

MEETING OF THE  
BOARD OF DIRECTORS OF THE  
MUNICIPAL WATER DISTRICT OF ORANGE COUNTY  
Jointly with the  
**PLANNING & OPERATIONS COMMITTEE**  
December 5, 2011, 8:30 a.m.  
Conference Room 101

**Committee:**

Director Royce, Chairman  
Director Clark  
Director Hinman

**Staff:** K. Hunt, K. Seckel,  
R. Bell, J. Berg, D. Cordero,  
K. Davanaugh

Ex Officio Member: J. Finnegan

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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 PARTICIPATION**

**ITEMS RECEIVED TOO LATE TO BE AGENDIZED**

Determine there is a need to take immediate action on item(s) and that the need for action came to the attention of the District subsequent to the posting of the Agenda. (Requires a unanimous vote of the Committee)

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

Pursuant to Government Code section 54957.5, non-exempt public records that relate to open session agenda items and are distributed to a majority of the Board less than seventy-two (72) hours prior to the meeting will be available for public inspection in the lobby of the District's business office located at 18700 Ward Street, Fountain Valley, California 92708, during regular business hours. When practical, these public records will also be made available on the District's Internet Web site, accessible at <http://www.mwdoc.com>.

**DISCUSSION ITEMS**

1. STATUS REPORT ON SOUTH ORANGE COASTAL OCEAN DESALINATION PROJECT PARTICIPANT'S MEETING ON NOVEMBER 16, 2011
2. STATUS REPORT ON SOUTH ORANGE COASTAL OCEAN DESALINATION PROJECT PHASE 3 BUDGET OVERVIEW

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

3. SOUTH ORANGE COUNTY INTEGRATED REGIONAL WATER MANAGEMENT PLAN (SOCIRWMP) SMARTIMER PURCHASE AND DISTRIBUTION PROGRAM
4. LANDSCAPE RETURN ON INVESTMENT CALCULATOR
5. MWDOC STAFF REPORT ON INVESTIGATION FOR WEROC RADIO SYSTEM
6. STATUS OF ONGOING MWDOC RELIABILITY AND ENGINEERING/PLANNING PROJECTS
7. WATER USE EFFICIENCY REPORTS
  - a. Status of Water Use Efficiency Projects
  - b. Water Use Efficiency Programs Savings and Implementation Report
8. REVIEW OF ISSUES RELATED TO CONSTRUCTION PROGRAMS, 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.



## SOUTH ORANGE COASTAL OCEAN DESALINATION PROJECT DISCUSSION ITEM

December 5, 2011

**TO:** Board of Directors

**FROM:** **Planning & Operations**  
(Directors Royce, Clark, Hinman)

Kevin Hunt  
General Manager

Staff Contact: Karl Seckel/Richard Bell

**SUBJECT:** **Status Report on South Orange Coastal Ocean Desalination Project  
Participant’s Meeting of November 16**

### STAFF RECOMMENDATION

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It is recommended that the Planning and Operations Committee receive and file the report.

### COMMITTEE RECOMMENDATION

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The MWDOC Committee recommendation will be developed at the meeting.

### SUMMARY DISCUSSION

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The South Orange Coastal Ocean Desalination Project Participant’s meeting was held on November 16, 2011. The major items of discussion were:

<b>Budgeted (Y/N): Yes</b>	Budgeted amount: Staff time	Core __	Choice <input checked="" type="checkbox"/>
<b>Action item amount: \$0</b>	Line item: SOCOD Phase 3 Budget		
<b>Fiscal Impact (explain if unbudgeted):</b> Funding comes from the Phase 3 SOCOD Project Funds.			

- The Project Operations are continuing, the discharge and the channel to the surf zone remains open and the testing work is proceeding. Another four months will be required to complete the agreed upon testing of the treatment processes per the Grant Agreements.
- Staff has determined that the results from the first draft surface water modeling effort were not useable without additional work to improve the calibration and predictive capabilities of the model. Geoscience Support Services, our groundwater modeling firm, volunteered to complete the work at no extra cost to the Participants, while agreeing to work closely with Wildermuth Environmental who will be preparing the Groundwater Management Plan for the San Juan Basin Authority.
- The Packet includes an outline of the major steps to complete Phase 3 and to move forward with implementation the project. Ultimately, a detailed schedule showing the relationship of each step and the critical path will need to be developed to help guide timing of the project and funding decisions. At this time, staff is requesting input regarding the list and is requesting the Participants to confirm what other related information they would like to see in this regards.
- Staff is in the process of updating the cost and economic model for the project. Previously, the Participants asked about the many variables and assumptions that go into determining the project costs. We now have a first DRAFT of an economic model that allows the user to change the inputs and analyze the project financial implications. We are testing the model and want to review the current version with the Technical Advisory Committee for the Participants to get their input.
- CALDESAL has been a very effective organization in its first year of operation. It cannot accomplish its goals without our support, both financially and from a staff and consultant standpoint. SOCOD gains a lot in the regulatory process by having a broad organization to help collectively produce good science and good regulations. The Participants approved continuing with the SOCOD membership renewal at a cost of \$5,000 to be taken out of the Phase 3 budget.
- The next meeting is being set for the end of January 2012. The Participants requested a financial accounting at that time on the work and dollars remaining and a recommendation as to when to host the Experts Panel on the offshore boring work.

Attached is the agenda package from the November16 meeting.

## EXECUTIVE OVERVIEW OF NOV 16 SOCOD PARTICIPANTS MEETING

1. The Project Operations are continuing, the channel to the surface zone remains open and the testing work is proceeding. Another four months will be required to complete the agreed upon testing of the treatment processes per the Grant Agreements.
2. Staff has determined that the results from the first draft surface water modeling effort were not useable without additional work to improve the calibration and predictive capabilities of the model. Geoscience Support Services, our groundwater modeling firm, volunteered to complete the work at no extra cost to the Participants, while agreeing to work closely with Wildermuth Environmental who will be preparing the Groundwater Management Plan for the San Juan Basin Authority.
3. The Packet includes an outline of the major steps to complete Phase 3 and to move forward with implementation the project. Ultimately, a detailed schedule showing the relationship of each step and the critical path will need to be developed to help guide timing of the project and funding decisions. At this time, staff is requesting input regarding the list and is requesting the Participants to confirm what other related information they would like to see in this regards.
4. Staff is in the process of updating the cost and economic model for the project. Previously, the Participants asked about the many variables and assumptions that go into determining the project costs. We now have a first DRAFT of an economic model that allows the user to change the inputs and analyze the project financial implications. We are testing the model and want to review the current version with the Participants to get their input.
5. CALDESAL has been a very effective organization in its first year of operation. It cannot accomplish its goals without our support, both financially and from a staff and consultant standpoint. SOCOD gains a lot in the regulatory process by having a broad organization to help collectively produce good science and good regulations. Staff recommends SOCOD continue with its annual membership renewal at a cost of \$5,000.
6. If any questions arise before the meeting or there is a need to meet with any of the Participant representatives or agencies, we will try our best to accommodate those requests.

Thanks,

Karl Seckel



South Orange Coastal Ocean  
Desalination Project

**\*\*\*NOTE START TIME OF 2:30 PM\*\*\***

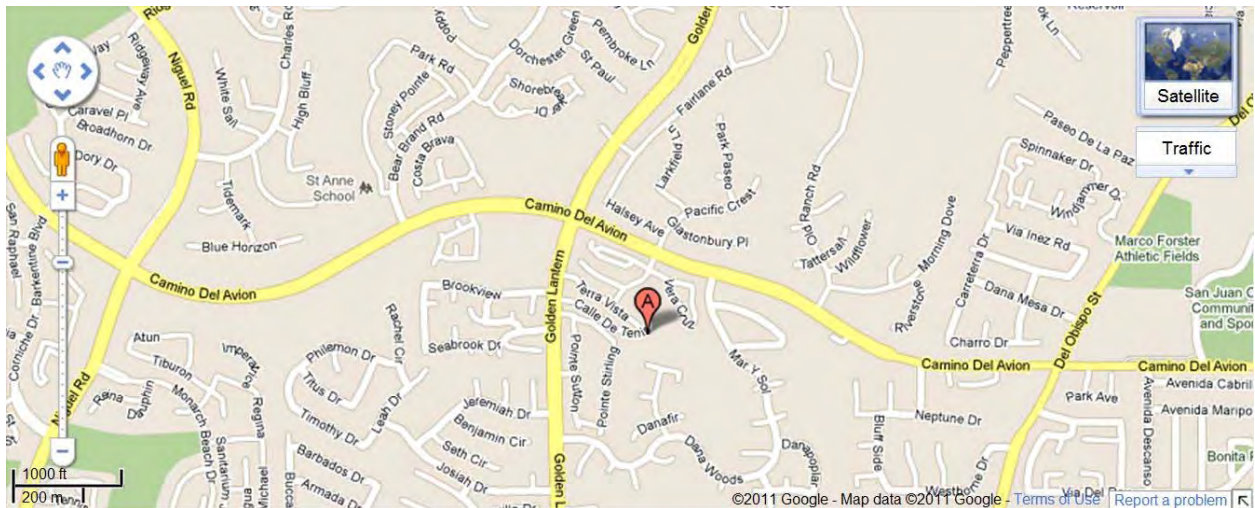
**\*\*NOTE LOCATION – BACK AT THE TENNIS CENTER\*\***

## A G E N D A

### SOUTH ORANGE COASTAL OCEAN DESALINATION PROJECT

**Participants Meeting Location:  
Dana Hills Tennis Center  
24911 Calle de Tenis  
Dana Point, CA 92629**

**Wednesday, Nov 16, 2011  
2:30 p.m.**



IN ACCORDANCE WITH THE REQUIREMENTS OF CALIFORNIA GOVERNMENT CODE SECTION 54954.2, THIS AGENDA SHALL BE POSTED IN THE MAIN LOBBY OF PARTICIPATING AGENCIES ADMINISTRATIVE OFFICES NOT LESS THAN 24 HOURS PRIOR TO THE MEETING DATE AND TIME ABOVE. ALL WRITTEN MATERIALS RELATING TO EACH AGENDA ITEM ARE AVAILABLE FOR PUBLIC INSPECTION IN THE RESPECTIVE AGENCIES OFFICE OF THE BOARD SECRETARY OR CITY CLERK. THE PARTICIPATING AGENCIES TO THE SOUTH ORANGE COUNTY OCEAN DESALINATION PROJECT ARE: MUNICIPAL WATER DISTRICT OF ORANGE COUNTY, SOUTH COAST WATER DISTRICT, MOULTON NIGUEL WATER DISTRICT, LAGUNA BEACH COUNTY WATER DISTRICT, CITY OF SAN CLEMENTE AND CITY OF SAN JUAN CAPISTRANO.

IN THE EVENT ANY MATTER NOT LISTED ON THIS AGENDA IS PROPOSED TO BE SUBMITTED TO THE GROUP FOR DISCUSSION AND/OR ACTION, IT WILL SET FORTH ON A SUPPLEMENTAL AGENDA POSTED IN THE MANNER AS ABOVE, NOT LESS THAN 24 HOURS PRIOR TO THE MEETING DATE.

**A. CALL TO ORDER.....CHAIRPERSON INGRID MCGUIRE**

**B. PLEDGE OF ALLEGIANCE ..... (TBD)**

**C. ROLL CALL OF PARTICIPATING AGENCIES**

- Municipal Water District of Orange County (MWDOC)
- South Coast Water District (SCWD)
- Moulton Niguel Water District (MNWD)
- Laguna Beach County Water District (LBCWD)
- City of San Clemente (CSC)
- City of San Juan Capistrano (CSJC)

**D. ORAL COMMUNICATIONS / PUBLIC COMMENTS**

All persons wishing to address the Participant's Group on specific agenda items or matters of general interest should do so at this time by completing a "Request to Speak" form available at the door. The completed "Request to Speak" form is to be submitted to the Chair prior to an individual being heard by the Group. **Remarks may be limited to three (3) minutes.**

**E. CONSENT CALENDAR:**

All matters listed under Consent Calendar are considered by the Participating Agencies to be routine and will all be enacted by one motion by the form listed below. There will be no separate discussion of the items prior to the time the Participating Agencies vote on the motion unless members of the Participating Agencies, or public request specific items to be discussed and/or removed from the Consent Calendar for separate discussion. Reports will only be given if items are pulled from the Consent Calendar.

**Recommended Action:** Motion to approve Consent Calendar Item(s):

**Consent Calendar (Item(s) 1)**

**1. Approval of Meeting Minutes**

- a. South Orange Coastal Ocean Desalination Project Participants Committee Business Meeting of October 26, 2011

**F. NEW BUSINESS**

**1. Project Status and General Update**

- Report:
- Committee Questions
- Public Comments
- Committee Decision

- a. Nov 7, 2011 Status Report

**Recommended Action:** Information Item; receive and file.

**2. Status of Groundwater Modeling Work**

Report:  
Committee Questions  
Public Comments  
Committee Decision

**Recommended Action:** Informational item; It is recommended that the Participants file and receive the attached report.

**3. Outline of Next Steps and Decision Points for Implementation of the Project**

Report:  
Committee Questions  
Public Comments  
Committee Decision

**Recommended Action:** Staff recommends discussion of the general future steps towards implementation of the project to determine what additional information the Participants want developed.

**4. DRAFT Cost Model for the SOCOD Project**

Report:  
Committee Questions  
Public Comments  
Committee Decision

**Recommended Action:** Informational item; receive and file.

**5. Annual Membership Renewal for CALDESAL**

Report:  
Committee Questions  
Public Comments  
Committee Decision

**Recommended Action:** Staff recommends SOCOD continue with its membership and authorize the \$5,000 renewal payment.

**6. Other**

Report:  
Committee Questions  
Public Comments  
Committee Decision

**a.** CALDESAL Update

**b.** Next Meeting –(date to be discussed at the meeting – December or January ??)

**c.** Topics for Next Meeting

**G. MISCELLANEOUS ORAL REPORTS**

## H. ADJOURNMENT

Accommodations for the Disabled. The Participants Meeting Room is wheelchair accessible. If you require any special disability related accommodations, please contact the South Coast Water District Dana Hills Tennis Center office at (949) 240-2104 as soon as possible prior to the scheduled meeting. Requests must specify the nature of the disability and the type of accommodation requested.

Written materials related to Agenda. At the time of the posting of the agenda for South Orange County Ocean Desalination Project meetings, the entire agenda packet is available for public review at the Participating Agencies Administrative Offices at Municipal Water District of Orange County, South Coast Water District, Laguna Beach County Water District, City of San Clemente and City of San Juan Capistrano. Pursuant to Government Code Section 54957.5 any writing that is distributed to the Group after the posting of a meeting agenda shall also be made immediately available to the public at the Participating Agencies Administrative Offices. Written materials distributed by members of the public at a meeting shall be made available immediately following the meeting. Information regarding the South Orange County Ocean Desalination Project is available on SCWD.org, including Meeting Schedules, Meeting Agendas and Minutes.

**E. Recommended Action:** Motion to approve Consent Calendar Item(s):

**Consent Calendar (Item(s) 2)**

**1. Approval of Meeting Minutes**

- a. South Orange Coastal Ocean Desalination Project Participants Committee Business Meeting of October 26, 2011 (attached below)

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# SOUTH ORANGE COASTAL OCEAN DESALINATION



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## MINUTES

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### Meeting October 26, 2011 2:30 PM

The meeting of Participants Group of the South Orange County Ocean Desalination (SOCOD) was held on October 26, 2011, at 2:30 p.m., at the Dana Hills Tennis Center located at 24911 Calle de Tennis, Dana Point, Orange County, California.

#### **A. CALL TO ORDER**

The meeting was called to order by Chairperson Ingrid McGuire (South Coast Water District Board of Director).

