

**MEETING OF THE  
BOARD OF DIRECTORS OF THE  
MUNICIPAL WATER DISTRICT OF ORANGE COUNTY**  
Jointly with the  
**PLANNING & OPERATIONS COMMITTEE**  
January 6, 2014, 8:30 a.m.  
MWDOC Conference Room 101

**P&O Committee:**

Director Osborne, Chair  
Director Barbre  
Director Hinman

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

Ex Officio Member: J. Finnegan

---

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

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

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

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

**ACTION ITEMS**

1. BUREAU OF RECLAMATION WATERSMART GRANT RESOLUTION
2. MET'S FOUNDATIONAL ACTION PROGRAM AGREEMENTS
  - a. Doheny Desalination Project
  - b. San Juan Basin
3. DWR PROPOSITION 50 GRANT FOR DESALINATION – APPLICATION FOR DOHENY DESAL FUNDING

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

4. STATUS OF ONGOING MWDOC RELIABILITY AND ENGINEERING/PLANNING PROJECTS
5. WATER USE EFFICIENCY REPORTS
  - a. Status of Water Use Efficiency Projects
  - b. Water Use Efficiency Programs Savings and Implementation Report
6. 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.



**ACTION ITEM**  
January 15, 2014

**TO:** Board of Directors

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

Robert Hunter  
General Manager

Staff Contact:

J. Berg  
WUE Programs Manager

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

**STAFF RECOMMENDATION**

---

Staff recommends the Board of Directors adopt the proposed resolution in support of MWDOC's 2014 WaterSMART: Water and Energy Efficiency grant application to be submitted to the Bureau of Reclamation by January 23, 2014.

**COMMITTEE RECOMMENDATION**

---

Committee recommends (To be determined at Committee Meeting)

**DETAILED REPORT**

---

In November 2013, the Bureau of Reclamation released its "WaterSMART: Water and Energy Efficiency Grants for FY2014" Funding Opportunity Announcement (FOA). The objective of this announcement is to invite proposals to leverage investments and resources by cost sharing with Reclamation on projects that save water, improve energy efficiency, address endangered species and other environmental issues, and facilitate water transfers to new uses. A total of \$12 million is available for project awards within the 17 western states. The Bureau has established two funding groups: Group 1 includes projects that will be awarded up to \$300,000 each; and Group 2 includes projects that will be awarded up to \$1 million each.

Staff will be submitting an application for a Water Smart Landscape Project: Spray to Drip Irrigation Conversion. The FOA requires all applications to include an official Board Resolution supporting the grant application. The proposed Resolution containing the required content is attached for your consideration.

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

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

**WHEREAS**, the Municipal Water District of Orange County submitted an application to the Bureau of Reclamation for funding for an Water Smart Landscape Program: Spray to Drip Irrigation Conversion to improve urban landscape water use efficiency in the Municipal Water District of Orange County service area,

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

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

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

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

Said Resolution was adopted on January 15, 2014, by the following roll call vote:

AYES:

NOES:

ABSENT:

ABSTAIN:

I HEREBY CERTIFY the foregoing is a full, true, and correct copy of Resolution No. \_\_\_\_ adopted by the Board of Directors of Municipal Water District of Orange County at its meeting held on January 15, 2014.

\_\_\_\_\_  
Maribeth Goldsby, Secretary  
Municipal Water District of Orange County



**ACTION ITEM**

January 15, 2014

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

**FROM:** **Robert Hunter, General Manager**

Staff Contact: Karl Seckel and MWDOC Legal Counsel Russ Behrens and Joseph Byrne

**SUBJECT:** **Foundational Action Program Funding Agreements for Consideration:**  
**(1) Agreement Between MWDOC and MET and Agreement Between MWDOC and South Coast Water District and Laguna Beach County Water District for the Doheny Desal Project**  
**(2) Agreement Between MWDOC and MET and Agreement Between MWDOC and San Juan Basin Authority (SJBA) for the SJBA Project**

**STAFF RECOMMENDATION**

---

It is recommended that the Board authorize staff to execute all four agreements substantially in the form presented, subject to final review and comment by Legal Counsel. At the time of production of this packet item, the final form of the agreements is still under consideration, both by MET and by South Coast WD, Laguna Beach CWD and the SJBA; attached to the packet are the most current versions. Board action by South Coast WD, Laguna Beach CWD and SJBA are expected the first three weeks in January.

**COMMITTEE RECOMMENDATION**

---

Committee recommends (To be determined at Committee Meeting)

<b>Budgeted (Y/N):</b> Yes	Budgeted amount: n/a	Core <input checked="" type="checkbox"/>	Choice
<b>Action item amount:</b> n/a		Line item:	
<b>Fiscal Impact (explain if unbudgeted):</b> Staff and Legal Counsel time. This item is marked Core because it represents an open offer of assistance in seeking funding from MET for local projects.			

## **SUMMARY**

---

In June, the MWDOC Board approved seeking funding from MET for Foundational Action Funding. MWDOC was successful in three efforts. West Basin is managing the funding agreement for the Direct Potable Reuse. The topic of this action item is to approve funding agreements toward:

- Doheny Desal Project for \$200,000
- San Juan Basin Authority Project for \$200,000

Overall, four agreements are included:

1. Agreement Between MWDOC and MET for the Doheny Desal Project
2. Agreement Between MWDOC and South Coast Water District and Laguna Beach County Water District for the Doheny Desal Project
3. Agreement Between MWDOC and MET for the SJBA Project
4. Agreement Between MWDOC and San Juan Basin Authority (SJBA) for the SJBA Project

The form of Agreements for 1&3 are very similar and the form of Agreements for 2 & 4 are very similar.

### **Key Provisions of the Agreements**

- The term goes through June 30, 2017, roughly two years to complete the work. Both projects should be completed within that time frame without any problems.
- The agreement may be terminated by either Party with or without cause upon 30 days notice (a MET provision).
- Failure to provide progress reports on time will be considered a breach of contract.
- The agreement can be terminated immediately by MET if work has NOT started by January 31, 2014. MET has agreed that “start of work” means procuring consultant contracts to complete the work. It does mean that we need executed agreements with MET and with our agencies before the end of the month.
- Local agencies are responsible for all conduct of the work and compliance with CEQA.
- MET has requested specific language in any consultant agreements for:
  - Indemnification and hold harmless
  - Insurance provisions
  - Intellectual Property

- Any “Intellectual Property” shall be owned by MWDOC but shall be made available to MET and the MET Member Agencies at no cost.
- MET payment shall not exceed \$200,000 or 50% of the project, whichever is less.
- MET is withholding 25% of the payment until a “Final Invoice” is submitted.
- A Final Report must be prepared along with a one-year post report update.
- In-kind services are NOT eligible for any aspect of reimbursement.
- MWDOC’s agreements with the local agencies have the same provisions as the MET Agreements, although the Doheny Desal Project Scope of Work in the MWDOC Agreement is broader and covers work that is not part of the MET Agreement. The Doheny agreement includes about \$35,000 of reimbursable work to be done by Richard Bell. For the Doheny Project overall, the Scope of Work in MET Agreement is estimated at \$419,240 and Metropolitan will pay up to \$200,000. The study task summary in the MWDOC Agreement includes a total amount of work estimated at \$500,000. For the avoidance of doubt, SCWD and LBCWD will be responsible for up to \$300,000 in funding to complete all of the activities outlined.

Attached are all four Agreements in DRAFT Form.

The Final Form of Agreements from MET are expected in early January; Board Action by the local agencies, South Coast WD, Laguna Beach CWD and SJBA is expected in the first three weeks in January.

**FOUNDATIONAL ACTIONS FUNDING PROGRAM AGREEMENT****Agreement No. 139834**

THIS AGREEMENT (Agreement) is made and entered into on [REDACTED], 2013, between

The Metropolitan Water District of Southern California (Metropolitan) and  
Municipal Water District of Orange County (Agency).

Metropolitan and Agency may be collectively referred to as "Parties" and individually as "Party."

**Recitals**

- A. Metropolitan, through its Foundational Actions Funding Program (FAF Program), provides funding to persons or entities for technical studies or pilot projects that reduce barriers to future production of recycled water, stormwater, seawater desalination, and groundwater resources. This Program was established per authorization detailed in Board Letter No.8-4 in April 2013.
- B. Agency was selected through a Request for Proposal (RFP). Metropolitan and Agency agree to enter into an agreement for Overcoming Barriers to Slant Well Seawater Desalination – Siting, Groundwater, Water Quality and Treatment (Project).
- C. This Agreement provides the terms for Agency's participation in the FAF Program.

NOW, THEREFORE, in consideration of the promises and covenants hereinafter set forth, the Parties do agree as follows:

**Section 1: Project Description**

- 1.1 Agency shall carry out the Project as described in Exhibit A (Scope of Work, Cost, and Schedule), which is hereby incorporated into this Agreement.
- 1.2 Agency shall provide the Project deliverables according to the schedule as set forth in Exhibit A.

**Section 2: Agreement Term**

- 2.1 This Agreement shall be effective on [REDACTED], 2013 and the term shall be through June 30, 2017, or when all of the Parties' obligations under this Funding Agreement have been fully satisfied, whichever occurs earlier. Extensions of time to complete all or portions of the Project, including any required deliverables, shall be requested in writing by Agency and may be authorized at the sole discretion of Metropolitan in writing by Metropolitan. Any written authorization for an extension of time shall be attached to and incorporated into this Agreement.
- 2.2 This Agreement may be terminated by either Party with or without cause upon 30 days written notice to the other Party. Metropolitan's only obligation in the event of termination will be payment of approved invoices in conformity with this Agreement up to and including the effective date of termination.
- 2.3 Failure of an Agency to submit progress reports or the final report within the timeframe established in Exhibit A or any extension of time authorized in accordance with Section 2.1 above will be a breach of this Agreement.
- 2.4 This Agreement may be terminated immediately by Metropolitan upon written notice to the Agency if work on the Project has not started by January 31, 2014.

**Section 3: Agreement Administrators**

- 3.1 Ms. Stacie Takeguchi is appointed Agreement Administrator for Metropolitan for the purpose of administering this Agreement. The Agreement Administrator appointed by Agency for the purpose of administering this Agreement is [REDACTED].
- 3.2 The designated Agreement Administrator may be changed by providing written notice to the other Party. Any communication required to administer this Agreement shall be in writing and will be deemed received upon personal delivery or 48 hours after deposit in any United States mail depository, first class postage prepaid, and addressed to the Party for whom intended, as follows:



**If to Metropolitan:**

The Metropolitan Water District of Southern California  
P. O. Box 54153  
Los Angeles, CA 90054-0153  
Attention: Ms. Stacie Takeguchi  
Or by email to: stakeguchi@mwadh2o.com

**If to Agency:**

Municipal Water District of Orange County  
18700 Ward Street  
Fountain Valley, CA 92708  
Attention: [Insert Agency Agreement Administrator Name]  
Or by email to: [Insert Agency Administrator email]

Either Party may change such address by giving notice to the other Party as provided herein.

**Section 4: Responsibilities and Ownership**

- 4.1 Agency shall be responsible for all necessary services and materials for Project implementation including, but not limited to, providing the following: Project administration, data collection, analyses, and reporting.
- 4.2 Agency shall comply with all Federal, State and local laws, ordinances and regulations and is solely responsible for any such obligations, including, without limitation, compliance with the California Environmental Quality Act.
- 4.3 Metropolitan and Agency agree that each party shall be responsible for its own actions, and the actions of its officers, employees and agents, in performing services under this Agreement. Metropolitan and Agency each agree to indemnify and hold the other Party and its officers and agents harmless and agree to defend the other Party against any claim or asserted liability arising out of its actions, either willful or negligent, or the actions of its officers, employees and agents, in performing services pursuant to this Agreement. Such indemnity includes any losses relating to any claim made, whether or not a court action is filed, and attorney fees and administrative and overhead costs related to or arising out of such claim or asserted liability.
- 4.4 Agency is solely responsible for the performance of its staff or representatives in complying with the terms of this Agreement and for the proper allocation of funds provided by Metropolitan for the purpose of implementing the Project under this Agreement.
- 4.5 Agency shall be responsible for the design, implementation, personnel, equipment and supplies, and all capital and operating costs related to and incurred by Project. All materials and equipment necessary to implement Project are the exclusive property of Agency. Metropolitan shall have no ownership, right, title, security interest, or other interest in any Project facilities, materials, or equipment, nor any rights, duties, or responsibilities for operation or maintenance thereof.
- 4.6 Agency shall include this Agreement, language stating that the terms of this Agreement prevail if there is a conflict in any terms in a separate agreement, and the following language in its agreement with any consultant, contractor, or organization retained by or partnering with Agency to work on the Project: "(Consultant) agrees at its sole cost and expense to protect, indemnify, defend, and hold harmless The Metropolitan Water District of Southern California and its Board of Directors, officers, representatives, agents and employees from and against any and all claims and liability of any kind (including, but not limited to, any claims or liability for injury or death to any person, damage to property, natural resources or to the environment, or water quality problems) that arise out of or relate to Agency's approval, construction, operation, repair or ownership of the Project. Such indemnity shall include all damages and losses related to any claim made, whether or not a court action is filed, and shall include attorney's fees, administrative and overhead costs, engineering and consulting fees and all other costs related to or arising out of such claim or asserted liability." Agency shall be solely responsible for all payments and other contractual requirements required by any such separate agreement.

**Section 5: Intellectual Property and Use of Materials**

- 5.1 All intellectual property developed pursuant to this Agreement shall be owned by Agency and Agency hereby grants Metropolitan and its member public agencies a nonexclusive license, at no cost, to use the intellectual property developed in the course of the work performed under this Agreement by Agency or any contractor and consultant working on Project as described in Exhibit A. This intellectual property includes, but is not limited to, all inventions, patents, data, design, drawings, specifications, raw results, computer programs, final report, as well as any other presentations, reports, findings or related materials developed during the Project.
- 5.2 The Parties agree that the granting of the nonexclusive license to use the intellectual property developed pursuant to this Agreement is beneficial to all Metropolitan member agencies and the Southern California region.
- 5.3 Agency agrees that all results produced in the performance of this Agreement may be released to the public.
- 5.4 Agency shall include the following language in its agreement with any consultant or contractor retained by Agency to work on the Project: "All intellectual property developed pursuant to this Agreement is owned by Municipal Water District of Orange County (Agency). This intellectual property includes, but is not limited to, all inventions, patents, data, design, drawings, specifications, raw results, computer programs, final report,

as well as any other presentations, reports, findings or related materials developed during the Project. All results produced in the performance of this Agreement may be released to the public.”

- 5.5 Agency shall notify Metropolitan in writing of all intellectual property conceived or developed in the course of the work performed under this Agreement.
- 5.6 Agency shall cooperate in the execution of all documents necessary to perfect and protect Metropolitan’s and its member public agencies’ right to intellectual property under this Agreement as requested by Metropolitan.
- 5.7 When requested by Metropolitan or its member public agencies, or upon termination of this Agreement, Agency shall furnish a copy of all documents and other tangible media containing intellectual property developed by Agency during the course of this Agreement, including all prototypes and computer programs.

#### Section 6: Metropolitan’s Payment

- 6.1 Metropolitan’s payment for the Project is not to exceed \$200,000, or fifty (50) percent of the total cost expended per task as established in Exhibit A, whichever is less. Agency shall be responsible for all costs in excess of Metropolitan’s payment.
- 6.2 Metropolitan shall reimburse Agency only upon receipt and approval by Metropolitan of a required quarterly progress report and associated quarterly invoice in compliance with the requirements of this Agreement and as scheduled in Exhibit A. Twenty five (25) percent of eligible reimbursable costs shall be withheld per invoice until a final report is accepted by Metropolitan. Agency shall submit quarterly invoices with related quarterly progress reports to Metropolitan’s Accounts Payable Section, whose mailing address is P.O. Box 54153, Los Angeles, California 90054-0153, with a copy to the Agreement Administrator via email at the address provided under Section 3.2. Agency’s Agreement Administrator shall sign and certify the invoices to be true and correct to the best of his/her knowledge. Agency’s invoices shall include at a minimum the information requested in Exhibit B (Sample Invoice). Invoices shall itemize allowable expenses and include receipts for which reimbursement is sought. Attached receipts should itemize each cost and provide descriptive information so that expenses are separately identified. The final invoice, including any requests for release of retention, shall be clearly marked “FINAL INVOICE.”
- 6.3 In-kind services are not eligible for reimbursement and shall not be included in Agency invoices to Metropolitan. In-kind services include, but are not limited to, work performed by staff of Agency or of Agency’s partner(s) contributing funding to Project, and related expenses (e.g., travel, overhead, etc.).
- 6.4 All invoices related to the Project must be submitted by Agency to Metropolitan by April 15, 2016, to be considered for payment under the provisions of this agreement. Invoices received after April 15, 2016, will not be paid unless Metropolitan, in its sole discretion, grants Agency, in writing, an extension of time to complete the work and submit its invoices.
- 6.5 Invoices to Metropolitan will be paid 30 days after approval of the invoices, provided the work achieved complies with the conditions set forth in section 6.2 of this Agreement and Exhibit A.

#### Section 7: Reporting Requirements

- 7.1 Agency shall submit to Metropolitan quarterly progress reports with the associated invoices by the 15<sup>th</sup> of January, April, July, and October for the preceding quarter. The progress reports shall include, at a minimum, the items listed in Exhibit C (Progress Report Format). Agency shall document all activities and expenditures in progress reports. The submittal of these reports is a requirement for initial and continued disbursement of funds.
- 7.2 Agency shall prepare and submit to Metropolitan, upon completion of the Project, a Final Report, which shall include, at a minimum, the items listed in Exhibit D (Final Report Format). The Final Report shall be provided in hard copy and digital format prior to final payment of funds retained by Metropolitan.
- 7.3 Upon written request by Metropolitan, Agency shall prepare and submit to Metropolitan a Post-Project Update Report one year following the acceptance of the Final Report. The Post-Project Update Report shall provide a summary of related post-funding project activities and include, at a minimum, the items listed in Exhibit E (Post-Project Update Report Format).

#### Section 8: Verification

- 8.1 Agency shall be responsible for verifying completion of Consultant’s or Subcontractor’s work in accordance with the Scope of Work as shown in Exhibit A.

#### Section 9: Representations

- 9.1 Each Party represents that it is represented by legal counsel, that it has reviewed this Agreement and agrees that:
  - a. This Agreement is legally enforceable;
  - b. Payments made by Metropolitan to Agency pursuant to this Agreement are a legal use of Metropolitan’s funds; and,
  - c. Metropolitan may legally recover the costs incurred by Metropolitan pursuant to this Agreement in the water rates charged to its Member Agencies, including Agency.

## Section 10: Insurance

10.1 Agency shall procure and maintain for the duration of this Agreement a program of commercial insurance or documented self-insurance program to protect against claims for injuries to persons or damages to property which may arise from or in connection with the performance of the work hereunder by the Agency, its agents, representatives, or employees.

10.2 Agency shall sustain proof of insurance coverage in an updated ACORD form, attached hereto as Exhibit F (Agency Proof of Insurance Coverage) and incorporated by reference, during the term of this Agreement. Failure to provide the updated insurance ACORD form annually may result in the withholding of Agency's invoice payment. Agency shall list the agreement number on the ACORD form and email to: AgreementInsurance@mw2h2o.com or fax to (213-576-6158). Alternatively, if unable to email or fax, Agency shall send the ACORD form via U.S. mail as follows:

Metropolitan Water District of Southern California  
P.O. Box 54153  
Los Angeles, CA 90054  
Attention: Ms. Stacie Takeguchi  
Agreement No. 139834

### 10.3 Minimum Scope of Insurance

- a. Coverage shall be at least as broad as:
  - i. Insurance Services Office Commercial Liability coverage (occurrence Form CG0001).
  - ii. Insurance Services Office Form Number CA 0001 covering Automobile Liability, Code 1, (any auto).
  - iii. Workers' Compensation insurance as required by the State of California and Employer's Liability Insurance.
  - iv. Professional Liability or Errors and Omissions Liability insurance appropriate to the Agency's profession. Architects' and engineers' coverage is to be endorsed to include contractual liability."

### 10.4 Minimum Limits of Insurance

- a. Agency shall maintain limits no less than:
  - i. General Liability: Including operations, products and completed operations as applicable, \$1,000,000 per occurrence for bodily injury, personal injury and property damage. If Commercial General Liability Insurance or other form with a general aggregate limit is used, either the general aggregate limit shall apply separately to the project or location, or the general aggregate limit shall be twice the required occurrence limit.
  - ii. Automobile Liability: \$1,000,000 per accident for bodily injury and property damage.
  - iii. Workers' Compensation: Shall be furnished in accordance with statutory requirements of the State of California and shall include Employer's Liability coverage of \$1,000,000 per accident for bodily injury or disease.
  - iv. Professional Liability or Errors and Omissions Liability: \$1,000,000 per claim, with a \$2 million aggregate.

10.5 Deductibles and Self-Insurance Retentions: Any deductibles or self-insured retentions must be declared to and approved by Metropolitan. At the option of Metropolitan, either: the insurer shall reduce or eliminate such deductibles or self-insured retentions as respect to Metropolitan, its officers officials, employees, agents and volunteers; or the Agency shall provide a financial guarantee satisfactory to Metropolitan guaranteeing payment of losses and related investigations, claim administration and defense expenses.

10.6 Verification of Coverage: Agency shall furnish Metropolitan with original certificates and amendatory endorsements effecting coverage required by this clause. The endorsements and certificates are to be received and approved by Metropolitan prior to the commencement of work. Metropolitan reserves the right to require complete, certified copies of all required insurance policies, including endorsements effecting coverage, and coverage binders required by these specifications at any time.

10.7 Acceptability of Insurers: Insurance is to be placed with California admitted insurers with a current A.M. Best's rating of no less than A:VIII. A non-admitted carrier may be used with prior approval from Metropolitan, with an A.M. Best rating of no less than A: X. An exception to these standards will be made for the State Compensation Insurance Fund when not specifically rated.

## 10.8 General Liability and Automobile Liability Endorsements

- a. The commercial general liability policy and automobile policies are to contain, or be endorsed to contain, the following provisions:
  - i. Metropolitan, its officers, officials, employees and agents are to be covered as insureds as respect to liability arising out of work or operations performed by or on behalf of the Agency; or automobiles owned, leased, hired or borrowed by the Agency.
  - ii. For any claims related to this project, the Agency's insurance coverage shall be primary insurance as respect to Metropolitan, its officers, officials, employees and volunteers. Any insurance or self-insurance maintained by Metropolitan, its officers, officials, employees or agents shall be excess of the Agency's insurance and shall not contribute with it.
  - iii. Each insurance policy required by this clause shall be endorsed to state that coverage shall not be canceled by either party, except after thirty (30) days' prior written notice by certified mail, return receipt requested, has been given to Metropolitan.
  - iv. Coverage shall not extend to any indemnity coverage for the active negligence of the additional insured in any case where an agreement to indemnify the additional insured would be invalid under Subdivision (b) of Section 2782 of the Civil Code.

## 10.9 Other Endorsements and Insurance Provisions

- a. All rights of subrogation under the property insurance policy (if any) have been waived against Metropolitan.
- b. The workers' compensation insurer, agrees to waive all rights of subrogation against Metropolitan for injuries to employees of the insured (Agency) resulting from work for Metropolitan or use of Metropolitan's premises or facilities.
- c. If General Liability, Pollution and/or any Asbestos Pollution Liability and/or professional liability or Errors & Omissions coverages are written on a claims-made form:
  - i. The "Retro Date" must be shown, and must be before the date of the contract or the beginning of contract work.
  - ii. If coverage is canceled or non-renewed, and not replaced with another claims-made policy form with a "Retro Date" prior to the contract effective date, the Agency must purchase "extended reporting" coverage for a minimum of five (5) years after completion of contract work.
  - iii. A copy of the claims reporting requirements must be submitted to Metropolitan for review.

## Section 11: Miscellaneous

11.1 This Agreement may be amended by written mutual agreement executed by both Parties. Any alteration or variation of the terms of this Agreement will not be valid unless made in writing and signed by both Parties. This Agreement constitutes the entire agreement between the Parties.

11.2 This Agreement will inure to the benefit of and be binding upon Metropolitan and Agency and their respective successors. This Agreement is not assignable by either Party in whole or in part.

11.3 If any provision of this Agreement shall be held illegal, invalid, or unenforceable, in whole or in part, such provision shall be modified to the minimum extent necessary to make it legal, valid, and enforceable, and the legality, validity, and enforceability of the remaining provisions shall not be affected thereby.

11.4 This Agreement shall be deemed a contract under the laws of the State of California, and for all purposes will be interpreted in accordance with such laws. Metropolitan and Agency hereby agree and consent to the exclusive jurisdiction of the courts of the State of California, and that the venue of any action brought hereunder will be in Los Angeles County, California.

Attachments incorporated in this Agreement include:

- |            |                                    |
|------------|------------------------------------|
| Exhibit A: | Scope of Work, Cost, and Schedule  |
| Exhibit B: | Sample Invoice                     |
| Exhibit C: | Quarterly Progress Report Format   |
| Exhibit D: | Final Report Format                |
| Exhibit E: | Post-Project Update Report Format  |
| Exhibit F: | Agency Proof of Insurance Coverage |

IN WITNESS WHEREOF, the Parties hereto have executed and entered into this Agreement as of the date last written below.

APPROVED AS TO FORM:

Marcia L. Scully  
General Counsel

By: \_\_\_\_\_  
Setha E. Schlang  
Senior Deputy General Counsel

Date: \_\_\_\_\_

THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

Jeffrey Kightlinger  
General Manager

By: \_\_\_\_\_  
Debra C. Man  
Assistant General Manager/COO

Date: \_\_\_\_\_

APPROVED AS TO FORM:

By: \_\_\_\_\_  
Legal Counsel (if necessary)

Date: \_\_\_\_\_

MUNICIPAL WATER DISTRICT OF ORANGE COUNTY

By: \_\_\_\_\_  
Name: \_\_\_\_\_  
Title: \_\_\_\_\_

Date: \_\_\_\_\_

In Duplicate

## Exhibit A

### Scope of Work, Costs, and Schedule For Overcoming Barriers to Slant Well Seawater Desalination – Siting, Groundwater, Water Quality and Treatment

#### 1.0 Project Objective

The objective of this study is to further the understanding and utilization of slant well intakes for development of an ocean desalination project.

#### 2.0 Background Information

Seawater desalination offers the potential to provide a reliable and high quality water supply. Subsurface slant beach well intakes offer an alternative intake system that can lower the cost of supply and protect local basins from seawater intrusion. Additional study, as described herein, can help overcome barriers and pave the way for use of these facilities.

**Changing Regulatory Environment.** Ocean intake regulations are becoming increasingly stringent. The State Water Resources Control Board (SWRCB) has acted to phase out once-thru-cooling systems and is in the process of amending the Ocean Plan with an ocean desalination policy for intakes and brine disposal. The costs for open water intakes are likely to increase. Slant wells offer a cost-effective alternative for small and mid-sized projects.

**Prior Slant Well Technology Research & Development.** Since 2003, the Municipal Water District of Orange County (MWDOC) along with five project participants have been investigating a seawater desalination project that would be sited on South Coast Water District (SCWD) San Juan Creek property and along Doheny State Beach. The Doheny Desal Project (formerly South Orange Coastal Ocean Desalination Project), has been considering the use of a slant well subsurface intake system because of their cost advantages and their avoidance of impingement and entrainment impacts to marine organisms. In 2006, MWDOC with Metropolitan, State and Federal grants constructed a Test Slant Well on Doheny State Beach, conducted various studies, and with five project participants funding and additional State and Federal grants by June 2010 installed a test facility and ran the Phase 3 Extended Pumping and Pilot Plant Test Project (Phase 3) to evaluate feedwater quality, aquifer pretreatment filtration capabilities and other related tests. These tests were completed in May 2012.

