1,113	780	766	3,298	582	64	48	165	342	347	10,256	5,452
Fullerton	41	138	270	91	96	133	579	29	4	0	94	0	53	1,556	1,277
Santa Ana	153	589	227	624	373	493	815	728	39	12	16	17	0	4,201	3,750
Non-MWDOC Totals	594	1,674	859	1,828	1,249	1,392	4,692	1,339	107	60	275	359	400	16,013	10,479
Orange County Totals	3,598	2,335	3,780	3,877	3,494	2,471	8,826	5,876	3,531	2,026	1,869	1,531	603	45,962	30,400

[1] Retrofit devices include ULF Toilets and Urinals, High Efficiency Toilets and Urinals, 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 05-06	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	Overall Water Savings To Date (AF)
Brea	0	0	0	0	0	0	22	22	22	22	43.96
Buena Park	0	0	0	0	17	103	101	101	101	101	369.00
East Orange CWD RZ	0	0	0	0	0	0	0	0	0	0	0.00
El Toro WD	109	227	352	384	371	820	810	812	812	812	4,103.66
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	0	14	34	32	34	32	32	32	32	170.91
Huntington Beach	0	0	0	0	31	33	31	31	31	31	119.67
Irvine Ranch WD	638	646	708	1,008	6,297	6,347	6,368	6,795	6,797	6,720	32,030.48
Laguna Beach CWD	0	0	0	57	141	143	141	124	124	124	618.04
La Habra	0	0	0	23	22	24	22	22	22	22	116.32
La Palma	0	0	0	0	0	0	0	0	0	0	0.00
Mesa Water	170	138	165	286	285	288	450	504	511	511	2,467.75
Moulton Niguel WD	57	113	180	473	571	595	643	640	675	675	3,493.82
Newport Beach	27	23	58	142	171	191	226	262	300	300	1,222.88
Orange	0	0	0	0	0	0	0	0	0	0	0.00
San Clemente	165	204	227	233	247	271	269	269	299	323	2,005.05
San Juan Capistrano	0	0	0	0	0	0	0	0	0	0	0.00
Santa Margarita WD	619	618	945	1,571	1,666	1,746	1,962	1,956	2,274	2,274	12,026.83
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	0	62	117	108	110	118	118	118	118	681.05
Trabuco Canyon WD	0	0	12	49	48	62	60	60	60	60	294.86
Tustin	0	0	0	0	0	0	0	0	0	0	0.00
Westminster	0	0	10	18	18	20	18	18	18	18	99.76
Yorba Linda WD	0	0	0	0	0	0	0	0	0	0	0.00
MWDOC Totals	1,785	1,969	2,733	4,395	10,025	10,787	11,273	11,766	12,196	12,143	59,864.0
Anaheim	0	0	0	0	142	146	144	190	190	190	605.27
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	0	142	146	144	190	190	190	605.27
Orange Co. Totals	1,785	1,969	2,733	4,395	10,167	10,933	11,417	11,956	12,386	12,333	60,469.31

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	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
Buena Park	0	1	0	0	0	0	0	0	1	54	311
East Orange	0	0	0	0	0	0	0	0	0	0	0
El Toro	0	0	0	0	0	0	0	0	0	0	0
Fountain Valley	0	0	0	0	0	0	0	0	0	0	0
Garden Grove	0	0	0	0	0	0	0	0	0	0	0
Golden State	1	0	0	0	0	0	0	0	1	3	19
Huntington Beach	0	0	0	0	0	2	0	0	2	54	119
Irvine Ranch	0	0	2	1	1	1	1	0	6	98	268
La Habra	0	0	0	0	0	0	0	0	0	0	0
La Palma	0	0	0	0	0	0	0	0	0	0	0
Laguna Beach	0	0	0	0	0	0	0	0	0	0	0
Mesa Water	0	0	0	0	0	0	0	0	0	0	0
Moulton Niguel	0	0	0	0	0	0	0	0	0	0	0
Newport Beach	0	0	0	0	0	0	0	0	0	0	0
Orange	1	0	0	0	0	0	0	0	1	43	287
San Juan Capistrano	0	0	0	0	0	0	0	0	0	0	0
San Clemente	0	0	0	0	0	0	0	0	0	0	0
Santa Margarita	0	0	0	0	0	0	0	0	0	0	0
Seal Beach	0	0	0	0	0	0	0	0	0	0	0
Serrano	0	0	0	0	0	0	0	0	0	0	0
South Coast	0	0	0	0	0	0	0	0	0	0	0
Trabuco Canyon	0	0	0	0	0	0	0	0	0	0	0
Tustin	0	0	0	0	0	0	0	0	0	0	0
Westminster	0	0	0	0	0	0	0	0	0	0	0
Yorba Linda	0	0	0	0	0	0	0	0	0	0	0
MWDOC Totals	2	1	2	1	1	3	1	0	11	252	1004