**B. PLEDGE OF ALLEGIANCE** Larry Kramer (City Council of City of San Juan Capistrano)

#### **C. ROLL CALL OF PARTICIPATING AGENCIES**

There were present and participating the following agency participants, to wit: Municipal Water District of Orange County (MWDOC), South Coast Water District (SCWD), Laguna Beach County Water District (LBCWD), Moulton Niguel Water District (MNWD), City of San Juan Capistrano (CSJC), and City of San Clemente (CSC).

#### **D. ORAL COMMUNICATIONS / PUBLIC COMMENTS**

None

#### **E. CONSENT CALENDAR**

**Consent Calendar (Item(s) 1)**

## **1. Approval of Meeting Minutes**

**a.** South Orange Coastal Ocean Desalination Project Participants Committee Business Meeting of September 21, 2011

*Upon Motion made by:* South Coast Water District, seconded by Laguna Beach County Water District – and passed by a 4-0 vote (City of San Juan Capistrano abstained), to approve the Meeting Minutes.

## **F. NEW BUSINESS**

### **1. Project Status and General Update**

**a.** Oct 18, 2011 Status Report

Information Item; received and filed report.

### **2. Status Update on the South Orange Coastal Ocean Desalination Project Construction Contract Award for Extension of Pilot Plant Discharge Piping**

Information item; received and filed report.

### **3. Brine Disposal Compliance – Technical and Regulatory Assistance Consulting Contract Award to Flow Science**

*Upon Motion made by:* South Coast Water District, seconded by Moulton Niguel Water District – and passed by a 5-0 vote, to award of a sole source contract in the amount \$22,500 to Flow Science for the services of Dr. Susan Paulsen per the proposal dated October 6, 2011 to provide technical and regulatory assistance as part of the SWRCB California Ocean Plan Amendment process for Ocean Desalination Brine Disposal. Funds are available and are part of the EPA STAG grant.

The SOCOD Project Participants requested that any “Additional on-call services, as needed” be brought back for consideration.

### **4. Status of Groundwater Modeling Work**

Information item; received and filed report.

### **5. Convening of Expert Panel on Future Offshore Investigation Work**

Participants discussed the timing of the investigation work in relation to Phase 3 work and annual budgets of agency participants.

There was concurrence to complete the work, but to push the timing of convening the Expert Panel to the Spring of 2012 to ensure that all data are available in reviewing the draft proposal approach for a Future Offshore Hydrogeology Investigation to answer

questions not determined from the Phase 3 work. The Committee asked staff to come back after the first of the year to discuss the actual timing of the panel.

## **6. Snapshot of Ocean Desal Costs Around the World**

Information Item; received and filed report.

## **7. Water Reliability Issues**

Public Speaker: John Earl, representative of Surf City Voice

Information Item; received and filed report.

## **8. Other**

- a. CALDESAL Update reported by Michael Dunbar/SCWD
- b. Next Meeting – Tentatively set for November 16, 2011, at 2:30 p.m., at the Dana Hills Tennis Center
- c. Topics for Next Meeting
  - i. Decision Points
  - ii. Other

## **G. MISCELLANEOUS ORAL REPORTS**

Larry Kramer/CSJC introduced Keith Van Der Maaten, new San Juan Capistrano Director of Utilities Department.

## **H. ADJOURNMENT**

The meeting was adjourned at 4:20 p.m.

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P A R T I C I P A N T S   I N   A T T E N D A N C E



**South Orange Coastal Ocean**  
Desalination Project

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**Participants Meeting Location:  
Dana Hills Tennis Center  
24911 Calle de Tennis  
Dana Point, CA 92629**

**Wednesday, October 26, 2011  
2:30 p.m.**

**Participants in attendance:**

- Dan Payne, MKB Law/MWDOC
- Betty Burnett, SCWD
- Mike Dunbar, SCWD
- Wayne Rayfield, SCWD
- Susan Hinman, MWDOC
- Christopher Regan, LBCWD
- Debbie Neev, LBCWD
- Gary Kurtz, MNWD
- Larry Kramer, CSJC
- Bob Baker, CSC
- Ingrid McGuire, SCWD
- Karl Seckel, MWDOC
- Richard Bell, MWDOC

# SOUTH ORANGE COASTAL OCEAN DESALINATION PROJECT

**MEETING LOCATION:  
DANA HILLS TENNIS CENTER  
24911 Calle de Tennis  
Dana Point, CA 92629**

**For the meeting of  
Wednesday, October 26, 2011**

Please print your name and affiliation below so that the Participating Agencies will have a record of those attending today's meeting. Thank you.

NAME	ADDRESS / AGENCY	E-MAIL
Ray Miller	CITA / S.J. CAP	
Susan Hinman	MWD OC	shinman@mwdoc.net
Rick Wilson	SWFIRE	rwilson@swfire.org
Michael McFue	SCWD	
GARY KURTZ	MNWD	
STEVE SANOLANO	3 PARK PLAZA, IRVINE, CA	SSANOLANO@PROJECTDIMENSIONS.COM
CATHERINE GUCK	27045 Mill Pond CAPOBEN	geopex@earthlink.net
DICK DIETHELM	DANA POINT	
GARY MEYERHOFER	CAROLLO ENGR	
Laraya Voeltz	CDM	voeltzld@cdm.com
Christopher Regan	LIBCWD	cregan@libcwp.org
Shay Euel	Sanitary Zone	
Shawn	SJC	shawn@sjc.org
Huy Bui	DPH	huy.bui@aph.ca.gov
Dan Payne	KIB	dpayne@kib.org
DAVE REBENSPOFF	CSC	REBENSPOFF@SAN-CLEMENTE.ORG
Kevin Lussier	CSC	LUSSIER@SAN-CLEMENTE
Katy Barnum	SCWD	KatyBarnum@MWD-CM
Richard Gardawer	SCWD	



## NEW BUSINESS

### 1. Project Status and General Update

Report:  
Committee Questions  
Public Comments  
Committee Decision

#### a. Nov 7, 2011 Status Report

**Recommended Action:** Information Item, receive and file.

**System Operations.** On October 13, the well pumping was re-started with the opening of a channel to the surf zone. The discharge channel has remained open to date through very high tide, high surf and storm flow conditions. At this time, we expect it to remain open throughout the remainder of the test. We have asked SCW the construction contractor for a letter to hold their bid open through next March as a back up should the extension of the outfall be needed.

Separation Processes Inc. (SPI) and their subcontractor, CDM have been working on the iron and manganese (Fe/Mn) removal column testing. The column testing helps to establish the general parameters for the full scale treatment testing for the Fe/MN removal including selecting the type of media and chemical dosing. The column testing is nearly completed and a media has been selected and has been ordered for the full scale testing. The pilot testing through the larger sedimentation and pressure filtration equipment is expected to start up next week. They will need the next 4 months to complete the pre-treatment testing and the RO testing work.

In the near future, we will be taking a discharge sample for compliance with our Regional Water Quality Control Board discharge permit.

Recent activities have included:

- SPI and their subcontractor are now at the site daily running the system and RO unit.
- Staff conducted a tour for Senator Feinstein's staff on November 1 and also earlier in the day for Scott Maloni of Poseidon.
- Upcoming presentations are being planned for the Orange County Water Association on Wednesday November 16 and for the Dana Point Civic Association on Friday November 18.

**Tracer Study Update.** We received the draft Tracer Study report from Dr. Charette on November 7, 2011. Staff is currently reviewing the report. The findings indicate only a very small amount of lagoon water was captured by the slant well. This is good news for us because it is consistent with our previous modeling work which did not expect a high degree of linkage between the lagoon and our pumping.

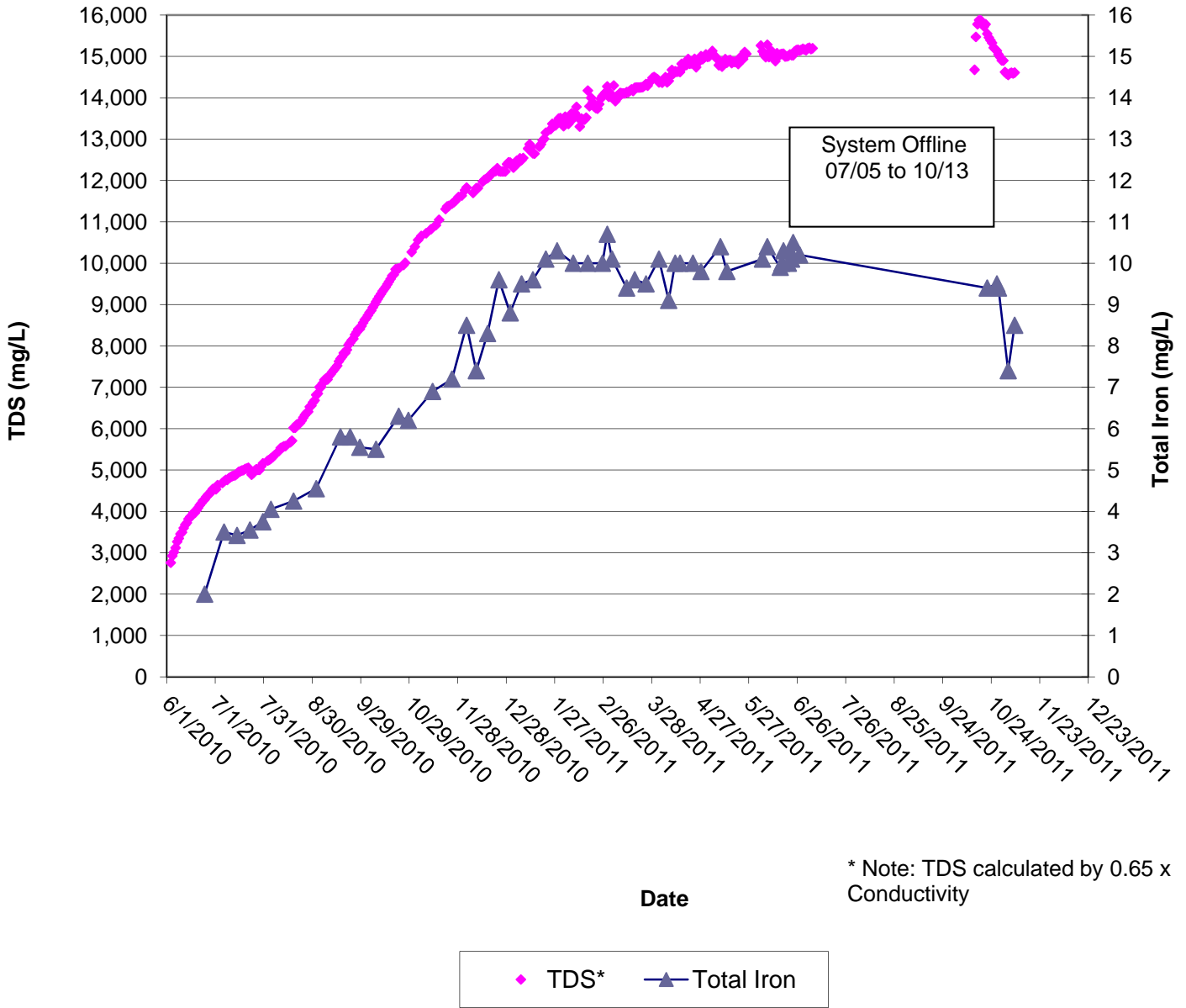
**SWRCB SCCWRP Brine Discharge Workshop.** Ron Davis from CalDesal was able to obtain a 30 minute presentation slot under Regulatory and Technical Background for Dr. Susan Paulsen for the December 8 workshop for an “Overview of Brine Disposal Alternatives”. Dr. Paulsen will give a short overview of all methods and will discuss our project in terms of co-disposal methods and important considerations that would both apply to co-disposal and dedicated pressure diffuser systems. We are also coordinating with SCWD on their public comment regarding groundwater recovery discharge issues that relate to iron and manganese. The December 8 meeting is here in Costa Mesa and is an open meeting if you would like to attend. The meeting will be held at the Southern California Coastal Water Research Project (SCCWRP) 3535 Harbor Blvd., Suite 110 in Costa Mesa, CA 92626, Phone: (714) 755-3200. The meeting is scheduled from 8 am to 5 pm.

A photo of the discharge outlet to the ocean and the updated graph on the levels of TDS and Total Iron are included below. We are looking into the recent trend in the TDS and the Total Iron to explain the recent trend line.



**View of the Sand Berm and Discharge Channel as of early November**

### Slant Well TDS\* and Total Iron



## 2. Status of Groundwater Modeling Work

Report:  
 Committee Questions  
 Public Comments  
 Committee Decision

**Recommended Action:** Informational item; receive and file.

The slow progress was discussed at the San Juan Basin Authority Meeting on October 11 and the SJBA Board expressed its displeasure with the hold up of the work because it has delayed the preparation of the Groundwater Management Plan. Subsequent to that meeting, PACE Advanced Water Engineering delivered their first written draft documentation of the work completed on the Surface Flow Model. The initial review of the document by MWDOC staff and our other modeling consultants indicated that the results of the modeling work were not useable without additional work to improve the calibration and predictive capabilities of the model. MWDOC discussed the situation with Geoscience and Wildermuth Environmental. Both firms indicated they had the capabilities to pick up the work and complete it. Following more discussion, Geoscience volunteered to pick up the work and complete the Surface Modeling at no extra cost to the Participants, while agreeing to work closely with Wildermuth Environmental who will be preparing the Groundwater Management Plan for the San Juan Basin Authority. A previously scheduled Model Advisory Committee (MAC) scheduled for November 3 was pushed off to November 9 to provide time for the consultant team to reconvene and present a plan and schedule to the technical representatives from the Participants. The revised schedule for the modeling work is as follows:

Task	General Date
1. Complete Draft Surface Water Report (PACE)	Oct 14, 2011
2. Model Advisory Committee input to revised Technical Approach for Surface Modeling	Nov 9, 2011
3. Complete Surface Water/Groundwater Model Interface (HSPF)	Dec 2011
4. Technical Review of Updated Surface Modeling HSPF	Dec 2011
5. Complete Historical and Calibration Runs of the Groundwater Model	Mid Feb 2012
6. Technical Review of Historical Runs	Mid Feb 2012
7. Maximum Local Sustainable Yield Run	Mid March 2012
8. Technical Review of Local Yield Runs	Late March 2012
9. Time will be needed about this point to incorporate basin management strategies from the Groundwater Management Plan	Timing Unknown
10. Ocean Desal Runs	
11. Technical review of Ocean Desal Runs	
12. Mitigation and other work to follow	

**Note: Timing could change at any of these steps depending on the results and input from the Technical Representatives**

### 3. Outline of Next Steps and Decision Points for Implementation of the Project

Report:  
Committee Questions  
Public Comments  
Committee Decision

**Recommended Action:** Informational item; receive and file.

**Staff Report.** In follow up to the Committee's request, staff has prepared an outline of the major steps to implement the project. The outline shows the remaining major steps in Phase 3 Feasibility Investigation and the major steps in Phase 4 Pre-Design Baseline Monitoring, Project Agreements and Approval Process. Upon successful conclusion of Phase 4 the project would be able to proceed to design, construction and start-up. At this time, staff has only very preliminary estimates of costs and time requirements to carry out each of these steps. A detailed schedule showing the relationship of each step and the critical path will need to be developed to help guide timing of the project and funding decisions. As previously discussed, the decision to proceed with either conventional delivery or an alternative delivery method needs to be made prior to permitting. At this time, staff is requesting input regarding the list and a request from the Participants regarding what other information they would like to see.

The list is attached below.

## **SOCOD Project Major Implementation Steps**

The Phase 3 work is expected to be completed between now and the summer/fall of 2012. Other than that, there are not any specific schedules associated with any of the following work.