Concurrently, MWDOC developed a regional groundwater flow model to study the sustainable yield of the San Juan Basin, seawater intrusion potential, and potential impacts on the basin from a seawater desalination project slant well field situated along Doheny State Beach. This work was cooperatively prepared with the San Juan Basin Authority's (SJBA) technical assistance and was used by SJBA to develop its 2013 San Juan Basin Groundwater and Facilities Master Plan.



## Exhibit A

The Phase 3 Extended Pumping and Pilot Plant Testing Project draft reports have been completed and released for review to our project participants. These reports will be finalized by September 2013. The reports are contained in three volumes: Project Development; Operations, Testing and Evaluation (forthcoming); and San Juan Basin Regional Groundwater Flow Model. They are available for review on the MWDOC website: <http://www.mwdoc.com/services/desalination>.

**Going Forward.** This project is focused on advancing both slant well technology and groundwater flow / water quality modeling methodologies by addressing coastal geotechnical and environmental risks and issues that pose challenges and potential barriers to seawater desalination utilizing slant well intakes. The potential for slant wells impacts on upstream groundwater requires evaluation of feasible mitigation approaches, including coastal injection wells, to control drawdown effects on the basin.

Following on the recommendations from the Phase 3 Expert Panel review, one the key goals of this project is to develop and apply advanced geoscience analytical methodologies to answer remaining slant well application questions. These include understanding feedwater quality to be produced over time from a slant well system, understanding with precision drawdown effects and environmental strategies for along coastal reaches, and the behavior of seawater flows and intrusion control in a multiple layered aquifer system. In addition, it is critical to understand and develop protective approaches for geotechnical risks related to placement of slant wells on beaches. These are key issues to be resolved wherever coastal slant wells are to be considered and utilized.

### **3.1 Project Description**

This project is focused on overcoming identified barriers to the use of slant wells in San Juan Basin with similar issues expected in other locations and understanding long-term pumped water quality, slant well performance and institutional and physical mitigation measures such as injection wells to minimize drawdown impacts.

The five areas of investigation are:

- Advancement of Slant Well Technology
- Geologic, Seismic and Ocean Risk Analysis for Siting Slant Wells
- Prediction of Coastal/Ocean Groundwater Flow and Water Quality
- Modeling of Slant Well Feedwater Supply, Impacts and Mitigation Approaches
- Coastal Environment Drawdown Issues and Regulatory Strategies

These five elements will help to reduce barriers to implementation of slant well seawater desalination intakes by developing the following information and methods that are transferable:

- Slant well intake and wellhead technology application considerations and concepts;
- Well placement criteria for long-term service and consistent operations;

## Exhibit A

- The effectiveness of physical injection wells to significantly reduce drawdowns on groundwater users and pumping of basin water compared to non-physical mitigation;
- The interaction between the ocean and groundwater basins and optimizing slant well sizing and placement for yield and groundwater basin seawater intrusion control;
- Aquifer response to slant well shutdown on water levels and ocean water movement;
- Drawdown effects on the coastal stream reaches and seasonal lagoon and injection well barrier placement and operation to minimize these effects (as one alternative);
- Improved prediction of salinity and water quality over time, through better understanding of the geochemistry of the offshore marine groundwater system from static conditions (dissolved minerals/metals, anoxia, acidic conditions) to slant well pumped flow dynamic conditions (transition to steady state - salinity, anoxia, percent ocean, minerals/metals);
- Steady state Fe/Mn levels when the marine aquifer is fully recharged by ocean water with and without injection barriers and by injection barrier source-of-supply to aid analysis of any need for Fe/Mn removal;
- Assessment of cost-effective methods to collect water samples from offshore aquifers; and
- Applicability to other similar locations in southern California.

While many of these activities will need to be analyzed on a local basis, the applicability of this promising technology, methods of analysis, and lessons learned are valuable and transferable to many coastal locations within the region.

This study will assess advanced modeling tools that have the necessary level of precision to resolve the barriers that currently exist to the use of slant wells. A feasibility assessment with advanced and more precision modeling capabilities will be conducted. This assessment will evaluate the effectiveness of using a fine grid coastal/ocean flow and water quality model capable of prediction of time variation of (1) source water flows to slant wells, (2) water quality using an array of the most capable modeling software for solute transport, variable density flows, natural isotopes, and geochemistry reactions, and (3) analysis of seawater intrusion through multiple layered aquifer systems.

Source water quality for injection alternatives and regulatory requirements for recycled water will be handled by the San Juan Basin Authority under their FAP work. Task 4.4 in this scope of work has been accordingly revised. Participating Entities

Under MWDOC, the following agencies are participating in the project:

The Doheny Desal Project Participants for the study are:

- South Coast Water District
- Laguna Beach County Water District

Consulting Technical support will be provided by:

- Geoscience
- Separation Processes
- Carollo Engineers
- Woods Hole Oceanographic Institute



## Exhibit A

- Ninyo and Moore

### 4.0 **Description of Tasks**

The objective of this work plan is to develop methodologies to overcome barriers to implementation of slant well technology.

Beach slant wells for ocean desalination must be sited carefully and consider impacts to coastal resources and groundwater. The way to responsibly site such intakes is to define and understand the extraction and movement of water resources in these areas. This requires precision modeling.

#### ***TASK 1 – Advancement of Slant Well Technology***

##### **1.1 Slant Well Technology Assessment**

This task will describe the initial prototype design for the Test Slant Well, its constraints and limitations, knowledge gained, and lessons learned over the past several years of research and development work at the Doheny State Beach test site. Based on this knowledge and experience, an assessment will be made on how to advance slant well technology for future implementation. Areas of slant well technology to be addressed fall in six categories: (1) full-scale well drilling technology, capability, limitations and modifications, (2) casing and screen, (3) selection and placement of gravel packing, (4) well development and testing, (5) submersible pumps (subsurface installation is necessary for subsurface beach applications), and (6) downhole instrumentation.

##### **1.2 Achieving Long-Term Performance**

To gain the necessary knowledge on slant well long-term performance considerations, it is important to have a thorough understanding of slant well technology: (1) engineering, materials, design, construction practices, O&M, and forensics/rehabilitation, and (2) the sciences of metallurgy, microbiology and chemistry and their interactions at marine aquifer/well interfaces and for well corrosion, biofouling and iron oxidation. This task will assess the knowledge gained in Phase 3, conduct an updated literature review, and scope out a plan to inspect the test slant well/pump to evaluate rehabilitation techniques for future application to full scale slant wells.

## Exhibit A

### 1.3 Application Considerations and Concepts

Develop a conceptual level assessment to resolve potential barriers to full-scale slant well siting, construction and O&M on beaches. This work will evaluate full-scale, fully buried slant well layout concepts, including angle, screen length, depth of completion, types of pumps, wellhead considerations, and other appurtenant facilities. This conceptual plan will be utilized to enable discussions with State Parks, land use and regulatory agencies for determining permitting requirements and issues such that an acceptable approach can be developed. This will be necessary before moving a project forward to preliminary design, CEQA and permitting steps which will provide guidance for use in siting at other locations.

#### ***TASK 2.0 – Geologic, Seismic and Ocean Risk Analysis for Siting Slant Beach Wells***

The purpose of this task is to prepare a preliminary geotechnical study for slant well siting, placement and protective measures for subsurface slant wells, wellheads and pipelines that can be constructed on beaches. This work is necessary for feasibility assessments, facility plans and subsequent environmental documentation, permit application support, and design guidance for this and other projects. The task will include evaluation of design protection measures that may be implemented to protect the project facilities against potential geologic hazards such as earthquake induced liquefaction or ground failure, tsunami run up and scour, flood scour, sea level rise and beach retreat. The findings will be presented in a technical report.

#### ***TASK 3.0 – Prediction of Coastal / Ocean Groundwater Flow and Water Quality***

The completed Phase 3 project included development of a coarse grid regional surface and groundwater flow model for the San Juan Basin. This model was used to estimate the basin yield using the 1947-2010 hydrology and a general assessment of the ocean desalination project drawdown effects. The existing regional model is limited and is not capable of adequately assessing multiple layered coupled coastal/ocean systems nor is it able to accurately predict slant well pumped water quality over time, injection water flow/water quality/reactants, and seawater intrusion. This work is necessary to understand the groundwater basin and seasonal coastal lagoon drawdown effects, issues which may be encountered in other locations. These methods would then be applied by development/calibration of a fine grid multiple layered aquifer model to address the main issues of precision: basin/coastal drawdowns, seawater intrusion, and pumped water quality with and without mitigation measures. This level of detail is necessary if barriers to the use of slant beach wells are to be overcome and is precedent to project development.

### **3.1 State-of-the-Art Groundwater Models and Selection of Preferred Models / Modules**

Groundwater flow and water quality models will be evaluated and assessed for application. At this time, the apparent preferred modeling software likely to be used in this process includes the latest versions of USGS developed and support modeling software: (1) MODFLOW – basic flow model (2) MT3DMS – solute transport module, and

## **Exhibit A**

(3) SEAWAT – variable density module. Calibration of the selected and developed model will be made against 21 months of Phase 3 extended pumping test data, post-test groundwater level recovery data, and use of the innovative natural isotope model developed in Phase 3.

### **3.2 Development and Calibration for Geochemical Modules**

This task will develop a geochemical module tool for the precision model developed in subtask 3.1. This effort will help to improve the ability to predict water quality from both offshore and onshore aquifers incorporating the geochemical interactions of minerals and flow, including salinity, anoxia state, iron/manganese and other constituents. Several models are available for application and this task will review models most suited for this application. A candidate is the USGS “PHREEQC” model. Development of the geochemical module will enable an understanding of process treatment issues unique to the use of slant well intakes which include understanding the pump out of old marine groundwater and its water quality for determination of use or disposal and treatment requirements and understanding change in water quality over time as the aquifer is fully recharged with ocean water. It will also help to assess the degree and type of any pretreatment that may be required. The model elements and approach will be applicable to other locations considering slant wells. The modeling analysis for testing the merits of this technique will be undertaken in subtask 4.2.

### **3.3 Development and Calibration of Preferred Model/Modules to Assess Feasibility**

This task will develop and calibrate a fine grid coastal/ocean groundwater flow and water quality model building on the existing coarse grid regional model and earlier variable density model. This task will develop and calibrate the preferred model/modules selected in subtask 3.1 for groundwater flow and water quality and for geochemistry reactions for the module from subtask 3.2. When calibrated, the advanced precision coastal model would be incorporated into an existing regional watershed surface water/groundwater basin model for evaluation of basin supply/recharge terms and regional effects from coastal slant wells and mitigation injection wells and other measures. This same or similar configuration is expected at other coastal groundwater locations and this modeling approach is transferable to those locations.

### **3.4 California Department of Fish & Wildlife (CDFW) Streambed Alteration Agreements and Assessment for Compliance**

Evaluate the CDFW Streambed Alteration Agreements and types of conditions that could be imposed on projects using slant wells. The results of this task can be used to inform the analysis of other coastal beach well settings. This work draws from Subtask 4.3.

## **Exhibit A**

### ***TASK 4.0 – Modeling Slant Well Feedwater Supply, Impacts and Mitigation Approaches***

In order to overcome the barriers to the use of slant wells, this task will utilize the advanced modeling techniques and fine grid coastal/ocean groundwater flow and water quality model developed in Task 3 to enable a more precise analysis for a range of slant well siting, production capacities and yields, drawdowns, time variable water quality, seawater intrusion control, and mitigation approaches and effectiveness. The focus will be twofold: (1) to quantify with sufficient precision impacts on a groundwater basin and coastal seasonal lagoon due to slant beach well extraction and (2) to evaluate mitigation measures such as coastal injection wells. The objective of this task is to demonstrate the use of advanced modeling methods necessary to resolve impacts.

#### **4.1 Assessment of Sustainable Yield for Baseline Comparison**

Integrate the subtask 3.3 model into the existing regional model to estimate groundwater basin pumping with no ocean water intrusion to establish a "sustainable yield" baseline to compare with other alternatives. This analysis would be run to evaluate well and basin yields, storage volumes, water levels with the seawater intrusion control point near the ocean. This approach has applicability in other coastal groundwater basins.

#### **4.2 Prediction of Transition and Steady State Pumped Water Quality**

This task will utilize the advanced model developed in Task 3 to estimate pumped water quality vs. time for anoxia state, iron/manganese, salinity, pH, temperature and other constituents. This work will also allow evaluation of pumped water quality by capacity, screen length, and depth of completion. Projections of conservative and non-conservative constituents will be made including time to reach steady state, estimate of time to pump out old marine groundwater, determination of rate of connectivity to the ocean, evaluation of effects of organic carbon content in ocean floor sediments on microbial uptake of dissolved oxygen and pumped water state, and prediction of water quality over the transition to steady state with ocean water recharge. Task results will also be used to predict water quality for use in establishing pretreatment requirements.

#### **4.3 Analysis of Pumping Impacts**

This task would test a range of slant well production rates to evaluate drawdowns on upstream groundwater users, and would compare the effects with and without slant wells. Source waters to the slant wells include ocean, old marine groundwater, deep aquifer, inland groundwater, and streamflow. This task would also evaluate rising groundwater, surface water and ocean flows into and out of the seasonal lagoon with a comparison of these results with existing CDFW Streambed Alteration Agreement groundwater levels within the shallow aquifer.

## Exhibit A

### 4.4 Assessment of Institutional and Physical Mitigation Approaches

Examine mitigation options, including reassignment of supply sources and physical mitigation. The Phase 3 work indicated for a 30 mgd slant well feedwater supply the draw on the groundwater basin would average about 1.5 mgd; this would be the amount for reassignment from desalination plant yield and is roughly the rate for injection mitigation. The model will determine injection rates and their effectiveness. Injection wells would be evaluated for spacing, type and capacity. Seawater intrusion control will be evaluated over a range of hydrologies and groundwater basin operations. The regulatory requirements for the use of recycled water as a source of injection water is being evaluated by the SJBA in their complementary Foundational Action project.

This task would review means to reduce institutional barriers for each approach, including an evaluation of a smaller sized initial project. In addition, the smaller sized initial project will be conceptualized and the value of a phased approach to both validate Phase 3 data and to provide design data for the larger project will be evaluated.

### ***TASK 5.0 – Coastal Environmental Drawdown Issues and Regulatory Strategies***

If the fine grid modeling analysis indicates that the slant wellfield will result in significant lowering of water levels in the seasonal coastal lagoon of San Juan Creek (the mouth is slowly closed off from sand accretion during non-stormflow periods), this task will evaluate the environmental/regulatory issues and mitigation approaches. This task would review drawdown issues under intermittent streamflows and seasonal lagoons. This task would evaluate issues such as connectivity of the underlying formation and groundwater support to the overlying surface waters. This task will also review how to develop appropriate regulatory terms and conditions, including monitoring and assessment, for any required streambed alteration agreements or other agency permits related to these potential issues. This will be evaluated together with mitigation strategies for placement of injection barriers that would both reduce impacts on upstream groundwater users and drawdown impacts on seasonal coastal lagoons. Evaluate how the use of the advanced modeling techniques can help to demonstrate pre and post project conditions and mitigation, if necessary. This approach will be foundational for evaluation and application to other areas along the coast.

### ***TASK 6.0 – Project Management***

#### **6.1 Project Management**

Project management work includes execution of work, grant administration, staffing project committees, convening scientific/technical panels, technical reviews, meetings,

public outreach and input, permitting and regulatory support, Cal Desal support,

## **Exhibit A**

preparing invoices and billing, preparing submittals, and Board and Participants reporting.

### **6.2 Convene Science Review Panel**

The National Water Research Institute (NWRI) will manage a Scientific Review Panel ("Panel") to address scientific and technical questions. The goal is to ensure the best science/technology are used in the study work and that water management decisions are made to protect public health and the environment. The scope of the Panel review may involve regulatory assessment. NWRI will convene the Panel to advise the study team at specific intervals. Specifically, the Panel will review both the study design (including study protocol, methodology, analytical tools, calibration, and QA/QC procedures) and the study report. The panel review will be conducted through in-person meetings supplemented by email and conference calls. The product of this review will be written reports.

### **6.3 Progress Reports**

Provide quarterly progress reports and invoices documenting activities scheduled, description of work completed, % completed, project issues, as described in this Agreement.

### **6.4 Final Report**

Provide a detailed written final report of project outcomes, lessons learned, cost-effectiveness, feasibility of regional implementation, recommendations for future actions, next steps, as described in this Agreement.

### **6.5 Long-Term Reporting**

Prepare a post-project update report to Metropolitan one year following the acceptance of the Final Report, as described in this Agreement.

## Exhibit A

### 5.0 Deliverables

Task/Subtask		Deliverables	Submittal Due Date
1. Advancement of Slant Well Technology			
1.1	Slant Well Technology Assessment	<ul style="list-style-type: none"><li>• Technical Memorandum on how to advance slant well technology, including an updated literature review and scope to evaluate rehabilitation techniques</li><li>• Conceptual plan of a full-scale slant well</li></ul>	10/15/2014
1.2	Achieving Long-Term Performance		
1.3	Application Considerations and Concepts		
2. Geologic, Seismic and Ocean Risk analysis for Sitting Slant Beach Wells			
	Preliminary geotechnical study	<ul style="list-style-type: none"><li>• Technical Memorandum including a geotechnical study for siting, placement, and protective measures for construction on beaches</li></ul>	10/15/2014
3. Prediction of Coastal / Ocean Groundwater Flow and Water Quality			
3.1	State-of-the-Art Groundwater Models and Selection of Preferred Models/Modules	<ul style="list-style-type: none"><li>• Technical Memorandum describing model selection, development, and calibration, and CDFW compliance</li><li>• Calibrated fine grid coastal/ocean groundwater flow and water quality precision model, including a geochemical module tool</li></ul>	4/15/2015
3.2	Development and Calibration for Geochemical Modules		
3.3	Development and Calibration of Preferred Model/Modules to Assess Feasibility		
3.4	California Department of Fish & Wildlife (CDFW) Streambed Alteration Agreements and Assessment for Compliance		
4. Modeling Slant Well Feedwater Supply, Impacts and Mitigation Approaches			
4.1	Assessment of Sustainable Yield for Baseline Comparison	<ul style="list-style-type: none"><li>• Technical Memorandum, quantifying sustainable yield, water quality vs time, slant well extraction impacts and evaluating mitigation measures</li></ul>	1/15/2016
4.2	Prediction of Transition and Steady State Pumped Water Quality		
4.3	Analysis of Pumping Impacts		
4.4	Assessment of Institutional and Physical Mitigation Approaches		
5. Coastal Environmental Drawdown Issues and Regulatory Strategies			
	Coastal Environmental Drawdown Issues and Regulatory Strategies	<ul style="list-style-type: none"><li>• Technical Memorandum, describing drawdown issues and development of appropriate regulatory terms and conditions, and evaluation of mitigation strategies</li></ul>	1/15/2016
6. Coastal Environmental Drawdown Issues and Regulatory Strategies			
6.1	Project Management	<ul style="list-style-type: none"><li>• Reports given to Agency Board and project Participants/Stakeholders</li></ul>	Quarterly (see pg 14)
6.2	Convene Science Review Panel	<ul style="list-style-type: none"><li>• Reports on the review panel activity and results, including panel bios</li></ul>	As needed
6.3	Progress Reports	Quarterly Progress Reports	Quarterly (see pg 14)
6.4	Final Report	Final Report to Metropolitan	2/1/2016
6.5	Long-Term Reporting	Post-Project Update Report	4/15/2017

## Exhibit A

### 6.0 Cost Estimate

Task No.	Task	Total Project Cost	Maximum Cost to Metropolitan
Task 1	Advancement of Slant Well Technology	\$45,000	\$21,467
Task 2	Geologic, Seismic and Ocean Risk Analysis for Siting Slant Beach Wells	\$77,200	\$36,829
Task 3	Prediction of Coastal / Ocean Groundwater Flow and Water Quality	\$128,440	\$61,273
Task 4	Modeling Slant Well Feedwater Supply, Impacts and Mitigation Approaches	\$114,000	\$54,384
Task 5	Coastal Environmental Drawdown Issues and Regulatory Strategies	\$7,200	\$3,435
Task 6	Project Management	\$47,400	\$22,612
<b>Grand Total</b>		<b>\$419,240</b>	<b>\$200,000</b>

Note: MET share = \$200,000/\$419,240 = 0.47705. Additional local, non-match work at \$80,760 not shown.



## Exhibit A

### 7.0 Schedule

The following illustrates the expected quarterly progress schedule per task. The costs shown represent estimated costs to Metropolitan.

Overcoming Barriers to Slant Well Seawater Desalination – Siting, Groundwater, Water Quality and Treatment												
Task	Task Name	2013			2014			2015			2016	
		Start-Dec	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	Jan-Mar	
		Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q1
1	Advancement of Slant Well Technology			\$21,467								
2	Geologic, Seismic and Ocean Risk Analysis for Siting Slant Beach Wells			\$36,829								
3	Prediction of Coastal / Ocean Groundwater Flow and Water Quality				\$61,273							
4	Modeling Slant Well Feedwater Supply, Impacts and Mitigation Approaches							\$54,384				
5	Coastal Environmental Drawdown Issues and Regulatory Strategies								\$3,435			
6	Project Management										\$22,612	

Note: A minimum 25% of eligible reimbursable costs will be withheld per invoice until a final report (due 2/1/2016) is accepted by Metropolitan.

Post-project reporting to Metropolitan is not shown on this schedule, but should be submitted upon request by Metropolitan one year following Metropolitan's acceptance of the Final Report.

Reporting Schedule

- Progress Report 2013 Q4 (Start – December 2013)..... January 15, 2014
- Progress Report 2014 Q1 (January 2014 – March 2014)..... April 15, 2014
- Progress Report 2014 Q2 (April 2014 – June 2014) ..... July 15, 2014
- Progress Report 2014 Q3 (July 2014 – September 2014) ..... October 15, 2014
- Progress Report 2014 Q4 (October 2014 – December 2014)..... January 15, 2015
- Progress Report 2015 Q1 (January 2015 – March 2015)..... April 15, 2015
- Progress Report 2015 Q2 (April 2015 – June 2015) ..... July 15, 2015
- Progress Report 2015 Q3 (July 2015 – September 2015) ..... October 15, 2015
- Progress Report 2015 Q4 (October 2015 – December 2015)..... January 15, 2016
- **Final Report**..... **February 1, 2016**
- Progress Report 2016 Q1 (January 2016 – March 2016)..... April 15, 2016
- Post-Project Update Report..... April 15, 2017

## Exhibit B – Sample Invoice

BILL TO

Metropolitan Water District of Southern California  
Accounts Payable Section  
P.O. Box 54153  
Los Angeles, CA 90054-0153

# INVOICE

AGENCY NAME	INVOICE DATE	INVOICE PERIOD

ADDRESS	PROJECT NAME

CONTACT	CONTACT PHONE	AGREEMENT NUMBER

MAXIMUM AWARD AMOUNT	AMOUNT PREVIOUSLY INVOICED	AWARD AMOUNT REMAINING

ITEMIZED EXPENSES		
TASK	DETAILED DESCRIPTION (e.g., consultant costs and hours, materials and supplies, lab costs, etc.)	COST
TOTAL COSTS		

TOTAL ELIGIBLE REIMBURSABLE COSTS (UP TO 50% OF TOTAL COSTS)	
WITHHOLDING (25%)	
<b>TOTAL REIMBURSABLE REQUEST (UP TO 37.5% OF TOTAL COSTS)</b>	

BY SIGNING THIS INVOICE, AGENCY CERTIFIES THAT WORK DESCRIBED HEREIN IS AN ACCURATE AND CORRECT RECORD OF SERVICES PERFORMED FOR METROPOLITAN UNDER THIS AGREEMENT AND THIS WORK HAS NOT BEEN BILLED ON ANY OTHER CLIENT OR PROJECT PARTNER INVOICES.

PROJECT MANAGER	
-----------------	--

Agreement No. 139834

BILL TO

Metropolitan Water District of Southern California  
Accounts Payable Section  
P.O. Box 54153  
Los Angeles, CA 90054-0153

# BUDGET

PROJECT NAME

INVOICE  
PERIOD

	AGREEMENT NUMBER

A	B	C	D	E	F	G	H
TASK	CUMULATIVE COSTS THROUGH PREVIOUS QUARTER	TOTAL COSTS FOR CURRENT QUARTER	CURRENT QUARTER'S ELIGIBLE REIMBURSABLE COSTS (UP TO 50%)	CUMULATIVE ELIGIBLE REIMBURSABLE COSTS TO DATE	TOTAL AWARD AMOUNT	REMAINING AWARD BALANCE	PERCENT COMPLETE
TOTAL							

Description of the Example Budget Table Columns:

- A. Task number and name
- B. Cumulative total Project costs through the previous quarter (does not include current quarter's costs)
- C. Total Project costs for the current quarter
- D. Eligible reimbursable costs for the current quarter (up to 50% of the total Project cost of the task for the current quarter). Example:  $D = C \times 0.50$
- E. Cumulative eligible reimbursable costs to date (includes the current quarter's reimbursable costs). Do not subtract out Metropolitan withholding.
- F. Total award amount per task as established in Exhibit A (Scope of Work, Costs, and Schedule) of the Agreement
- G. Remaining award balance.  $G = F - E$
- H. Percent complete.  $H = E \div F$

## Exhibit C: Quarterly Progress Report Format

Agency shall include, at minimum, the following items in the Quarterly Progress Reports.

### 1. Cover Letter

Provide a brief description of the submittal, including the amount invoiced in the respective invoice period, a list of items being submitted, and contact information.

The letter must be signed and include the following language:

**"I am informed and believe that the information contained in this report is true and that the supporting data is accurate and complete."**

### 2. Quarterly Progress Report

#### 2.1 Report Status

- a) Describe work performed during the quarter, by task.
- b) Describe major accomplishments, such as:
  - i. Tasks achieved
  - ii. Milestones met
  - iii. Meetings held or attended
  - iv. Press release, etc.
- c) Where applicable, describe how the activities carried out differed from the plans outlined in the Project Scope of Work. Identify any problems encountered in the performance of the work under this Agreement, and how these matters were addressed.
- d) If the quarter's objectives were not met, explain why and how these goals will be approached for the next reporting period.

#### 2.2 Cost Information

- a) Identify costs incurred during the quarter by Agency and each partnering/supporting entity working on the Project.
- b) Discuss how the actual budget is progressing in comparison to the latest Project budget. Justify any differences that occurred, identifying budget impacts and/or problems encountered, and describe how these matters will be addressed for the next reporting period.
- c) Provide a revised budget, by task, if changed from the latest Project budget.

#### 2.3 Schedule Information

- a) Provide a Project schedule showing actual progress versus planned progress from the latest schedule.
- b) Discuss how the actual schedule is progressing in comparison to the latest Project schedule. Justify any differences that occurred, identifying schedule impacts and/or problems encountered, and describe how these matters will be addressed for the next reporting period.
- c) Provide a revised schedule, by task, if changed from the latest Project schedule.

## Exhibit D: Final Report Format

Agency shall include, at minimum, the following items in the Final Report.

### 1. Cover Letter

Provide a brief description of the submittal, including the total amount of funds disbursed, a list of items being submitted, and contact information.

The letter must be signed and include the following language:

***"I am informed and believe that the information contained in this report is true and that the supporting data is accurate and complete."***

### 2. Final Report

#### 2.1 Executive Summary

- a) Briefly summarize the content of the main report.