[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 MWD OC and Local Agency Conservation Programs

Agency	FY 10/11		FY 11/12		FY 12/13		FY 13/14		FY 14/15		Total Program		Cumulative Water Savings across all Fiscal Years
	Res	Comm.	Res	Comm.	Res	Comm.	Res	Comm.	Res	Comm.	Res	Comm.	
Brea	0	0	3,397	9,466	7,605	0	5,697	0	2,972	0	19,671	9,466	12.41
Buena Park	0	0	0	0	0	0	0	0	0	0	0	0	-
East Orange	0	0	0	0	0	0	1,964	0	665	0	2,629	0	0.64
El Toro	0	0	4,723	0	4,680	72,718	4,582	0	3,963	2,975	17,948	75,693	37.41
Fountain Valley	0	0	1,300	0	682	7,524	4,252	0	1,056	0	7,290	7,524	5.51
Garden Grove	0	46,177	14,013	0	4,534	0	8,274	0	0	0	26,821	46,177	44.39
Golden State	0	0	42,593	30,973	31,813	3,200	32,725	8,424	16,318	0	123,449	42,597	69.71
Huntington Beach	801	3,651	27,630	48,838	9,219	12,437	20,642	0	9,255	37,650	67,547	102,576	67.38
Irvine Ranch	5,423	12,794	6,450	1,666	32,884	32,384	36,584	76,400	55,037	8,471	136,378	131,715	85.23
La Habra	0	7,775	0	8,262	0	0	0	0	0	0	0	16,037	10.07
La Palma	0	0	0	0	0	0	0	0	0	0	0	0	-
Laguna Beach	978	0	2,533	0	2,664	1,712	4,586	226	4,903	0	15,664	1,938	5.97
Mesa Water	0	0	6,777	0	10,667	0	22,246	0	19,262	0	58,952	0	17.20
Moulton Niguel	956	16,139	4,483	26,927	11,538	84,123	14,739	40,741	33,446	114,837	65,162	282,767	106.03
Newport Beach	0	0	3,454	0	3,548	2,346	894	0	2,928	0	10,824	2,346	5.07
Orange	0	0	12,971	0	15,951	8,723	11,244	0	10,120	199,116	50,286	207,839	50.07
San Clemente	0	0	21,502	0	16,062	13,165	18,471	13,908	13,958	0	69,993	27,073	35.34
San Juan Capistrano	0	0	22,656	103,692	29,544	27,156	12,106	0	9,580	832	73,886	131,680	99.41
Santa Margarita	4,483	5,561	1,964	11,400	10,151	11,600	17,778	48,180	42,921	145,013	77,297	221,754	68.43
Seal Beach	0	0	0	0	3,611	0	0	0	869	0	4,480	0	1.64
Serrano	0	0	0	0	0	0	2,971	0	0	0	2,971	0	0.83
South Coast	0	16,324	6,806	0	9,429	4,395	15,162	116,719	12,316	1,980	43,713	139,418	59.97
Trabuco Canyon	0	0	272	0	1,542	22,440	2,651	0	1,366	0	5,831	22,440	11.16
Tustin	0	0	0	0	9,980	0	1,410	0	2,480	0	13,870	0	4.93
Westminster	0	0	0	0	0	0	0	0	0	0	0	0	-
Yorba Linda	11,349	0	0	0	0	0	0	0	924	5,405	12,273	5,405	8.83
MWD OC Totals	23,990	108,421	183,524	241,224	216,104	303,923	238,978	304,598	244,339	516,279	906,935	1,474,445	807.63

Anaheim	0	0	0	0	0	0	0	0	0	0	0	0	-
Fountain Valley	0	0	0	0	0	0	0	9,214	0	0	0	9,214	2.58
Santa Ana	0	0	0	0	0	0	0	0	0	0	0	0	-
Non-MWD OC Totals	0	0	0	0	0	0	0	9,214	0	0	0	9,214	2.58

Orange County Totals	23,990	108,421	183,524	241,224	216,104	303,923	238,978	313,812	244,339	516,279	906,935	1,483,659	810.21
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[1] Installed device numbers are listed as square feet