### **Phase 3 - Feasibility Investigations**

- A. Complete Extended Pumping and Pilot Plant Test
  - 1. Complete Testing Through mid-March and Document Findings/Conclusions
  - 2. DWR Prop 50 Grant Report
  - 3. EPA Grant Report
  - 4. USBR Iron/Manganese Pretreatment Report
- B. Determine Disposition of Test Facilities and Site
- C. Offshore Investigation – Refine Scoping and Cost Estimate
- D. Brine Disposal Regulatory Process and SOCOD Project Implications
- E. Groundwater Drawdown Impact and Mitigation Measures/Agreements
  - 1. Upstream Groundwater Recovery Projects and Water Rights
  - 2. Coastal Seasonal Lagoon (NMFS, USFWS, DFG, TU and State Parks)
  - 3. Develop and negotiate necessary agreements
- F. Gasoline Station Contamination Remediation Progress
- G. Water Supply Reliability and SOCOD Project Value to Participants
- H. Project Cost and Economic Analysis Update
- I. Project Schedule – Needs input from Participants
- J. Project Participants Decision on Future Governance/JPA Formation and Phase 4 Funding Approach and Schedule

### **Phase 4 – Pre-Design - Baseline Monitoring, Project Agreements and Approval Process**

- A. Pre-CEQA Work
  - 1. Offshore Hydrogeology Investigation
  - 2. CEQA Baseline Monitoring
  - 3. Mapping and Geotechnical Design Data
  - 4. Brine Dispersion , Compliance Analysis, and Ocean Impact Assessment
  - 5. Preliminary Engineering and Cost Estimate
  - 6. Energy Supply & Evaluation of Renewable Energy Options
  - 7. State Parks Land Use Agreement
  - 8. Project Delivery Decision
- B. Project Approval and Financing Process
  - 1. CEQA/NEPA Documentation and Approvals
  - 2. SCWD Site Use Agreement
  - 3. SOCWA Brine Disposal Agreement
  - 4. SDG&E Service Agreement
  - 5. Permitting (CCC, SLC, RWQCB, USACOE, DFG, et al)
  - 6. Project Financing

**Phase 5 – Design (Design Engineer or DBO Procurement)**

**Phase 6 – Construction and Start Up**

#### 4. DRAFT Cost Model for the SOCOD Project

Report:  
Committee Questions  
Public Comments  
Committee Decision

**Recommended Action:** Informational item; receive and file.

**Project Cost and Economic Model.** We are in the process of updating the cost and economic model. The prior cost evaluation required us to make assumptions on interest rates, inflation rates, MET rates and other factors. In addition, we are reviewing the energy usage requirements in more detail with input from SPI who has modeling capability to determine energy requirements based on our project work. We asked Nikolay Voutckov, Globe Water Engineering, to review the cost estimate to provide input regarding recent cost data from other projects. We also met with MET staff to review their future water costs projected in the Integrated Resources Plan. They indicated that their costs are generally expected to exceed inflation costs by 1% to 2% for the next decade or two. The projected inflation over that period is 3.5%. At the last meeting a comparison of worldwide ocean desalination costs was provided and the wide spread major variations in project features that have a very large impact on costs was outlined. We now have a draft economic model that allows the user to change the inputs and analyze the project financial implications. We are testing the model and want to review the current version with the Participants.

The model input variables that can be changed include:

- Capital Costs
  - The need for iron and manganese removal can be clicked on or off to show the impacts.
  - The level of contingency funds can be changed
  - The year for the midpoint of construction can be selected
- O&M Costs
  - Energy escalation is a separate selection
  - Other O&M costs can be varied for 2011-2015, 2016 -2019 and 2020 and after.
  - The annual land costs per AF can be varied.
- Project Financing
  - Grant funding can be added
  - Bond repayment period is selected
  - Bond interest rate is selected
- MET Avoided Costs (this is used both to compare to imported water rates, but also to aggregate the investment before and after the project cost lines cross with the cost of MET water).
  - MET Tier 1 and Tier 2 rates are hard coded for the period 2010 to 2020 (although they can be modified). Other offsets such as the Capacity Charge and the Readiness to Serve Charge are also included. You can select

whether you are offsetting Tier 1, Tier 2 or a combination of the two. The escalation factor for MET rates applies to 2020 and thereafter.

- Output includes the following:
  - Graph of the Project cost per AF, less the MET incentive, plotted against the cost of imported water from MET
  - Project costs are summarized for the assumptions made
  - The current cost per AF is shown
  - Output of the Net project costs and MET rates are shown for all years
  - The Net Present Value is provided between the project start and the breakeven point, from the breakeven to the end of the project financing and the total cost or savings from the project.

Staff will attempt to demonstrate the model at the meeting. Snapshots are included on the next two pages (may be unreadable at this size). One assumes that iron and manganese treatment is required and one does not. They both assume we secure \$15M in grant funding toward the project and that our bond rate is 4.5%. The breakeven point is moved 5 years based on the extra costs for iron and manganese removal.

# South Orange Coastal Desalination Project - Economic Analysis - DRAFT VERSION 1.1

## Input

### Capital Cost

Fe/Mn Treatment?	No	<input type="checkbox"/>
Contingency	15%	<input type="text"/>
Midpoint of Construction	Choose Year ->	2017

### O&M Costs

Energy Escalation Rate	1.8%	<input type="text"/>
General Inflation Rate		
2011 - 2015	2.0%	<input type="text"/>
2016 - 2019	3.0%	<input type="text"/>
2020 - Future	3.0%	<input type="text"/>
Land Cost per Acre-Foot	\$45	<input type="text"/>

### Project Financing

Grant Amount	Enter Value ->	\$15,000,000
Bond Repayment Period (yrs)	Select ->	30
Bond Interest Rate		4.50%

### MET Avoided Costs

Escalation Rate After 2020	5.0%	<input type="text"/>
Melded Rate		
%Tier 1	100%	<input type="text"/>
%Tier 2	0%	<input type="text"/>
Capacity Charge		
Year	Charge	
2011	\$7,200	<input type="text"/>
2012	\$7,400	<input type="text"/>
2013	\$7,400	<input type="text"/>
2014	\$7,400	<input type="text"/>
2015	\$7,500	<input type="text"/>
2016	\$7,800	<input type="text"/>
2017	\$8,100	<input type="text"/>
2018	\$8,500	<input type="text"/>
2019	\$8,900	<input type="text"/>
2020	\$9,300	<input type="text"/>

### Readiness-To-Serve (RTS) Offset

Year	Offset	
2011	\$36	<input type="text"/>
2012	\$46	<input type="text"/>
2013	\$52	<input type="text"/>
2014	\$58	<input type="text"/>
2015	\$64	<input type="text"/>
2016	\$72	<input type="text"/>
2017	\$81	<input type="text"/>
2018	\$89	<input type="text"/>
2019	\$96	<input type="text"/>

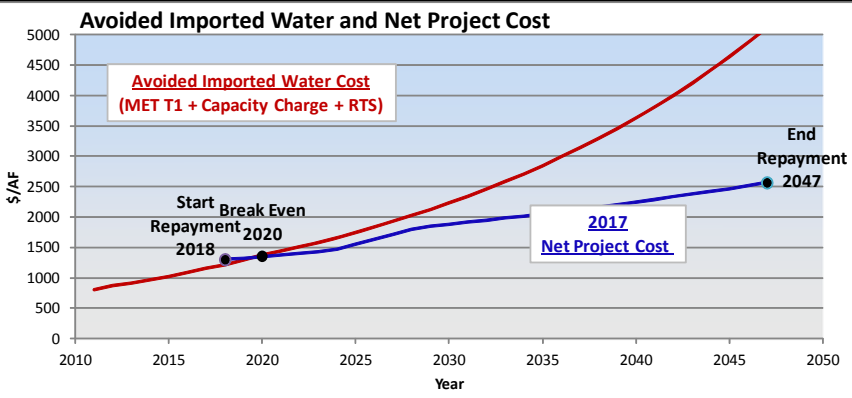
### Long Range Finance Plan \$/AF

Year	Treated T1	Treated T2
2012	\$794	\$920
2013	\$833	\$969
2014	\$877	\$1,020
2015	\$920	\$1,069
2016	\$970	\$1,123
2017	\$1,023	\$1,180
2018	\$1,079	\$1,238
2019	\$1,146	\$1,301
2020	\$1,214	\$1,366

### Present Value Discount Rate

Present Value Discount Rate	5.0%	<input type="text"/>
Delta Fix Costs (Placeholder)		\$10B
Major R+R (Placeholder)		

## Output



### Project Capital Costs

Capital Cost (2011)	\$130,666,087
Grants	\$15,000,000
Contingency	\$19,599,913
<b>Total Cost (2011)</b>	<b>\$135,266,000</b>
Total Cost Escalated to Midpt. of Construction	\$153,824,932

### Costs per AF

	2011	First Year
Capital Cost	\$520	\$534
O&M	\$401	\$474
Energy	\$487	\$496
<b>Annual Cost</b>	<b>\$1,408</b>	<b>\$1,504</b>
Annual Cost w/ Land	\$1,453	\$1,550

### Net Present Value

Up to Break Even	(\$1,019,039)
Break Even to End	\$88,283,449
<b>Total Savings</b>	<b>\$87,264,410</b>

Year	Net Project Cost	Net Project Cost Minus MET Subsidy	Imported Water Cost	Annual Savings		Present Value Savings
				Per AF	Per Year	
2017	#N/A	#N/A	\$1,150	#N/A	#N/A	#N/A
2018	\$1,550	\$1,300	\$1,216	(\$83)	(\$1,332,005)	(\$901,554)
2019	\$1,574	\$1,324	\$1,293	(\$31)	(\$490,158)	(\$315,960)
2020	\$1,598	\$1,348	\$1,369	\$20	\$323,294	\$198,475
2021	\$1,624	\$1,374	\$1,437	\$63	\$1,011,893	\$591,633
2022	\$1,650	\$1,400	\$1,509	\$109	\$1,744,919	\$971,636
2023	\$1,676	\$1,426	\$1,584	\$158	\$2,524,833	\$1,338,973
2024	\$1,704	\$1,476	\$1,664	\$188	\$3,001,685	\$1,516,055
2025	\$1,731	\$1,549	\$1,747	\$197	\$3,151,770	\$1,516,055
2026	\$1,760	\$1,627	\$1,834	\$207	\$3,309,358	\$1,516,055
2027	\$1,790	\$1,708	\$1,926	\$218	\$3,474,826	\$1,516,055
2028	\$1,820	\$1,794	\$2,022	\$229	\$3,648,567	\$1,516,055
2029	\$1,851	\$1,851	\$2,123	\$273	\$4,353,496	\$1,722,826
2030	\$1,882	\$1,882	\$2,229	\$347	\$5,542,225	\$2,088,806
2031	\$1,915	\$1,915	\$2,341	\$426	\$6,802,769	\$2,441,802
2032	\$1,948	\$1,948	\$2,458	\$510	\$8,139,018	\$2,782,322
2033	\$1,982	\$1,982	\$2,581	\$599	\$9,555,064	\$3,110,855
2034	\$2,017	\$2,017	\$2,710	\$693	\$11,055,211	\$3,427,866
2035	\$2,053	\$2,053	\$2,845	\$792	\$12,643,988	\$3,733,805
2036	\$2,090	\$2,090	\$2,988	\$898	\$14,326,157	\$4,029,099
2037	\$2,128	\$2,128	\$3,137	\$1,009	\$16,106,729	\$4,314,160
2038	\$2,167	\$2,167	\$3,294	\$1,127	\$17,990,971	\$4,589,382
2039	\$2,207	\$2,207	\$3,459	\$1,252	\$19,984,425	\$4,855,142
2040	\$2,247	\$2,247	\$3,632	\$1,384	\$22,092,918	\$5,111,803
2041	\$2,289	\$2,289	\$3,813	\$1,524	\$24,322,578	\$5,359,711
2042	\$2,332	\$2,332	\$4,004	\$1,672	\$26,679,851	\$5,599,198
2043	\$2,376	\$2,376	\$4,204	\$1,828	\$29,171,512	\$5,830,584

# South Orange Coastal Desalination Project - Economic Analysis - DRAFT VERSION 1.1

## Input

### Capital Cost

Fe/Mn Treatment?	Yes	<input checked="" type="checkbox"/>
Contingency	15%	<input type="text"/>
Midpoint of Construction	Choose Year ->	2017

### O&M Costs

Energy Escalation Rate	1.8%	<input type="text"/>
General Inflation Rate		
2011 - 2015	2.0%	<input type="text"/>
2016 - 2019	3.0%	<input type="text"/>
2020 - Future	3.0%	<input type="text"/>
Land Cost per Acre-Foot	\$45	<input type="text"/>

### Project Financing

Grant Amount	Enter Value ->	\$15,000,000
Bond Repayment Period (yrs)	Select ->	30
Bond Interest Rate		4.50%

### MET Avoided Costs

Escalation Rate After 2020	5.0%	<input type="text"/>
Melded Rate		
%Tier 1	100%	<input type="text"/>
%Tier 2	0%	<input type="text"/>
Capacity Charge		
Year	Charge	
2011	\$7,200	<input type="text"/>
2012	\$7,400	<input type="text"/>
2013	\$7,400	<input type="text"/>
2014	\$7,400	<input type="text"/>
2015	\$7,500	<input type="text"/>
2016	\$7,800	<input type="text"/>
2017	\$8,100	<input type="text"/>
2018	\$8,500	<input type="text"/>
2019	\$8,900	<input type="text"/>
2020	\$9,300	<input type="text"/>

### Readiness-To-Serve (RTS) Offset

Year	Offset	
2011	\$36	<input type="text"/>
2012	\$46	<input type="text"/>
2013	\$52	<input type="text"/>
2014	\$58	<input type="text"/>
2015	\$64	<input type="text"/>
2016	\$72	<input type="text"/>
2017	\$81	<input type="text"/>
2018	\$89	<input type="text"/>
2019	\$96	<input type="text"/>

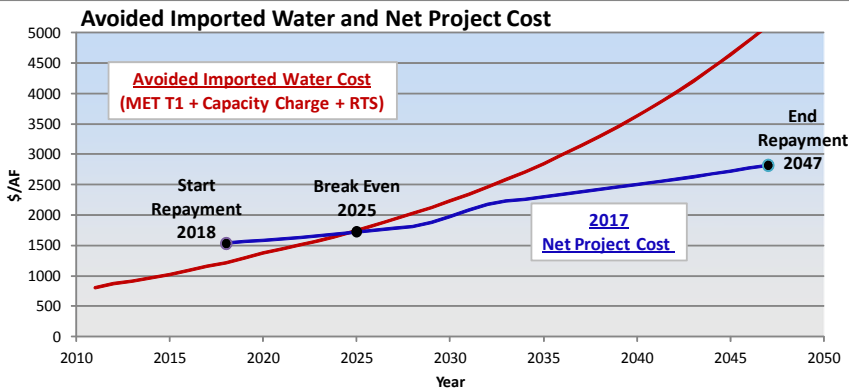
### Long Range Finance Plan \$/AF

Year	Treated T1	Treated T2
2012	\$794	\$920
2013	\$833	\$969
2014	\$877	\$1,020
2015	\$920	\$1,069
2016	\$970	\$1,123
2017	\$1,023	\$1,180
2018	\$1,079	\$1,238
2019	\$1,146	\$1,301
2020	\$1,214	\$1,366

### Present Value Discount Rate

Present Value Discount Rate	5.0%	<input type="text"/>
Delta Fix Costs (Placeholder)		\$10B
Major R+R (Placeholder)		

## Output



### Project Capital Costs

Capital Cost (2011)	\$170,851,304
Grants	\$15,000,000
Contingency	\$25,627,696
<b>Total Cost (2011)</b>	<b>\$181,479,000</b>
Total Cost Escalated to Midpt. of Construction	\$206,378,504

Costs per AF	2011	First Year
Capital Cost	\$698	\$736
O&M	\$401	\$474
Energy	\$518	\$528
<b>Annual Cost</b>	<b>\$1,617</b>	<b>\$1,738</b>
Annual Cost w/ Land	\$1,662	\$1,784

Net Present Value	
Up to Break Even	(\$11,693,126)
Break Even to End	\$64,454,170
<b>Total Savings</b>	<b>\$52,761,044</b>