#### 2.2 Introduction

- a) Provide an overview of the work performed and accomplishments achieved throughout the duration of the Project.
- b) Briefly describe the findings of the study.
- c) Describe the role/involvement of each partnering/supporting entity and their relationship to the Project.

#### 2.3 Cost Summary

- a) Include a summary of the costs incurred and of funds disbursed throughout the duration of the Project.
- b) Provide a comparison between the planned budget in the Agreement and the actual budget. Justify any differences that occurred, identifying budget impacts and/or problems encountered, and how these matters were addressed.

#### 2.3 Schedule Summary

- a) Include a summary of all tasks accomplished throughout the duration of the Project.
- b) Provide a comparison between the planned schedule in the Agreement and the actual schedule. Justify any differences that occurred, identifying schedule impacts and/or problems encountered, and how these matters were addressed.

#### 2.4 Project Results and Analysis

- a) Describe and provide an analysis of the Project results and findings in detail.
- b) Were the Project goals and objectives as proposed achieved? Explain.
- c) Discuss any major problems that occurred in meeting the Project goals and objectives, including how, and if, they were resolved.
- d) Explain how the findings of the Project can be applied to other areas of the region. What types of obstacles, if any, would be anticipated before implementation/application can occur, and how could these matters be addressed?

#### 2.5 Conclusion

- a) Describe lessons learned.
- b) Describe the next steps of the Project (e.g., applicability of the results, topics that may require additional research, new programs that should be developed, policy amendments, etc.).

## **Exhibit E: Post-Project Update Report Format**

Agency shall include, at minimum, the following items in the Post-Project Update Report.

### **1. Accomplishments and Applicability**

- a) What has been accomplished since the submittal of the Final Report?  
How have the Project findings/results of the Final Report been applied/implemented (e.g., regional application of results, pilot study results used for full-scale implementation, additional research performed, impacts on regulations/legislation, technical advances, etc.)?
- b) Discuss new information obtained during this reporting period, and how this knowledge will further future efforts.
- c) If applicable, provide additional data obtained since the submittal of the Final Report (e.g., pilot project water quality data, etc.).

### **2. Next Steps**

- a) Describe specific plans, if any, for continuing work on this Project or related projects (e.g., what questions will be investigated, what programs will be developed, etc.).

## **DOHENY OCEAN DESALINATION FOUNDATIONAL ACTIONS FUNDING PROGRAM AGREEMENT**

This Foundational Actions Funding Program Agreement for the Doheny Ocean Desalination Project (“Agreement”) is made and entered into on the \_\_\_\_ of January 2014 by and between the Municipal Water District of Orange County (MWDOC), South Coast Water District (“SCWD”), and Laguna Beach County Water District (“LBCWD”). MWDOC, SCWD, and LBCWD may be collectively referred to as “Parties” and individually as a “Party.” SCWD and LBCWD may also be referred to as the “Participating Agencies.”

### **Section 1. Recitals.**

A. On behalf of the Participating Agencies, MWDOC recently submitted a proposal to the Metropolitan Water District of Southern California (“Metropolitan”), through Metropolitan’s Foundational Actions Funding Program (“FAF Program”) for funding of a project entitled “Overcoming Barriers to Slant Well Seawater Desalination - Siting, Groundwater, Water Quality and Treatment” for the Doheny Desal Project (the “Study”).

B. MWDOC is a public agency member of Metropolitan and applied for the FAF Program funding for the Study on behalf of SCWD and LBCWD, as well as additional agencies that have not yet decided whether to participate in the Study.

C. The objective of the Study is to further the understanding and utilization of slant well intakes for the development of an ocean desalination project. Specifically, the Study is focused on overcoming identified barriers to the use of slant wells for ocean water intake purposes where the ocean connects to the San Juan Groundwater Basin with similar issues expected in other locations and understanding long-term pumped water quality, slant well performance, and institutional and physical mitigation measures such as injection wells to minimize drawdown impacts.

D. In November 2013, Metropolitan notified MWDOC that the Metropolitan Board of Directors authorized funding through its FAF Program for the Study for an amount not to exceed \$200,000.

E. MWDOC plans to enter into an agreement with Metropolitan regarding the FAF Program for the Study concurrent with the execution of this Agreement to initiate work prior to January 31, 2014. A copy of the Metropolitan Agreement is attached hereto as Exhibit A (“Metropolitan Agreement”).

F. SCWD and LBCWD will provide funds in the amount of \$200,000 to match the Metropolitan funds and will provide such additional funding to complete the Study and, through this Agreement, intend to administer the Study and assume all of the obligations, responsibilities, and liabilities imposed on MWDOC in the Metropolitan Agreement.

I. This Agreement sets forth the terms and conditions by which the Parties will proceed with the Study, including the roles, responsibilities, and financial obligations of each Party.



NOW, THEREFORE, in consideration of the promises and covenants hereinafter set forth, the Parties agree as follows:

## **Section 2. Study Responsibilities**

A. SCWD and LBCWD shall collectively carry out the Study as described in the Scope of Work, Cost and Schedule set forth in the attached Exhibit ~~BA to the Metropolitan Agreement, which is attached to this Agreement as Exhibit A.~~

B. In addition, as part of the Study, SCWD and LBCWD shall collectively fund, carry out, and complete the additional tasks that are included in the study task summary chart, which is attached to this Agreement as Exhibit CB. The additional tasks in Exhibit BC are above and beyond the requirements in Exhibit BA to the Metropolitan Agreement and shall be funded by the Participating Agencies, not by MWDOC. With respect to the funding, the Scope of Work in Exhibit BA to the Metropolitan Agreement is estimated at \$419,240 and Metropolitan will pay up to \$200,000. The study task summary in Exhibit BC is for a total amount of work estimated at \$500,000. For the avoidance of doubt, SCWD and LBCWD will be responsible for up to \$300,000 in funding to complete all of the activities in Exhibit CB.

C. SCWD and LBCWD shall collectively provide the Study deliverables to MWDOC and Metropolitan according to the schedule set forth in Exhibit BA to the Metropolitan Agreement, which is attached to this Agreement as Exhibit A.

## **Section 3. Agreement Term**

A. This Agreement shall be effective on the effective date of the Metropolitan Agreement with MWDOC and the term shall be through June 30, 2017, or when all of the Parties' obligations under this Agreement and the Metropolitan Agreement have been fully satisfied, whichever occurs earlier. Extensions of time to complete all or portions of the Study, including any required deliverables, shall be requested in writing by LBCWD and SCWD and may be authorized by MWDOC only if Metropolitan agrees to a corresponding extension of the Metropolitan Agreement. Any written authorization for an extension of time shall be attached to and incorporated into this Agreement.

B. This Agreement may be terminated by either MWDOC or by the Participating Agencies with or without cause upon 30 days written notice to the other. MWDOC's only obligation in the event of termination will be payment of approved invoices in conformity with this Agreement and the Metropolitan Agreement up to and including the effective date of termination. Notwithstanding the previous sentence, MWDOC shall have no obligation to pay any invoices to the Participating Agencies if they are not approved by Metropolitan. In the event of termination, the Participating Parties are responsible for providing all information, reports, data and consultant and other documents available that were developed up to the point of Termination to MWDOC.

C. Failure of the Participating Agencies to submit progress reports or the final report to

MWDOC within the timeframe established in Exhibit ~~B.A to the Metropolitan Agreement~~ or any extension of time authorized in accordance with Section 3(A) of this Agreement will be a breach of this Agreement and may result in termination of the agreement.

#### **Section 4. Responsibilities and Ownership**

A. The Participating Agencies shall be responsible for all necessary services and materials for the Study implementation including, but not limited to, the hiring of consultants and others to conduct the work, Study administration, data collection, and reporting and completion of the final report.

B. The Participating Agencies shall comply with all Federal, State and local laws, ordinances and regulations and are solely responsible for any such obligations, including, without limitation, compliance with the California Environmental Quality Act.

C. The Participating Agencies shall be responsible for the design, implementation, personnel, equipment, and supplies, and all capital and operating costs related to and incurred by the Study. All materials and equipment necessary to implement the Study are the exclusive property of the Participating Agencies. MWDOC shall have no ownership, right, title, security interest, or other interest in any Study facilities, materials, or equipment, nor any rights, duties, responsibilities for operation or maintenance thereof ~~pursuant to this Agreement, except as otherwise provided in the “Wind-Up Agreement for Phase 3,” which is attached to this Agreement as Exhibit B.~~

D. The following language must be included in all contracts entered into by the Participating Agencies with any subcontractors or consultants regarding completion of the Study:

- i. “(Consultant or Responsible Party) agrees at their sole cost and expense to protect, indemnify, defend, and hold harmless the Municipal Water District of Orange County and the Metropolitan Water District of Southern California, and their respective Boards of Directors, officers, representatives, agents, and employees from and against any and all claims and liability of any kind (including, but not limited to, any claims or liability for injury or death to any person, damage to property, natural resources or to the environment, or water quality problems) that arise out of Consultant’s actions or relate to the approval, construction, operation, repair or ownership of the Study. Such indemnity shall include all damages and losses related to any claim made, whether or not a court action is filed, and shall include attorney’s fees, administrative and overhead costs, engineering and consulting fees and all other costs related to or arising out of such claim or asserted liability”.
- ii. “(Consultant or Responsible Party) will maintain the types and levels of insurance in compliance with the requirements in the Doheny Ocean Desalination Foundational Actions Funding Program Agreement entered into between the Municipal Water District of Orange County and \_\_\_\_\_ (“Participating Agency”).”

- iii. “All intellectual property developed pursuant to this Agreement is owned by MWDOC. This intellectual property includes, but is not limited to, all inventions, patents, data, design, drawings, specifications, raw results, computer programs, final report, as well as any other presentations, reports, findings or related materials developed during the Study. All results produced in the performance of the Agreement may be released to the public”.

## Section 5. Indemnity

A. The Participating Agencies agree at their sole cost and expense to protect, indemnify, defend, and hold harmless MWDOC and Metropolitan, and their respective Boards of Directors, officers, representatives, agents, and employees from and against any and all claims and liability of any kind (including, but not limited to, any claims or liability for injury or death to any person, damage to property, natural resources or to the environment, or water quality problems) that arise out of the Participating Agencies’ actions or relate to ~~their approval, construction, operation, repair or ownership of~~ the Study. Such indemnity shall include all damages and losses related to any claim made, whether or not a court action is filed, and shall include attorney’s fees, administrative and overhead costs, engineering and consulting fees and all other costs related to or arising out of such claim or asserted liability.

## Section 6. Intellectual Property and Use of Materials

A. All intellectual property developed pursuant to this Agreement is owned by MWDOC. This intellectual property includes, but is not limited to, all inventions, patents, data, design, drawings, specifications, raw results, computer programs, final report, as well as any other presentations, reports, findings or related materials developed during the Study. All results produced in the performance of the Agreement may be released to the public. [This exact language is required by the MET Agreement to be in this Agreement.]

B. MWDOC grants to the Participating Agencies a nonexclusive license, at no cost, to use the intellectual property developed in the course of the work performed under this Agreement by any of the Parties or any contractor and consultant working on the Study ~~as described in Exhibit A.~~

C. The Participating Agencies shall notify MWDOC in writing of all intellectual property conceived or developed in the course of the work performed under this Agreement.

D. When requested by MWDOC, or upon termination of this Agreement, the Participating Agencies shall furnish a copy of all documents and other tangible media containing intellectual property developed by the Participating Agencies during the course of this Agreement, including prototypes and computer programs.

## Section 7. Payment

A. MWDOC’s payment for the Study is not to exceed \$200,000, or fifty (50) percent of the total cost expended per task as established in Exhibit ~~BA to the Metropolitan Agreement, which~~

~~is attached to this Agreement as Exhibit A~~, whichever is less. Notwithstanding the previous sentence, MWDOC will not be responsible for any payments of any amount in connection with this Agreement unless such payments are first approved and reimbursed to MWDOC by Metropolitan. ~~A~~For the avoidance of doubt, all payments required to be made by MWDOC to the Participating Agencies pursuant to this Agreement are contingent upon such payments being first approved by Metropolitan and reimbursed to MWDOC by Metropolitan. The Participating Agencies are responsible for any and all costs in excess of the payments approved by Metropolitan.

B. The Participating Agencies must submit quarterly progress reports and associated quarterly invoices to MWDOC as described in Section 8 below. Twenty five (25) percent of eligible reimbursable costs shall be withheld per invoice until a final report is submitted to MWDOC and accepted by Metropolitan. The Participating Agencies' invoices shall include at a minimum the information requested in ~~Exhibit B (the Sample Invoice)~~, ~~to the Metropolitan Agreement, which is attached to this Agreement as Exhibit D~~A. Invoices shall itemize allowable expenses and include receipts for which reimbursement is sought. Attached receipts should itemize each cost and provide descriptive information so that expenses are separately identified. The final invoice, including any requests for release of retention, shall be clearly marked "FINAL INVOICE."

C. In-kind services are not eligible for reimbursement and shall not be included in any invoices to MWDOC. In-kind services include, but are not limited to, work performed by staff of MWDOC and the Participating Agencies, and related expenses (e.g. travel, overhead, etc.).

D. All invoices related to the Study must be submitted by the Participating Agencies to MWDOC by April 5, 2016, to be considered for payment under the provisions of this Agreement. Invoices received after April 5, 2016 will not be paid unless MWDOC obtains from Metropolitan, an extension of time, in writing, to complete the work and submit MWDOC's invoices to Metropolitan pursuant to the Metropolitan Agreement.

E. Invoices to MWDOC will be paid by MWDOC to the Participating Agencies within 10 days after MWDOC's receipt of payment from Metropolitan for the invoice, and only in the amount approved and paid by Metropolitan to MWDOC.

## **Section 8. Reporting Requirements**

A. The Participating Agencies shall submit to MWDOC quarterly progress reports with the associated invoices by the 5th of January, April, July, and October for the preceding quarter. The progress reports shall include, at a minimum, the items listed in ~~the Exhibit C (Progress Report Format, which is attached)~~ to the Metropolitan Agreement, which is attached to this Agreement as Exhibit ~~E~~A. The Participating Agencies shall document all activities and expenditures in progress reports. The submittal of these reports is a requirement for initial and continued disbursement of funds.

B. The Participating Agencies shall prepare and submit to MWDOC, upon completion of the Study, a Final Report, which shall include, at a minimum, the items listed in ~~the Exhibit D (Final Report Format)~~ to the Metropolitan Agreement, which is attached to this Agreement as Exhibit

~~FA.~~ The Final Report shall be provided in hard copy and digital format prior to final payment of funds retained by MWDOC.

C. Upon request by MWDOC, the Participating Agencies shall prepare and submit to MWDOC a Post-Study Update Report one year following the acceptance of the Final Report. The Post-Study Update Report shall provide a summary of related post-funding Study activities and include, as a minimum, the items listed in Exhibit ~~GE~~ (Post-Study Update Report Format) ~~to the Metropolitan Agreement, which is attached to this Agreement as Exhibit A.~~

#### **Section 9. MWDOC Work.**

MWDOC shall perform certain services for the Participating Agencies as described in Exhibit B. The Participating Agencies shall be responsible for paying MWDOC for such services and any costs associated with such in an amount not to exceed ~~-\$\_\_\_\_\_~~. The Participating Agencies may not use funds provided to the Participating Agencies by MWDOC pursuant to this Agreement to pay MWDOC for such services.

#### **Section 10. Verification.**

The Participating Agencies shall be responsible for verifying completion of any consultant's or subcontractor's work in accordance with the Scope of Work as shown in Exhibit B.

#### **Section 11. Representations.**

Each Party represents that it is represented by legal counsel, that it has reviewed this Agreement and agrees that the Agreement is legally enforceable.

#### **Section 12. Insurance.**

The Participating Agencies shall comply with the insurance requirements imposed on "Agency" in the Metropolitan Agreement ("Insurance Requirements") and as more particularly described below.

A. Agency shall procure and maintain for the duration of this Agreement a program of commercial insurance or documented self-insurance program to protect against claims for injuries to persons or damages to property which may arise from or in connection with the performance of the work hereunder by the Participating Agencies, their agents, representatives, or employees.

B. The Participating Agencies shall sustain proof of insurance coverage in an updated ACORD form, attached as Exhibit ~~GHE to the Metropolitan Agreement~~ (Agency Proof of Insurance Coverage), and incorporated by reference, during the term of this Agreement. Failure to provide the updated insurance ACORD form, ~~or an equivalent form provided by the ACWA JPIA,~~ annually to MWDOC may result in the withholding of the Participating Agencies' invoice payment.

C. Minimum Scope of Insurance

1. Coverage shall be at least as broad as:

i. Insurance Services Office Commercial Liability coverage (occurrence Form CG00001).

ii. Insurance Service Office Form Number CA 0001 covering Automobile Liability, Code 1, (any auto).

iii. Workers' Compensation insurance as required by the State of California and Employer's Liability Insurance.

iv. Professional Liability or Errors and Omissions Liability insurance appropriate to the Agency's profession. Architects' and engineers' coverage is to be endorsed to include contractual liability.

D. Minimum Limits of Insurance

1. The Participating Agencies shall maintain limits no less than:

i. General Liability: General Liability: Including operations, products and completed operations as applicable, \$1,000,000 per occurrence for bodily injury, personal injury and property damage. If Commercial General Liability Insurance or other form with a general aggregate limit is used, either the general aggregate limit shall apply separately to the project or location, or the general aggregate limit shall be twice the required occurrence limit.

ii. Automobile Liability: \$1,000,000 per accident for bodily injury and property damage.

iii. Workers' Compensation: Shall be furnished in accordance with statutory requirements of the State of California and shall include Employer's Liability coverage of \$1,000,000 per accident for bodily injury or disease.

iv. Professional Liability or Errors and Omissions Liability: \$1,000,000 per claim, with a \$2 million aggregate.

E. Deductibles and Self-Insurance Retentions: Any deductibles or self-insured retentions must be declared to and approved by MWDOC. At the option of MWDOC, either: the insurer shall reduce or eliminate such deductibles or self-insured retentions as respect to MWDOC, its officers officials, employees, agents and volunteers; or the Participating Agencies shall provide a financial guarantee satisfactory to MWDOC guaranteeing payment of losses and related investigations, claim administration and defense expenses.

F. Verification of Coverage: The Participating Agencies shall furnish MWDOC with original certificates and amendatory endorsements effecting coverage required by this clause. The endorsements and certificates are to be received and approved by MWDOC prior to the commencement of work. MWDOC reserves the right to require complete, certified copies of all required insurance policies, including endorsements effecting coverage, and coverage binders required by these specifications at any time.

G. Acceptability of Insurers: Insurance is to be placed with California admitted insurers with

a current A.M. Best's rating of no less than A:VIII. A non-admitted carrier may be used with prior approval from MWDOC, with an A.M. Best rating of no less than A: X. An exception to these standards will be made for the State Compensation Insurance Fund when not specifically rated. The Participating Agencies may participate in and provide evidence of pooled equivalent coverage through joint powers agency insurance authorities such as CSRMA or ACWA JPIA.

#### H. General Liability and Automobile Liability Endorsements

1. The commercial general liability policy and automobile policies are to contain, or be endorsed to contain, the following provisions:

i. MWDOC and Metropolitan, their officers, officials, employees and agents are to be covered as insureds as respect to liability arising out of work or operations performed by or on behalf of the Participating Agencies; or automobiles owned, leased, hired or borrowed by the Participating Agencies.

ii. For any claims related to this Study, the Participating Agencies' insurance coverage shall be primary insurance as respect to MWDOC and Metropolitan, and their officers, officials, employees and volunteers. Any insurance or self-insurance maintained by MWDOC and Metropolitan, their officers, officials, employees or agents shall be excess of the Participating Agencies' insurance and shall not contribute with it.

iii. Each insurance policy required by this clause shall be endorsed to state that coverage shall not be cancelled by either party, except after thirty (30) days prior written notice by certified mail, return receipt requested, has been given to MWDOC.

iv. Coverage shall not extend to any indemnity coverage for the active negligence of the additional insured in any case where an agreement to indemnify the additional insured would be invalid under Subdivision (b) of Section 2782 of the Civil Code.

#### I. Other Endorsements and Insurance Provisions

1. All rights of subrogation under the property insurance policy (if any) have been waived against MWDOC and Metropolitan.

2. The workers' compensation insurer, agrees to waive all rights of subrogation against MWDOC and Metropolitan for injuries to employees of the insured (Participating Agencies) resulting from work for MWDOC or Metropolitan or use of MWDOC or Metropolitan's premises or facilities.

3. If General Liability, ~~Pollution and/or any Asbestos Pollution Liability and/or professional liability or Errors & Omissions~~ coverages is are written on a claims-made form:



i. The “Retro Date” must be shown, and must be before the date of the contract or the beginning of contract work.

ii. If coverage is canceled or non-renewed, and not replaced with another claims-made policy form with a “Retro Date” prior to the contract effective date, the Participating Agencies must purchase “extended reporting” coverage for a minimum of five (5) years after completion of contract work.

iii. A copy of the claims reporting requirements must be submitted to MWDOC and Metropolitan for review.

4. Any consultants or subcontracts who contract with either of the Participating Agencies in connection with performing work on the Study must maintain insurance in compliance with the requirements in this Agreement and must name MWDOC as an additional insured consistent with the requirements of Section 124 of this Agreement. Any professional engineering firms conducting studies under Exhibit B and C of this Agreement shall provide evidence of Professional Errors & Omissions coverage meeting coverage amounts of \$1,000,000 per claim, with a \$2 million aggregate.

### **Section 13. Miscellaneous**

A. This Agreement may be amended by written mutual agreement executed by the Parties. Any alteration or variation of the terms of this Agreement will not be valid unless made in writing and signed by all of the Parties. This Agreement constitutes the entire agreement between the Parties.

B. This Agreement will inure to the benefit of and be binding upon the Parties and their respective successors. This Agreement is not assignable by any Party in whole or in part.

C. If any provision of this Agreement shall be held illegal, invalid, or unenforceable, in whole or in part, such provision shall be modified to the minimum extent necessary to make it legal, valid, and enforceable, and the legality, and enforceability of the remaining provisions shall not be affected thereby.

D. This Agreement shall be deemed a contract under the laws of the State of California, and for all purposes will be interested in accordance with such laws. The Parties hereby agree to consent to the exclusive jurisdiction of the courts of the state of California, and that the venue of any action brought hereunder will be in Los Angeles County, California.

E. Notice. Any notice, invoice, report, or payment made pursuant to this Agreement shall be sent to the Parties at their respective addresses shown below, including any notice that must be sent to Metropolitan.

If to MWDOC:           Municipal Water District of Orange County  
                                  18700 Ward St.



P.O. Box 20895  
Fountain Valley, CA 92728  
Attn: General Manager  
Email: rhunter@mwdoc.com

If to SCWD: South Coast Water District  
31592 West Street  
Laguna Beach, CA 92651  
Attn: General Manager  
Email: abrunhart@scwd.org

If to LBCWD: Laguna Beach County Water District  
306 Third Street  
P.O. Box 987  
Laguna Beach, CA 92652  
Attn: General Manager  
Email: rhinchey@lbcwd.org

F. Counterparts. This Agreement and any amendment hereto may be executed in two or more counterparts, and by each Party on a separate counterpart, each of which, when executed and delivered, shall be an original and all of which together shall constitute one instrument, with the same force and effect as through all signatures appeared on a single document.

G. Signatures. The individuals executing this Agreement represent and warrant that they have the legal capacity and authority to do so on behalf of their respective agencies.

IN WITNESS WHEREOF, the Parties have executed this Agreement as of the date below.

Date \_\_\_\_\_

Date \_\_\_\_\_

By \_\_\_\_\_  
Andrew Brunhart  
General Manager  
SCWD

By \_\_\_\_\_  
Robert Hunter  
General Manager  
MWDOC

Approved as to Form:

Approved as to Form:

Date \_\_\_\_\_

Date \_\_\_\_\_

By: \_\_\_\_\_

By: \_\_\_\_\_

Betty Burnett  
General Counsel

Russell G. Behrens  
General Counsel

Date \_\_\_\_\_

By \_\_\_\_\_  
Rena M. Hinchey  
General Manager  
LBCWD

Approved as to Form:

Date \_\_\_\_\_

By: \_\_\_\_\_  
General Counsel

Exhibit B: Study Budget Task Summary

			Geoscience (1)				Carollo (2)				NWRI			SCWD			MWDOC		
Task		Budget	Average	Est.	Est. Cost	Average	Est.	Est. Cost	Average	Est.	Est. Cost	Average	Est.	Est. Cost	Average	Est.	Est. Cost		
			Hrly Rate	Hrs		Hrly Rate	Hrs		Hrly Rate	Hrs		Hrly Rate	Hrs						
1.0		Advancement of Slant Well Technology			\$32,400			\$12,600									\$5,760		
1.1		Slant Well Technology Assessment	\$180	40	\$7,200	\$175	24	\$4,200							\$120	16	\$1,920		
1.2		Achieving Long-Term Performance	\$180	80	\$14,400	\$175	8	\$1,400							\$120	16	\$1,920		
1.3		Application Considerations and Concepts	\$180	60	\$10,800	\$175	40	\$7,000							\$120	16	\$1,920		
2.0		Geologic, Seismic and Ocean Risk Analysis for Siting Slant Beach Wells	\$180	40	\$7,200	\$140	500	\$70,000							\$120	25	\$3,000		
3.0		Prediction of Coastal/Ocean Groundwater (GW) Flow and Water Quality			\$128,440			\$0									\$9,600		
3.1		State-of-the-Art GW Models and Selection of Preferred Model/Modules	\$180	24	\$4,320														
3.2		Development and Calibration for Geochemical Modules	\$200	149	\$29,800														
3.3		Development and Calibration for Preferred Model/Modules to Assess Feasibility	\$180	500	\$90,000														
3.4		CDFW Streambed Alteration Agreements & Assess Compliance	\$180	24	\$4,320										\$120	80	\$9,600		
4.0		Modeling Slant Well Feedwater Supply, Impacts and Mitigation Approaches			\$72,000			\$42,000											
4.1		Assessment of Sustainable Yield for Baseline Comparison	\$180	80	\$14,400														
4.2		Prediction of Transition and Steady State Pumped Water Quality	\$180	80	\$14,400														
4.3		Analysis of Pumping Impacts	\$180	80	\$14,400														
4.4		Assessment of Institutional and Physical Mitigation Approaches	\$180	160	\$28,800	\$175	240	\$42,000											
5.0		Coastal Environmental Drawdown Issues and Regulatory Strategies	\$180	40	\$7,200										\$120	160	\$19,200		
6.0		Project Management, PM Support, Science Panel and Reports			\$4,800			\$4,200			\$38,400			\$43,200			\$0		
6.1		Project Management (PM) and PM Support (Planning, Technical and Regulatory)												\$19,200					
6.2		Convene Science Advisory Committee (4 Meetings)	\$200	24	\$4,800	\$175	24	\$4,200		\$120	\$38,400								
6.3		Annual Post Grant Activities Reporting (for 5 years)								\$120		120	\$14,400						
6.4		Quarterly Progress and Interim Study/Documents Reporting & Final Report								\$120		80	\$9,600						
		Totals			\$252,040			\$128,800			\$38,400			\$43,200			\$37,560		
Estimated Direct Costs (included in hourly rates above)					\$2,500			\$500			\$1,500						\$500		
Notes:			1. Geoscience labor hours/costs includes subcontractor Dr. Matt Charrette (WHOI) at \$30,000 for Subtask 3.2 Geochemical Module																
			2. Carollo Engineers labor hours/cost includes subcontractors Ninyo & Moore at \$70,000 for Task 2.0 and SPI at \$10,000 for Subtask 4.4																
			3. All labor hours are estimates at this time and require final negotiation.																