HIGH EFFICIENCY TOILETS (HETs) INSTALLED BY AGENCY

through MWDOC and Local Agency Conservation Programs

Agency	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	Total	Cumulative Water Savings across all Fiscal Years
Brea	0	2	7	43	48	8	0	0	38	43	189	34.98
Buena Park	0	1	2	124	176	7	0	0	96	77	483	95.89
East Orange CWD RZ	0	0	10	12	1	0	0	0	13	3	39	8.47
El Toro WD	0	392	18	75	38	18	0	133	218	96	988	231.78
Fountain Valley	0	69	21	262	54	17	0	0	41	27	491	133.68
Garden Grove	0	14	39	443	181	24	0	0	63	109	873	211.94
Golden State WC	2	16	36	444	716	37	80	2	142	113	1,588	372.99
Huntington Beach	2	13	59	607	159	76	0	0	163	191	1,270	285.53
Irvine Ranch WD	29	1,055	826	5,088	2,114	325	0	1,449	810	586	12,282	3,101.32
Laguna Beach CWD	0	2	17	91	28	11	0	0	45	49	243	49.07
La Habra	0	3	18	296	34	20	0	0	37	37	445	113.12
La Palma	0	1	10	36	26	13	0	0	21	22	129	26.64
Mesa Water	0	247	19	736	131	7	0	0	174	66	1,380	372.90
Moulton Niguel WD	0	20	104	447	188	46	0	0	400	440	1,645	286.81
Newport Beach	0	5	19	163	54	13	0	0	49	64	367	80.39
Orange	1	20	62	423	79	40	0	1	142	84	852	199.69
San Juan Capistrano	0	10	7	76	39	11	0	0	35	42	220	45.92
San Clemente	0	7	22	202	66	21	0	0	72	68	458	100.69
Santa Margarita WD	0	5	14	304	151	44	0	0	528	361	1,407	205.48
Seal Beach	0	678	8	21	12	1	0	2	17	19	758	274.46
Serrano WD	2	0	1	13	5	0	0	0	2	8	31	6.85
South Coast WD	2	2	29	102	41	12	23	64	102	89	466	79.46
Trabuco Canyon WD	0	0	4	23	23	0	0	0	10	32	92	16.30
Tustin	0	186	28	387	479	17	0	0	64	34	1,195	328.90
Westminster	0	17	25	541	167	23	0	0	35	37	845	228.29
Yorba Linda WD	0	14	89	323	96	18	0	0	40	68	648	166.53
MWDOC Totals	38	2,779	1,494	11,282	5,106	809	103	1,651	3,357	2,765	29,384	7,058.08

Anaheim	0	255	78	2,771	619	114	0	0	156	202	4,195	1,153.95
Fullerton	0	4	28	286	60	23	0	0	61	83	545	125.21
Santa Ana	0	11	25	925	89	23	0	0	33	27	1,133	319.87
Non-MWDOC Totals	0	270	131	3,982	768	160	0	0	250	312	5,873	1,599.03

Orange County Totals	38	3,049	1,625	15,264	5,874	969	103	1,651	3,607	3,077	35,257	8,657.11
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HOME WATER SURVEYS PERFORMED BY AGENCY

through MWDOC and Local Agency Conservation Programs

Agency	FY 13/14		FY 14/15		Total		Cumulative Water Savings
	Surveys	Cert Homes	Surveys	Cert Homes	Surveys	Cert Homes	
Brea	1	0	0	0	1	0	0.02
Buena Park	0	0	0	0	0	0	0.00
East Orange	19	0	1	0	20	0	0.45
El Toro	0	0	3	0	3	0	0.00
Fountain Valley	3	0	3	0	6	0	0.07
Garden Grove	0	0	5	0	5	0	0.00
Golden State	0	0	0	0	0	0	0.00
Huntington Beach	2	0	1	0	3	0	0.05
Irvine Ranch	1	0	0	0	1	0	0.02
La Habra	0	0	0	0	0	0	0.00
La Palma	0	0	0	0	0	0	0.00
Laguna Beach	4	0	4	0	8	0	0.09
Mesa Water	0	0	0	0	0	0	0.00
Moulton Niguel	4	0	4	0	8	0	0.09
Newport Beach	2	0	6	0	8	0	0.05
Orange	2	0	11	0	13	0	0.05
San Clemente	15	0	7	0	22	0	0.35
San Juan Capistrano	4	0	10	0	14	0	0.09
Santa Margarita	15	0	9	1	24	1	0.35
Serrano	0	0	1	0	1	0	0.00
South Coast	6	0	3	0	9	0	0.14
Trabuco Canyon	0	0	1	0	1	0	0.00
Tustin	0	0	1	0	1	0	0.00
Westminster	0	0	0	0	0	0	0.00
Yorba Linda	0	0	1	0	1	0	0.00
MWDOC Totals	78	0	71	1	149	1	1.83

Anaheim	0	0	0	0	0	0	0.00
Fullerton	0	0	4	0	4	0	0.00
Santa Ana	0	0	0	0	0	0	0.00
Non-MWDOC Totals	0	0	4	0	4	0	0.00

Orange County Totals	78	0	75	1	153	1	1.835
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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
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[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	988	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
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