Year	Net Project Cost	Net Project Cost Minus MET Subsidy	Imported Water Cost	Annual Savings		Present Value
				Per AF	Per Year	Savings
2017	#N/A	#N/A	\$1,150	#N/A	#N/A	#N/A
2018	\$1,784	\$1,534	\$1,216	(\$318)	(\$5,069,210)	(\$3,431,041)
2019	\$1,809	\$1,559	\$1,293	(\$265)	(\$4,236,558)	(\$2,730,923)
2020	\$1,834	\$1,584	\$1,369	(\$215)	(\$3,432,467)	(\$2,107,237)
2021	\$1,860	\$1,610	\$1,437	(\$173)	(\$2,753,398)	(\$1,609,855)
2022	\$1,886	\$1,636	\$1,509	(\$127)	(\$2,030,073)	(\$1,130,421)
2023	\$1,913	\$1,663	\$1,584	(\$79)	(\$1,260,035)	(\$668,223)
2024	\$1,941	\$1,691	\$1,664	(\$28)	(\$440,697)	(\$222,582)
2025	\$1,970	\$1,720	\$1,747	\$27	\$430,662	\$207,156
2026	\$1,999	\$1,749	\$1,834	\$85	\$1,356,906	\$621,614
2027	\$2,029	\$1,779	\$1,926	\$147	\$2,341,049	\$1,021,392
2028	\$2,060	\$1,810	\$2,022	\$212	\$3,386,262	\$1,407,062
2029	\$2,092	\$1,883	\$2,123	\$240	\$3,830,996	\$1,516,055
2030	\$2,124	\$1,977	\$2,229	\$252	\$4,022,545	\$1,516,055
2031	\$2,157	\$2,076	\$2,341	\$265	\$4,223,673	\$1,516,055
2032	\$2,191	\$2,180	\$2,458	\$278	\$4,434,856	\$1,516,055
2033	\$2,226	\$2,226	\$2,581	\$355	\$5,661,115	\$1,843,097
2034	\$2,262	\$2,262	\$2,710	\$448	\$7,149,246	\$2,216,752
2035	\$2,299	\$2,299	\$2,845	\$547	\$8,725,789	\$2,576,750
2036	\$2,336	\$2,336	\$2,988	\$651	\$10,395,505	\$2,923,640
2037	\$2,375	\$2,375	\$3,137	\$762	\$12,163,399	\$3,257,946
2038	\$2,415	\$2,415	\$3,294	\$879	\$14,034,736	\$3,580,172
2039	\$2,455	\$2,455	\$3,459	\$1,003	\$16,015,051	\$3,890,798
2040	\$2,497	\$2,497	\$3,632	\$1,135	\$18,110,170	\$4,190,285
2041	\$2,540	\$2,540	\$3,813	\$1,273	\$20,326,215	\$4,479,074
2042	\$2,584	\$2,584	\$4,004	\$1,420	\$22,669,627	\$4,757,588
2043	\$2,629	\$2,629	\$4,204	\$1,575	\$25,147,179	\$5,026,230

## 5. Annual Membership Renewal for CALDESAL

Report:  
Committee Questions  
Public Comments  
Committee Decision

**Recommended Action:** Staff recommends SOCOD continue with its membership and authorize the \$5,000 renewal payment.

### **Staff Report**

CALDESAL has been a very effective organization in its first year of operation. It cannot accomplish its goals without our support, both financially and from a staff and consultant standpoint. SOCOD gains a lot in the regulatory process by having a broad organization to help collectively produce good science and good regulations. Staff recommends SOCOD continue with its membership. Options considered last time included the following:

- Each Participant could join on their own at a cost of \$5,000 each.
- Each Participant could contribute \$1,000 and join as a group.
- Not joining at all.
- Proceed under the MWDOC membership

It is recommended that SOCOD continue its participation as a group membership. Staff believes that sufficient funding exists to fulfill this need for 2011-12.

Renewal of Annual Membership in CALDESAL by the South Orange Coastal Ocean Desalination Project (SOCOD)

In May 2010, the five Project Participants authorized cost-sharing of an annual membership in CALDESAL through a \$5,000 contribution made out of the Phase 3 Budget. Each member concurred with the expense of \$1,000 per agency to jointly participate in the CALDESAL organization. Your membership has been represented by South Coast General Manager Mike Dunbar and SOCOD Chairs Dick Dietmeier and Ingrid McGuire. CALDESAL has advised us that the year 2 membership of \$5,000 is due if SOCOD is to continue participating in the organization as a full member.

Year one of CALDESAL has been an exciting one. The organization was formed and launched, an Executive Director, Ron Davis, was hired and the organization was off and running with no time to waste. CALDESAL has been very active for a first year organization and has depended heavily on its membership for organization, input, direction and technical support. In its first year of operation, CALDESAL has accomplished the following:

- Created a presence in California water resources

- Weighed in on development and implementation of a statewide strategy in support of desalination (ocean and groundwater)
- Monitored and participated in state and federal legislation affecting desalination
- Advocated for a state desal policy and other legislative and regulatory actions that benefit desalination efforts
- Suggested legislation for streamlined permitting of California desalination facilities
- Promoted the benefits of desalination to key stakeholders through strategic, fact-based outreach
- From an organizational perspective, CALDESAL is working on its:
  - Website
  - Communications Plan
  - Regulatory Issues
  - Legislative Issues

Additional information is provided below on CALDESAL:

### **Leadership of CALDESAL**

#### **Officers**

Chair - Shawn Dewane, Mesa Consolidated Water District

Vice Chair - Dan Burns, Marina Coast Water District

Treasurer - Bob Harding, Metropolitan Water District of Southern California

Secretary - Kevin Thomas, RBF Consulting

#### **Executive Committee**

Jerry Brown, Contra Costa Water District

Wayne Clark, Municipal Water District of Orange County

Gary Crisp, GHD Inc.

Mike Dunbar, South Orange Coastal Ocean Desalination Project/South Coast Water District

Bill Kocher, SCWD2- City of Santa Cruz

Carol Kwan, West Basin Municipal Water District

Bob Yamada, San Diego County Water Authority

#### **Directors-at-Large**

Dan Boyd, CDM

Jim Cathcart, HDR Engineering, Inc.

Bill Everest, Arcadis-Malcolm Pirnie, Inc.

Val Frenkel, Kennedy-Jenks Consultants

Gerry Filteau, Separation Processes, Inc.

Brian Graham, United Water

Michael Markus, Orange County Water District

David Mayer, Tenera Environmental, Inc.  
Joe Monaco, Dudek  
Laer Pearce, Laer Pearce & Associates  
John Robinson, MWH Americas, Inc.  
Tom Rosales, South Orange County Wastewater Authority  
Tom Seacord, Carollo Engineers  
Richard Trembath, Parsons Corporation  
Kent Turner, IDE Americas, Inc.  
Walt Wadlow, Alameda County Water District  
Dennis Williams, GEOSCIENCE Support Services, Inc.  
Acciona Agua Corporation  
City of Oceanside  
Irvine Ranch Water District  
Northern California Salinity Coalition  
Santa Margarita Water District  
SCWD2- Soquel Creek Water District  
Townsend Public Affairs  
Upper San Gabriel Valley Municipal Water District  
Water Replenishment District  
Zone 7 Water Agency

#### **Executive Director**

Ron Davis

#### **Legislative Workgroup**

E.J. Caldwell, West Basin Municipal Water District (Chair)  
Wayne Clark, Municipal Water District of Orange County  
Mike Dunbar, South Orange Coastal Ocean Desalination Project/South Coast Water District  
Rosalie Thompson, Metropolitan Water District of Southern California  
Bob Yamada, San Diego County Water Authority

#### **Regulatory Workgroup**

Kevin Thomas, RBF Consulting (Chair)  
Bob Harding, Metropolitan Water District of Southern California  
Jim Heitzman, Marina Coast Water District

#### **Policy Research and Technical Paper Review Workgroup**

Gary Crisp, GHD Inc. (Chair)

#### **Public Relations/Marketing Workgroup**

Shawn Dewane, Mesa Water District (Co-chair)  
Carol Kwan, West Basin Municipal Water District (Co-chair)  
Steve Heinz, Metropolitan Water District of Southern California  
Ron Wildermuth, West Basin Municipal Water District

### Program Workgroup

Mike Dunbar, South Orange Coastal Ocean Desalination Project/South Coast Water District (Chair)

Bill Kocher, SCWD2- City of Santa Cruz

Paul Shoenberger, Mesa Consolidated Water District

Warren Teitz, Metropolitan Water District of Southern California

Bob Yamada, San Diego County Water Authority

Items that CALDESAL has been involved with:

- 1. Legislative Proposal for CalDesal Sponsorship:** The Metropolitan Water District of Southern California submitted a proposal for CalDesal sponsorship as legislation in 2012. The proposal would create a Task Force to recommend streamlining seawater desalination permitting processes. However, the proposal would not change regulatory standards, just how they are applied through the permitting process. This proposal would build on the outcome of the Water Desalination Task Force created in 2002 by AB 2717 (Hertzberg). That task force submitted a report with findings and recommendations including a recommendation “To improve communication, cooperation, and consistency in permitting processes, encourage review processes for each desalination project to be coordinated among regulators and the public.” Until now, nothing has come of that recommendation. The bill would benefit the numerous CalDesal members that are considering seawater desalination as a water supply option. The bill would also be viewed by many as an opportunity to streamline and make more efficient state government in a time of economic uncertainty. This should also provide CalDesal and its member agencies a great opportunity to educate legislators and the public of the benefits of water desalination and proper management of the concentrate byproduct.
- 2. H.R. 2664 (Representative Grace Napolitano) Reauthorization of Water Desalination Act 2011:** H.R. 2664 would reauthorize the Water Desalination Act of 1996 that authorized the Secretary of the Interior to promote demonstration projects to develop new water and energy technologies and to create new supplies of usable water for various purposes. The bill also calls for the development of innovative methods and technologies to reduce the volume and cost of desalination concentrated wastes in an environmental sound manner. The bill has been identified by the House leadership as an earmark and thus has little chance of moving forward unless the Desal industry starts lobbying to get the bill the momentum to move through the House process. The author’s press release and the author’s staff represent that the bill applies to both ocean water and brackish groundwater desalination. However, the language of the bill is less than clear as to ocean water desalination. We may want to seek a clarification. The CalDesal Legislative Workgroup voted unanimously to recommend to the Executive Committee that CalDesal support H.R. 2664 and request clarification from the author to make certain the bill applies to ocean water desalination.

3. **Support for Wedge Wire Screened Seawater Open Intakes Policy:** The Legislative Committee members recommended that CalDesal's Executive Committee should consider writing and adopting a policy on open intakes that supports wedge wire screens. This discussion was driven by the fact that there are several state agencies that wish to establish a state desalination policy that is consistent with the recently approved Once Through Cooling Policy (OTC). The OTC policy calls for energy plants to stop using ocean water for cooling purposes. The OTC does not apply to desalination and therefore desalination should not be subject to a policy consistent with OTC. There are important technical differences between OTC and desalination that warrant differentiation. Wedge wire or similar screens just add more credence to that argument and make a compelling argument that desalination environmental impacts are de minus. The Legislative Workgroup is recommending that the Executive Committee direct staff to work with the Regulatory Affairs Workgroup to develop consensus.
  
4. **SUBJECT: CalDesal Programs and Conferences:** CalDesal is preparing several programs in the near future and for 2012. CalDesal has also been asked to develop programs for a number of other water associations.
  - a. CalDesal sponsored Conference: Several CalDesal members have developed a proposal for a desalination workshop to provide a complete view of desalination, examining the reality of navigating a desalination project through the permitting process, including funding and construction. The program will be a day and half and will be held in a northern California location and a southern California location. The event sponsors would like CalDesal to serve as host for the two programs and would split any net proceeds with CalDesal.
  
  - b. ACWA Conference Program on Desalination - ACWA has requested CalDesal to develop a program on Emerging Trends in Desalination in California for the ACWA Fall Conference. The Executive Director has already lined up several excellent speakers and this program is set. The program will be on Wednesday, November 30 from 10:00 AM to 11:45 AM.
  
  - c. Urban Water Institute Request to Cosponsor and develop a program in spring of 2012.
  
  - d. Public Officials in Water and the Environment (POWER) request to CalDesal to sponsor their March 8 and 9, 2012 Conference at \$1000.00.
  
  - e. Multi-State Salinity Coalition: The Multi-State Salinity Coalition has requested the Executive Director to be a keynote speaker at the January 26, 2012 program. A key objective of this program is to promote awareness of salinity management and desalination challenges from a broad variety of perspectives. This program is in Las Vegas, Nevada.

- f. Desal Dialogue: CalDesal is one of a number of organizations across country that has been invited to participate in the Desal Dialogue. The Desal Dialogue is a WaterReuse Research Foundation work product managed by NRS Consulting Engineers and Nikolay Voutchkov. The purpose of the study is to bring utilities and regulators together to discuss and address the most important issues and obstacles associated with the permitting and implementation of inland brackish and seawater desalination projects.

## **6. Other**

Report:  
Committee Questions  
Public Comments  
Committee Decision

- a.** CALDESAL Update
- b.** Next Meeting – (date to be discussed at the meeting – December or January??)
- c.** Topics for Next Meeting
- d.** Other

## **G. MISCELLANEOUS ORAL REPORTS**

## **H. ADJOURNMENT**



**SOUTH ORANGE COASTAL OCEAN DESALINATION PROJECT  
DISCUSSION ITEM**  
December 5, 2011

**TO:** Board of Directors

**FROM:** **Planning & Operations**  
(Directors Royce, Clark, Hinman)

Kevin Hunt  
General Manager

Staff Contact: Karl Seckel/Richard Bell

**SUBJECT:** **Status Report on South Orange Coastal Ocean Desalination Project  
Phase 3 Budget Overview**

**STAFF RECOMMENDATION**

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It is recommended that the Planning and Operations Committee receive and file the report.

**COMMITTEE RECOMMENDATION**

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The MWDOC Committee recommendation will be developed at the meeting.

**SUMMARY DISCUSSION**

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The South Orange Coastal Ocean Desalination Project Participants and the MWDOC Board requested an update on the Phase 3 Project Budget and costs. This information is provided below:

<b>Budgeted (Y/N): Yes</b>	Budgeted amount: Staff time	Core ___	Choice <input checked="" type="checkbox"/>
<b>Action item amount: n/a</b>		Line item: SOCOD Phase 3 Budget	
<b>Fiscal Impact (explain if unbudgeted):</b> Funding comes from the Phase 3 SOCOD Project Funds and grants.			

## SOCOD Phase 3 Budget Overview

<b>Revenue</b>	
<b>EPA STAG Grant</b>	\$848,000
<b>BUREC Grant</b>	\$499,000
<b>DWR Grant</b>	\$1,500,000
<b>Participants Funds</b>	\$3,300,000
<b>Total Phase 3 Budget</b>	\$6,147,000
<b>Expenditures</b>	
<b>Work completed in previous periods</b>	\$3,825,891
<b>Total work in progress</b>	\$1,555,303
<b>Total work to be authorized/reserved</b>	\$510,000
<b>Contingency amount</b>	\$255,806
<b>Total work to be completed</b>	\$6,147,000

The details are shown below by contractor.