**FOUNDATIONAL ACTIONS FUNDING PROGRAM AGREEMENT****Agreement No. 139835**

THIS AGREEMENT (Agreement) is made and entered into on [REDACTED], 2013, between  
The Metropolitan Water District of Southern California (Metropolitan) and  
The Municipal Water District of Orange County (Agency).  
Metropolitan and Agency may be collectively referred to as "Parties" and individually as "Party."

**Recitals**

- A. Metropolitan, through its Foundational Actions Funding Program (FAF Program), provides funding to persons or entities for technical studies or pilot projects that reduce barriers to future production of recycled water, stormwater, seawater desalination, and groundwater resources. This Program was established per authorization detailed in Board Letter No.8-4 in April 2013.
- B. Agency was selected through a Request for Proposal (RFP). Metropolitan and Agency agree to enter into an agreement for the San Juan Basin Groundwater and Desalination Optimization Program (Project).
- C. This Agreement provides the terms for Agency's participation in the FAF Program.

NOW, THEREFORE, in consideration of the promises and covenants hereinafter set forth, the Parties do agree as follows:

**Section 1: Project Description**

- 1.1 Agency shall carry out the Project as described in Exhibit A (Scope of Work, Cost, and Schedule), which is hereby incorporated into this Agreement.
- 1.2 Agency shall provide the Project deliverables according to the schedule as set forth in Exhibit A.

**Section 2: Agreement Term**

- 2.1 This Agreement shall be effective on [REDACTED], 2013 and the term shall be through June 30, 2017, or when all of the Parties' obligations under this Funding Agreement have been fully satisfied, whichever occurs earlier. Extensions of time to complete all or portions of the Project, including any required deliverables, shall be requested in writing by Agency and may be authorized at the sole discretion of Metropolitan in writing by Metropolitan. Any written authorization for an extension of time shall be attached to and incorporated into this Agreement.
- 2.2 This Agreement may be terminated by either Party with or without cause upon 30 days written notice to the other Party. Metropolitan's only obligation in the event of termination will be payment of approved invoices in conformity with this Agreement up to and including the effective date of termination.
- 2.3 Failure of an Agency to submit progress reports or the final report within the timeframe established in Exhibit A or any extension of time authorized in accordance with Section 2.1 above will be a breach of this Agreement.
- 2.4 This Agreement may be terminated immediately by Metropolitan upon written notice to the Agency if work on the Project has not started by January 31, 2014.

**Section 3: Agreement Administrators**

- 3.1 Ms. Stacie Takeguchi is appointed Agreement Administrator for Metropolitan for the purpose of administering this Agreement. The Agreement Administrator appointed by Agency for the purpose of administering this Agreement is [REDACTED].
- 3.2 The designated Agreement Administrator may be changed by providing written notice to the other Party. Any communication required to administer this Agreement shall be in writing and will be deemed received upon personal delivery or 48 hours after deposit in any United States mail depository, first class postage prepaid, and addressed to the Party for whom intended, as follows:

**If to Metropolitan:**

The Metropolitan Water District of Southern California  
 P. O. Box 54153  
 Los Angeles, CA 90054-0153  
 Attention: Ms. Stacie Takeguchi  
 Or by email to: stakeguchi@mwadh2o.com

**If to Agency:**

Municipal Water District of Orange County  
 18700 Ward Street  
 Fountain Valley, CA 92708  
 Attention: [Insert Agency Agreement Administrator Name]  
 Or by email to: [Insert Agency Administrator email]

Either Party may change such address by giving notice to the other Party as provided herein.

**Section 4: Responsibilities and Ownership**

- 4.1 Agency shall be responsible for all necessary services and materials for Project implementation including, but not limited to, providing the following: Project administration, data collection, analyses, and reporting.
- 4.2 Agency shall comply with all Federal, State and local laws, ordinances and regulations and is solely responsible for any such obligations, including, without limitation, compliance with the California Environmental Quality Act.
- 4.3 Metropolitan and Agency agree that each party shall be responsible for its own actions, and the actions of its officers, employees and agents, in performing services under this Agreement. Metropolitan and Agency each agree to indemnify and hold the other Party and its officers and agents harmless and agree to defend the other Party against any claim or asserted liability arising out of its actions, either willful or negligent, or the actions of its officers, employees and agents, in performing services pursuant to this Agreement. Such indemnity includes any losses relating to any claim made, whether or not a court action is filed, and attorney fees and administrative and overhead costs related to or arising out of such claim or asserted liability.
- 4.4 Agency is solely responsible for the performance of its staff or representatives in complying with the terms of this Agreement and for the proper allocation of funds provided by Metropolitan for the purpose of implementing the Project under this Agreement.
- 4.5 Agency shall be responsible for the design, implementation, personnel, equipment and supplies, and all capital and operating costs related to and incurred by Project. All materials and equipment necessary to implement Project are the exclusive property of Agency. Metropolitan shall have no ownership, right, title, security interest, or other interest in any Project facilities, materials, or equipment, nor any rights, duties, or responsibilities for operation or maintenance thereof.
- 4.6 Agency shall include this Agreement, language stating that the terms of this Agreement prevail if there is a conflict in any terms in a separate agreement, and the following language in its agreement with any consultant, contractor, or organization retained by or partnering with Agency to work on the Project: "(Consultant) agrees at its sole cost and expense to protect, indemnify, defend, and hold harmless The Metropolitan Water District of Southern California and its Board of Directors, officers, representatives, agents and employees from and against any and all claims and liability of any kind (including, but not limited to, any claims or liability for injury or death to any person, damage to property, natural resources or to the environment, or water quality problems) that arise out of or relate to Agency's approval, construction, operation, repair or ownership of the Project. Such indemnity shall include all damages and losses related to any claim made, whether or not a court action is filed, and shall include attorney's fees, administrative and overhead costs, engineering and consulting fees and all other costs related to or arising out of such claim or asserted liability." Agency shall be solely responsible for all payments and other contractual requirements required by any such separate agreement.

**Section 5: Intellectual Property and Use of Materials**

- 5.1 All intellectual property developed pursuant to this Agreement shall be owned by Agency and Agency hereby grants Metropolitan and its member public agencies a nonexclusive license, at no cost, to use the intellectual property developed in the course of the work performed under this Agreement by Agency or any contractor and consultant working on Project as described in Exhibit A. This intellectual property includes, but is not limited to, all inventions, patents, data, design, drawings, specifications, raw results, computer programs, final report, as well as any other presentations, reports, findings or related materials developed during the Project.
- 5.2 The Parties agree that the granting of the nonexclusive license to use the intellectual property developed pursuant to this Agreement is beneficial to all Metropolitan member agencies and the Southern California region.
- 5.3 Agency agrees that all results produced in the performance of this Agreement may be released to the public.
- 5.4 Agency shall include the following language in its agreement with any consultant or contractor retained by Agency to work on the Project: "All intellectual property developed pursuant to this Agreement is owned by Municipal Water District of Orange County (Agency). This intellectual property includes, but is not limited to, all inventions, patents, data, design, drawings, specifications, raw results, computer programs, final report, as well as any other presentations, reports, findings or related

materials developed during the Project. All results produced in the performance of this Agreement may be released to the public.”

- 5.5 Agency shall notify Metropolitan in writing of all intellectual property conceived or developed in the course of the work performed under this Agreement.
- 5.6 Agency shall cooperate in the execution of all documents necessary to perfect and protect Metropolitan’s and its member public agencies’ right to intellectual property under this Agreement as requested by Metropolitan.
- 5.7 When requested by Metropolitan or its member public agencies, or upon termination of this Agreement, Agency shall furnish a copy of all documents and other tangible media containing intellectual property developed by Agency during the course of this Agreement, including all prototypes and computer programs.

#### Section 6: Metropolitan’s Payment

- 6.1 Metropolitan’s payment for the Project is not to exceed \$200,000, or fifty (50) percent of the total cost expended per task as established in Exhibit A, whichever is less. Agency shall be responsible for all costs in excess of Metropolitan’s payment.
- 6.2 Metropolitan shall reimburse Agency only upon receipt and approval by Metropolitan of a required quarterly progress report and associated quarterly invoice in compliance with the requirements of this Agreement and as scheduled in Exhibit A. Twenty five (25) percent of eligible reimbursable costs shall be withheld per invoice until a final report is accepted by Metropolitan. Agency shall submit quarterly invoices with related quarterly progress reports to Metropolitan’s Accounts Payable Section, whose mailing address is P.O. Box 54153, Los Angeles, California 90054-0153, with a copy to the Agreement Administrator via email at the address provided under Section 3.2. Agency’s Agreement Administrator shall sign and certify the invoices to be true and correct to the best of his/her knowledge. Agency’s invoices shall include at a minimum the information requested in Exhibit B (Sample Invoice). Invoices shall itemize allowable expenses and include receipts for which reimbursement is sought. Attached receipts should itemize each cost and provide descriptive information so that expenses are separately identified. The final invoice, including any requests for release of retention, shall be clearly marked “FINAL INVOICE.”
- 6.3 In-kind services are not eligible for reimbursement and shall not be included in Agency invoices to Metropolitan. In-kind services include, but are not limited to, work performed by staff of Agency or of Agency’s partner(s) contributing funding to Project, and related expenses (e.g., travel, overhead, etc.).
- 6.4 All invoices related to the Project must be submitted by Agency to Metropolitan by April 15, 2016, to be considered for payment under the provisions of this agreement. Invoices received after April 15, 2016, will not be paid unless Metropolitan, in its sole discretion, grants Agency, in writing, an extension of time to complete the work and submit its invoices.
- 6.5 Invoices to Metropolitan will be paid 30 days after approval of the invoices, provided the work achieved complies with the conditions set forth in section 6.2 of this Agreement and Exhibit A.

#### Section 7: Reporting Requirements

- 7.1 Agency shall submit to Metropolitan quarterly progress reports with the associated invoices by the 15<sup>th</sup> of January, April, July, and October for the preceding quarter. The progress reports shall include, at a minimum, the items listed in Exhibit C (Progress Report Format). Agency shall document all activities and expenditures in progress reports. The submittal of these reports is a requirement for initial and continued disbursement of funds.
- 7.2 Agency shall prepare and submit to Metropolitan, upon completion of the Project, a Final Report, which shall include, at a minimum, the items listed in Exhibit D (Final Report Format). The Final Report shall be provided in hard copy and digital format prior to final payment of funds retained by Metropolitan.
- 7.3 Upon written request by Metropolitan, Agency shall prepare and submit to Metropolitan a Post-Project Update Report one year following the acceptance of the Final Report. The Post-Project Update Report shall provide a summary of related post-funding project activities and include, at a minimum, the items listed in Exhibit E (Post-Project Update Report Format).

#### Section 8: Verification

- 8.1 Agency shall be responsible for verifying completion of Consultant’s or Subcontractor’s work in accordance with the Scope of Work as shown in Exhibit A.

#### Section 9: Representations

- 9.1 Each Party represents that it is represented by legal counsel, that it has reviewed this Agreement and agrees that:
  - a. This Agreement is legally enforceable;
  - b. Payments made by Metropolitan to Agency pursuant to this Agreement are a legal use of Metropolitan’s funds; and,
  - c. Metropolitan may legally recover the costs incurred by Metropolitan pursuant to this Agreement in the water rates charged to its Member Agencies, including Agency.

## Section 10: Insurance

10.1 Agency shall procure and maintain for the duration of this Agreement a program of commercial insurance or documented self-insurance program to protect against claims for injuries to persons or damages to property which may arise from or in connection with the performance of the work hereunder by the Agency, its agents, representatives, or employees.

10.2 Agency shall sustain proof of insurance coverage in an updated ACORD form, attached hereto as Exhibit F (Agency Proof of Insurance Coverage) and incorporated by reference, during the term of this Agreement. Failure to provide the updated insurance ACORD form annually may result in the withholding of Agency's invoice payment. Agency shall list the agreement number on the ACORD form and email to: AgreementInsurance@mwdh2o.com or fax to (213-576-6158). Alternatively, if unable to email or fax, Agency shall send the ACORD form via U.S. mail as follows:

Metropolitan Water District of Southern California  
P.O. Box 54153  
Los Angeles, CA 90054  
Attention: Ms. Stacie Takeguchi  
Agreement No. 139835

### 10.3 Minimum Scope of Insurance

- a. Coverage shall be at least as broad as:
  - i. Insurance Services Office Commercial Liability coverage (occurrence Form CG0001).
  - ii. Insurance Services Office Form Number CA 0001 covering Automobile Liability, Code 1, (any auto).
  - iii. Workers' Compensation insurance as required by the State of California and Employer's Liability Insurance.
  - iv. Professional Liability or Errors and Omissions Liability insurance appropriate to the Agency's profession. Architects' and engineers' coverage is to be endorsed to include contractual liability."

### 10.4 Minimum Limits of Insurance

- a. Agency shall maintain limits no less than:
  - i. General Liability: Including operations, products and completed operations as applicable, \$1,000,000 per occurrence for bodily injury, personal injury and property damage. If Commercial General Liability Insurance or other form with a general aggregate limit is used, either the general aggregate limit shall apply separately to the project or location, or the general aggregate limit shall be twice the required occurrence limit.
  - ii. Automobile Liability: \$1,000,000 per accident for bodily injury and property damage.
  - iii. Workers' Compensation: Shall be furnished in accordance with statutory requirements of the State of California and shall include Employer's Liability coverage of \$1,000,000 per accident for bodily injury or disease.
  - iv. Professional Liability or Errors and Omissions Liability: \$1,000,000 per claim, with a \$2 million aggregate.

10.5 Deductibles and Self-Insurance Retentions: Any deductibles or self-insured retentions must be declared to and approved by Metropolitan. At the option of Metropolitan, either: the insurer shall reduce or eliminate such deductibles or self-insured retentions as respect to Metropolitan, its officers officials, employees, agents and volunteers; or the Agency shall provide a financial guarantee satisfactory to Metropolitan guaranteeing payment of losses and related investigations, claim administration and defense expenses.

10.6 Verification of Coverage: Agency shall furnish Metropolitan with original certificates and amendatory endorsements effecting coverage required by this clause. The endorsements and certificates are to be received and approved by Metropolitan prior to the commencement of work. Metropolitan reserves the right to require complete, certified copies of all required insurance policies, including endorsements effecting coverage, and coverage binders required by these specifications at any time.

10.7 Acceptability of Insurers: Insurance is to be placed with California admitted insurers with a current A.M. Best's rating of no less than A:VIII. A non-admitted carrier may be used with prior approval from Metropolitan, with an A.M. Best rating of no less than A: X. An exception to these standards will be made for the State Compensation Insurance Fund when not specifically rated.



## 10.8 General Liability and Automobile Liability Endorsements

- a. The commercial general liability policy and automobile policies are to contain, or be endorsed to contain, the following provisions:
  - i. Metropolitan, its officers, officials, employees and agents are to be covered as insureds as respect to liability arising out of work or operations performed by or on behalf of the Agency; or automobiles owned, leased, hired or borrowed by the Agency.
  - ii. For any claims related to this project, the Agency's insurance coverage shall be primary insurance as respect to Metropolitan, its officers, officials, employees and volunteers. Any insurance or self-insurance maintained by Metropolitan, its officers, officials, employees or agents shall be excess of the Agency's insurance and shall not contribute with it.
  - iii. Each insurance policy required by this clause shall be endorsed to state that coverage shall not be canceled by either party, except after thirty (30) days' prior written notice by certified mail, return receipt requested, has been given to Metropolitan.
  - iv. Coverage shall not extend to any indemnity coverage for the active negligence of the additional insured in any case where an agreement to indemnify the additional insured would be invalid under Subdivision (b) of Section 2782 of the Civil Code.

## 10.9 Other Endorsements and Insurance Provisions

- a. All rights of subrogation under the property insurance policy (if any) have been waived against Metropolitan.
- b. The workers' compensation insurer, agrees to waive all rights of subrogation against Metropolitan for injuries to employees of the insured (Agency) resulting from work for Metropolitan or use of Metropolitan's premises or facilities.
- c. If General Liability, Pollution and/or any Asbestos Pollution Liability and/or professional liability or Errors & Omissions coverages are written on a claims-made form:
  - i. The "Retro Date" must be shown, and must be before the date of the contract or the beginning of contract work.
  - ii. If coverage is canceled or non-renewed, and not replaced with another claims-made policy form with a "Retro Date" prior to the contract effective date, the Agency must purchase "extended reporting" coverage for a minimum of five (5) years after completion of contract work.
  - iii. A copy of the claims reporting requirements must be submitted to Metropolitan for review.

## Section 11: Miscellaneous

- 11.1 This Agreement may be amended by written mutual agreement executed by both Parties. Any alteration or variation of the terms of this Agreement will not be valid unless made in writing and signed by both Parties. This Agreement constitutes the entire agreement between the Parties.
- 11.2 This Agreement will inure to the benefit of and be binding upon Metropolitan and Agency and their respective successors. This Agreement is not assignable by either Party in whole or in part.
- 11.3 If any provision of this Agreement shall be held illegal, invalid, or unenforceable, in whole or in part, such provision shall be modified to the minimum extent necessary to make it legal, valid, and enforceable, and the legality, validity, and enforceability of the remaining provisions shall not be affected thereby.
- 11.4 This Agreement shall be deemed a contract under the laws of the State of California, and for all purposes will be interpreted in accordance with such laws. Metropolitan and Agency hereby agree and consent to the exclusive jurisdiction of the courts of the State of California, and that the venue of any action brought hereunder will be in Los Angeles County, California.

Attachments incorporated in this Agreement include:

- |            |                                    |
|------------|------------------------------------|
| Exhibit A: | Scope of Work, Cost, and Schedule  |
| Exhibit B: | Sample Invoice                     |
| Exhibit C: | Quarterly Progress Report Format   |
| Exhibit D: | Final Report Format                |
| Exhibit E: | Post-Project Update Report Format  |
| Exhibit F: | Agency Proof of Insurance Coverage |



IN WITNESS WHEREOF, the Parties hereto have executed and entered into this Agreement as of the date last written below.

APPROVED AS TO FORM:

Marcia L. Scully  
General Counsel

By: \_\_\_\_\_  
Setha E. Schlang  
Senior Deputy General Counsel

Date: \_\_\_\_\_

THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

Jeffrey Kightlinger  
General Manager

By: \_\_\_\_\_  
Debra C. Man  
Assistant General Manager/COO

Date: \_\_\_\_\_

APPROVED AS TO FORM:

By: \_\_\_\_\_  
Legal Counsel (if necessary)

Date: \_\_\_\_\_

MUNICIPAL WATER DISTRICT OF ORANGE COUNTY

By: \_\_\_\_\_  
Name:  
Title:

Date: \_\_\_\_\_

In Duplicate

## Exhibit A

### Scope of Work, Costs, and Schedule For San Juan Basin Groundwater and Desalination Optimization Program

#### 1.0 Project Objective

The project analyzes options for sustainable, long-term use of an impaired watershed that is typical to Southern California. Without adaptive management and expanded recharge of the watershed there is limited opportunity for production of potable water. The watershed has a stream morphology that extends offshore and currently the aquifer is underutilized. The project is an innovative approach not generally used on a small basin, it takes the tools that have historically been applied to larger basins and incorporates them with the goal of producing a new sustainable water supply.

#### 2.0 Background Information

Many small groundwater basins within The Metropolitan Water District of Southern California (Metropolitan) service area have the following attributes: limited yield, limited storage, natural and anthropogenic contamination sources, chronically impaired water, and overlying lands that are completely developed. The classic approach to utilizing these small basins is to treat the groundwater at its sustainable yield and rely on imported water to meet demands in excess of the underlying groundwater. The San Juan Basin in South Orange County is typical of these marginalized basins. In its current state, the San Juan Basin: can sustain on average about 9,300 acre-ft/yr of production, which will range from about 7,700 to about 11,200 acre-ft/yr, limited by hydrology and water in storage; has a storage capacity of about 40,000 acre-ft and currently has about 27,000 acre-ft in storage; has impaired groundwater with a TDS concentration of about 2,200 mg/L; has both natural and anthropogenic degradation sources; and very high concentrations of iron and manganese. The near term production goal is about 11,400 acre-ft/yr, and thus the Basin, under its current management scheme, is projected to chronically fail to meet the production needs of the local agencies. Currently, groundwater desalters are used to treat the groundwater that is produced for municipal uses.

The program elements contains the efforts to develop practical spatial and temporal groundwater production plans based on storage conditions that are related to production, natural hydrologic variability, artificial recharge, and prevailing DPH and Basin Plan requirements. There are also overlying producers that may have to convert to recycled and or municipal water to enable the implementation.

[Discussion Points: Since a portion of this work is being submitted through this study proposal and the “Overcoming Barriers to Slant Well Seawater Desalination – Siting, Groundwater, Water Quality and Treatment.” proposal, the actual funding/scope will be negotiated if both are funded to ensure there is no duplication of work.]

## Exhibit A

### 3.0 Project Description

The 2013 San Juan Basin Groundwater and Facilities Master Plan (SJBGFMP) is being developed in a stakeholder process to meet the water management goals of the SJBA and other stakeholders. The 2013 SJBGFMP proposes a novel and unprecedented approach to aggressively manage the San Juan Creek Basin that will result in a sustainable increase in Basin production to over 20,000 acre-ft/yr – an increase of over 100 percent. This is proposed to be accomplished by: the construction and operation of a seawater extraction barrier near the coast where San Juan Creek discharges into the Pacific Ocean; new stormwater recharge in and possibly adjacent to San Juan Creek and the Arroyo Trabuco; seasonal recharge of tertiary-treated recycled water; and managed groundwater production and treatment. The expanded yield developed from the 2013 SJBGFMP will be used by the local water agencies to reduce their demand on imported water and to improve local reliability. The program elements of the 2013 SJBGFMP and the process under which they were developed can be exported to any of the small impaired groundwater basins in the Metropolitan service area. The program elements of the 2013 SJBGFMP and the scope of work for this study are described below.

**Conduct Groundwater Modeling Studies for Proposed Seawater Extraction Barrier.** The 2013 SJBGFMP includes a seawater extraction barrier that will prevent seawater intrusion and provide up to 4,000 acre-ft/yr of potable water. The extraction wells will be located between the coast and Stonehill Drive with a treatment plant possibly being co-located at the existing SCWD groundwater treatment plant. The current estimated cost to produce water from the extraction barrier project is about \$1,330 per acre-ft. The scope of work herein is to conduct groundwater modeling studies, utilizing a recently (2013) calibrated model<sup>1</sup> of the coastal zone of the San Juan Basin, to investigate extraction barrier well locations, sustainable production rates, and projected salinity concentrations. The analysis will apply to similar stream morphology that extends offshore and currently may be underutilized. An updated facilities and operating plan will be prepared along with updated cost estimates.

**Conduct Hydraulic Investigations to Increase Stormwater Recharge.** The 2013 SJBGFMP includes in-stream stormwater recharge using either “T” and “L” levees, as utilized by the Orange County Water District (OCWD); rubber dams for in-stream recharge; and rubber dams for in-stream recharge and diversion to off-stream recharge facilities. The increase in recharge anticipated by the “T” and “L” levees alternative could range from 500 to 2,000 acre-ft/yr and for the rubber dam alternative could range from 1,000 to 4,000 acre-ft/yr. Under either in-stream recharge alternative, the cost to recharge stormwater will range from \$200 per acre-ft to \$800 per acre-ft. San Juan Creek and the Arroyo Trabuco have been listed as habitat for Steelhead Trout and the stream bottom may have other habitat values. The scope of work herein is to conduct a hydraulic investigation to refine the “T” and “L” levees alternative, develop hydraulic and fish passage requirements for both alternatives, and refine the stormwater recharge estimates for all three alternatives. Groundwater modeling, using a recently developed groundwater model,<sup>2</sup> will be done to assess the groundwater basin.

<sup>1</sup> A variable-density model developed by the MWDOC for the investigation of the South Orange County Ocean Desalter (SOCOD) project.

<sup>2</sup> A regional groundwater flow model developed by the MWDOC for the investigation of the South Orange County Ocean Desalter (SOCOD) project.

## Exhibit A

response, mounding, and the need to revise groundwater production plans to accommodate new recharge. The data developed may be utilized in other streambed applications in urbanized areas. An updated facilities and operating plan will be prepared along with updated cost estimates.

**Conduct Hydraulic Investigations to Recycled Water Recharge.** The 2013 SJBGFMP includes in-stream recycled water recharge using seasonally constructed ponds along San Juan Creek or rubber dams. The recycled water recharge anticipated by the SJBGFMP could ramp up from an initial 2,000 acre-ft/yr and eventually reach about 10,000 acre-ft/yr. Under either recharge alternative, the cost to recharge recycled water will range from \$50 to \$100 per acre-ft, not including recycled water production facilities. The rubber dam alternative used for stormwater recharge could also be utilized for recycled water recharge if constructed. This program element will have the same habitat challenges as the stormwater recharge program element. The scope of work herein is to conduct a hydraulic investigation to refine the layout and operation of the temporary seasonal recharge ponds, develop hydraulic and fish passage requirements for both alternatives, and refine the recycled water recharge estimates for both alternatives. Groundwater modeling, using a recently developed groundwater model,<sup>3</sup> will be completed to assess the groundwater basin response, mounding, and the need to revise groundwater production plans to accommodate the new recharge. Recycled water distribution system retrofits for irrigation purposes in urban areas of Southern California may be difficult and costly, the Project recharge analysis may be applicable for beneficial indirect use analysis. An updated facilities and operating plan for recycled water will be prepared along with revised cost estimates.

**Develop Adaptive Production Management.** The implementation of the extraction barrier and recharge program elements will change the location, magnitude, and timing of recharge in the basin. Existing groundwater production and treatment facilities will have to be modified to maximize the new yield, to ensure there is groundwater storage capacity to accept the recharge, to minimize potential for liquefaction, continue to protect the health of the public and to ensure maximum beneficial use of the produced water. This program element contains the efforts to develop practical spatial and temporal groundwater production plans based on storage conditions that are related to production, natural hydrologic variability, artificial recharge, and prevailing DPH<sup>4</sup> and Basin Plan requirements. There are also overlying producers that may have to convert to recycled and or municipal water to enable the implementation of the 2013 SJBGFMP. The scope of work for this program element includes: groundwater modeling to develop spatial and temporal groundwater production plans tied to groundwater storage, underground residence time for recycled water prior to production, and recycled water contribution; expected groundwater treatment requirements to produce potable water; and the water type and cost to replace the groundwater currently used by overlying producers. A reconnaissance-level Title 22 engineering assessment will be prepared pursuant to the existing

---

<sup>3</sup> A regional groundwater flow model developed by the MWDOC for the investigation of the South Orange County Ocean Desalter (SOCOD) project coupled with MT3D to estimate the recycled water contribution and underground residence time.

<sup>4</sup> <http://www.cdph.ca.gov/healthinfo/environhealth/water/pages/waterrecycling.aspx>

## Exhibit A

draft Title 22 regulations for a groundwater recycled reuse project.<sup>5</sup> An updated facilities and operating plan will be prepared along with updated cost estimates. The updated facilities and operation plan will include the locations of new wells, raw water conveyance, treatment facilities, product water conveyance, and the phasing of these facilities as recycled water recharge is ramped up from 2,000 to 10,000 acre-ft/yr. The results of the work can be transferred to other similar situated basins in Southern California.