**South Orange Coastal Ocean Desalination Project  
Phase 3 Extended Pumping and Pilot Plant Test  
Current and Remaining Work Authorizations  
November 29, 2011**

Task	Firm/Supplier	Contracted Budgeted	Cumulative Costs Thru 30-Sep-11	Projected Costs Oct Thru 30-Jun-12	Total
<b>AUTHORIZED WORK</b>					
<b>1 ENVIRONMENTAL &amp; PERMITTING</b>					
1.1 <i>Paleo/Bio Monitoring and Site Lease</i>	Chambers/SCWD	\$60,397	\$43,139	\$17,258	\$60,397
1.1 <i>Lagoon Environment Impact Assessment</i>	Chambers/Trout Unlimited	\$25,000	\$0	\$25,000	\$25,000
1.2 <i>Discharge Monitoring &amp; Analysis</i>	Geoscience/MBC/Flow Science	\$275,816	\$225,029	\$50,787	\$275,816
1.4 <i>Brine Disposal Regulatory Support</i>	Flow Science	\$22,500	\$0	\$22,500	\$22,500
<b>Subtotal</b>		<b>\$383,713</b>	<b>\$268,168</b>	<b>\$115,545</b>	<b>\$383,713</b>
<b>2 PUMPING AND PILOT PLANT FACILITIES</b>					
2.1 <i>Extension of Outfall to Thor's Hammer</i>	SCW & State Parks	\$91,860	\$0	\$2,526	\$2,526
<b>3 WATER QUALITY, CORROSION, MICROBIAL AND PILOT PLANT STUDIES</b>					
3.2 <i>Pilot Facilities Operation</i>	SPI/SDGE	\$510,047	\$335,777	\$174,270	\$510,047
3.3 <i>Submersible Pump &amp; Well Performance</i>	SPI	\$2,430	\$540	\$1,890	\$2,430
3.6 <i>Materials Corrosion Testing/Evaluation</i>	Engineering Materials	\$26,242	\$5,683	\$20,559	\$26,242
<b>Subtotal</b>		<b>\$538,719</b>	<b>\$342,000</b>	<b>\$196,719</b>	<b>\$538,719</b>
<b>4 HYDROGEOLOGY SERVICES</b>					
4.1 <i>MWs Service/Downloads/Testing/Reports</i>	Geoscience	\$21,055	\$11,040	\$10,015	\$21,055
4.2 <i>Groundwater Modeling</i>	Geoscience/PACE	\$325,613	\$231,986	\$93,628	\$325,613
4.5 <i>Geochemistry Testing</i>	Coastal GW (Charette)	\$111,277	\$85,105	\$26,172	\$111,277
4.6 <i>Offshore Investigation Scoping - Experts Panel Review</i>	Misc	\$22,400	\$0	\$22,400	\$22,400
<b>Subtotal</b>		<b>\$480,345</b>	<b>\$328,130</b>	<b>\$152,215</b>	<b>\$480,345</b>
<b>5 PROJECT MANAGEMENT, GRANT ADMINISTRATION AND PUBLIC OUTREACH</b>					
5.4 <i>State and Federal Advocacy</i>	Barker & Townsend	\$150,000	\$96,000	\$54,000	\$150,000
<b>Total In Progress Authorized Work</b>		<b>\$1,644,637</b>	<b>\$1,034,299</b>	<b>\$521,004</b>	<b>\$1,555,303</b>
<b>REMAINING WORK TO BE AUTHORIZED</b>					
2.3 <i>Remove, Destroy Test Facilities/Well and Site Restoration</i>	TBD	\$310,000	\$0	\$310,000	\$310,000
3.2 <i>Mothballing Test Facility During Berm Blockage</i>	SPI	\$50,000	\$0	\$50,000	\$50,000
5.3 <i>Final Reports to DWR &amp; EPA</i>	SPI/Geoscience	\$150,000	\$0	\$150,000	\$150,000
<b>Total Remaining Work to be Authorized</b>		<b>\$510,000</b>	<b>\$0</b>	<b>\$510,000</b>	<b>\$510,000</b>
<b>TOTAL CONTRACTED/COMPLETED WORK FROM PREVIOUS PERIODS</b>					<b>\$3,825,892</b>
<b>TOTAL IN PROGRESS AUTHORIZED WORK</b>					<b>\$1,555,303</b>
<b>TOTAL REMAINING WORK TO BE AUTHORIZED</b>					<b>\$510,000</b>
<b>Subtotal</b>					<b>\$5,891,195</b>
<b>CONTINGENCY</b>					<b>\$255,805</b>
<b>TOTAL PROJECT FUNDS</b>					<b>\$6,147,000</b>
Note: MWDOC labor costs included only for grant reimbursable amounts					



## INFORMATION ITEM

December 5, 2011

**TO: Planning & Operations Committee**  
(Directors Royce, Clark, Hinman)

**FROM: Kevin Hunt, General Manager**

Staff Contact: J. Berg, WUE Programs Manager

**SUBJECT: South Orange County Integrated Regional Water Management Plan  
(SOCIRWMP) SmarTimer Purchase and Distribution Program**

### STAFF RECOMMENDATION

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Staff recommends the Committee receive and file the report.

### COMMITTEE RECOMMENDATION

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Committee recommends (To be determined at Committee Meeting)

### SUMMARY

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In October 2011, the Board authorized the purchase of up to 750 SmarTimers to be distributed by retail water agencies in south county using budgeted Proposition 50 grant funding obtained through the South Orange County Integrated Regional Watershed Management Area. Two implementation formats were described to the Board including Workshop Distributions and Contractor Installation.

Staff has continued to meet with the south county agencies to plan for this effort. At our November 1 meeting, the agencies requested SmarTimer installation costs be paid for by the grant and local funding, rather than participants. Staff viewed this as a significant deviation from what was previously presented to the Board as it will require MWDOC to hire contractors to install the SmarTimers. Staff reviewed this request against available grant, retail agency, and Metropolitan funding and concluded that sufficient financial resources are available to fund installation costs.

As planned, staff released a Request for Quotes (RFQ) to solicit installation costs from local landscape contractors. Staff will return to the Board in January with a request to hire several installation contractors for this program.



**INFORMATION ITEM**

December 5, 2011

**TO: Planning & Operations Committee**  
(Directors Royce, Clark, Hinman)

**FROM: Kevin Hunt, General Manager**

Staff Contact: J. Berg, WUE Programs Manager

**SUBJECT: Landscape Return on Investment Calculator**

**STAFF RECOMMENDATION**

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Staff recommends the Committee receive and file the report.

**COMMITTEE RECOMMENDATION**

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Committee recommends (To be determined at Committee Meeting)

**SUMMARY**

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MWDOC was awarded two grants, one from Metropolitan and another from the Bureau of Reclamation, for the development of a Return on Investment (ROI) Calculator and Educational Program to promote landscape improvements in urban landscapes. The basic goal of this effort is to develop new tools to facilitate business-based decision making for landscape water use efficiency improvements. The grant proposals included a partnership between MWDOC, the City of Santa Rosa (City), and Contra Costa Water District (CCWD). A summary of the grants is provided in Table 1.

<b>Table 1 Summary of Return on Investment Calculator and Educational Program Grants</b>			
<b>Task:</b>	<b>Metropolitan Grant</b>	<b>Bureau Grant</b>	<b>Total</b>
Return on Investment Calculator	\$17,000	\$15,000	\$32,000
Educational Materials	\$17,000	\$30,000	\$47,000
Training/Workshops	\$22,500	\$55,000	\$77,500
<b>Total:</b>	<b>\$56,500</b>	<b>\$100,000</b>	<b>\$156,500</b>

Over the past year, the City of Santa Rosa developed a beta version of an ROI Calculator, educational materials, and promotional workshop. Through MWDOC's grants, the City will be able to make further improvements to these tools and allow for branding for the MWDOC and CCWD service areas.

The City has agreed, in concept, to take the lead in further development of the ROI Calculator, educational materials and workshops. In addition, City of Santa Rosa staff will implement workshops in all three service areas. City staff is currently developing a cost proposal to provide these services to MWDOC. These services will be funded by the Metropolitan and Bureau grants.

This informational item is intended to brief the Board on an upcoming Action Item. MWDOC staff will be returning to the Board in January or February with a final recommendation on implementation of this effort.



**INFORMATION ITEM**

December 5, 2011

**TO: Planning & Operations Committee**  
(Directors Royce, Clark, Hinman)

**FROM: Kevin Hunt, General Manager**

Staff Contact: Karl Seckel and Kelly Hubbard

**SUBJECT: MWDOC Staff Report on Investigation for WEROC Radio System**

**STAFF RECOMMENDATION**

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

**COMMITTEE RECOMMENDATION**

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Committee recommends (To be determined at Committee Meeting)

**SUMMARY**

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Staff emailed the Board a preliminary report on the investigation of the WEROC Radio system on Monday, October 31, 2011 (please see attached report). Staff has completed discussions with MET who will be dispatching staff and their contractor to review the system status of the Pleasant's Peak repeater. We are awaiting on the specifics of the site visit. MET has informed us that they are not interested in maintaining the repeater for us on a regular basis.

<b>Budgeted (Y/N):</b>	Budgeted amount:	Core <input checked="" type="checkbox"/> _	Choice <input type="checkbox"/>
<b>Action item amount:</b>	Line item:		
<b>Fiscal Impact (explain if unbudgeted):</b> Costs impacts are unknown at this time.			

## **MWDOC Staff Report on Investigation for WEROC Radio System**

Karl Seckel and Kelly Hubbard met with radio experts from OC on 10/18/2011 to review the communication issues occurring with the WEROC radio system. Those experts included the Director of Communications for the OC Sheriff's Department, a Met staff person from Diemer with extensive communications background and familiarity with the WEROC system, and the IT and Communications Manager for a WEROC member agency who volunteered his expertise. After a lengthy discussion about previous issues, the current problem and future options, the following plan was developed.

Step 1: Get the Radio System Working ASAP - The noise and current issues are thought to be due to continuing problems with the repeater on Pleasants Peak. It was noted that the original problem at that site was resolved some time ago, but it appears as if some type of interference or technical component is causing interference with the system. Options include having our radio contractor visit the site and provide trouble shooting, or to have other qualified staff visit the site and provide trouble shooting. Our contractor has lost key staff, restricting their availability and causing staff to have lost some confidence in them. The repeater is located at the same site as MET's radio system and because it is a similar frequency and because the interference may be a result of the close frequencies, we believe it would be in our best interest to hire MET to conduct the work. Since the meeting, we have confirmed with MET staff that they will be able to trouble shoot and repair the repeater as if it was theirs and then bill us for the work. It may be in our interest to hire MET to maintain the site on an on-going basis. We will check to see if that is feasible as well. We may also look into raising the height of the antenna at the MWDOC office if interference at that location continues.

Step 2: System Assessment and Training - All agreed that Step 1 would not be enough to ensure long term operability of the system at all locations. It was recommended that a "System Assessment" should be completed that would systematically check all radios, both WEROC's and the member agencies' (approximately 60) and the 2 repeater sites. This assessment would document which types of radios are at all sites, what the settings are to reach each repeater, check which ones are reprogrammable, check that all systems are operational, provide re-programming if necessary, and provide training of staff on proper operations and maintenance of the systems. Training would have to be built into a regular radio check of the systems. The documentation would be used to make the next recommendation for step 3. This step can also test the simplex operation (direct radio to radio) of the radio systems from the Operational Area in case the repeater is ever knocked out of operation. Staff will have to determine who best can complete this work for us and what the costs will be.

Step 3: Check Alternate Frequency for Conversion of the WEROC Radio System - Every radio technician that has ever looked at the WEROC radio frequencies has made the recommendation that WEROC change the input and output frequencies due to their very close proximity within the bandwidth. OC Sheriff's Department Communications Division is offering to give us the needed frequencies to do this at no cost. However the reprogramming of all the repeaters and radios that would be required when the frequencies are switched may be a significant cost. Depending on the vintage of the radio, the frequencies may be reprogrammable or the radios may need to be replaced in total. The information collected in the assessment will be used to tell us the cost of this option. Traditionally the cost of programming and replacement radios has been a cost that each member agency incurs.

Step 4: Investigate a Buy-in to the County 800 Megahertz System - Buying into the County's 800 megahertz system would provide a high quality communication system that is fully supported by the County and easily allows communication among many cities, law and fire services throughout the county. It was noted that WEROC could have its own channel created on the County's system as a primary method of communications. We could get rid of the current radio system and just use the 800 MH system, however radio systems being what they are, the more the better to ensure something works during an emergency is a common recommendation. To buy into the 800 MH system there is an initial \$2,450 license fee per radio, plus the initial cost of each radio, and then an annual \$200 fee for maintenance of the system (the initial investment per radio is rounded off at about \$5,000 – WEROC has 60 radios, so the cost would be about \$300,000). The county has a full staff of technicians that keep the system running and a training officer that provides training to all systems users. The County indicated they would allow us to borrow a mobile radio to test coverage in the entire county area before we proceed on this course of action. We would likely need grant funds to be able to afford this system, and there would be an ongoing annual fee that would need to be paid by our member agencies. Since we would be a low use emergency use of the system, we could petition for a lower buy-in fee. It is unknown if this would be allowed as it sets a bad precedent for the County.

Both Steps 3 and 4 are conditional based on what is found in the field during the assessment, our agencies input, and what the agencies are willing to pay for. In an ideal world we would complete Steps 1 through 4. Staff will initially complete Steps 1 and 2 and see what comes out. Staff is also researching satellite phone systems as a possible back-up solution.

## Status of Ongoing MWDOC Reliability and Engineering and Planning Projects

**November 30, 2011**

Description	Lead Agency	Status % Complete	Scheduled Completion Date	Comments
<b>Baker Treatment Plant or Expansion of Baker Water Treatment Plant</b>	IRWD, MNWD, SMWD, ETWD Trabuco CWD		On line date is 2014	<p>(Nothing New to Report) IRWD and its partners are proceeding with the final design of the Baker Treatment Plant, including the treatment plant, a reservoir and a pump station to connect into the AMP. A pump station is also being designed to allow water from Irvine Lake to be delivered through the Baker Pipeline to the treatment plant. The treatment plant is being designed at 43.5 cfs with 10.5 cfs going directly to IRWD and 33 cfs going into a separate local pipeline to connect to the South County Pipeline. The updated schedule for this project is:</p> <ul style="list-style-type: none"> <li>• December 2011 - Complete pre-selection process of microfiltration membranes &amp; ultraviolet disinfection equipment.</li> <li>• March 2012 - Complete design for the Baker Plant; project out to bid.</li> <li>• July 2012 - Award construction of Baker Plant.</li> <li>• February 2014 - Complete Baker Plant construction.</li> </ul>
<b>MET Interconnections – Second Lower Cross Feeder</b>	MWDOC			<p>The second meeting of the work group is anticipated for December 2011. A tentative agenda has been prepared. This meeting will set the objectives for the next couple of steps to be taken by the group to help develop and</p>

Description	Lead Agency	Status % Complete	Scheduled Completion Date	Comments
				implementable project. Kevin Hunt and Karl Seckel recently met with IRWD to ascertain their interest in the project.
<b>South Orange Coastal Ocean Desalination Project</b>	MWDOC		Phase 3 work completed in 2012.	A report is included on the November P&O agenda regarding the recent Participants meeting.
<b>Budget Based Tiered Rates Grant from DWR</b>				Karl Seckel worked with the City of San Clemente to add an element to their current cost of service evaluation to study the issues associated with Budget Based Tiered Rates. The City of San Clemente approved the agreement with MWDOC to gain access to \$34,000 in grant funding towards their study efforts.
<b>Poseidon Resources Ocean Desalination Project in Huntington Beach</b>				<p>(Nothing New to Report) Work is still underway on the system integration concepts to understand the capability of the City of Huntington Beach system to convey additional water for integration of the Poseidon Project into that part of the County. Howard Johnson, former Utilities Director for the City of Huntington Beach was brought on board with Richard Brady &amp; Associates to help in the process. Howard provided an update on his work at the Dec 6 Poseidon meeting.</p> <p>Quite a lot of information came out of the last San Diego County Water Authority meeting on the Poseidon Carlsbad project. We are expecting Poseidon to share this</p>

Description	Lead Agency	Status % Complete	Scheduled Completion Date	Comments
				information at the Dec 6 meeting. The schedule for the Huntington Beach Project will be dictated by the speed with which the issues can be settled with San Diego County Water Authority on the Carlsbad project.
<b>Other Meetings</b>				
				Karl Seckel and Keith Lyon recently met with the City of San Clemente staff and MET to discuss the Local Resources Program funding for their recycled water expansion project. The \$22 million project will serve about 100 customers and will increase their utilization of recycled water by about 1,000 acre-feet. The agreement will go before the MET board in a few months for consideration. No problems are expected.
				Karl Seckel and Susan Hinman attended the San Juan Utilities Commission.
				Karl Seckel attended the San Juan Basin Authority meeting where the schedule for the groundwater modeling work was discussed along with the schedule for the Groundwater Management Plan.
				Karl Seckel presented to the Orange County Water Association on the ocean desalination costs, the recent public polling conducted by MWDOC and the progress on the South Orange Coastal Ocean Desalination Project.