### Participating Entities

Under Municipal Water District of Orange County (MWDOC), the following agencies are participating in the project:

- San Juan Basin Authority (SJBA), which is a joint powers authority. The San Juan Basin has a drainage area of over 111,000 acres and includes Oso Creek, Trabuco Creek, Horno Creek, Chiquita Canyon, Canada Gobernadora and Bell Canyon. The SJBA is designed to carry out and oversee water resource development of the San Juan Basin. The SJBA is comprised of the following member agencies:
  - Santa Margarita Water District (SMWD)
  - Moulton Miguel Water District (MNWD)
  - South Coast Water District (SCWD)
  - City of San Juan Capistrano (CSJC)

In addition, the following entities will provide an assessment and input on regulatory and feasibility issues with the project:

- State of California Department of Public Health, Division of Drinking Water and Environmental Management District Engineer has discussed the project with the proponents and will be included on the technical advisory team to review the project and groundwater recharge relative to of current and proposed regulations
- National Water Research Institute (NWRI) has been involved in similar projects in other areas of California and the southwest involving groundwater recharge of recycled water. In addition to efforts to review key regulatory issues concerning recycled water, NWRI and SJBA have the opportunity for development of a Blue Ribbon Panel to conduct a peer review of the project scope and findings.

## **4.0 Description of Tasks**

### ***TASK 1 – Project Management***

#### **1.1 Project Management and Administration**

The work completed in this task includes project management (resourcing, scheduling, cost controls, etc.), timely invoicing, internal technical reviews, and coordination with Metropolitan. The work products include progress reports and invoices.

---

<sup>5</sup> Ibid

## Exhibit A

### **1.1a Progress Reports**

Provide quarterly progress reports and invoices documenting activities scheduled, description of work completed, % completed, project issues, as described in this Agreement.

### **1.1b Final Report**

Provide a detailed written final report of project outcomes, lessons learned, cost-effectiveness, feasibility of regional implementation, recommendations for future actions, next steps, as described in this Agreement.

### **1.1c Long-Term Reporting**

Prepare a post-project update report to Metropolitan one year following the acceptance of the Final Report.

## **1.2 Progress Reports to the SJBA Board and Stakeholder Process Meetings**

Quarterly oral presentations will be conducted at the SJBA Board meetings to brief the SJBA Board, other stakeholders and the public on the progress of the work. The objective of the oral presentations is to keep the SJBA Board and stakeholders current on the ongoing work and to receive input and direction from the SJBA Board. There will be detailed technical public workshops included in Tasks 2, 3 and 5 below.

- The work products will be presentations, handouts, and presentation summaries, all of which will be posted on the SJBA website.

## **1.3 Technical Advisory Committee Meetings**

The objective of this task is to meet and review the program elements as they evolve with the SJBA technical advisory committee (TAC).

- The work products will include meeting handouts (preliminary facilities plans, operation plans, cost opinions, institutional and environmental challenges and solutions, etc.), the meeting handouts and meeting summaries will be posted on the SJBA website.

## ***TASK 2 - Develop Preliminary Alternatives for Each Program Element***

### **2.1 Develop Design Criteria, Cost Estimating Methodology and Identify Potential Project Participants and Points of Delivery**

The objectives of this task are: to identify and obtain agreement on facility design and operating criteria and assumptions before engineering work begins; to obtain agreement on the cost and financial assumptions to be used in the preparation of cost opinions; and to identify potential purchasers of the water and where they would take delivery and the capacity limitations at the points of delivery. A draft technical memorandum (TM) will be prepared and submitted to the TAC that contains this

## **Exhibit A**

information as a straw man proposal. The TAC will review, provide direction and the TM will be finalized. The TM will subsequently be incorporated into an appendix to the project report in Task 5.

- The work products will include draft and final TMs, the final TM being posted on the SJBA website.

### **2.2 Develop Preliminary Extraction Barrier Alternatives**

The objective of this task to develop up to three extraction barrier alternatives that will prevent seawater intrusion and increase local supplies by intercepting and treating seawater induced landward by the extraction barrier wells. These alternatives will be analyzed in detail in Task 3. Operating plans, well field layouts, raw water conveyance and treatment facilities, brine disposal facilities and product water conveyance facilities will be developed. The recent extensive hydrogeologic work done for the Doheny Desalter investigations and the SJBA groundwater-monitoring program will be relied upon. A draft TM that describes the three extraction barrier alternatives will be prepared and submitted to the TAC. The TAC will review, provide direction and the TM will be finalized. The TM will subsequently be incorporated into the project report in Task 5.

- The work products will include draft and final TMs, the final TM being posted on the SJBA website.

### **2.3 Develop Preliminary Storm Water Recharge Alternatives**

The objective of this task is to identify the range of storm water recharge alternatives overlying the San Juan Basin and to formulate up to six recharge alternatives for detailed analysis in Task 3. The 2013 SJBGfMP considered two in-stream recharge alternatives involving "T" and "L" levees as used by the OCWD on the Santa Ana River, and a series of rubber dams. These in-stream alternatives and as well as off-stream recharge in new recharge basins and infiltration galleries located near San Juan Creek and Arroyo Trabuco will be considered. Facility layouts and operating schemes for each alternative will be developed. The 2013 SJBGfMP and recent extensive hydrology modeling work done for the Doheny Desalter investigations will be relied upon. A draft TM will be prepared and submitted to the TAC that describes the six storm water recharge alternatives. The TAC will review, provide direction and the TM will be finalized. The TM will subsequently be incorporated into the project report in Task 5.

- The work products will include a draft and final TMs, the final TM being posted on the SJBA website.

### **2.4 Develop Preliminary Recycled Water Recharge Alternatives**

The objective of this task is to identify the range of recycled water recharge alternatives overlying the San Juan Basin and to formulate up to six recharge alternatives for detailed analysis in Task 3. The 2013 SJBGfMP considered two in-stream recharge alternatives involving a series of seasonal temporary cascading ponds in San Juan Creek



## Exhibit A

and Arroyo Trabuco, as well as a series of rubber dams on the same creeks. Consideration will be given to these in-stream alternatives and off-stream alternatives with recharge, including recharge basins, injection wells and infiltration galleries located near San Juan Creek and Arroyo Trabuco. Facility layouts and operating schemes for each alternative will be developed. The 2013 SJBGfMP, SJBA groundwater-monitoring program and planning information provided by the South Orange County Wastewater Authority (SOCWA) will be relied upon to formulate these alternatives. A draft TM will be prepared and submitted to the TAC that describes the six recycled water recharge alternatives. The TAC will review, provide direction and the TM will be finalized. The TM will subsequently be incorporated into the project report in Task 5.

- The work products will include a draft and final TMs, the final TM being posted on the SJBA website.

### 2.5 Develop Preliminary Adaptive Production Management Alternatives

The objectives of this task are: to identify the range of adaptive production management alternatives that include existing and new wells and expanded groundwater treatment to enable groundwater production to be increased to exploit the existing basin as well as possible storm and recycled water recharged as part of this project; and to determine how production should be managed during critical dry periods. Up to six alternatives will be developed considering: selected amounts of new storm and recycled water recharge; determination of the approximate number of new wells and treatment capacity required to increase groundwater production to recover the new recharge; maximizing groundwater production during dry periods and comply with the then current draft DPH Groundwater Replenishment with Recycled Water (GRRP) regulations; and the location of existing wells that may need to be abandoned. Facility layouts and operating schemes will be developed for each alternative. The 2013 SJBGfMP, the SJBA groundwater-monitoring program, hydrogeologic and planning information from the Doheny Desalter project and planning information provided by the SOCWA will be relied upon to formulate these alternatives. A draft TM will be prepared and submitted to the TAC that describes the six adaptive production management alternatives. The TAC will review, provide direction and the TM will be finalized. The TM will subsequently be incorporated into the project report in Task 5.

- The work products will include draft and final TMs, the final TM being posted on the SJBA website.

### 2.6 Develop a Presentation Summarizing Preliminary Program Elements

The objective of this task is to prepare a comprehensive presentation with notes to document the history of the project and the results of Task 2-1 through 2-5. This presentation will be used in Task 2.7 (below) and will be made available to all stakeholders for their subsequent review and use.

- The work product will be a presentation file that will be posted to the SJBA website.



## **Exhibit A**

### **2.7 Review Program Elements with SJBA Board, Other Stakeholders, DPH, SWRCB and the RWQCB**

The objective of this task is to conduct one or more workshops with the above-mentioned parties to summarize Task 2 results, answer questions, and to receive comments and suggestions.

- The work products will be the technical presentations, handouts, workshop summaries all of which will be posted on the SJBA website.

## ***TASK 3 – Evaluate Feasibility of All Program Elements***

### **3.1 Evaluate Groundwater Extraction Barrier Program Element Alternatives**

The objective of this task is to evaluate the preliminary extraction barrier alternatives, refine them as necessary, rank them and recommend an alternative. The evaluation will include: modifying and updating a recently calibrated variable-density groundwater model and applying that model for each of the preliminary alternatives to determine extraction barrier effectiveness, sustainable yield, and expected salinity. These model results will be used to refine the operating and facilities plan including: the phasing of groundwater treatment capacity; and the preparation of a construction cost opinion and unit cost of water produced. A preliminary recommendation for the extraction barrier alternative will be prepared. The factors that contribute to uncertainty in extraction barrier performance, the investigations required to reduce the uncertainty to an acceptable level, and the cost of these investigations will be described. A draft TM will be prepared and submitted to the TAC that describes the evaluation of the extraction barrier alternatives, the recommended alternative and the basis of the recommendation. The TAC will review, provide direction and the TM will be finalized. The TM will subsequently be incorporated into the project report in Task 5.

- The work products will include draft and final TMs, the final TM being posted on the SJBA website.

### **3.2 Evaluate Storm and Recycled Water Recharge Program Element Alternatives**

The objective of this task is to evaluate the preliminary storm and recycled water recharge alternatives, refine them as necessary, rank them and recommend an alternative. The evaluation of storm and recycled water recharge alternatives were combined herein because many of the same types of proposed facilities are being considered for both types of water. The evaluation will include: modifying and updating a recently calibrated, fine-grain regional groundwater model and applying that model for each of the preliminary recharge alternatives to determine: recharge capacity for each type of water and combinations of water types; mounding limitations; mitigation measures that can be incorporated into the project to maximize recharge; refining the facility and operating plans for each alternative based on model results; and preparing a construction cost opinion and unit cost of water recharged. The preliminary recommendations for the top three recharge alternatives, the recommended

## Exhibit A

alternative, and the basis for the recommendation will be prepared. The factors that contribute to uncertainty in storm and recycled water recharge performance, the investigations required to reduce the uncertainty to an acceptable level, and the cost of these investigations will be described. A draft TM will be prepared and submitted to the TAC that describes the three extraction barrier alternatives. The TAC will review, provide direction and the TM will be finalized. The TM will subsequently be incorporated into the project report in Task 5.

- The work products will include draft and final TMs, the final TM being posted on the SJBA website.

### **3.3 Evaluate and Refine Adaptive Management Alternatives**

The objective of this task is to evaluate the preliminary management alternatives for production of raw water, refine them as necessary based on work in Task 3-2, rank them and recommend an alternative. The evaluation will include: development and application of a new MT3D (solute transport) model to be used in conjunction with the existing fine-grain regional flow model to assess underground residence time for recycled water for each existing and proposed well, and to estimate recycled water contribution for each existing and proposed well; refining the facility and operating plans for each alternative based on model results; refining recycled water and groundwater treatment plans and cost; conducting a salt and nutrient loading assessment consistent with the Basin Plan and SWRCB policy; and, preparing a construction cost opinion and unit cost of water produced. The recommendations for the top three adaptive management alternatives, including a recommended alternative and the basis for the recommendation will be prepared. The factors that contribute to uncertainty in adaptive production management performance, the investigations required to reduce the uncertainty to an acceptable level, and the cost of these investigations will be described. A draft TM will be prepared and submitted to the TAC that describes the top 3 adaptive production management alternatives, the recommended alternative and the basis for the recommendation. The TAC will review, provide direction and the TM will be finalized. The TM will subsequently be incorporated into the project report in Task 5.

- The work products will include draft and final TMs, the final TM being posted on the SJBA website.

### **3.4 Develop a Presentation Summarizing Preliminary Program Elements**

The objective of this task is to prepare a comprehensive presentation with notes to document the history of the project and the results of Task 3-1 through 3-3. This presentation will be used at project workshop(s) described in Task 3-5 (below) and will be made available to all stakeholders for their subsequent review and use.

- The work product will be a presentation file that will be posted to the SJBA website.

## **Exhibit A**

### **3.5 Review Task 3 Results with SJBA Board, Other Stakeholders, DPH, SWRCB and the RWQCB**

The objective of this task is to conduct one or more workshops with the above-mentioned parties to summarize the results of Task 3, answer questions, and to receive comments and suggestions.

- The work products will be the technical presentations, handouts, workshop summaries all of which will be posted on the SJBA website.

## ***TASK 4 – Develop Implementation Plan***

### **4.1 Identify Potential Habitat and Environmental Opportunities for the Project Alternatives**

The objectives of this task are to identify the types of environmental impacts and to determine elements to include in the planning effort to move the project forward, including development of preliminary cost estimates. The results will be incorporated into an appendix in the project report prepared in Task 5.

- The work products will be a study which will be posted on the SJBA website.

### **4.2 Develop Phasing and Monitoring Plans**

The objective of this task is develop a plan to implement the project in phases that will allow the project participants to move forward with some of the project elements immediately and the remainder of the program elements in an incremental manner. For example the extraction barrier program element could be implemented independently of the recharge and adaptive management program for production of raw water elements, can be implemented more rapidly than the other program elements, and will likely be easier to implement. The recharge and adaptive production management program elements will still have some technical uncertainty and the regulators, specifically the DPH, will likely require that the recycled water recharge be slowly ramped up and monitoring be done to demonstrate compliance to the then current GRRP regulations. A phasing and monitoring plan will be developed based: on the work completed in Task 3; input from the regulatory community; funding availability; cost of alternative water supplies; the initial study findings from Task 4.1; and other considerations. A draft TM will be prepared and submitted to the TAC that describes the proposed phasing and monitoring plans. The TAC will review, provide direction and the TM will be finalized. The TM will subsequently be incorporated into the project report in Task 5.

- The work products will include draft and final TMs, the final TM being posted on the SJBA website.

## **Exhibit A**

### **4.3 Revise Cost Opinions**

The objective of this task is to revise the cost opinions and unit water cost projections based on the results of Tasks 3.5, 4.1 and 4.2. A draft TM will be prepared and submitted to the TAC that describes the revised cost opinions. The TAC will review, provide direction and the TM will be finalized. The TM will subsequently be incorporated into the project report in Task 5.

- The work products will include draft and final TMs, the final TM being posted on the SJBA website.

### ***TASK 5 – Prepare Project Report***

The objective of this task is to prepare a formal project report to document the technical work and the stakeholder process. The project report will be prepared using the following process: prepare an administrative draft report for review by the SJBA TAC; preparation and distribution of the public review draft; public workshop to summarize the report findings, answer questions, receive comments and suggestions; and finalize and distribute final report.

#### **5.1 Prepare an Administrative Draft Technical Report**

Prepare a detailed report outline produced at the conclusion of Task 2 and an administrative draft report.

#### **5.2 Review the Administrative Draft Technical Report with SJBA TAC**

#### **5.3 Prepare Draft Technical Report for Public Review and Distribute**

Public review of the draft report, which will be posted on the SJBA website.

#### **5.4 Review Draft Technical Report with DPH and Regional Board Staffs**

#### **5.5 Finalize Technical Report**

The final report will be posted on the SJBA website.

## Exhibit A

### 5.0 Deliverables

Task/Subtask		Deliverables	Submittal Due Date
<b>1 - Project Management</b>			
1.1	Project Management and Administration		
1.1a	Progress Reports	Quarterly Progress Reports	Quarterly (see pg 12)
1.1b	Final Report	Final Report to Metropolitan	2/1/2016
1.1c	Long-term Reporting	Post-Project Update Report	4/15/2017
1.2	Progress Reports to the SJBA Board and Stakeholder Process Meetings	Presentations, handouts, and presentation summaries	Every other Quarter
1.3	Technical Advisory Committee Meetings	Meeting handouts (preliminary facilities plans, operation plans, cost opinions, institutional and environmental challenges and solutions, etc.)	Every Quarter
<b>2 - Develop Preliminary Alternatives for Each Program Element</b>			
2.1	Develop Design Criteria, Cost Estimating Methodology and Identify Potential Project Participants and Points of Delivery	Draft and Final Technical Memoranda	4/15/2014
2.2	Develop Preliminary Extraction Barrier Alternatives	Draft and Final Technical Memoranda	7/15/2014
2.3	Develop Preliminary Stormwater Recharge Alternatives	Draft and Final Technical Memoranda	7/15/2014
2.4	Develop Preliminary Recycled Water Recharge Alternatives	Draft and Final Technical Memoranda	7/15/2014
2.5	Develop Preliminary Adaptive Production Management Alternatives	Draft and Final Technical Memoranda	7/15/2014
2.6	Develop a Presentation Summarizing Preliminary Program Elements	Presentation file	10/15/2014
2.7	Review Program Elements with SJBA Board, Other Stakeholders, DPH, SWRCB and the RWQCB	Technical presentations, handouts, workshop summaries	10/15/2014
<b>3 - Evaluate Feasibility of All Program Elements</b>			
3.1	Evaluate Groundwater Extraction Barrier Program Element Alternatives	Draft and Final Technical Memoranda	1/15/2015
3.2	Evaluate Storm and Recycled Water Recharge Program Element Alternatives	Draft and Final Technical Memoranda	1/15/2015
3.3	Evaluate and Refine Adaptive Management Alternatives	Draft and Final Technical Memoranda	4/15/2015
3.4	Develop a Presentation Summarizing Preliminary Program Elements	Presentation file	1/15/2015

## Exhibit A

Task/Subtask			Deliverables	Submittal Due Date
	3.5	Review Task 3 Results with SJBA Board, Other Stakeholders, DPH, SWRCB and the RWQCB	Technical presentations, handouts, workshop summaries	7/15/2015
<b>4. Develop Implementation Plan</b>				
	4.1	Identify Potential Habitat and Environmental Opportunities for the Project Alternatives	Technical Memorandum	10/15/2015
	4.2	Develop Phasing and Monitoring Plans	Draft and Final Technical Memoranda	10/15/2015
	4.3	Revise Cost Opinions	Draft and Final Technical Memoranda	10/15/2015
<b>5. Prepare Project Report</b>				
	5.1	Prepare Admin Draft	Detailed report outline produced at the conclusion of Task 2, and an Administrative Draft Technical Report	10/15/2014, 10/15/2015
	5.2-5.3	Review Admin Draft with SJBA TAC, Prepare Draft Technical Report for Public Review and Distribute	Draft Technical Report for Public Review	10/15/2015
	5.4-5.5	Review Draft Technical Report with DPH and Regional Board Staffs, Finalize Technical Report	Final Technical Report	1/15/2016

## Exhibit A

### 6.0 Cost Estimate

Task No.	Task	Total Project Cost	Maximum Cost to Metropolitan
Task 1	Project Management	\$68,000	\$34,000
Task 2	Develop Preliminary Alternatives for Each Program Element	\$64,400	\$32,200
Task 3	Evaluate Feasibility of All Program Elements	\$162,400	\$81,200
Task 4	Develop Implementation Plan	\$47,000	\$23,500
Task 5	Prepare Project Report	\$58,200	\$29,100
Grand Total		\$400,000	\$200,000

## 7.0 Schedule

The following illustrates the expected quarterly progress schedule per task. The costs shown represent estimated costs to Metropolitan.

San Juan Basin Groundwater and Desalination Optimization Program												
Task	Task Name	Start- Dec	Jan- Mar	Apr- Jun	Jul- Sep	Oct- Dec	Jan- Mar	Apr- Jun	Jul- Sep	Oct- Dec	Jan- Mar	
		2013			2014			2015			2016	
		Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q1
1	Project Management						\$34,000					
2	Develop Preliminary Alternatives for Each Program Element			\$32,200								
3	Evaluate Feasibility of All Program Elements						\$81,200					
4	Develop Implementation Plan										\$23,500	
5	Prepare Project Report						\$29,100					

Note: A minimum 25% of eligible reimbursable costs will be withheld per invoice until a final report (due 2/1/2016) is accepted by Metropolitan.

Post-project reporting to Metropolitan is not shown on this schedule, but should be submitted upon request by Metropolitan one year following Metropolitan's acceptance of the Final Report.



Reporting Schedule

- Progress Report 2013 Q4 (Start – December 2013) ..... January 15, 2014
- Progress Report 2014 Q1 (January 2014 – March 2014) ..... April 15, 2014
- Progress Report 2014 Q2 (April 2014 – June 2014) ..... July 15, 2014
- Progress Report 2014 Q3 (July 2014 – September 2014) ..... October 15, 2014
- Progress Report 2014 Q4 (October 2014 – December 2014) ..... January 15, 2015
- Progress Report 2015 Q1 (January 2015 – March 2015) ..... April 15, 2015
- Progress Report 2015 Q2 (April 2015 – June 2015) ..... July 15, 2015
- Progress Report 2015 Q3 (July 2015 – September 2015) ..... October 15, 2015
- Progress Report 2015 Q4 (October 2015 – December 2015) ..... January 15, 2016
- **Final Report** ..... **February 1, 2016**
- Progress Report 2016 Q1 (January 2016 – March 2016) ..... April 15, 2016
- Post-Project Update Report ..... April 15, 2017

## Exhibit B – Sample Invoice

BILL TO

Metropolitan Water District of Southern California  
Accounts Payable Section  
P.O. Box 54153  
Los Angeles, CA 90054-0153

# INVOICE

AGENCY NAME

INVOICE DATE

INVOICE PERIOD

ADDRESS

PROJECT NAME

CONTACT

CONTACT PHONE

AGREEMENT NUMBER

MAXIMUM AWARD AMOUNT

AMOUNT PREVIOUSLY INVOICED

AWARD AMOUNT REMAINING

ITEMIZED EXPENSES

TASK	DETAILED DESCRIPTION (e.g., consultant costs and hours, materials and supplies, lab costs, etc.)	COST
TOTAL COSTS		

TOTAL ELIGIBLE REIMBURSABLE COSTS (UP TO 50% OF TOTAL COSTS)

WITHHOLDING (25%)

**TOTAL REIMBURSABLE REQUEST (UP TO 37.5% OF TOTAL COSTS)**

BY SIGNING THIS INVOICE, AGENCY CERTIFIES THAT WORK DESCRIBED HEREIN IS AN ACCURATE AND CORRECT RECORD OF SERVICES PERFORMED FOR METROPOLITAN UNDER THIS AGREEMENT AND THIS WORK HAS NOT BEEN BILLED ON ANY OTHER CLIENT OR PROJECT PARTNER INVOICES.

PROJECT MANAGER

BILL TO

PROJECT NAME

INVOICE  
PERIOD

Metropolitan Water District of Southern California  
Accounts Payable Section  
P.O. Box 54153  
Los Angeles, CA 90054-0153

BUDGET

		AGREEMENT NUMBER

A	B	C	D	E	F	G	H
TASK	CUMULATIVE COSTS THROUGH PREVIOUS QUARTER	TOTAL COSTS FOR CURRENT QUARTER	CURRENT QUARTER'S ELIGIBLE REIMBURSABLE COSTS (UP TO 50%)	CUMULATIVE ELIGIBLE REIMBURSABLE COSTS TO DATE	TOTAL AWARD AMOUNT	REMAINING AWARD BALANCE	PERCENT COMPLETE
TOTAL							

Description of the Example Budget Table Columns:

- A. Task number and name
- B. Cumulative total Project costs through the previous quarter (does not include current quarter's costs)
- C. Total Project costs for the current quarter
- D. Eligible reimbursable costs for the current quarter (up to 50% of the total Project cost of the task for the current quarter). Example:  $D = C \times 0.50$
- E. Cumulative eligible reimbursable costs to date (includes the current quarter's reimbursable costs). Do not subtract out Metropolitan withholding.
- F. Total award amount per task as established in Exhibit A (Scope of Work, Costs, and Schedule) of the Agreement
- G. Remaining award balance.  $G = F - E$
- H. Percent complete.  $H = E \div F$

## Exhibit C: Quarterly Progress Report Format

Agency shall include, at minimum, the following items in the Quarterly Progress Reports.

### 1. Cover Letter

Provide a brief description of the submittal, including the amount invoiced in the respective invoice period, a list of items being submitted, and contact information.

The letter must be signed and include the following language:

**"I am informed and believe that the information contained in this report is true and that the supporting data is accurate and complete."**

### 2. Quarterly Progress Report

#### 2.1 Report Status

- a) Describe work performed during the quarter, by task.
- b) Describe major accomplishments, such as:
  - i. Tasks achieved
  - ii. Milestones met
  - iii. Meetings held or attended
  - iv. Press release, etc.
- c) Where applicable, describe how the activities carried out differed from the plans outlined in the Project Scope of Work. Identify any problems encountered in the performance of the work under this Agreement, and how these matters were addressed.
- d) If the quarter's objectives were not met, explain why and how these goals will be approached for the next reporting period.

#### 2.2 Cost Information

- a) Identify costs incurred during the quarter by Agency and each partnering/supporting entity working on the Project.
- b) Discuss how the actual budget is progressing in comparison to the latest Project budget. Justify any differences that occurred, identifying budget impacts and/or problems encountered, and describe how these matters will be addressed for the next reporting period.
- c) Provide a revised budget, by task, if changed from the latest Project budget.

#### 2.3 Schedule Information

- a) Provide a Project schedule showing actual progress versus planned progress from the latest schedule.
- b) Discuss how the actual schedule is progressing in comparison to the latest Project schedule. Justify any differences that occurred, identifying schedule impacts and/or problems encountered, and describe how these matters will be addressed for the next reporting period.
- c) Provide a revised schedule, by task, if changed from the latest Project schedule.

## Exhibit D: Final Report Format

Agency shall include, at minimum, the following items in the Final Report.

### 1. Cover Letter

Provide a brief description of the submittal, including the total amount of funds disbursed, a list of items being submitted, and contact information.

The letter must be signed and include the following language:

**"I am informed and believe that the information contained in this report is true and that the supporting data is accurate and complete."**

### 2. Final Report

#### 2.1 Executive Summary

- a) Briefly summarize the content of the main report.

#### 2.2 Introduction

- a) Provide an overview of the work performed and accomplishments achieved throughout the duration of the Project.
- b) Briefly describe the findings of the study.
- c) Describe the role/involvement of each partnering/supporting entity and their relationship to the Project.

#### 2.3 Cost Summary

- a) Include a summary of the costs incurred and of funds disbursed throughout the duration of the Project.
- b) Provide a comparison between the planned budget in the Agreement and the actual budget. Justify any differences that occurred, identifying budget impacts and/or problems encountered, and how these matters were addressed.

#### 2.3 Schedule Summary

- a) Include a summary of all tasks accomplished throughout the duration of the Project.
- b) Provide a comparison between the planned schedule in the Agreement and the actual schedule. Justify any differences that occurred, identifying schedule impacts and/or problems encountered, and how these matters were addressed.

#### 2.4 Project Results and Analysis

- a) Describe and provide an analysis of the Project results and findings in detail.
- b) Were the Project goals and objectives as proposed achieved? Explain.
- c) Discuss any major problems that occurred in meeting the Project goals and objectives, including how, and if, they were resolved.
- d) Explain how the findings of the Project can be applied to other areas of the region. What types of obstacles, if any, would be anticipated before implementation/application can occur, and how could these matters be addressed?

#### 2.5 Conclusion

- a) Describe lessons learned.
- b) Describe the next steps of the Project (e.g., applicability of the results, topics that may require additional research, new programs that should be developed, policy amendments, etc.).

## **Exhibit E: Post-Project Update Report Format**

Agency shall include, at minimum, the following items in the Post-Project Update Report.

### **1. Accomplishments and Applicability**

- a) What has been accomplished since the submittal of the Final Report? How have the Project findings/results of the Final Report been applied/implemented (e.g., regional application of results, pilot study results used for full-scale implementation, additional research performed, impacts on regulations/legislation, technical advances, etc.)?
- b) Discuss new information obtained during this reporting period, and how this knowledge will further future efforts.
- c) If applicable, provide additional data obtained since the submittal of the Final Report (e.g., pilot project water quality data, etc.).

### **2. Next Steps**

- a) Describe specific plans, if any, for continuing work on this Project or related projects (e.g., what questions will be investigated, what programs will be developed, etc.).

## **1.0 Project Objective**

The project analyzes options for sustainable, long-term use of an impaired watershed that is typical to Southern California. Without adaptive management and expanded recharge of the watershed there is limited opportunity for production of potable water. The watershed has a stream morphology that extends offshore and currently the aquifer is underutilized. The project is an innovative approach not generally used on a small groundwater basin, using the tools that have historically been applied to larger basins and incorporating this approach with the goal of producing a new sustainable water supply.

## **2.0 Background Information**

Many of the small groundwater basins within The Metropolitan Water District of Southern California (Metropolitan) service area have the following attributes: limited yield, limited storage, natural and anthropogenic contamination sources, chronically impaired water, and overlying lands that are completely developed. The classic approach to utilizing these small basins is to harvest the groundwater at its sustainable yield and rely on imported water to meet demands in excess of the underlying groundwater. The San Juan Basin in South Orange County is typical of these marginalized basins. In its current state, the San Juan Basin: can sustain on average about 9,300 acre-ft/yr (afy) of production, which will range from about 7,700 to about 11,200 afy, limited by hydrology and water in storage; has a storage capacity of about 40,000 acre-ft (af) and currently has about 27,000 af in storage; has impaired groundwater with a TDS concentration of about 2,200 mg/L; has both natural and anthropogenic degradation sources; and very high concentrations of iron and manganese. The near term production goal is about 11,400 afy, and thus the Basin, under its current management scheme, is projected to chronically fail to meet the production needs of the local agencies. Currently, groundwater desalters are used to treat the groundwater that is produced for municipal uses.

The program elements contain the efforts to develop practical spatial and temporal groundwater production plans based on storage conditions that are related to production, natural hydrologic variability, artificial recharge, and prevailing Department of Public Health (DPH) and Basin Plan requirements. There are also overlying producers that may have to recycled and/or municipal water to enable the implementation of the proposed program.

## **3.0 Project Description**

The 2013 San Juan Basin Groundwater and Facilities Master Plan (SJBGFMP) is being developed in a stakeholder process to meet the water management goals of the SJBA and other stakeholders. The 2013 SJBGFMP proposes a novel and unprecedented approach to aggressively manage the San Juan Creek Basin that will result in a sustainable increase in Basin production to over 20,000 afy – an increase of over 100 percent. This is proposed to be accomplished by: the construction and operation of a seawater extraction barrier near the coast where San Juan Creek discharges into the Pacific Ocean; new stormwater recharge in and possibly adjacent to San Juan Creek and the Arroyo Trabuco; seasonal recharge of tertiary-treated recycled water; and managed groundwater production and treatment. The expanded yield developed from the 2013 SJBGFMP will be used by the local water agencies to reduce their demand on imported water and to improve local reliability. The program elements of the 2013 SJBGFMP and the process under which they were developed can be exported to many of the small impaired groundwater basins in the Metropolitan service area. The program elements of the 2013 SJBGFMP and the scope of work for this study are described below.

**Conduct Groundwater Modeling Studies for Proposed Seawater Extraction Barrier.** The 2013 SJBGFMP includes a seawater extraction barrier that will prevent seawater intrusion and provide up to 4,000 acre-ft/yr of potable water. The extraction wells will be located between the coast and Stonehill Drive with a treatment plant possibly being co-located at the existing SCWD groundwater treatment plant. The scope of work herein is to conduct groundwater modeling studies, utilizing a recently (2013) calibrated model of the Lower San Juan Basin, to investigate possible extraction barrier well locations, sustainable production rates, and projected salinity concentrations. A facilities and operating plan will be prepared along with cost estimates. The analysis will apply to similar stream morphology that extends offshore and currently may be underutilized.

**Conduct Hydraulic Investigations to Increase Stormwater Recharge.** The 2013 SJBGFMP includes in-stream stormwater recharge using either “T” and “L” levees, as utilized by the Orange County Water District (OCWD); rubber dams for in-stream recharge; and rubber dams for in-stream recharge and diversion to off-stream recharge facilities. The increase in recharge anticipated by the “T” and “L” levees alternative could range from 500 to 2,000 afy and for the rubber dam alternative could range from 1,000 to 4,000 afy. San Juan Creek and the Arroyo Trabuco have been listed as habitat for Steelhead Trout and the stream bottom may have other habitat values. The scope of work herein is to conduct a hydraulic investigation to refine the “T” and “L” levees alternative, develop hydraulic and fish passage requirements for both alternatives, and refine the stormwater recharge estimates for all three alternatives. Groundwater modeling, using a recently developed groundwater model, will be done to assess the groundwater basin response, mounding, and the need to revise groundwater production plans to accommodate new recharge. A facilities and operating plan will be prepared along with a cost estimate. The data developed may be utilized in other streambed applications in urbanized areas.

**Conduct Hydraulic Investigations to Recycled Water Recharge.** The 2013 SJBGFMP includes in-stream recycled water recharge using seasonally constructed ponds along San Juan Creek or rubber dams. The recycled water recharge anticipated by the SJBGFMP could ramp up from an initial 2,000 afy and eventually reach about 10,000 afy. The rubber dam alternative used for stormwater recharge could also be utilized for recycled water recharge if constructed. This program element will have the same habitat challenges as the stormwater recharge program element. The scope of work herein is to conduct a hydraulic investigation to refine the layout and operation of the temporary seasonal recharge ponds, develop hydraulic and fish passage requirements for both alternatives, and refine the recycled water recharge estimates for both alternatives. Groundwater modeling, using a recently developed groundwater model, will be completed to assess the groundwater basin response, mounding, and the need to revise groundwater production plans to accommodate the new recharge. Recycled water distribution system retrofits for irrigation purposes in urban areas of Southern California may be difficult and costly, the Project recharge analysis may be applicable for beneficial indirect use analysis. A facilities and operating plan for recycled water will be prepared along with cost estimates.

**Develop Adaptive Production Management.** The implementation of the extraction barrier and recharge program elements will change the location, magnitude, and timing of recharge in the basin. Existing groundwater production and treatment facilities will have to be modified to maximize the new yield, to ensure there is groundwater storage capacity to accept the recharge, to minimize potential for liquefaction, continue to protect the health of the public and to ensure maximum beneficial use of the produced water. This program element contains



the efforts to develop practical spatial and temporal groundwater production plans based on storage conditions that are related to production, natural hydrologic variability, artificial recharge, and prevailing DPH and Basin Plan requirements. There are also overlying producers that may have to convert to recycled and or municipal water to enable the implementation of the 2013 SJBGfMP. The scope of work for this program element includes: groundwater modeling to develop spatial and temporal groundwater production plans tied to groundwater storage, underground residence time for recycled water prior to production, and recycled water contribution; expected groundwater treatment requirements to produce potable water; and the water type and cost to replace the groundwater currently used by overlying producers. A reconnaissance-level Title 22 engineering assessment will be prepared pursuant to the existing draft Title 22 regulations for a groundwater recycled reuse project. A facilities and operating plan will be prepared along with cost estimates. The updated facilities and operation plan will include the locations of new wells, raw water conveyance, treatment facilities, product water conveyance, and the phasing of these facilities as recycled water recharge is ramped up from 2,000 to 10,000 afy. The results of the work can be transferred to other similar situated basins in Southern California.

#### Participating Entities

Under Municipal Water District of Orange County (MWDOC), the following agencies are participating in the project:

- San Juan Basin Authority (SJBA), which is a joint powers authority. The San Juan Basin has a drainage area of over 111,000 acres and includes Oso Creek, Trabuco Creek, Horno Creek, Chiquita Canyon, Canada Gobernadora and Bell Canyon. The SJBA is designed to carry out and oversee water resource development of the San Juan Basin. The SJBA is comprised of the following member agencies:
  - o Santa Margarita Water District (SMWD)
  - o Moulton Miguel Water District (MNWD)
  - o South Coast Water District (SCWD)
  - o City of San Juan Capistrano (CSJC)

In addition, the following entities will provide an assessment and input on regulatory and feasibility issues with the project:

- State of California Department of Public Health, Division of Drinking Water and Environmental Management District Engineer has discussed the project with the proponents and will be included on the technical advisory team to review the project and groundwater recharge relative to of current and proposed regulations
- National Water Research Institute (NWRI) has been involved in similar projects in other areas of California and the southwest involving groundwater recharge of recycled water. In addition to efforts to review key regulatory issues concerning recycled water, NWRI and SJBA have the opportunity for development of a Blue Ribbon Panel to conduct a peer review of the project scope and findings.

**SAN JUAN BASIN AUTHORITY  
FOUNDATIONAL ACTIONS FUNDING PROGRAM AGREEMENT**

This Foundational Actions Funding Program Agreement for the San Juan Basin Authority (“Agreement”) is made and entered into on the \_\_\_\_ of January 2014 by and between the Municipal Water District of Orange County (MWDOC) and the San Juan Basin Authority (SJBA). MWDOC and SJBA may be collectively referred to as “Parties” and individually as a “Party.”

**Section 1. Recitals.**

A. On behalf of SJBA, MWDOC recently submitted a proposal to the Metropolitan Water District of Southern California (“Metropolitan”), through Metropolitan’s Foundational Actions Funding Program (“FAF Program”) for funding of a project entitled “San Juan Basin Groundwater and Desalination Optimization Program (the “Study”).

B. MWDOC is a public agency member of Metropolitan and applied for the FAF Program funding for the Study on behalf of SJBA.

C. The objective of the Study is to analyze options for sustainable, long-term use of an impaired watershed that is typical to Southern California. Without adaptive management and expanded recharge of the watershed there is limited opportunity for production of potable water. The watershed has a stream morphology that extends offshore and currently the aquifer is underutilized. The project is an innovative approach not generally used on a small basin, it takes the tools that have historically been applied to larger basins and incorporates them with the goal of producing a new sustainable water supply.

D. In November 2013, Metropolitan notified MWDOC that the Metropolitan Board of Directors authorized funding through its FAF Program for the Study for an amount not to exceed \$200,000.

E. MWDOC plans to enter into an agreement with Metropolitan regarding the FAF Program for the Study concurrent with the execution of this Agreement to initiate work prior to January 31, 2014. A copy of the Metropolitan Agreement is attached hereto as Exhibit A (“Metropolitan Agreement”).

F. SJBA will provide funds in the amount of \$200,000 to match the Metropolitan funds and, through this Agreement, intends to administer the Study and assume all of the obligations, responsibilities, and liabilities imposed on MWDOC in the Metropolitan Agreement.

I. This Agreement sets forth the terms and conditions by which the Parties will proceed with the Study, including the roles, responsibilities, and financial obligations of each Party.

NOW, THEREFORE, in consideration of the promises and covenants hereinafter set forth, the Parties agree as follows:

## **Section 2. Study Responsibilities**

- A. SJBA shall carry out the Study as described in the Scope of Work, Cost and Schedule set forth in Exhibit B.
- B. SJBA shall provide the Study deliverables to MWDOC and Metropolitan according to the schedule set forth in Exhibit B.

## **Section 3. Agreement Term**

- A. This Agreement shall be effective on the effective date of the Metropolitan Agreement with MWDOC and the term shall be through June 30, 2017, or when all of the Parties' obligations under this Agreement and the Metropolitan Agreement have been fully satisfied, whichever occurs earlier. Extensions of time to complete all or portions of the Study, including any required deliverables, shall be requested in writing by SJBA and may be authorized by MWDOC only if Metropolitan agrees to a corresponding extension of the Metropolitan Agreement. Any written authorization for an extension of time shall be attached to and incorporated into this Agreement.
- B. This Agreement may be terminated by either MWDOC or by SJBA with or without cause upon 30 days written notice to the other. MWDOC's only obligation in the event of termination will be payment of approved invoices in conformity with this Agreement and the Metropolitan Agreement up to and including the effective date of termination. Notwithstanding the previous sentence, MWDOC shall have no obligation to pay any invoices to SJBA if they are not approved by Metropolitan. In the event of termination, SJBA is responsible for providing all information, reports, data and consultant and other documents available that were developed up to the point of Termination to MWDOC.
- C. Failure of SJBA to submit progress reports or the final report to MWDOC within the timeframe established in Exhibit B or any extension of time authorized in accordance with Section 3(A) of this Agreement will be a breach of this Agreement and may result in termination of the agreement.

## **Section 4. Responsibilities and Ownership**

- A. SJBA shall be responsible for all necessary services and materials for the Study implementation including, but not limited to, the hiring of consultants and others to conduct the work, Study administration, data collection, and reporting, and completion of the final report.
- B. SJBA shall comply with all Federal, State and local laws, ordinances and regulations and is solely responsible for any such obligations, including, without limitation, compliance with the California Environmental Quality Act.
- C. SJBA shall be responsible for the design, implementation, personnel, equipment, and supplies, and all capital and operating costs related to and incurred by the Study. All materials and equipment necessary to implement the Study are the exclusive property of SJBA. MWDOC

shall have no ownership, right, title, security interest, or other interest in any Study facilities, materials, or equipment, nor any rights, duties, responsibilities for operation or maintenance thereof pursuant to this Agreement.

D. The following language must be included in all contracts entered into by SJBA with any subcontractors or consultants regarding completion of the Study:

- i. “(Consultant or Responsible Party) agrees at their sole cost and expense to protect, indemnify, defend, and hold harmless the Municipal Water District of Orange County and the Metropolitan Water District of Southern California, and their respective Boards of Directors, officers, representatives, agents, and employees from and against any and all claims and liability of any kind (including, but not limited to, any claims or liability for injury or death to any person, damage to property, natural resources or to the environment, or water quality problems) that arise out of Consultant’s actions or relate to the approval, construction, operation, repair or ownership of the Study. Such indemnity shall include all damages and losses related to any claim made, whether or not a court action is filed, and shall include attorney’s fees, administrative and overhead costs, engineering and consulting fees and all other costs related to or arising out of such claim or asserted liability”.
- ii. “(Consultant or Responsible Party) will maintain the types and levels of insurance in compliance with the requirements in the San Juan Basin Authority Foundational Actions Funding Program Agreement entered into between the Municipal Water District of Orange County and the San Juan Basin Authority.
- iii. “All intellectual property developed pursuant to this Agreement is owned by MWDOC. This intellectual property includes, but is not limited to, all inventions, patents, data, design, drawings, specifications, raw results, computer programs, final report, as well as any other presentations, reports, findings or related materials developed during the Study. All results produced in the performance of the Agreement may be released to the public”.

## **Section 5. Indemnity**

A. The SJBA agrees at their sole cost and expense to protect, indemnify, defend, and hold harmless MWDOC and Metropolitan, and their respective Boards of Directors, officers, representatives, agents, and employees from and against any and all claims and liability of any kind (including, but not limited to, any claims or liability for injury or death to any person, damage to property, natural resources or to the environment, or water quality problems) that arise out of the SJBA’s actions or relate to the Study. Such indemnity shall include all damages and losses related to any claim made, whether or not a court action is filed, and shall include attorney’s fees, administrative and overhead costs, engineering and consulting fees and all other costs related to or arising out of such claim or asserted liability.

## **Section 6. Intellectual Property and Use of Materials**

A. All intellectual property developed pursuant to this Agreement is owned by MWDOC. This intellectual property includes, but is not limited to, all inventions, patents, data, design, drawings, specifications, raw results, computer programs, final report, as well as any other presentations, reports, findings or related materials developed during the Study. All results produced in the performance of the Agreement may be released to the public. [This exact language is required to be included pursuant to the Metropolitan Agreement.]

B. MWDOC grants to SJBA a nonexclusive license, at no cost, to use the intellectual property developed in the course of the work performed under this Agreement by any of the Parties or any contractor and consultant working on the Study as described in Exhibit B.

C. SJBA shall notify MWDOC in writing of all intellectual property conceived or developed in the course of the work performed under this Agreement.

D. When requested by MWDOC, or upon termination of this Agreement, SJBA shall furnish a copy of all documents and other tangible media containing intellectual property developed by SJBA during the course of this Agreement, including prototypes and computer programs.

## **Section 7. Payment**

A. MWDOC's payment for the Study is not to exceed \$200,000, or fifty (50) percent of the total cost expended per task as established in Exhibit B, whichever is less. Notwithstanding the previous sentence, MWDOC will not be responsible for any payments of any amount in connection with this Agreement unless such payments are first approved and reimbursed to MWDOC by Metropolitan. All payments required to be made by MWDOC to SJBA pursuant to this Agreement are contingent upon such payments being first approved by Metropolitan and reimbursed to MWDOC by Metropolitan. SJBA is responsible for any and all costs in excess of the payments approved by Metropolitan.

B. SJBA must submit quarterly progress reports and associated quarterly invoices to MWDOC as described in Section 8 below. Twenty five (25) percent of eligible reimbursable costs shall be withheld per invoice until a final report is submitted to MWDOC and accepted by Metropolitan. The SJBA's invoices shall include at a minimum the information requested in the Sample Invoice attached to this Agreement as Exhibit C. Invoices shall itemize allowable expenses and include receipts for which reimbursement is sought. Attached receipts should itemize each cost and provide descriptive information so that expenses are separately identified. The final invoice, including any requests for release of retention, shall be clearly marked "FINAL INVOICE."

C. In-kind services are not eligible for reimbursement and shall not be included in any invoices to MWDOC. In-kind services include, but are not limited to, work performed by staff of MWDOC and SJBA, and related expenses (e.g. travel, overhead, etc.).

D. All invoices related to the Study must be submitted by SJBA to MWDOC by April 5, 2016, to be considered for payment under the provisions of this Agreement. Invoices received after April 5, 2016 will not be paid unless MWDOC obtains from Metropolitan, an extension of

time, in writing, to complete the work and submit MWDOC's invoices to Metropolitan pursuant to the Metropolitan Agreement.

E. Invoices to MWDOC will be paid by MWDOC to SJBA within 10 days after MWDOC's receipt of payment from Metropolitan for the invoice, and only in the amount approved and paid by Metropolitan to MWDOC.

## **Section 8. Reporting Requirements**

A. The SJBA shall submit to MWDOC quarterly progress reports with the associated invoices by the 5th of January, April, July, and October for the preceding quarter. The progress reports shall include, at a minimum, the items listed in Progress Report Format, which is attached to this Agreement as Exhibit D. SJBA shall document all activities and expenditures in progress reports. The submittal of these reports is a requirement for initial and continued disbursement of funds.

B. SJBA shall prepare and submit to MWDOC, upon completion of the Study, a Final Report, which shall include, at a minimum, the items listed in Final Report Format, which is attached to this Agreement as Exhibit E. The Final Report shall be provided in hard copy and digital format prior to final payment of funds retained by MWDOC.

C. Upon request by MWDOC, SJBA shall prepare and submit to MWDOC a Post-Study Update Report one year following the acceptance of the Final Report. The Post-Study Update Report shall provide a summary of related post-funding Study activities and include, as a minimum, the items listed in the Post-Study Update Report Format, which is attached to this Agreement as E.

## **Section 9. Verification.**

The SJBA shall be responsible for verifying completion of any consultant's or subcontractor's work in accordance with the Scope of Work as shown in Exhibit B.

## **Section 10. Representations.**

Each Party represents that it is represented by legal counsel, that it has reviewed this Agreement and agrees that the Agreement is legally enforceable.

## **Section 11. Insurance.**

SJBA shall comply with the insurance requirements imposed on "Agency" in the Metropolitan Agreement ("Insurance Requirements") and as more particularly described below.

A. Agency shall procure and maintain for the duration of this Agreement a program of commercial insurance or documented self-insurance program to protect against claims for injuries to persons or damages to property which may arise from or in connection with the performance of the work hereunder by SJBA, their agents, representatives, or employees.

B. SJBA shall sustain proof of insurance coverage in an updated ACORD form, attached as Exhibit F to the Metropolitan Agreement (Agency Proof of Insurance Coverage), and incorporated

by reference, during the term of this Agreement. Failure to provide the updated insurance ACORD form, or an equivalent form provided by the ACWA JPIA, annually to MWDOC may result in the withholding of SJBA' invoice payment.

C. Minimum Scope of Insurance

1. Coverage shall be at least as broad as:

- i. Insurance Services Office Commercial Liability coverage (occurrence Form CG00001).
- ii. Insurance Service Office Form Number CA 0001 covering Automobile Liability, Code 1, (any auto).
- iii. Workers' Compensation insurance as required by the State of California and Employer's Liability Insurance.
- iv. Professional Liability or Errors and Omissions Liability insurance appropriate to the Agency's profession. Architects' and engineers' coverage is to be endorsed to include contractual liability.

D. Minimum Limits of Insurance

1. The SJBA shall maintain limits no less than:

- i. General Liability: General Liability: Including operations, products and completed operations as applicable, \$1,000,000 per occurrence for bodily injury, personal injury and property damage. If Commercial General Liability Insurance or other form with a general aggregate limit is used, either the general aggregate limit shall apply separately to the project or location, or the general aggregate limit shall be twice the required occurrence limit.
- ii. Automobile Liability: \$1,000,000 per accident for bodily injury and property damage.
- iii. Workers' Compensation: Shall be furnished in accordance with statutory requirements of the State of California and shall include Employer's Liability coverage of \$1,000,000 per accident for bodily injury or disease.
- iv. Professional Liability or Errors and Omissions Liability: \$1,000,000 per claim, with a \$2 million aggregate.

E. Deductibles and Self-Insurance Retentions: Any deductibles or self-insured retentions must be declared to and approved by MWDOC. At the option of MWDOC, either: the insurer shall reduce or eliminate such deductibles or self-insured retentions as respect to MWDOC, its officers officials, employees, agents and volunteers; or the SJBA shall provide a financial

guarantee satisfactory to MWDOC guaranteeing payment of losses and related investigations, claim administration and defense expenses.

F. Verification of Coverage: SJBA shall furnish MWDOC with original certificates and amendatory endorsements effecting coverage required by this clause. The endorsements and certificates are to be received and approved by MWDOC prior to the commencement of work. MWDOC reserves the right to require complete, certified copies of all required insurance policies, including endorsements effecting coverage, and coverage binders required by these specifications at any time.

G. Acceptability of Insurers: Insurance is to be placed with California admitted insurers with a current A.M. Best's rating of no less than A:VIII. A non-admitted carrier may be used with prior approval from MWDOC, with an A.M. Best rating of no less than A: X. An exception to these standards will be made for the State Compensation Insurance Fund when not specifically rated. SJBA may participate in and provide evidence of pooled equivalent coverage through joint powers insurance agency authorities such as CSRMA or ACWA JPIA.

#### H. General Liability and Automobile Liability Endorsements

1. The commercial general liability policy and automobile policies are to contain, or be endorsed to contain, the following provisions:

- i. MWDOC and Metropolitan, their officers, officials, employees and agents are to be covered as insureds as respect to liability arising out of work or operations performed by or on behalf of SJBA; or automobiles owned, leased, hired or borrowed by SJBA.
- ii. For any claims related to this Study, SJBA's insurance coverage shall be primary insurance with respect to MWDOC and Metropolitan, and their officers, officials, employees and volunteers. Any insurance or self-insurance maintained by MWDOC and Metropolitan, their officers, officials, employees or agents shall be excess of SJBA's insurance and shall not contribute with it.
- iii. Each insurance policy required by this clause shall be endorsed to state that coverage shall not be cancelled by either party, except after thirty (30) days prior written notice by certified mail, return receipt requested, has been given to MWDOC.
- iv. Coverage shall not extend to any indemnity coverage for the active negligence of the additional insured in any case where an agreement to indemnify the additional insured would be invalid under Subdivision (b) of Section 2782 of the Civil Code.

#### I. Other Endorsements and Insurance Provisions

1. All rights of subrogation under the property insurance policy (if any) have been waived



against MWDOC and Metropolitan.

2. The workers' compensation insurer, agrees to waive all rights of subrogation against MWDOC and Metropolitan for injuries to employees of the insured (SJBA) resulting from work for MWDOC or Metropolitan or use of MWDOC or Metropolitan's premises or facilities.

3. If General Liability, Pollution and/or any Asbestos Pollution Liability and/or professional liability or Errors & Omissions coverages are written on a claims-made form:

i. The "Retro Date" must be shown, and must be before the date of the contract or the beginning of contract work.

ii. If coverage is canceled or non-renewed, and not replaced with another claims-made policy form with a "Retro Date" prior to the contract effective date, the SJBA must purchase "extended reporting" coverage for a minimum of five (5) years after completion of contract work.

iii. A copy of the claims reporting requirements must be submitted to MWDOC and Metropolitan for review.

4. Any consultants or subcontracts who contract with either of the SJBA in connection with performing work on the Study must maintain insurance in compliance with the requirements in this Agreement and must name MWDOC as an additional insured consistent with the requirements of Section 11 of this Agreement. Any professional engineering firms conducting studies under Exhibit B of this Agreement shall provide evidence of Professional Errors & Omissions coverage meeting coverage amounts of \$1,000,000 per claim, with a \$2 million aggregate.

## **Section 12. Miscellaneous**

A. This Agreement may be amended by written mutual agreement executed by the Parties. Any alteration or variation of the terms of this Agreement will not be valid unless made in writing and signed by all of the Parties. This Agreement constitutes the entire agreement between the Parties.

B. This Agreement will inure to the benefit of and be binding upon the Parties and their respective successors. This Agreement is not assignable by any Party in whole or in part.

C. If any provision of this Agreement shall be held illegal, invalid, or unenforceable, in whole or in part, such provision shall be modified to the minimum extent necessary to make it legal, valid, and enforceable, and the legality, and enforceability of the remaining provisions shall not be affected thereby.

D. This Agreement shall be deemed a contract under the laws of the State of California, and for all purposes will be interested in accordance with such laws. The Parties hereby agree to

consent to the exclusive jurisdiction of the courts of the state of California, and that the venue of any action brought hereunder will be in Los Angeles County, California.

E. Notice. Any notice, invoice, report, or payment made pursuant to this Agreement shall be sent to the Parties at their respective addresses shown below, including any notice that must be sent to Metropolitan.

If to MWDOC:           Municipal Water District of Orange County  
                              18700 Ward St.  
                              P.O. Box 20895  
                              Fountain Valley, CA 92728  
                              Attn: General Manager  
                              Email: rhunter@mwdoc.com

If to SJBA:             San Juan Basin Authority  
                              c/o Santa Margarita Water District  
                              26111 Antonio Pkwy  
                              Rancho Santa Margarita, CA 92688  
                              Attn: Executive Director, SJBA  
                              Email: Danf@smwd.com

F. Counterparts. This Agreement and any amendment hereto may be executed in two or more counterparts, and by each Party on a separate counterpart, each of which, when executed and delivered, shall be an original and all of which together shall constitute one instrument, with the same force and effect as through all signatures appeared on a single document.

G. Signatures. The individuals executing this Agreement represent and warrant that they have the legal capacity and authority to do so on behalf of their respective Agency.

IN WITNESS WHEREOF, the Parties have executed this Agreement as of the date below.