<b>Description</b>	<b>Lead Agency</b>	<b>Status % Complete</b>	<b>Scheduled Completion Date</b>	<b>Comments</b>
				Karl Seckel and Susan Hinman presented to the Dana Point Civic Association on the South Orange Coastal Ocean Desalination Project and other water issues.
				Karl Seckel and Richard Bell worked with Joe Berg to revise the goals and objectives for the Water Supply Portion of the South Orange County Integrated Regional Water Management Plan. Joe has been working with the workgroup on a process for ranking and selecting future projects for funding.
				Karl Seckel is working with MNWD on an upcoming presentation on water supply and system reliability issues to help them understand issues associated with the imported water into the region.
				Karl Seckel and Kelly Hubbard recently hosted several WEROC meetings on the Golden Guardian Exercise scheduled for May 2012 and on an update of the Hazard Mitigation Plan completed in 2006. The Hazard Mitigation Plan expires in February 2012 and needs to be updated by that date..

Status of Water Use Efficiency Projects

November 2011

Description	Lead Agency	Status % Complete	Scheduled Completion or Renewal Date	Comments
<p><b>Smart Timer Rebate Program</b></p>	<p>MWDSC</p>	<p>70%</p>	<p>September 2013</p>	<p>In October 2011, 30 smart timers were installed in the residential sector and zero in the commercial sector.</p> <p>The South Orange County Integrated Regional Watershed Management Plan (SOCIRWMP) Water Use Efficiency Program Expansion (WUEPE) Project continues its next phase of the Grant requirement. The Project, titled “The SmartScape Irrigation Improvement Project,” has completed 156 of the 220 sites enrolled. Currently, 56 additional participants are in the construction/improvement phase of the Project, and post inspections will be scheduled for completion. It is anticipated that this Project will be implemented through the end of 2011.</p> <p>Staff is also working on a smart timer purchase and distribution project for those agencies in the SOCIRWMP implementation area. The project is still in its planning stages. To date, Staff has met several times with the south county agencies to refine the project’s concepts. Staff has also begun work on a smart timer installer Request for Quotes (RFQ). The purpose of the RFQ is to solicit standard installation procedures and pricing by licensed installers.</p> <p>Staff will be meeting again with the south county agencies to further discuss the project and will bring the project’s smart timer installer information to the December P&amp;O committee and, ultimately, the December board meeting for approval.</p> <p>For program water savings and number of smart timer rebates, see MWDOC Water Use Efficiency Program Savings and Implementation Report.</p>

Description	Lead Agency	Status % Complete	Scheduled Completion or Renewal Date	Comments
<b>Rotating Nozzles Rebate Program</b>	MWDSC	97%	February 2013	<p>In October 2011, 1,630 residential and 38 commercial rotating nozzles were installed in Orange County.</p> <p>For the entire program, a total of 179,593 rotating nozzles have been installed and rebated on in Orange County (48,182 rotating nozzles in residential settings and 131,411 rotating nozzles in commercial settings).</p> <p>Staff has initiated the closeout of the DWR nozzle grant by temporarily halting the program to reconcile and determine the amount of remaining grant funds. Once the applications currently being processed are completed, Staff will quantify the remaining grant funds that can be spent in the final offering of the program.</p> <p>For program savings and implementation information, please see MWDOC Water Use Efficiency Program Savings and Implementation Report.</p>
<b>Landscape Performance Certification Program</b>	MWDOC	On-going	December 2011	<p>In September 2011, a total of 11,246 meters received monthly irrigation performance reports comparing actual water use to a landscape irrigation budget customized to each meter. Sixteen member agencies are participating in the program.</p> <p>Staff was awarded two grants, one from Metropolitan's Innovative Conservation Program and the other from the Bureau of Reclamation, for the development of an educational campaign and a Return on Investment Calculator for landscape water efficiency improvements. These grants include a partnership with the City of Santa Rosa and the Contra Costa Water District to develop both the ROI Calculator and the campaign. Staff finalized the scopes of work and signed agreements with Metropolitan and USBR in September. Staff is now formulating agreement arrangements with the City of Santa Rosa and Contra Costa Water District.</p>

Description	Lead Agency	Status % Complete	Scheduled Completion or Renewal Date	Comments
<b>Landscape Performance Certification Program (cont.)</b>				For program savings and implementation information, please see MWDOC Water Use Efficiency Program Savings and Implementation Report.
<b>High Efficiency Clothes Washer Rebate Program</b>	MWDCS	On-going	June 2015	<p>In October 2011, a total of 963 High Efficiency Clothes Washers were installed through this program.</p> <p>For program savings and implementation information, please see MWDOC Water Use Efficiency Program Savings and Implementation Report.</p>
<b>Save Water, Save A Buck Rebate Program</b>	MWDCS	On-going	June 2012	<p>In October 2011, a total of 221 devices were installed through this program.</p> <p>For program savings and implementation information, please see MWDOC Water Use Efficiency Program Savings and Implementation Report.</p>
<b>Industrial Process Water Use Reduction Program</b>	MWDOC	75%	December 2013	<p>Survey scheduling is ongoing. A total of 33 Focused Surveys and 13 Comprehensive Surveys have been completed or are in progress. To date, eight companies have signed Incentive Agreements, and eight companies have signed Statements of Interest.</p> <p>Two new Focused Surveys have been completed at Coastline Metal Finishing and Electronic Precision Inc. Comprehensive surveys will commence at both of these sites. The Comprehensive Surveys for Oakley and Jazz Semiconductor continue to be ongoing. The Comprehensive Survey Report has been finalized for B. Braun.</p> <p>Implementation of water savings devices and recommendations at Boeing, Continuous Coatings, and Hixson is ongoing and in accordance with program criteria. The MacArthur Court Central Plant is also in the process of implementing cooling tower process improvements.</p>

Description	Lead Agency	Status % Complete	Scheduled Completion or Renewal Date	Comments
<b>Industrial Process Water Use Reduction Program (cont.)</b>				For program savings and implementation information, please see MWDOC Water Use Efficiency Program Savings and Implementation Report.
<b>Landscape Programs Database</b>	MWDOC	95%	December 2011 (Revised)	<p>In May 2010, the Board authorized staff to hire Fortech to develop the Comprehensive Landscape Programs Database. Work began on development of the database in July 2010.</p> <p>Staff is in the final stages of testing the database to verify that the defined functionality has been built in and will conclude testing this month. Staff will then populate the database with historic program information, and go “live” with the database in December 2011.</p>
<b>MWDOC Conservation Meeting</b>	MWDOC	On-going	Monthly	This month’s meeting was held on November 3, 2011 and was hosted by MWDOC. The next meeting will be held on December 1, 2011 and will also be hosted by MWDOC.
<b>Metropolitan Conservation Meeting</b>	MWDSC	On-going	Monthly	This month’s meeting was held on November 17, 2011 at Metropolitan. The next meeting will be December 15, 2011.
<b>Water Smart Hotel Program</b>	MWDOC	55%	December 2013	<p>MWDOC was awarded a Proposition 50 Water Use Efficiency grant and a Bureau of Reclamation grant, to be matched with Metropolitan funds (Save Water, Save A Buck), to conduct up to 105 commercial and landscape audits of hotels. Enhanced financial incentives, not to exceed a total of \$633,900, will be distributed to augment rebate levels among Save A Buck fixtures.</p> <p>Recent participants in the program include: (1) the Courtyard - Fountain Valley, which received \$29,800 in incentives for replacing 149 high water using toilets with high efficiency toilets (HETs); (2) the Residence Inn - Fountain Valley, which received \$30,000 for replacing 150 toilets with HETs; and (3) the Residence Inn - Costa Mesa, which received \$8,200 for replacing 41 toilets with HETs.</p> <p>Survey scheduling is ongoing and targets small, medium, and</p>

Description	Lead Agency	Status % Complete	Scheduled Completion or Renewal Date	Comments
<b>Water Smart Hotel Program (cont.)</b>				large hotels. No surveys were scheduled or reports delivered in the month of October. Staff is working with WaterWise Consulting, the implementation contractor for the Program, to finalize the review and delivery of several pending reports.
<b>Turf Removal Program</b>	MWDOC	3%	March 31, 2012	<p>There are 19 retail water agencies currently participating in the program. As of October 2011, a total of 109 applications have been received representing a potential turf removal amount of 198,810 sqft (45,355 sqft for commercial sites and 153,455 sqft for residential sites).</p> <p>In October 2011, staff completed processing the first six applications, representing 7,718 sqft of turf removed in Orange County.</p>
<b>UC Verde Turf Study Pilot Program</b>	MWDOC	40%	December 2012	<p>MWDOC and The Bluffs Homeowners Community Association established a program to consider the appropriateness of UC Verde turfgrass at The Bluffs. The pilot project will measure: (1) the removal costs of the current turf, (2) soil preparation, (3) planting UC Verde plugs, (4) irrigation water use, and (5) mowing and maintenance compared to a control plot.</p> <p>Planting of the UC Verde plugs was completed in early May 2011. Through a site visit in September, the establishment of roots and coverage was completed. Additionally, baseline turfgrass identification was performed on the control site to identify existing turf grass types, which will be used in the statistical water use evaluation. The water use monitoring phase of the study began in November 2011 and will conclude in October 2012, at which time the statistical water savings evaluation will begin.</p>

## Orange County Water Use Efficiency Programs Savings and Implementation Report

### Retrofits and Acre-Foot Water Savings for Program Activity

Program	Program Start Date	Retrofits Installed Through	Month Indicated		Current Fiscal Year To Date		Overall Program To Date	
			Interventions	Water Savings	Interventions	Water Savings	Interventions	Water Savings
High Efficiency Clothes Washer Program	2001	October-11	963	2.22	2,875	14.5	79,560	10,264
Smart Timer Program - Irrigation Timers	2004	October-11	30	0.12	246	0.67	6,730	12,190
Rotating Nozzles Rebate Program	2007	October-11	1,668	0.56	10,900	44	179,593	3,850
Save Water Save A Buck Commercial Plumbing Fixture Rebate Program	2002	October-11	221	0.89	751	48.66	40,684	20,167
Landscape Certification Program [1]	1997	September-11	11,246	802.51	11,246	2,404	11,246	29,825
Industrial Process Water Use Reduction Program	2006	October-11	0	0.00	0	0	2	208
Turf Removal Program <sup>[3]</sup>	2010	November-11	0	0.00	0	0	132,411	74
High Efficiency Toilet (HET) Program	2005	February-11	0	0	0	0	26,819	3,425
Synthetic Turf Rebate Program	2007	April-11	0	0	0	0	685,438	277
Ultra-Low-Flush-Toilet Programs <sup>[2]</sup>	1992	June-09	0	0	0	0	363,926	138,457
Home Water Surveys <sup>[2]</sup>	1995		0	0	0	0	11,867	1,708
Showerhead Replacements <sup>[2]</sup>	1991		0	0	0	0	270,604	19,083
<b>Total Water Savings All Programs</b>				<b>806.3</b>		<b>2,511.9</b>		<b>239,527</b>

<sup>(1)</sup> Landscape Certification Program participation is based on the number of water meters receiving monthly Irrigation Performance Reports.

<sup>(2)</sup> Cumulative Water Savings Program To Date totals are from a previous Water Use Efficiency Program Effort.

<sup>(3)</sup> Turf Removal Interventions are listed as square feet.

Agency	FY 01/02	FY 02/03	FY03/04	FY 04/05	FY 05/06	FY 06/07	FY 07/08	FY 08/09	FY 09/10	FY 10/11	FY 11/12	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	47	1,315	0.22	171.96
Buena Park	9	45	88	81	84	85	114	146	59	230	65	1,006	0.37	116.75
East Orange CWD RZ	3	8	20	20	11	18	22	17	3	23	4	149	0.02	19.85
El Toro WD	21	88	108	103	83	91	113	130	32	162	24	955	0.12	122.94
Fountain Valley	36	127	209	196	178	205	219	243	72	289	61	1,835	0.32	238.08
Garden Grove	39	173	278	243	243	238	304	332	101	481	83	2,515	0.43	316.03
Golden State WC	37	195	339	374	342	339	401	447	168	583	156	3,381	0.69	429.77
Huntington Beach	114	486	857	738	680	761	750	751	211	963	221	6,532	1.21	862.03
Irvine Ranch WD	159	626	1,087	1,093	1,445	1,972	2,052	1,844	1,394	2,621	782	15,075	4.00	1,845.76
La Habra	8	40	86	81	66	96	136	83	22	179	36	833	0.20	103.47
La Palma	3	5	13	21	18	33	35	51	25	76	17	297	0.09	33.37
Laguna Beach CWD	17	88	119	84	68	57	77	77	27	96	28	738	0.15	96.14
Mesa Water District	24	117	228	240	212	239	249	246	73	232	61	1,921	0.29	260.63
Moulton Niguel WD	158	630	841	640	570	652	716	742	250	1,127	233	6,559	1.20	830.91
Newport Beach	17	144	343	277	243	245	270	259	57	197	47	2,099	0.22	292.30
Orange	58	247	304	358	330	366	365	403	111	349	81	2,972	0.39	404.46
Orange Park Acres	-	-	-	-	-	4	8	-	-	-	-	12	0.00	1.77
San Juan Capistrano	16	95	120	107	102	109	103	127	43	190	36	1,048	0.18	133.14
San Clemente	32	182	235	170	136	204	261	278	63	333	81	1,975	0.42	245.48
Santa Margarita WD	140	510	743	573	592	654	683	740	257	1,105	246	6,243	1.24	786.27
Seal Beach	13	28	57	39	46	47	46	57	7	81	17	438	0.09	55.53
Serrano WD	9	16	54	39	39	30	31	23	7	21	6	275	0.02	39.45
South Coast WD	35	138	165	97	103	107	130	148	43	183	48	1,197	0.26	150.23
Trabuco Canyon WD	10	63	76	58	44	69	60	62	28	82	17	569	0.10	73.55
Tustin	21	89	152	138	127	152	146	144	45	174	37	1,225	0.16	162.72
Westminster	37	159	235	196	186	213	171	233	74	329	67	1,900	0.33	243.03
Yorba Linda	36	214	342	355	333	288	350	367	117	394	91	2,887	0.41	385.69
<b>MWDOC Totals</b>	<b>1,069</b>	<b>4,620</b>	<b>7,277</b>	<b>6,453</b>	<b>6,424</b>	<b>7,406</b>	<b>7,987</b>	<b>8,106</b>	<b>3,331</b>	<b>10,686</b>	<b>2,592</b>	<b>65,951</b>	<b>13.11</b>	<b>8,421.32</b>

Anaheim	917	677	904	1,364	701	854	847	781	860	910	121	8,936	0.58	1,228.43
Fullerton	40	196	369	289	263	269	334	330	69	397	101	2,657	0.50	345.98
Santa Ana	15	69	188	269	244	236	235	257	87	355	61	2,016	0.32	267.87
<b>Non-MWDOC Totals</b>	<b>972</b>	<b>942</b>	<b>1,461</b>	<b>1,922</b>	<b>1,208</b>	<b>1,359</b>	<b>1,416</b>	<b>1,368</b>	<b>1,016</b>	<b>1,662</b>	<b>283</b>	<b>13,609</b>	<b>1.40</b>	<b>1,842.27</b>