Date \_\_\_\_\_

Date \_\_\_\_\_

By \_\_\_\_\_

Dan Ferons  
Executive Director  
SJBA

By \_\_\_\_\_

Robert Hunter  
General Manager  
MWDOC

Approved as to Form:

Approved as to Form:

Date \_\_\_\_\_

By: \_\_\_\_\_

General Counsel

Date \_\_\_\_\_

By: \_\_\_\_\_

Russell G. Behrens  
General Counsel



Item No. ' 1

**ACTION ITEM**  
January 15, 2014

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

**FROM: Robert Hunter, General Manager**

Staff Contact: Karl Seckel and MWDOC Legal Counsel Russ Behrens and Joseph Byrne

**SUBJECT: DWR Proposition 50 Grant for Desalination – Application for Doheny Desal Funding**

**STAFF RECOMMENDATION**

---

It is recommended that the Board authorize staff to proceed with a Grant Proposal if it can be ascertained that our proposal would be considered by DWR.

**COMMITTEE RECOMMENDATION**

---

Committee recommends (To be determined at Committee Meeting)

<b>Budgeted (Y/N): Yes</b>	Budgeted amount: n/a	Core <input checked="" type="checkbox"/>	Choice
<b>Action item amount: n/a</b>	Line item:		
<b>Fiscal Impact (explain if unbudgeted):</b> Staff and Legal Counsel time. This item is marked Core because it represents an open offer of assistance in seeking funding for local project development.			

## SUMMARY

---

DWR recently published a grant solicitation for desalination. MWDOC has previously applied twice under this program and been successful. This solicitation package was drafted in a narrow manner by DWR. MWDOC has submitted two requests to DWR to see if they would consider these under the format of the grant. DWR indicated our first request would NOT qualify; we are awaiting to hear on the second request before drafting and submitting a proposal. It is also possible that MWDOC would submit a proposal in conjunction with West Basin MWD.

According to the Project Solicitation Package drafted by DWR, the following categories of water desalination projects will be funded by these grants.

- Construction project with a completed feasibility study or facility plan, and permitting and design either ready to proceed or already proceeding towards construction of a full- scale desalination treatment or brine disposal facility
- Pilot or demonstration project with a completed feasibility study or facility plan to assess one or more components of a specific, planned facility
- Feasibility study, which may include environmental documentation, to assess the viability of implementing a brackish groundwater desalination project in a specific area
- Environmental documentation to supplement a completed feasibility study of a desalination project
- Research project that supports permitting agencies in establishing policies and regulatory criteria for water desalination projects and that is not for the sole purpose of assessing a specific project

The highlighted sections in each of these provisions presents constraints in submittal of a grant for the Doheny Desal Project. Staff wanted to submit a proposal in such a manner as to use the MET Foundational Action Funding as the matching funding in the following two areas:

1. Environmental Documentation related to the environmental baseline monitoring and issues associated with the Coastal Lagoon. Staff drafted a summary and sent it to DWR and they indicated that our proposal would not qualify as it did not cover the full environmental documentation for the project – this round of funding is specifically to move projects forward that are ready to move into construction to achieve quick results – Doheny is NOT at that stage.
2. Research into sampling offshore geology and water quality via horizontal directional drilling. This method would involve the possibility of drilling down through the existing well to sample the geology and water quality at various locations out under the ocean to help us with additional information in the groundwater modeling work under MET's Foundational Action Program. It is likely that this project will be fairly

expensive and will require additional local dollars (maybe \$500,000 to \$750,000). We have not heard back on this concept.

Staff will continue the discussions regarding this grant process into early 2014 to see if a successful proposal can be developed. If so, Board Action would likely be required on January 15 and the Grant submittal is due on January 16.

# Status of Ongoing MWDOC Reliability and Engineering and Planning Projects

November 25, 2013

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 late 2016	<p><u>Baker WTP Project Contract Award:</u> The IRWD Board awarded the construction contracts for the Baker Water Treatment Plant (BWTP) joint-agency project which will treat 43.5 cfs of potable water for use by the participant agencies El Toro WD, Irvine Ranch WD, Moulton Niguel WD, Santa Margarita WD, and Trabuco Canyon WD.</p> <p>IRWD is hosting a website on the project at: <a href="http://www.bakerwatertreatmentplant.com">http://www.bakerwatertreatmentplant.com</a></p> <p>MWDOC has also been asked to help secure MET's concurrence on the quality of water being introduced into the South County Pipeline. Discussions are underway with MET.</p>
<b>MET Interconnections – Second Lower Cross Feeder</b>	MWDOC			Due to concerns about the availability of MET water to pump into the Second Lower Cross Feeder, MWDOC conducted a meeting in August with MET staff to continue discussions regarding options and possibilities for the Project. After extensive discussions regarding prospects for the project, MET staff agreed to prepare additional written information regarding the SLCF Project. The comments are expected in December.

<b>Description</b>	<b>Lead Agency</b>	<b>Status % Complete</b>	<b>Scheduled Completion Date</b>	<b>Comments</b>
<b>Doheny Desalination Project (aka South Orange Coastal Ocean Desalination Project (SOCOD))</b>	MWDOC		Phase 3 Pilot Plant operations ceased in May 2012; working toward Phase 3 wrap up in Feb 2014.	<p>Work is underway on:</p> <ul style="list-style-type: none"> <li>• Site appraisal for to negotiate a site lease extension with State Parks.</li> <li>• In discussions regarding the Phase 3 Wind-Up Agreement</li> <li>• Completing agreements for funding of the Doheny Desal Foundational Action Program work</li> <li>• Considering whether to submit for a DWR Grant</li> </ul>
<b>Poseidon Resources Ocean Desalination Project in Huntington Beach</b>				MWDOC is still processing the Poseidon LRP Agreement with MET.
<b>Other Meetings</b>				
				Karl Seckel met with Andy Bruhart, General Manager of South Coast Water District along with AGM Betty Burnett and District Engineer Dave Youngblood to discuss the Doheny Desal Project.
				Keith Lyon continued to pursue a number of discussions and a flow test of the OC-88 Flow. The Flow Test and Calibration was completed on November 19 and 20; the results are expected any time now.
				Karl Seckel has been working with EOCWD and MET on



Description	Lead Agency	Status % Complete	Scheduled Completion Date	Comments
				getting an Electrical Transfer Switch installed at OC-70 to allow the pumps to be run off of a mobile generator unit in the event of loss of grid power.
				Richard Bell participated in the San Juan Basin Authority meeting where they discussed adoption of the Groundwater Management Plan.
				Karl Seckel and Richard Bell have been working with MET, South Coast Water District, Laguna Beach County Water District and San Juan Basin Authority on the Foundational Action Program Funding Agreements.
				Harvey De La Torre and Keith Lyon have been working with IRWD on a new LRP funding agreement with MET.
				Lee Jacobi and MET worked on coordination for an upcoming 11-day shutdown of the Allen McColloch Pipeline to allow a complete internal inspection by MET. The shutdown will begin on January 13. This will be the longest the pipeline has been shutdown since it began operations in 1980.
<b>WEROC General Activities</b>				Kelly attended the California Emergency Services Association, Southern Chapter Annual Board retreat in December. This one day meeting is to plan the organizations goals for the next year and budgetary needs.

Description	Lead Agency	Status % Complete	Scheduled Completion Date	Comments
<b>Water Trailers</b>				<p>MWDOC signed a change order with the Arizona Trailer Company for the additional 2 trailers that were approved for grant funding. The two trailers have been delivered to MWDOC. Staff is working on securing Transfer of Equipment agreements with the two agencies who will be receiving the trailers. At this time staff is working with the Cities of Buena Park and Newport Beach. Staff has identified two additional agencies (who already received 1 trailer each) in case these two cities cannot take the trailers.</p> <p>Reimbursement packets have been submitted to the City of Santa Ana for 14 of the 15 trailers for a total reimbursement request of \$464,152. The last trailer reimbursement request will be submitted in January for the remaining \$33,152 of the grant.</p>
<b>Member Agency Coordination</b>				<p>Staff met with the Yorba Linda Water District to discuss their emergency preparedness plan and training program. The District recently hired a new safety position that will have lead responsibility for emergency preparedness.</p> <p>Staff provided WEROC Radio training to Orange County Water District Field Headquarters staff.</p> <p>Staff attended a Moulton Niguel Water District Emergency Operations Center (EOC) training as an observer.</p> <p>Kelly provided four 3-hour NIMS 100&amp; 700 with SEMS Intro trainings to approximately 60 water utility staff. This is a</p>

<b>Description</b>	<b>Lead Agency</b>	<b>Status % Complete</b>	<b>Scheduled Completion Date</b>	<b>Comments</b>
				required training for National Incident Management System (NIMS) compliance.
<b>Coordination with the County of Orange</b>				Kelly attended a Disability, Access and Functional Needs (AFN) First Responder training hosted by the County. The goal was to learn how to take into account disability, access and functional needs when planning for water distribution and the use of the water trailers following an emergency. Several lessons were learned and will be incorporated into the Water Trailer SOP for all the agencies.
<b>Coordination with Outside Agencies</b>				Kelly participated in the California Water/Wastewater Agency Response Network (Cal WARN) State Steering Committee monthly conference call. The group is developing a series of programs to help water utilities with fuel planning.
<b>WEROC Emergency Operations Center (EOC) Readiness</b>				<p>Staff participated in the OA Radio Test successfully.</p> <p>Staff met with Met staff for an annual North EOC lease review.</p> <p>Met has been in the process of installing a completely new MARS radio system. Met paid for one of WEROC's MARS radios to be replaced and WEROC had the other two replaced from the WEROC budget. Unfortunately, Met discovered an interference problem with the new system and frequency. WEROC staff discussed the cost of having a radio company do the reprogramming with Met staff, and Met agreed to reprogram all 3 of the WEROC radios with their own staff and at no cost to WEROC. Staff was able to successfully participate in the</p>

Description	Lead Agency	Status % Complete	Scheduled Completion Date	Comments
				<p>MARS radio test from 2 of the WEROC radios this month.</p> <p>At the last annual maintenance appointment for the North EOC generator some costly repairs and preventative maintenance was recommended by the vendor. The recommendations seem reasonable considering the age and use of the generator. In discussing the recommended repairs, staff decided with the vendor on a slightly more conservative course of repairs with the understanding that additional repairs may still be needed. Staff received 2 quotes for repair. A third vendor reviewed the generator, but never submitted a quote after multiple reminders. Staff has schedule service with the vendor with the lowest quote and is waiting for some parts on back order.</p> <p>Staff completed updates to the MWDOC Continuity of Operations Plan (COOP) and the WEROC Autopaks. The Autopaks include critical contact and disaster response information and are distributed to staff that both assist with the COOP and the WEROC EOC's. The updated packs will be distributed in January.</p>

## Status of Water Use Efficiency Projects

January 2014

Description	Lead Agency	Status % Complete	Scheduled Completion or Renewal Date	Comments
<b>Smart Timer Rebate Program</b>	MWDSC	82%	September 2015	<p>In November 2013, 15 smart timers were installed in the residential sector and 43 in the commercial sector.</p> <p>Newport Beach has an ongoing smart timer installation program. In the month of November 2013, Newport Beach installed 15 smart timers in the residential sector and 4 smart timers in the commercial sector. These numbers are included in the program totals listed above.</p> <p>For program water savings and implementation information, see MWDSC Water Use Efficiency Program Savings and Implementation Report.</p>
<b>Rotating Nozzles Rebate Program</b>	MWDSC	Ongoing	June 2015	<p>In November 2013, 1,251 residential and 1,129 commercial rotating nozzles were installed in Orange County.</p> <p>Newport Beach has an ongoing rotating nozzle installation program. In the month of November 2013, Newport Beach reported the installation of 1,251 residential and 1,005 commercial rotating nozzles. These numbers are included in the program totals listed above.</p> <p>For program savings and implementation information, please see MWDSC Water Use Efficiency Program Savings and Implementation Report.</p>
<b>Water Smart Landscape Program</b>	MWDSC	On-going	September 2014	<p>In October 2013, a total of 12,307 meters received monthly irrigation performance reports comparing actual water use to a landscape irrigation budget customized to each meter.</p> <p>Staff met with TrueGreen Landcare, one of the largest</p>

Description	Lead Agency	Status % Complete	Scheduled Completion or Renewal Date	Comments
<b>Water Smart Landscape Program (cont.)</b>				<p>landscape maintenance contractors in the country, on December 17 to reintroduce them to our programs and reestablish the loop of accountability for their existing clients that had previously been enrolled in the program. TrueGreen will rely on MWDOC's Water Smart Landscape Program to meet their Irrigation Performance Report requirements for the California Landscape Contractors Certified Water Manager Program. We also discussed a turf removal project at Whittier Law School served by Mesa Water.</p> <p>For program savings and implementation information, please see MWDOC Water Use Efficiency Program Savings and Implementation Report.</p>
<b>SoCal Water\$mart Residential Indoor Rebate Program</b>	MWDSC	On-going	June 2015	<p>In October 2013, 666 high efficiency clothes washers and 340 high efficiency toilets were installed through this program.</p> <p>For program savings and implementation information, please see MWDOC Water Use Efficiency Program Savings and Implementation Report.</p>
<b>SoCal Water\$mart Commercial Rebate Program</b>	MWDSC	On-going	On-going	<p>In October 2013, 212 flow restrictors and 2 food steamers 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	81%	December 2014	<p>Survey scheduling is ongoing. A total of 40 Focused Surveys and 19 Comprehensive Surveys have been completed or are in progress. To date, eight companies have signed Incentive Agreements, and nine companies have signed Statements of Interest. Updated discharger lists have been obtained, and outreach is continuing to sites with feasible water savings potential.</p>

Description	Lead Agency	Status % Complete	Scheduled Completion or Renewal Date	Comments
<b>Industrial Process Water Use Reduction Program (cont.)</b>				Discussions are ongoing with: Fabrica Fine Carpets in Santa Ana, Royalty Carpeting in Irvine, the St. Regis Hotel, UCI Medical Buildings, and the Hoag Hospital laundry facility. For program savings and implementation information, please see MWDOC Water Use Efficiency Program Savings and Implementation Report.  Boeing has completed the monitoring period for Phase I and successfully saved approximately 16 million gallons of potable water during the last 12 months.
<b>MWDOC Conservation Meeting</b>	MWDOC	On-going	Monthly	This month's meeting was hosted by the City of San Clemente at Casa Romantica on December 5, 2013. The next meeting will be on February 6, 2014 and will be hosted by the City of Newport Beach.
<b>Metropolitan Conservation Meeting</b>	MWDSC	On-going	Monthly	There was no meeting during the month of December. The next meeting will be January 16, 2014 at Metropolitan.
<b>Water Smart Hotel Program</b>	MWDOC	68%	June 2014	MWDOC was awarded a Proposition 50 Water Use Efficiency grant and a Bureau of Reclamation grant, to be matched with Metropolitan funds, to conduct up to 105 commercial and landscape audits of hotels. Enhanced financial incentives will be distributed to augment rebate levels among SoCal WaterSmart commercial fixtures.  The Proposition 50 grant term ended on September 30, 2013. All grant funding was expended, and a draft Final Report has been submitted to the Department of Water Resources. Implementation of this program continues utilizing both Metropolitan and Bureau of Reclamation funding.
<b>Turf Removal Program</b>	MWDOC	On-going	June 2014	In November 2013, 11 rebates were paid, representing 10,595 square feet of turf removed in Orange County. To date, the Turf Removal Program has removed approximately 1,336,341 square feet of turf.

Description	Lead Agency	Status % Complete	Scheduled Completion or Renewal Date	Comments
				For program savings and implementation information, please see MWDOC Water Use Efficiency Program Savings and Implementation Report.
<b>California Sprinkler Adjustment Notification System</b>	MWDOC	80%	September 2014	<p>MWDOC was awarded a grant from the Bureau of Reclamation to develop the California Sprinkler Adjustment Notification System (CSANS). This system will e-mail or “push” an irrigation index to assist property owners with making global irrigation scheduling adjustments. Participants will voluntarily register to receive this e-mail and can unsubscribe at any time.</p> <p>Staff has completed the methodology for calculating the adjustment index. The CSANS is preparing to launch the pilot stage.</p>
<b>Public Spaces Program</b>	MWDOC	10%	December 2015	<p>Through the Integrated Regional Watershed Management (IRWM) process, MWDOC is implementing a Proposition 84 grant to target the implementation of comprehensive landscape improvements for publicly owned landscape properties throughout the South Orange County IRWM Plan area.</p> <p>The program encourages the removal of non-functional turfgrass, the upgrade of antiquated irrigation timers, and the conversion of high-precipitation-rate fixed spray irrigation to low-precipitation-rate rotating nozzles and/or drip irrigation. These improvements are meant to result in water savings, a reduction of dry-weather runoff, pollution prevention, and reduced maintenance costs on not only the landscape itself, but also the asphalt street material.</p> <p>To date, five (5) cities have applied for funding through this program. As these projects come in, MWDOC staff will evaluate them for consistency with the program rules and regulations. If the project is suitable, a Notice to Proceed will</p>



Description	Lead Agency	Status % Complete	Scheduled Completion or Renewal Date	Comments
				<p>be issued to the agency.</p> <p>Outreach to the cities continues. In November, the program opened up to the water districts. In February, the program plans to extend to commercial sites as well.</p>
<b>Home Certification Program</b>	MWDOC	3%	July 2015	<p>This program will provide rebates for the installation of residential water efficiency devices, including smart timers and high efficiency rotating nozzles. The program will also provide single-family sites with indoor and outdoor audits to identify areas for water savings improvements and opportunities.</p> <p>In November 2013, MWDOC received twenty-seven (27) applications for the Home Certification Program. 20 surveys have been conducted, and survey results are pending for the remaining applications.</p> <p>The Program website is officially up and running. Participating retail water agencies can direct their customers to complete the program application at <a href="http://www.mwdoc.com/services/watersmart/home">www.mwdoc.com/services/watersmart/home</a>.</p>
<b>Landscape Irrigation Survey Program</b>	MWDSC	Ongoing	June 2016	<p>Through this program, Metropolitan offers, at no cost, the services of a certified landscape irrigation auditor who will survey and provide written recommendations for qualifying non-residential properties within Metropolitan's service area. To participate, properties must have a minimum of one acre of irrigated area. Eligible landscapes include commercial and industrial sites, homeowner association common areas, and institutional sites such as schools, parks, and government facilities.</p> <p>To date, 70 sites in the MWDOC service area have contacted Metropolitan to request surveys. As these requests come in, MWDOC staff will continue to assist Metropolitan in</p>

Description	Lead Agency	Status % Complete	Scheduled Completion or Renewal Date	Comments
				scheduling the surveys and obtaining each site's water use history for incorporation into the written report that contains customized recommendations for improved efficiency.
<b>Spray to Drip Conversion Pilot Program</b>	MWDOC	10%	October 2014	<p>This is a pilot program designed to test the efficacy of replacing conventional spray heads in shrub beds with low-volume, low-precipitation drip technology. Through a rebate program format, residential homes will be encouraged to convert their existing spray nozzles to drip.</p> <p>Planning efforts continued during December and the program is scheduled to launch January 2014.</p>
<b>Commercial, Industrial, and Institutional Performance-Based Water Use Efficiency Program</b>	MWDOC	1%	December 2015	<p>This program will provide enhanced rebate incentives to commercial, industrial, and institutional sites and large-landscape properties (landscapes <math>\geq 1</math> acre).</p> <p>At the September 2013 MWDOC Board meeting, the agreement with the Bureau of Reclamation was authorized for signature.</p>
<b>Landscape Training and Outreach</b>	MWDOC	1%	Ongoing	<p>Orange County Garden Friendly: The Orange County Garden Friendly Program (OCGF) will promote the use of climate appropriate plants and water efficient irrigation practices with the overall goals of reducing water runoff and improving outdoor water use efficiency. The Orange County Garden Friendly Program will be a collaborative effort of the Orange County Stormwater Program (OCSP) and the University of California Cooperative Extension (UCCE). Each partner will play a role in planning and implementing the Program. Various water-related organizations will also provide program support and assist with implementation.</p>

# Orange County

## Water Use Efficiency Programs Savings and Implementation Report

Retrofits and Acre-Feet Water Savings for Program Activity

Program	Program Start Date	Retrofits Installed in	Month Indicated		Current Fiscal Year		Overall Program		
			Interventions	Water Savings	Interventions	Water Savings	Interventions	Annual Water Savings[4]	Cumulative Water Savings[4]
High Efficiency Clothes Washer Program	2001	November-13	142	0.33	2,539	20.11	93,570	2,585	15,017
Smart Timer Program - Irrigation Timers	2004	November-13	58	2.38	412	28.94	10,614	3,599	19,519
Rotating Nozzles Rebate Program	2007	November-13	2,380	0.79	39,332	52.35	348,887	1,902	7,766
SoCal WaterSmart Commercial Plumbing Fixture Rebate Program	2002	November-13	0	0.00	531	4.80	44,135	3,347	26,913
Water Smart Landscape Program [1]	1997	October-13	12,307	878.22	12,307	3,474.34	12,307	10,311	50,776
Industrial Process Water Use Reduction Program	2006	October-13	0	0.00	0	0.00	10	239	797
Turf Removal Program[3]	2010	November-13	10,595	0.12	259,155	36	1,336,341	187	434
High Efficiency Toilet (HET) Program	2005	November-13	89	0.32	1,177	44.57	29,750	1,100	7,053
Home Water Certification Program	2013	November-13	27	0.053	1	0.002	1	0.024	0.024
Synthetic Turf Rebate Program	2007		27	0	1	0	1	0	0
Ultra-Low-Flush-Toilet Programs [2]	1992		0	0	0	0	685,438	25,336	469
Home Water Surveys [2]	1995		0	0	0	0	363,926	4,892	138,457
Showerhead Replacements [2]	1991		0	0	0	0	11,867	73	1,708
Total Water Savings All Programs			882	315,455	3,662	2,936,847	53,570	287,971	

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

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

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

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

# **HIGH EFFICIENCY CLOTHES WASHERS INSTALLED BY AGENCY** through MWDOD and Local Agency Conservation Programs

Agency	FY 01/02	FY 02/03	FY 03/04	FY 04/05	FY 05/06	FY 06/07	FY 07/08	FY 08/09	FY 09/10	FY 10/11	FY 11/12	FY 12/13	FY 13/14	Total	Current FY Water Savings Ac/Ft (Cumulative)	Cumulative Water Savings across all Fiscal Years
Brea	17	107	178	132	143	132	175	156	42	186	144	93	50	1,555	0.35	250.25
Buena Park	9	45	88	81	84	85	114	146	59	230	145	105	59	1,250	0.43	182.19
East Orange CWD RZ	3	8	20	20	11	18	22	17	3	23	10	10	6	171	0.04	28.38
El Toro WD	21	88	108	103	83	91	113	130	32	162	112	134	63	1,240	0.49	185.73
Fountain Valley	36	127	209	196	178	205	219	243	72	289	158	115	45	2,092	0.35	344.10
Garden Grove	39	173	278	243	243	238	304	332	101	481	236	190	74	2,932	0.64	465.72
Golden State WC	37	195	339	374	342	339	401	447	168	583	485	265	110	4,085	0.86	644.63
Huntington Beach	114	486	857	738	680	761	750	751	211	983	582	334	133	7,360	1.02	1,231.93
Irvine Ranch WD	159	626	1,087	1,093	1,445	1,972	2,052	1,844	1,394	2,621	2,170	1,763	781	19,007	6.30	2,857.23
La Habra	8	40	86	81	66	96	136	83	22	179	128	82	48	1,055	0.37	159.01
La Palma	3	5	13	21	18	33	35	51	25	76	46	34	14	374	0.11	53.82
Laguna Beach CWD	17	88	119	84	68	57	77	77	27	96	57	38	11	816	0.08	135.11
Mesa Water District	24	117	228	240	212	239	249	246	73	232	176	114	37	2,187	0.29	372.71
Moulton Niguel WD	158	630	841	640	570	652	716	742	250	1,127	679	442	180	7,627	1.45	1,211.53
Newport Beach	17	144	343	277	243	245	270	259	57	197	142	116	47	2,357	0.34	408.96
Orange	58	247	304	358	330	366	365	403	111	349	262	218	75	3,446	0.59	579.78
Orange Park Acres	-	-	-	-	-	4	8	-	-	-	-	-	-	12	0.00	2.43
San Juan Capistrano	16	95	120	107	102	109	103	127	43	190	110	76	27	1,225	0.19	195.30
San Clemente	32	182	235	170	136	204	261	278	63	333	206	140	42	2,282	0.39	360.59
Santa Margarita WD	140	510	743	573	592	654	683	740	257	1,105	679	553	291	7,520	2.25	1,164.52
Seal Beach	13	28	57	39	46	47	46	57	7	81	51	31	17	520	0.15	81.83
Serrano WD	9	16	54	39	39	30	31	23	7	21	20	13	8	310	0.07	54.41
South Coast WD	35	138	165	97	103	107	130	148	43	183	112	89	46	1,396	0.35	217.88
Trabuco Canyon WD	10	63	76	58	44	69	60	62	28	82	62	30	23	667	0.18	106.61
Tustin	21	89	152	138	127	152	146	144	45	174	97	78	23	1,386	0.18	232.58
Westminster	37	159	235	196	186	213	171	233	74	329	208	121	25	2,187	0.21	354.34
Yorba Linda	36	214	342	355	333	288	350	367	117	394	273	181	66	3,316	0.52	554.61
<b>MWDOD 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>7,350</b>	<b>5,365</b>	<b>2,301</b>	<b>78,375</b>	<b>18.20</b>	<b>12,436.19</b>
Anaheim	917	677	904	1,364	701	854	847	781	860	910	477	331	108	9,731	0.88	1,684.06
Fullerton	40	196	369	289	263	269	334	330	69	337	270	200	79	3,105	0.65	493.77
Santa Ana	15	69	188	269	244	236	235	257	87	355	190	163	51	2,359	0.37	402.84
<b>Non-MWDOD 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>937</b>	<b>694</b>	<b>238</b>	<b>15,195</b>	<b>1.90</b>	<b>2,580.66</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>8,287</b>	<b>6,059</b>	<b>2,539</b>	<b>93,570</b>	<b>20.11</b>	<b>15,016.85</b>

# **SMART TIMERS INSTALLED BY AGENCY** through MWDOC and Local Agency Conservation Programs

Agency	FY 08/09		FY 09/10		FY 10/11		FY 11/12		FY 12/13		FY 13/14		Total Program		Cumulative Water Savings across all Fiscal Years
	Res	Comm	Res	Comm	Res	Comm	Res	Comm	Res	Comm	Res	Comm	Res	Comm.	
Brea	3	9	0	0	2	0	8	0	9	8	1	0	34	66	293.54
Buena Park	3	1	0	0	0	0	4	19	3	0	0	0	10	20	44.07
East Orange CWD RZ	0	0	0	0	1	0	5	0	2	0	0	0	11	0	2.35
El Toro WD	0	25	2	18	5	5	26	2	7	2	5	0	59	321	1,524.58
Fountain Valley	1	0	0	6	2	2	8	2	3	2	0	0	34	17	74.22
Garden Grove	2	1	6	0	5	4	7	0	5	2	4	0	45	13	62.18
Golden State WC	1	2	9	22	7	4	13	3	9	50	1	0	87	103	304.68
Huntington Beach	13	1	6	27	6	36	15	4	18	33	10	13	113	138	418.41
Irvine Ranch WD	29	56	14	145	28	153	267	71	414	136	35	20	1,083	1,311	5,553.94
La Habra	0	0	0	21	0	0	3	0	4	7	1	0	16	29	89.22
La Palma	0	0	0	0	0	0	1	0	1	0	1	0	3	0	0.28
Laguna Beach CWD	2	0	2	14	4	1	109	2	76	2	2	0	229	19	93.32
Mesa Water District	6	7	13	7	7	22	21	0	10	2	3	2	104	73	337.65
Moulton Niguel WD	21	23	17	162	36	60	179	31	51	74	19	33	448	465	1,510.41
Newport Beach	10	27	7	58	6	0	275	12	242	26	82	42	883	312	1,345.37
Orange	5	2	2	13	5	8	25	0	20	24	8	9	142	111	461.17
San Juan Capistrano	10	0	7	49	13	1	103	2	14	17	3	0	171	78	274.96
San Clemente	81	20	13	209	46	11	212	17	26	7	2	0	934	332	1,475.94
Santa Margarita WD	25	44	10	152	61	53	262	7	53	171	23	2	545	603	2,075.08
Santiago CWD	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00
Seal Beach	0	0	0	1	0	0	0	3	1	0	1	36	2	40	33.79
Serrano WD	0	0	11	0	4	0	3	0	1	0	0	0	19	0	3.78
South Coast WD	11	6	3	10	13	3	78	10	13	16	2	0	152	124	530.97
Trabuco Canyon WD	1	0	2	0	2	10	12	0	6	0	1	0	67	103	548.11
Tustin	7	9	10	14	10	0	11	0	8	4	6	0	56	34	137.37
Westminster	3	0	3	0	1	1	2	0	1	1	0	0	26	14	85.13
Yorba Linda	8	5	5	21	25	0	22	0	20	0	5	2	166	80	392.14
<b>MWDOC Totals</b>	<b>242</b>	<b>238</b>	<b>142</b>	<b>949</b>	<b>289</b>	<b>374</b>	<b>1,671</b>	<b>185</b>	<b>1,017</b>	<b>584</b>	<b>215</b>	<b>159</b>	<b>5,439</b>	<b>4,406</b>	<b>17,672.64</b>