<b>Orange County Totals</b>	<b>2,041</b>	<b>5,562</b>	<b>8,738</b>	<b>8,375</b>	<b>7,632</b>	<b>8,765</b>	<b>9,403</b>	<b>9,474</b>	<b>4,347</b>	<b>12,348</b>	<b>2,875</b>	<b>79,560</b>	<b>14.50</b>	<b>10,263.59</b>
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Agency	FY 04/05		FY 05/06		FY 06/07		FY 07/08		FY 08/09		FY 09/10		FY 10/11		FY 11/12		Total Program		Cumulative Water Savings across all Fiscal Years
	Res	Comm.	Res	Comm.	Res	Comm.	Res	Comm.	Res	Comm.	Res	Comm.	Res	Comm.	Res	Comm.	Res	Comm.	
Brea	2	0	1	3	8	6	0	40	3	9	0	0	2	0	3	0	19	58	201.37
Buena Park	0	0	0	0	0	0	0	0	3	1	0	0	0	0	0	0	3	1	3.25
East Orange CWD RZ	1	0	2	0	0	0	0	0	0	0	0	0	1	0	5	0	9	0	1.34
El Toro WD	1	0	8	0	4	95	1	174	0	25	2	18	5	5	4	0	25	317	1,084.87
Fountain Valley	3	3	2	2	11	0	4	0	1	0	0	6	2	2	4	0	27	13	46.66
Garden Grove	2	2	11	1	2	0	1	3	2	1	6	0	5	4	6	0	35	11	40.67
Golden State WC	0	0	15	2	24	12	8	8	1	2	9	22	7	4	3	0	67	50	155.56
Huntington Beach	5	2	21	9	12	12	7	1	13	1	6	27	6	36	6	0	76	88	228.31
Irvine Ranch WD	2	2	68	111	160	434	66	183	29	56	14	145	28	153	17	0	384	1,084	3,644.86
La Habra	0	0	0	0	7	1	1	0	0	0	0	21	0	0	3	0	11	22	48.75
La Palma	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00
Laguna Beach CWD	3	0	5	0	21	0	5	0	2	0	2	14	4	1	10	0	52	15	40.78
Mesa Water District	5	0	13	27	14	6	12	0	6	7	13	7	7	22	6	0	76	69	230.57
Moulton Niguel WD	2	0	25	10	39	52	59	20	21	23	17	162	36	60	24	0	223	327	838.15
Newport Beach	3	17	35	4	125	86	98	40	10	27	7	58	6	0	4	0	288	232	855.33
Orange	8	4	37	13	28	38	4	0	5	2	2	13	5	8	13	0	102	78	304.51
San Juan Capistrano	0	0	5	4	5	4	11	1	10	0	7	49	13	1	7	0	58	59	148.53
San Clemente	4	0	483	1	46	7	21	60	81	20	13	209	46	11	30	0	724	308	923.05
Santa Margarita WD	3	0	15	8	40	96	53	70	25	44	10	152	61	53	40	0	247	423	1,200.47
Santiago CWD	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00
Seal Beach	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	2.02
Serrano WD	0	0	0	0	0	0	0	0	0	0	11	0	4	0	2	0	17	0	1.98
South Coast WD	2	0	6	1	17	29	7	49	11	6	3	10	13	3	9	6	68	104	344.23
Trabuco Canyon WD	0	0	29	0	10	93	4	0	1	0	2	0	2	10	4	0	52	103	402.94
Tustin	1	0	1	4	0	0	2	3	7	9	10	14	10	0	5	0	36	30	86.43
Westminster	1	0	8	12	6	0	1	0	3	0	3	0	1	1	1	0	24	13	63.84
Yorba Linda	0	0	30	6	31	5	20	41	8	5	5	21	25	0	10	0	129	78	270.14
<b>MWDOC Totals</b>	<b>48</b>	<b>30</b>	<b>820</b>	<b>218</b>	<b>610</b>	<b>976</b>	<b>385</b>	<b>693</b>	<b>242</b>	<b>238</b>	<b>142</b>	<b>949</b>	<b>289</b>	<b>374</b>	<b>216</b>	<b>6</b>	<b>2,752</b>	<b>3,484</b>	<b>11,168.62</b>

Anaheim	6	1	8	13	17	78	12	57	9	59	5	46	12	11	11	0	80	265	4.00
Fullerton	0	0	2	0	10	0	10	0	2	2	2	39	9	33	10	0	45	74	136.22
Santa Ana	0	0	0	0	1	0	3	0	2	4	1	8	8	0	3	0	18	12	29.28
<b>Non-MWDOC Totals</b>	<b>6</b>	<b>1</b>	<b>10</b>	<b>13</b>	<b>28</b>	<b>78</b>	<b>25</b>	<b>57</b>	<b>13</b>	<b>65</b>	<b>8</b>	<b>93</b>	<b>29</b>	<b>44</b>	<b>24</b>	<b>0</b>	<b>143</b>	<b>351</b>	<b>169.50</b>

<b>Orange County Totals</b>	<b>54</b>	<b>31</b>	<b>830</b>	<b>231</b>	<b>638</b>	<b>1,054</b>	<b>410</b>	<b>750</b>	<b>255</b>	<b>303</b>	<b>150</b>	<b>1,042</b>	<b>318</b>	<b>418</b>	<b>240</b>	<b>6</b>	<b>2,895</b>	<b>3,835</b>	<b>11,338</b>
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Agency	FY 06/07			FY 07/08			FY 08/09			FY 09/10			FY 10/11			FY 11/12			Total Program			Cumulative Water Savings across all Fiscal Years
	Small		Large	Small		Large	Small		Large	Small		Large	Small		Large	Small		Large	Small		Large	
	Res	Comm.	Comm.	Res	Comm.	Comm.	Res	Comm.	Comm.	Res	Comm.	Comm.	Res	Comm.	Comm.	Res	Comm.	Comm.	Res	Comm.	Comm.	
Brea	0	0	31	0	0	0	0	0	0	0	0	0	32	0	0	57	0	0	119	100	0	2.13
Buena Park	0	0	0	0	0	32	0	0	0	0	0	0	29	0	0	32	0	0	98	75	2,535	268.32
East Orange	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	340	0	0	445	0	0	3.04
El Toro	0	0	24	0	0	71	0	0	0	0	0	0	174	0	0	134	0	0	541	3,584	890	144.35
Fountain Valley	0	0	64	0	0	0	0	0	0	0	0	0	83	0	0	64	0	0	302	0	0	3.52
Garden Grove	0	0	0	0	0	119	0	0	0	0	0	0	38	0	0	119	0	0	505	151	0	8.15
Golden State	0	0	90	0	0	0	0	0	0	0	0	0	303	943	0	90	0	0	917	972	0	18.58
Huntington Beach	0	0	40	0	0	0	0	0	0	0	0	0	203	625	0	96	0	0	753	4,909	2,681	479.43
Irvine Ranch	0	0	899	0	0	15	0	0	0	0	0	0	2,411	2,861	0	1,086	0	0	6,735	69,845	2,004	1224.13
La Habra	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24	808	900	142.53
La Palma	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	0	0	0.16
Laguna Beach	0	0	197	0	0	50	0	0	0	0	0	0	156	0	0	378	0	0	941	47	0	9.72
Mesa Water District	0	0	29	0	0	103	0	0	0	0	0	0	118	0	0	132	0	0	726	108	343	70.49
Moulton Niguel	0	0	330	0	0	37	0	0	0	0	0	0	1,578	0	0	439	0	0	2,974	7,003	2,945	521.14
Newport Beach	0	0	26	0	0	56	0	0	0	0	0	0	337	1,208	0	82	0	0	598	6,728	0	86.71
Orange	0	0	0	0	0	20	0	0	0	0	0	0	135	30	0	151	0	0	1,534	193	0	24.61
San Clemente	0	0	1,060	0	0	546	38	0	0	0	0	0	2,612	851	0	1,971	38	0	5,896	2,213	0	70.26
San Juan Capistrano	0	0	291	0	0	0	0	0	0	0	0	0	1,452	0	0	291	0	0	2,903	7,369	0	124.01
Santa Margarita	0	0	2,999	0	0	197	0	0	0	0	0	0	3,959	3,566	0	3,479	0	0	10,413	4,571	611	191.88
Seal Beach	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	115	291	0	5.33
Serrano	0	0	0	0	0	0	0	0	0	0	0	0	364	0	0	0	0	0	1,980	0	0	23.14
South Coast	38	0	122	65	0	97	0	0	0	0	0	0	318	1,772	0	280	143	0	787	2,048	0	24.38
Trabuco Canyon	0	0	356	0	0	23	0	0	0	0	0	0	0	0	0	379	0	0	1,866	791	0	29.88
Tustin	0	0	63	0	0	93	0	0	0	0	0	0	512	0	0	156	0	0	1,554	0	0	17.72
Westminster	0	0	26	0	0	0	0	0	0	0	0	0	0	0	0	26	0	0	217	0	0	2.84
Yorba Linda	0	0	142	0	0	0	0	0	0	0	0	0	529	0	0	197	0	0	2,100	3,369	500	138.62
<b>MWDOC Totals</b>	<b>38</b>	<b>0</b>	<b>6,789</b>	<b>65</b>	<b>0</b>	<b>1,459</b>	<b>38</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>15,343</b>	<b>11,856</b>	<b>0</b>	<b>9,979</b>	<b>181</b>	<b>0</b>	<b>45,053</b>	<b>115,175</b>	<b>13,409</b>	<b>3635.06</b>

Anaheim	0	0	266	0	0	31	0	0	0	0	0	0	372	382	0	391	0	0	1,433	546	105	30.48
Fullerton	0	0	113	0	0	140	0	0	0	0	0	0	416	0	0	349	0	0	1,354	64	1,484	171.17
Santa Ana	0	0	0	0	0	0	0	0	0	0	0	0	53	0	0	0	0	0	342	628	0	13.19
<b>Non-MWDOC Totals</b>	<b>0</b>	<b>0</b>	<b>379</b>	<b>0</b>	<b>0</b>	<b>171</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>841</b>	<b>382</b>	<b>0</b>	<b>740</b>	<b>0</b>	<b>0</b>	<b>3,129</b>	<b>1,238</b>	<b>1,589</b>	<b>214.84</b>
<b>Orange County Totals</b>	<b>38</b>	<b>0</b>	<b>7,168</b>	<b>65</b>	<b>0</b>	<b>1,630</b>	<b>38</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>16,184</b>	<b>12,238</b>	<b>0</b>	<b>10,719</b>	<b>181</b>	<b>0</b>	<b>48,182</b>	<b>116,413</b>	<b>14,998</b>	<b>3849.90</b>

# SAVE WATER SAVE A BUCK COMMERCIAL PLUMBING FIXTURES REBATE PROGRAM<sup>[1]</sup>

## 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	Totals	Cumulative Water Savings across all Fiscal Years
Brea	0	51	0	22	52	2	27	113	24	4	0	295	187
Buena Park	10	83	28	55	64	65	153	432	122	379	0	1,391	472
East Orange CWD RZ	0	0	0	0	0	0	0	0	0	0	0	0	0
El Toro WD	23	23	73	42	5	2	0	92	143	1	0	404	273
Fountain Valley	1	94	2	59	35	63	17	35	0	2	314	622	301
Garden Grove	21	199	51	297	34	136	5	298	130	22	0	1,193	833
Golden State WC	11	197	34	232	80	531	46	414	55	68	134	1,802	1,056
Huntington Beach	5	191	73	185	82	209	48	104	126	96	43	1,162	804
Irvine Ranch WD	306	1,085	87	325	1,044	429	121	789	2,708	1,002	87	7,983	3,194
La Habra	10	37	52	45	60	16	191	75	53	4	0	543	295
La Palma	0	0	0	0	5	0	0	140	21	0	0	166	37
Laguna Beach CWD	2	30	2	18	9	12	20	137	189	0	0	419	158
Mesa Water District	424	155	22	130	241	141	141	543	219	669	41	2,726	1,075
Moulton Niguel WD	31	74	65	172	3	0	9	69	151	6	0	580	468
Newport Beach	4	230	9	77	24	94	98	27	245	425	0	1,233	645
Orange	84	144	22	553	127	88	18	374	67	1	73	1,551	963
San Juan Capistrano	0	34	21	181	0	6	2	1	1	0	0	246	246
San Clemente	0	36	5	95	40	173	2	18	43	0	0	412	223
Santa Margarita WD	0	16	3	56	0	0	6	23	11	0	0	115	117
Santiago CWD	0	0	0	0	0	0	0	0	0	0	0	0	0
Seal Beach	3	34	44	40	61	45	1	2	124	0	0	354	236
Serrano WD	0	0	0	0	0	0	0	0	0	0	0	0	0
South Coast WD	0	31	8	54	8	4	9	114	56	422	1	707	196
Trabuco Canyon WD	0	1	0	6	0	0	0	4	0	0	0	11	9
Tustin	9	114	16	82	14	7	115	145	25	230	0	757	431
Westminster	16	109	32	153	57	104	40	161	16	63	0	751	563
Yorba Linda	0	36	12	42	4	118	10	24	8	30	0	284	311
<b>MWDOC Totals</b>	<b>960</b>	<b>3,004</b>	<b>661</b>	<b>2,921</b>	<b>2,049</b>	<b>2,245</b>	<b>1,079</b>	<b>4,134</b>	<b>4,537</b>	<b>3,424</b>	<b>693</b>	<b>25,707</b>	<b>13,093</b>
<b>Anaheim</b>	<b>1,042</b>	<b>400</b>	<b>947</b>	<b>362</b>	<b>1,113</b>	<b>780</b>	<b>766</b>	<b>3,298</b>	<b>582</b>	<b>64</b>	<b>46</b>	<b>9,400</b>	<b>3,676</b>
<b>Fullerton</b>	<b>28</b>	<b>41</b>	<b>138</b>	<b>270</b>	<b>91</b>	<b>96</b>	<b>133</b>	<b>579</b>	<b>29</b>	<b>4</b>	<b>0</b>	<b>1,409</b>	<b>871</b>
<b>Santa Ana</b>	<b>115</b>	<b>153</b>	<b>589</b>	<b>227</b>	<b>624</b>	<b>373</b>	<b>493</b>	<b>815</b>	<b>728</b>	<b>39</b>	<b>12</b>	<b>4,168</b>	<b>2,526</b>
<b>Non-MWDOC Totals</b>	<b>1,185</b>	<b>594</b>	<b>1,674</b>	<b>859</b>	<b>1,828</b>	<b>1,249</b>	<b>1,392</b>	<b>4,692</b>	<b>1,339</b>	<b>107</b>	<b>58</b>	<b>14,977</b>	<b>7,074</b>
<b>Orange County Totals</b>	<b>2,145</b>	<b>3,598</b>	<b>2,335</b>	<b>3,780</b>	<b>3,877</b>	<b>3,494</b>	<b>2,471</b>	<b>8,826</b>	<b>5,876</b>	<b>3,531</b>	<b>751</b>	<b>40,684</b>	<b>20,167</b>

[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, and Water Pressurized Brooms.

Agency	FY 04-05	FY 05-06	FY 06-07	FY 07-08	FY 08-09	FY 09-10	FY 10-11	FY 11-12	Overall Water Savings To Date (AF)
Brea	0	0	0	0	0	0	0	0	0.00
Buena Park	0	0	0	0	0	17	103	101	109.54
East Orange CWD RZ	0	0	0	0	0	0	0	0	0.00
El Toro WD	88	109	227	352	384	371	820	818	2,020.11
Fountain Valley	0	0	0	0	0	0	0	0	0.00
Garden Grove	0	0	0	0	0	0	0	0	0.00
Golden State WC	0	0	0	14	34	32	34	32	88.70
Huntington Beach	0	0	0	0	0	31	33	31	40.03
Irvine Ranch WD	277	638	646	708	1,008	6,297	6,347	6,355	14,874.99
Laguna Beach CWD	0	0	0	0	57	141	143	141	279.01
La Habra	0	0	0	0	23	22	24	22	59.80
La Palma	0	0	0	0	0	0	0	0	0.00
Mesa Water District	191	170	138	165	286	285	288	384	1,234.59
Moulton Niguel WD	80	57	113	180	473	571	595	629	1,832.65
Newport Beach	32	27	23	58	142	171	191	208	563.52
Orange	0	0	0	0	0	0	0	0	0.00
San Clemente	191	165	204	227	233	247	271	269	1,293.39
San Juan Capistrano	0	0	0	0	0	0	0	0	0.00
Santa Margarita WD	547	619	618	945	1,571	1,666	1,746	1,919	6,700.35
Seal Beach	0	0	0	0	0	0	0	0	0.00
Serrano WD	0	0	0	0	0	0	0	0	0.00
South Coast WD	0	0	0	62	117	108	110	115	378.35
Trabuco Canyon WD	0	0	0	12	49	48	62	60	140.72
Tustin	0	0	0	0	0	0	0	0	0.00
Westminster	0	0	0	10	18	18	20	18	53.52
Yorba Linda WD	0	0	0	0	0	0	0	0	0.00
<b>MWDOC Totals</b>	<b>1,406</b>	<b>1,785</b>	<b>1,969</b>	<b>2,733</b>	<b>4,395</b>	<b>10,025</b>	<b>10,787</b>	<b>11,102</b>	<b>29,669.3</b>
Anaheim	0	0	0	0	0	142	146	144	155.49
Fullerton	0	0	0	0	0	0	0	0	0.00
Santa Ana	0	0	0	0	0	0	0	0	0.00
<b>Non-MWDOC Totals</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>142</b>	<b>146</b>	<b>144</b>	<b>155.49</b>
<b>Orange Co. Totals</b>	<b>1,406</b>	<b>1,785</b>	<b>1,969</b>	<b>2,733</b>	<b>4,395</b>	<b>10,167</b>	<b>10,933</b>	<b>11,246</b>	<b>29,824.77</b>

Agency	FY 07/08	FY 08/09	FY 09/10	FY 10/11	FY 11/12	Total Program	Current Fiscal Year Water Savings <sup>[1]</sup>	Cumulative Water Savings across all Fiscal Years <sup>[1]</sup>
Brea	0	0	0	0	0	0	0	0
Buena Park	0	0	0	0	0	0	0	0
East Orange	0	0	0	0	0	0	0	0
El Toro	0	0	0	0	0	0	0	0
Fountain Valley	0	0	0	0	0	0	0	0
Garden Grove	0	0	0	0	0	0	0	0
Golden State	0	0	0	0	0	0	0	0
Huntington Beach	0	0	0	0	0	0	0	0
Irvine Ranch	0	0	1	0	0	1	0	47
La Habra	0	0	0	0	0	0	0	0
La Palma	0	0	0	0	0	0	0	0
Laguna Beach	0	0	0	0	0	0	0	0
Mesa Water District	0	0	0	0	0	0	0	0
Moulton Niguel	0	0	0	0	0	0	0	0
Newport Beach	0	0	0	0	0	0	0	0
Orange	1	0	0	0	0	1	0	161
San Juan Capistrano	0	0	0	0	0	0	0	0
San Clemente	0	0	0	0	0	0	0	0
Santa Margarita	0	0	0	0	0	0	0	0
Seal Beach	0	0	0	0	0	0	0	0
Serrano	0	0	0	0	0	0	0	0
South Coast	0	0	0	0	0	0	0	0
Trabuco Canyon	0	0	0	0	0	0	0	0
Tustin	0	0	0	0	0	0	0	0
Westminster	0	0	0	0	0	0	0	0
Yorba Linda	0	0	0	0	0	0	0	0
<b>MWDOC Totals</b>	1	0	1	0	0	2	0	208

[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<sup>[1]</sup>**  
 through MWDOC and Local Agency Conservation Programs

Agency	FY 10/11		FY 11/12		FY 12/13		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	0	0	0	0	0	0	0	0	-
Buena Park	0	0	0	0	0	0	0	0	0	0	-
East Orange	0	0	0	0	0	0	0	0	0	0	-
El Toro	0	0	0	0	0	0	0	0	0	0	-
Fountain Valley	0	0	0	0	0	0	0	0	0	0	-
Garden Grove	0	46,177	0	0	0	0	0	0	0	46,177	25.86
Golden State	0	0	0	0	0	0	0	0	0	0	-
Huntington Beach	801	3,651	0	0	0	0	0	0	801	3,651	2.49
Irvine Ranch	5,423	12,794	0	0	0	0	0	0	5,423	12,794	10.20
La Habra	0	7,775	0	0	0	0	0	0	0	7,775	4.35
La Palma	0	0	0	0	0	0	0	0	0	0	-
Laguna Beach	978	0	0	0	0	0	0	0	978	0	0.55
Mesa Water District	0	0	0	0	0	0	0	0	0	0	-
Moulton Niguel	956	16,139	0	0	0	0	0	0	956	16,139	9.57
Newport Beach	0	0	0	0	0	0	0	0	0	0	-
Orange	0	0	0	0	0	0	0	0	0	0	-
San Clemente	0	0	0	0	0	0	0	0	0	0	-
San Juan Capistrano	0	0	0	0	0	0	0	0	0	0	-
Santa Margarita	4,483	5,561	0	0	0	0	0	0	4,483	5,561	5.62
Seal Beach	0	0	0	0	0	0	0	0	0	0	-
Serrano	0	0	0	0	0	0	0	0	0	0	-
South Coast	0	16,324	0	0	0	0	0	0	0	16,324	9.14
Trabuco Canyon	0	0	0	0	0	0	0	0	0	0	-
Tustin	0	0	0	0	0	0	0	0	0	0	-
Westminster	0	0	0	0	0	0	0	0	0	0	-
Yorba Linda	11,349	0	0	0	0	0	0	0	11,349	0	6.36
<b>MWDOC Totals</b>	<b>23,990</b>	<b>108,421</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>23,990</b>	<b>108,421</b>	<b>74.15</b>

Anaheim	0	0	0	0	0	0	0	0	0	0	-
Fullerton	0	0	0	0	0	0	0	0	0	0	-
Santa Ana	0	0	0	0	0	0	0	0	0	0	-
<b>Non-MWDOC Totals</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>-</b>

<b>Orange County Totals</b>	<b>23,990</b>	<b>108,421</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>23,990</b>	<b>108,421</b>	<b>74.15</b>
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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	Total	Cumulative water Savings across all Fiscal Years
Brea	0	1	8	43	48	8	108	11.53
Buena Park	0	0	3	124	176	7	310	31.66
East Orange CWD RZ	0	0	7	14	2	0	23	3.32
El Toro WD	0	385	22	78	38	18	541	100.06
Fountain Valley	0	63	23	265	55	17	423	57.03
Garden Grove	0	6	34	454	183	24	701	82.61
Golden State WC	0	5	39	454	716	37	1,251	129.25
Huntington Beach	0	5	66	604	165	76	916	107.59
Irvine Ranch WD	0	913	918	5,161	2,120	325	9,437	1,215.91
Laguna Beach CWD	0	0	11	97	30	11	149	17.79
La Habra	0	3	8	306	34	20	371	45.24
La Palma	0	1	9	37	26	13	86	9.28
Mesa Water District	0	244	20	736	133	7	1,140	161.21
Moulton Niguel WD	0	4	94	473	188	46	805	96.99
Newport Beach	0	3	16	168	54	13	254	30.26
Orange	0	15	54	437	79	40	625	77.50
San Juan Capistrano	0	1	12	80	39	11	143	16.81
San Clemente	0	2	15	214	66	21	318	37.54
Santa Margarita WD	0	0	16	307	151	44	518	56.99
Seal Beach	0	678	6	23	12	1	720	149.38
Serrano WD	0	2	1	13	5	0	21	2.77
South Coast WD	0	3	15	114	44	12	188	22.90
Trabuco Canyon WD	0	0	3	24	23	0	50	5.58
Tustin	0	180	30	391	479	17	1,097	135.25
Westminster	0	7	35	541	167	23	773	92.14
Yorba Linda WD	0	10	85	331	96	18	540	68.31
<b>MWDOC Totals</b>	0	2,531	1,550	11,489	5,129	809	21,508	2,764.89

Anaheim	0	253	73	2,778	619	114	3,837	478.87
Fullerton	0	0	26	292	60	23	401	48.22
Santa Ana	0	6	26	927	91	23	1,073	133.25
<b>Non-MWDOC Totals</b>	0	259	125	3,997	770	160	5,311	660.35

<b>Orange County Totals</b>	0	2,790	1,675	15,486	5,899	969	26,819	3,425.24
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**SYNTHETIC TURF INSTALLED BY AGENCY<sup>[1]</sup>**  
 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	1.95
Buena Park	0	0	1,566	5,850	0	0	0	0	1,566	5,850	3.11
East Orange	0	0	0	0	983	0	0	0	983	0	0.28
El Toro	3,183	0	2,974	0	3,308	0	895	0	10,360	0	4.08
Fountain Valley	11,674	0	1,163	0	2,767	0	684	0	16,288	0	7.90
Garden Grove	1,860	0	0	0	3,197	0	274	0	5,331	0	1.98
Golden State	6,786	0	13,990	0	15,215	0	2,056	0	38,047	0	14.22
Huntington Beach	15,192	591	12,512	0	4,343	1,504	0	0	32,047	2,095	15.73
Irvine Ranch	11,009	876	13,669	0	2,585	0	0	0	27,263	876	13.12
La Habra	0	0	0	0	0	0	0	0	0	0	-
La Palma	429	0	0	0	0	0	0	0	429	0	0.24
Laguna Beach	3,950	0	3,026	0	725	0	0	0	7,701	0	3.69
Mesa Water District	4,114	0	3,005	78,118	4,106	0	2,198	0	13,423	78,118	37.83
Moulton Niguel	14,151	0	25,635	2,420	7,432	0	0	0	47,218	2,420	21.79
Newport Beach	2,530	0	6,628	0	270	0	0	0	9,428	0	4.28
Orange	4,169	0	7,191	0	635	0	0	0	11,995	0	5.53
San Clemente	9,328	0	11,250	455	2,514	1,285	500	0	23,592	1,740	11.27
San Juan Capistrano	0	0	7,297	639	2,730	0	4,607	0	14,634	639	4.74
Santa Margarita	12,922	0	26,069	0	21,875	0	7,926	0	68,792	0	25.42
Seal Beach	0	0	817	0	0	0	0	0	817	0	0.34
Serrano	7,347	0	1,145	0	0	0	0	0	8,492	0	4.60
South Coast	2,311	0	6,316	0	17,200	0	1,044	0	26,871	0	8.91
Trabuco Canyon	1,202	0	9,827	0	0	0	0	0	11,029	0	4.80
Tustin	6,123	0	4,717	0	2,190	0	0	0	13,030	0	6.02
Westminster	2,748	16,566	8,215	0	890	0	0	0	11,853	16,566	14.52
Yorba Linda	11,792	0	12,683	0	4,341	5,835	0	0	28,816	5,835	14.78
<b>MWDOC Totals</b>	<b>132,820</b>	<b>18,033</b>	<b>181,848</b>	<b>89,642</b>	<b>97,806</b>	<b>8,624</b>	<b>20,184</b>	<b>0</b>	<b>432,658</b>	<b>116,299</b>	<b>231.12</b>

Anaheim	4,535	0	7,735	20,093	13,555	65,300	4,122	0	29,947	85,393	36.88
Fullerton	4,865	876	5,727	0	6,223	0	105	0	16,920	876	7.38
Santa Ana	0	0	2,820	0	525	0	0	0	3,345	0	1.33
<b>Non-MWDOC Totals</b>	<b>9,400</b>	<b>876</b>	<b>16,282</b>	<b>20,093</b>	<b>20,303</b>	<b>65,300</b>	<b>4,227</b>	<b>0</b>	<b>50,212</b>	<b>86,269</b>	<b>45.59</b>

<b>Orange County Totals</b>	<b>142,220</b>	<b>18,909</b>	<b>198,130</b>	<b>109,735</b>	<b>118,109</b>	<b>73,924</b>	<b>24,411</b>	<b>0</b>	<b>482,870</b>	<b>202,568</b>	<b>276.72</b>
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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	1,446.24
Buena Park	361	147	331	802	520	469	524	1,229	2,325	1,522	50	40	18	9	0	8,347	2,945.51
East Orange CWD RZ	2	0	33	63	15	17	15	50	41	44	19	18	13	2	0	332	116.24
El Toro WD	1,169	511	678	889	711	171	310	564	472	324	176	205	61	40	0	6,281	2,675.14
Fountain Valley	638	454	635	858	1,289	2,355	1,697	1,406	1,400	802	176	111	58	32	0	11,911	4,594.17
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	10,413.55
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	10,101.62
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	11,917.59
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	10,080.76
Laguna Beach CWD	283	93	118	74	149	306	220	85	271	118	32	26	29	6	0	1,810	725.80
La Habra	594	146	254	775	703	105	582	645	1,697	1,225	12	31	6	7	0	6,782	2,508.52
La Palma	65	180	222	125	44	132	518	173	343	193	31	27	20	17	0	2,090	789.09
Mesa Water District	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	6,575.43
Moulton Niguel WD	744	309	761	698	523	475	716	891	728	684	410	381	187	100	0	7,607	2,867.29
Newport Beach	369	293	390	571	912	1,223	438	463	396	1,883	153	76	36	16	0	7,219	2,688.62
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	6,248.42
San Juan Capistrano	1,234	284	193	168	323	1,319	347	152	201	151	85	125	42	39	0	4,663	2,015.57
San Clemente	225	113	191	65	158	198	667	483	201	547	91	66	37	34	0	3,076	1,110.90
Santa Margarita WD	577	324	553	843	345	456	1,258	790	664	260	179	143	101	29	0	6,522	2,569.03
Seal Beach	74	66	312	609	47	155	132	81	134	729	29	10	6	12	0	2,396	915.10
Serrano WD	81	56	68	41	19	52	95	73	123	98	20	15	14	2	0	757	288.52
South Coast WD	110	176	177	114	182	181	133	358	191	469	88	72	32	22	0	2,305	837.38
Trabuco Canyon WD	10	78	42	42	25	21	40	181	102	30	17	20	12	14	0	634	231.03
Tustin	968	668	557	824	429	1,292	1,508	1,206	1,096	827	69	89	26	12	0	9,571	3,789.94
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	6,025.51
Yorba Linda WD	257	309	417	457	404	1,400	759	1,690	1,155	627	158	136	81	41	0	7,891	2,886.83
<b>MWDOC Totals</b>	<b>24,256</b>	<b>12,879</b>	<b>18,778</b>	<b>20,765</b>	<b>21,136</b>	<b>30,242</b>	<b>24,918</b>	<b>27,175</b>	<b>31,827</b>	<b>27,568</b>	<b>3,654</b>	<b>3,242</b>	<b>2,031</b>	<b>861</b>	<b>4</b>	<b>249,336</b>	<b>97,363.80</b>
<b>Non-MWDOC Totals</b>	<b>3,011</b>	<b>4,161</b>	<b>3,687</b>	<b>7,583</b>	<b>5,207</b>	<b>18,477</b>	<b>12,133</b>	<b>19,298</b>	<b>22,636</b>	<b>15,988</b>	<b>924</b>	<b>582</b>	<b>531</b>	<b>369</b>	<b>3</b>	<b>114,590</b>	<b>41,092.81</b>
<b>Orange County Totals</b>	<b>27,267</b>	<b>17,040</b>	<b>22,465</b>	<b>28,348</b>	<b>26,343</b>	<b>48,719</b>	<b>37,051</b>	<b>46,473</b>	<b>54,463</b>	<b>43,556</b>	<b>4,578</b>	<b>3,824</b>	<b>2,562</b>	<b>1,230</b>	<b>7</b>	<b>363,926</b>	<b>138,456.61</b>