Anaheim	9	59	5	46	12	11	23	60	19	10	5	26	116	361	1,376.17
Fullerton	2	2	2	39	9	33	22	51	9	29	3	0	69	154	384.65
Santa Ana	2	4	1	8	8	0	6	5	8	19	2	2	31	38	85.36
<b>Non-MWDOC Totals</b>	<b>13</b>	<b>65</b>	<b>8</b>	<b>93</b>	<b>29</b>	<b>44</b>	<b>51</b>	<b>116</b>	<b>36</b>	<b>58</b>	<b>10</b>	<b>28</b>	<b>216</b>	<b>553</b>	<b>1,846.18</b>
<b>Orange County Totals</b>	<b>255</b>	<b>303</b>	<b>150</b>	<b>1,042</b>	<b>318</b>	<b>418</b>	<b>1,722</b>	<b>301</b>	<b>1,053</b>	<b>642</b>	<b>225</b>	<b>187</b>	<b>5,655</b>	<b>4,959</b>	<b>19,519</b>

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

Agency	FY 09/10			FY 10/11			FY 11/12			FY 12/13			FY 13/14			Total Program			Cumulative Water Savings across all Fiscal Years
	Small		Large	Small		Large	Small		Large	Small		Large	Small		Large	Small		Large	
	Res	Comm.	Comm.	Res	Comm.	Comm.	Res	Comm.	Comm.	Res	Comm.	Comm.	Res	Comm.	Comm.	Res	Comm.	Comm.	
Brea	8	100	0	32	0	0	130	0	0	65	120	0	48	0	0	305	220	0	6.43
Buena Park	0	0	2,535	29	0	0	32	0	0	65	0	0	53	0	0	216	75	2,535	447.88
East Orange	0	0	0	0	0	0	340	0	0	55	0	0	0	0	0	500	0	0	7.04
El Toro	145	2,874	890	174	0	0	357	76	0	23	6,281	0	16	538	0	803	10,059	890	285.77
Fountain Valley	21	0	0	83	0	0	108	0	0	35	0	0	0	0	0	381	0	0	6.74
Garden Grove	151	45	0	38	0	0	119	0	0	95	0	0	61	0	0	661	151	0	14.40
Golden State	280	29	0	303	943	0	294	0	0	257	2,595	0	0	0	0	1,378	3,567	0	58.94
Huntington Beach	39	3,420	305	203	625	0	458	0	0	270	0	0	97	0	0	1,482	4,909	2,681	719.26
Irvine Ranch	1,034	54,441	1,479	2,411	2,861	0	1,715	4,255	0	23,778	1,014	0	10,561	3,367	0	41,703	78,481	2,004	2289.31
La Habra	0	273	0	0	0	0	33	90	0	0	0	0	0	0	0	57	898	900	213.65
La Palma	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	0	0	0.24
Laguna Beach	191	0	0	156	0	0	763	0	0	3,596	0	0	0	0	0	4,922	47	0	50.99
Mesa Water District	195	83	0	118	0	0	297	277	0	246	0	0	126	0	0	1,263	385	343	108.94
Moulton Niguel	234	0	959	1,578	0	0	1,225	0	0	512	1,385	0	460	0	0	4,732	8,388	2,945	833.50
Newport Beach	92	4,781	0	337	1,208	0	640	3,273	0	25,250	50	0	13,623	4,174	0	40,029	14,225	0	464.72
Orange	129	0	0	135	30	0	343	0	0	264	0	0	124	0	0	2,114	193	0	43.33
San Clemente	729	1,299	0	2,612	851	0	4,266	117	1,343	631	172	0	94	5,004	0	8,916	7,468	1,343	331.40
San Juan Capistrano	656	5,709	0	1,452	0	0	949	0	0	684	30	0	283	0	0	4,528	7,399	0	220.89
Santa Margarita	1,731	937	611	3,959	3,566	0	4,817	0	0	983	0	0	152	0	0	12,886	4,571	611	378.99
Seal Beach	0	291	0	0	0	0	0	0	0	0	0	0	0	0	0	115	291	0	8.58
Serrano	1,498	0	0	364	0	0	58	0	0	190	0	0	105	0	0	2,333	0	0	41.61
South Coast	0	0	0	318	1,772	0	688	359	0	435	0	0	0	0	0	1,630	2,264	0	58.02
Trabuco Canyon	1,357	791	0	0	0	0	379	0	0	34	0	0	0	0	0	1,900	791	0	51.40
Tustin	314	0	0	512	0	0	476	1,013	0	265	0	0	224	0	0	2,363	1,013	0	49.16
Westminster	80	0	0	0	0	0	26	0	0	15	0	0	0	0	0	232	0	0	4.69
Yorba Linda	371	3,256	0	529	0	0	559	0	0	730	0	0	15	0	0	3,207	3,369	500	227.59
MWDOC Totals	9,255	78,329	6,779	15,343	11,856	0	19,072	9,460	1,343	58,478	11,647	0	26,042	13,083	0	138,666	148,764	14,752	6923.46

Page 2 of 10

Agua Fria	273	164	105	372	382	0	742	38,554	0	459	813	0	144	0	0	2,387	39,913	105	531.07
Fullerton	48	0	1,484	416	0	0	409	0	0	119	0	0	63	0	0	1,596	64	1,484	288.31
Santa Ana	48	572	0	53	0	0	22	65	0	99	0	0	0	0	0	463	693	0	22.78
<b>Non-MWDOC Totals</b>	<b>369</b>	<b>736</b>	<b>1,589</b>	<b>841</b>	<b>382</b>	<b>0</b>	<b>1,173</b>	<b>38,619</b>	<b>0</b>	<b>677</b>	<b>813</b>	<b>0</b>	<b>207</b>	<b>0</b>	<b>0</b>	<b>4,446</b>	<b>40,670</b>	<b>1,589</b>	<b>842.16</b>
<b>Orange County Totals</b>	<b>9,624</b>	<b>79,065</b>	<b>8,368</b>	<b>16,184</b>	<b>12,238</b>	<b>0</b>	<b>20,245</b>	<b>48,079</b>	<b>1,343</b>	<b>59,155</b>	<b>12,460</b>	<b>0</b>	<b>26,249</b>	<b>13,083</b>	<b>0</b>	<b>143,112</b>	<b>189,434</b>	<b>16,341</b>	<b>7765.62</b>

# SOCAL WATER\$MART 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	FY 12/13	FY 13/14	Totals	Cumulative Water Savings across all Fiscal Years
Brea	0	51	0	22	52	2	27	113	24	4	1	234	0	530	263
Buena Park	10	83	28	55	64	65	153	432	122	379	290	5	0	1,686	691
East Orange CWD RZ	0	0	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	137	0	212	753	393
Fountain Valley	1	94	2	59	35	63	17	35	0	2	314	0	0	622	409
Garden Grove	21	199	51	297	34	136	5	298	130	22	0	4	1	1,198	1,058
Golden State WC	11	197	34	232	80	531	46	414	55	68	135	0	0	1,803	1,367
Huntington Beach	5	191	73	185	82	209	48	104	126	96	156	0	104	1,379	1,066
Irvine Ranch WD	306	1,085	87	325	1,044	429	121	789	2,708	1,002	646	970	125	9,637	4,474
La Habra	10	37	52	45	60	16	191	75	53	4	0	0	0	543	385
La Palma	0	0	0	0	5	0	0	140	21	0	0	0	0	166	56
Laguna Beach CWD	2	30	2	18	9	12	20	137	189	0	0	0	27	446	219
Mesa Water District	424	155	22	130	241	141	141	543	219	669	41	6	0	2,732	1,438
Moulton Niguel WD	31	74	65	172	3	0	9	69	151	6	0	0	0	580	595
Newport Beach	4	230	9	77	24	94	98	27	245	425	35	0	0	1,268	873
Orange	84	144	22	553	127	88	18	374	67	1	73	1	20	1,572	1,239
San Juan Capistrano	0	34	21	181	0	6	2	1	1	0	0	0	0	246	306
San Clemente	0	36	5	95	40	173	2	18	43	0	19	0	0	431	287
Santa Margarita WD	0	16	3	56	0	0	6	23	11	0	0	0	0	115	149
Santiago CWD	0	0	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	0	0	354	309
Serrano WD	0	0	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	84	148	0	938	304
Trabuco Canyon WD	0	1	0	6	0	0	0	4	0	0	0	0	0	11	11
Tustin	9	114	16	82	14	7	115	145	25	230	0	0	0	757	574
Westminster	16	109	32	153	57	104	40	161	16	63	35	1	0	787	729
Yorba Linda	0	36	12	42	4	118	10	24	8	30	0	1	0	285	402
<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>1,966</b>	<b>1,370</b>	<b>489</b>	<b>28,839</b>	<b>17,596</b>

Anaheim	1,042	400	947	362	1,113	780	766	3,298	582	64	48	165	42	9,609	4,835
Fullerton	28	41	138	270	91	96	133	579	29	4	0	94	0	1,503	1,141
Santa Ana	115	153	589	227	624	373	493	815	728	39	12	16	0	4,184	3,341
<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>60</b>	<b>275</b>	<b>42</b>	<b>15,296</b>	<b>9,317</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>2,026</b>	<b>1,645</b>	<b>531</b>	<b>44,135</b>	<b>26,913</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.

# Water Smart Landscape Program

Total Number of Meters  
in Program by Agency

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	FY 12/13	FY 13/14	Overall Water Savings To Date (AF)
Brea	0	0	0	0	0	0	0	22	22	22	26.69
Buena Park	0	0	0	0	0	17	103	101	101	101	289.72
East Orange CWD RZ	0	0	0	0	0	0	0	0	0	0	0.00
El Toro WD	88	109	227	352	384	371	820	810	812	812	3,466.28
Fountain Valley	0	0	0	0	0	0	0	0	0	0	0.00
Garden Grove	0	0	0	0	0	0	0	0	0	0	0.00
Golden State WC	0	0	0	14	34	32	34	32	32	32	145.79
Huntington Beach	0	0	0	0	0	31	33	31	31	31	95.34
Invine Ranch WD	277	638	646	708	1,008	6,297	6,347	6,368	6,795	6,796	26,707.15
Laguna Beach CWD	0	0	0	0	57	141	143	141	124	124	520.71
La Habra	0	0	0	0	23	22	24	22	22	22	99.05
La Palma	0	0	0	0	0	0	0	0	0	0	0.00
Mesa Water District	191	170	138	165	286	285	288	450	504	505	2,067.07
Moulton Niguel WD	80	57	113	180	473	571	595	643	640	637	2,975.75
Newport Beach	32	27	23	58	142	171	191	226	262	299	987.90
Orange	0	0	0	0	0	0	0	0	0	0	0.00
San Clemente	191	165	204	227	233	247	271	269	269	269	1,773.28
San Juan Capistrano	0	0	0	0	0	0	0	0	0	0	0.00
Santa Margarita WD	547	619	618	945	1,571	1,666	1,746	1,962	1,956	2,271	10,242.92
Seal Beach	0	0	0	0	0	0	0	0	0	0	0.00
Serrano WD	0	0	0	0	0	0	0	0	0	0	0.00
South Coast WD	0	0	0	62	117	108	110	118	118	118	588.43
Trabuco Canyon WD	0	0	0	12	49	48	62	60	60	60	247.76
Tustin	0	0	0	0	0	0	0	0	0	0	0.00
Westminster	0	0	0	10	18	18	20	18	18	18	85.63
Yorba Linda WD	0	0	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>11,273</b>	<b>11,766</b>	<b>12,117</b>	<b>50,319.4</b>
Anaheim	0	0	0	0	0	142	146	144	190	190	456.13
Fullerton	0	0	0	0	0	0	0	0	0	0	0.00
Santa Ana	0	0	0	0	0	0	0	0	0	0	0.00
<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>190</b>	<b>190</b>	<b>456.13</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>11,417</b>	<b>11,956</b>	<b>12,307</b>	<b>50,775.58</b>



# INDUSTRIAL PROCESS WATER USE REDUCTION PROGRAM

Number of Process Changes by Agency

Agency	FY 07/08	FY 08/09	FY 09/10	FY 10/11	FY 11/12	FY 12/13	FY 13/14	Overall Program Interventions	Annual Water Savings[1]	Cumulative Water Savings across all Fiscal Years[1]
Brea	0	0	0	0	0	0	0	0	0	0
Buena Park	0	1	0	0	0	0	0	1	54	266
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	0	0	0	0	0	0	0	0	0
Golden State	1	0	0	0	0	0	0	1	3	17
Huntington Beach	0	0	0	0	0	2	0	2	54	74
Irvine Ranch	0	0	2	1	1	1	0	5	84	190
La Habra	0	0	0	0	0	0	0	0	0	0
La Palma	0	0	0	0	0	0	0	0	0	0
Laguna Beach	0	0	0	0	0	0	0	0	0	0
Mesa Water District	0	0	0	0	0	0	0	0	0	0
Moulton Niguel	0	0	0	0	0	0	0	0	0	0
Newport Beach	0	0	0	0	0	0	0	0	0	0
Orange	1	0	0	0	0	0	0	1	43	251
San Juan Capistrano	0	0	0	0	0	0	0	0	0	0
San Clemente	0	0	0	0	0	0	0	0	0	0
Santa Margarita	0	0	0	0	0	0	0	0	0	0
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	0	0	0	0	0	0	0	0	0
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	0	0	0	0	0	0	0	0	0	0
<b>MWDOC Totals</b>	<b>2</b>	<b>1</b>	<b>2</b>	<b>1</b>	<b>1</b>	<b>3</b>	<b>0</b>	<b>10</b>	<b>239</b>	<b>797</b>

[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 MWD OC and Local Agency Conservation Programs

Agency	FY 10/11		FY 11/12		FY 12/13		FY 13/14		Total Program		Cumulative Water Savings across all Fiscal Years
	Res	Comm.	Res	Comm.	Res	Comm.	Res	Comm.	Res	Comm.	
Brea	0	0	3,397	9,466	7,605	0	0	0	11,002	9,466	7.53
Buena Park	0	0	0	0	0	0	0	0	0	0	-
East Orange	0	0	0	0	0	0	1,964	0	1,964	0	0.27
El Toro	0	0	4,723	0	4,680	72,718	1,529	0	10,932	72,718	23.87
Fountain Valley	0	0	1,300	0	682	7,524	1,054	0	3,036	7,524	2.99
Garden Grove	0	46,177	14,013	0	4,534	0	3,274	0	21,821	46,177	33.47
Golden State	0	0	42,593	30,973	31,813	3,200	9,738	8,424	84,144	42,597	43.24
Huntington Beach	801	3,651	27,630	48,838	9,219	12,437	7,021	0	44,671	64,926	41.66
Irvine Ranch	5,423	12,794	6,450	1,666	32,884	32,384	11,800	54,381	56,557	101,225	41.15
La Habra	0	7,775	0	8,262	0	0	0	0	0	16,037	7.82
La Palma	0	0	0	0	0	0	0	0	0	0	-
Laguna Beach	978	0	2,533	0	2,664	1,712	997	226	7,172	1,938	3.01
Mesa Water District	0	0	6,777	0	10,667	0	5,953	0	23,397	0	6.67
Moulton Niguel	956	16,139	4,483	26,927	11,538	84,123	2,748	8,012	19,725	135,201	51.06
Newport Beach	0	0	3,454	0	3,548	2,346	894	0	7,896	2,346	3.23
Orange	0	0	12,971	0	15,951	8,723	0	0	28,922	8,723	12.36
San Clemente	0	0	21,502	0	16,062	13,165	2,648	10,000	40,212	23,165	18.98
San Juan Capistrano	0	0	22,656	103,692	29,544	27,156	6,581	0	58,781	130,848	69.86
Santa Margarita	4,483	5,561	1,964	11,400	10,151	11,600	689	10,257	17,287	38,818	18.86
Seal Beach	0	0	0	0	3,611	0	0	0	3,611	0	1.01
Serrano	0	0	0	0	0	0	2,971	0	2,971	0	0.42
South Coast	0	16,324	6,806	0	9,429	4,395	1,833	96,947	18,068	117,666	29.70
Trabuco Canyon	0	0	272	0	1,542	22,440	0	0	1,814	22,440	6.83
Tustin	0	0	0	0	9,980	0	0	0	9,980	0	2.79
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>MWD OC Totals</b>	<b>23,990</b>	<b>108,421</b>	<b>183,524</b>	<b>241,224</b>	<b>216,104</b>	<b>303,923</b>	<b>61,694</b>	<b>188,247</b>	<b>485,312</b>	<b>841,815</b>	<b>433.13</b>

Page 1

Anaheim	0	0	0	0	0	0	0	0	0	0	-
Fullerton	0	0	0	0	0	0	0	9,214	0	9,214	1.29
Santa Ana	0	0	0	0	0	0	0	0	0	0	-
<b>Non-MWD OC Totals</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>9,214</b>	<b>0</b>	<b>9,214</b>	<b>1.29</b>

<b>Orange County Totals</b>	<b>23,990</b>	<b>108,421</b>	<b>183,524</b>	<b>241,224</b>	<b>216,104</b>	<b>303,923</b>	<b>61,694</b>	<b>197,461</b>	<b>485,312</b>	<b>851,029</b>	<b>434.42</b>
-----------------------------	---------------	----------------	----------------	----------------	----------------	----------------	---------------	----------------	----------------	----------------	---------------

[1] Installed device numbers are listed as square feet

# HIGH EFFICIENCY TOILETS (HETs) INSTALLED BY AGENCY

through MWDOC and Local Agency Conservation Programs

Agency	FY05-06	FY 06-07	FY 07-08	FY 08-09	FY 09-10	FY 10-11	FY 11-12	FY 12-13	FY 13-14	Total	Cumulative Water Savings across all Fiscal Years
Brea	0	2	7	43	48	8	0	0	16	124	26.00
Buena Park	0	1	2	124	176	7	0	0	23	333	72.22
East Orange CWD RZ	0	0	10	12	1	0	0	0	0	23	6.26
El Toro WD	0	392	18	75	38	18	0	133	115	789	185.34
Fountain Valley	0	69	21	262	54	17	0	0	5	428	111.25
Garden Grove	0	14	39	443	181	24	0	0	16	717	172.79
Golden State WC	2	16	36	444	716	37	80	2	42	1,375	301.15
Huntington Beach	2	13	59	607	159	76	0	0	74	990	227.69
Invine Ranch WD	29	1,055	826	5,088	2,114	325	0	1,449	303	11,189	2,557.03
Laguna Beach CWD	0	2	17	91	28	11	0	0	9	158	37.20
La Habra	0	3	18	296	34	20	0	0	2	373	92.69
La Palma	0	1	10	36	26	13	0	0	9	95	20.64
Mesa Water District	0	247	19	736	131	7	0	0	28	1,168	307.96
Moulton Niguel WD	0	20	104	447	188	46	0	0	104	909	204.20
Newport Beach	0	5	19	163	54	13	0	0	12	266	63.20
Orange	1	20	62	423	79	40	0	1	54	680	159.68
San Juan Capistrano	0	10	7	76	39	11	0	0	0	143	35.07
San Clemente	0	7	22	202	66	21	0	0	14	332	78.73
Santa Margarita WD	0	5	14	304	151	44	0	0	203	721	131.76
Seal Beach	0	678	8	21	12	1	0	2	0	722	241.48
Serrano WD	0	0	1	13	5	0	0	0	1	20	5.49
South Coast WD	2	2	29	102	41	12	23	64	33	308	56.69
Trabuco Canyon WD	2	0	4	23	23	0	0	0	2	54	12.04
Tustin	0	186	28	387	479	17	0	0	20	1,117	276.17
Westminster	0	17	25	541	167	23	0	0	12	785	191.35
Yorba Linda WD	0	14	89	323	96	18	0	0	15	555	137.89
<b>MWDOC Totals</b>	<b>38</b>	<b>2,779</b>	<b>1,494</b>	<b>11,282</b>	<b>5,106</b>	<b>809</b>	<b>103</b>	<b>1,651</b>	<b>1,112</b>	<b>24,374</b>	<b>5,711.98</b>

Anaheim	0	255	78	2,771	619	114	0	0	42	3,879	970.56
Fullerton	0	4	28	286	60	23	0	0	12	413	99.93
Santa Ana	0	11	25	925	89	23	0	0	11	1,084	270.72
<b>Non-MWDOC Totals</b>	<b>0</b>	<b>270</b>	<b>131</b>	<b>3,982</b>	<b>768</b>	<b>160</b>	<b>0</b>	<b>0</b>	<b>65</b>	<b>5,376</b>	<b>1,341.21</b>

<b>Orange County Totals</b>	<b>38</b>	<b>3,049</b>	<b>1,625</b>	<b>15,264</b>	<b>5,874</b>	<b>969</b>	<b>103</b>	<b>1,651</b>	<b>1,177</b>	<b>29,750</b>	<b>7,053.19</b>
-----------------------------	-----------	--------------	--------------	---------------	--------------	------------	------------	--------------	--------------	---------------	-----------------

# HOME WATER SURVEYS PERFORMED BY AGENCY

## through MWDOC and Local Agency Conservation Programs

Agency	FY 13/14		FY 14/15		Total		Cumulative Water Savings
	Surveys	Cert Homes	Surveys	Cert Homes	Surveys	Cert Homes	
Brea	0	0	0	0	0	0	0.00
Buena Park	0	0	0	0	0	0	0.00
East Orange	5	0	0	0	5	0	0.12
El Toro	0	0	0	0	0	0	0.00
Fountain Valley	2	0	0	0	2	0	0.05
Garden Grove	0	0	0	0	0	0	0.00
Golden State	0	0	0	0	0	0	0.00
Huntington Beach	0	0	0	0	0	0	0.00
Irvine Ranch	0	0	0	0	0	0	0.00
La Habra	0	0	0	0	0	0	0.00
La Palma	0	0	0	0	0	0	0.00
Laguna Beach	2	0	0	0	2	0	0.05
Mesa	0	0	0	0	0	0	0.00
Moulton Niguel	0	0	0	0	0	0	0.00
Newport Beach	0	0	0	0	0	0	0.00
Orange	0	0	0	0	0	0	0.00
San Clemente	0	0	0	0	0	0	0.00
San Juan Capistrano	1	0	0	0	1	0	0.02
Santa Margarita	3	0	0	0	3	0	0.07
Serrano	0	0	0	0	0	0	0.00
South Coast	1	0	0	0	1	0	0.02
Trabuco Canyon	0	0	0	0	0	0	0.00
Tustin	0	0	0	0	0	0	0.00
Westminster	0	0	0	0	0	0	0.00
Yorba Linda	0	0	0	0	0	0	0.00
<b>MWDOC Totals</b>	<b>14</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>14</b>	<b>0</b>	<b>0.33</b>

Anaheim	0	0	0	0	0	0	0.00
Fullerton	0	0	0	0	0	0	0.00
Santa Ana	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>0</b>	<b>0.00</b>

# **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	3.30
Buena Park	0	0	1,566	5,850	0	0	0	0	1,566	5,850	5.19
East Orange	0	0	0	0	983	0	0	0	983	0	0.55
El Toro	3,183	0	2,974	0	3,308	0	895	0	10,360	0	6.98
Fountain Valley	11,674	0	1,163	0	2,767	0	684	0	16,288	0	12.46
Garden Grove	1,860	0	0	0	3,197	0	274	0	5,331	0	3.47
Golden State	6,786	0	13,990	0	15,215	0	2,056	0	38,047	0	24.88
Huntington Beach	15,192	591	12,512	0	4,343	1,504	0	0	32,047	2,095	25.29
Irvine Ranch	11,009	876	13,669	0	2,585	0	0	0	27,263	876	21.00
La Habra	0	0	0	0	0	0	0	0	0	0	-
La Palma	429	0	0	0	0	0	0	0	429	0	0.36
Laguna Beach	3,950	0	3,026	0	725	0	0	0	7,701	0	5.84
Mesa Water District	4,114	0	3,005	78,118	4,106	0	2,198	0	13,423	78,118	63.46
Moulton Niguel	14,151	0	25,635	2,420	7,432	0	0	0	47,218	2,420	35.69
Newport Beach	2,530	0	6,628	0	270	0	0	0	9,428	0	6.92
Orange	4,169	0	7,191	0	635	0	0	0	11,995	0	8.89
San Clemente	9,328	0	11,250	455	2,514	1,285	500	0	23,592	1,740	18.37
San Juan Capistrano	0	0	7,297	639	2,730	0	4,607	0	14,634	639	9.02
Santa Margarita	12,922	0	26,069	0	21,875	0	7,926	0	68,792	0	44.68
Seal Beach	0	0	817	0	0	0	0	0	817	0	0.57
Serrano	7,347	0	1,145	0	0	0	0	0	8,492	0	6.97
South Coast	2,311	0	6,316	0	17,200	0	1,044	0	26,871	0	16.43
Trabuco Canyon	1,202	0	9,827	0	0	0	0	0	11,029	0	7.89
Tustin	6,123	0	4,717	0	2,190	0	0	0	13,030	0	9.67
Westminster	2,748	16,566	8,215	0	890	0	0	0	11,853	16,566	22.47
Yorba Linda	11,792	0	12,683	0	4,341	5,835	0	0	28,816	5,835	24.48
<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>384.83</b>

Anaheim	4,535	0	7,735	20,093	13,555	65,300	4,122	0	29,947	85,393	69.18
Fullerton	4,865	876	5,727	0	6,223	0	105	0	16,920	876	12.36
Santa Ana	0	0	2,820	0	525	0	0	0	3,345	0	2.27
<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>83.81</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>468.63</b>
-----------------------------	----------------	---------------	----------------	----------------	----------------	---------------	---------------	----------	----------------	----------------	---------------

[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	28	48	17	4	0	3,720	1,569.44
Buena Park	361	147	331	802	520	469	524	1,229	2,325	1,522	50	40	18	9	0	8,347	3,221.94
East Orange CWD RZ	2	0	33	63	15	17	15	50	41	44	19	18	13	2	0	332	127.24
El Toro WD	1,169	511	678	889	711	171	310	564	472	324	176	205	61	40	0	6,281	2,883.15
Fountain Valley	638	454	635	858	1,289	2,355	1,697	1,406	1,400	802	176	111	58	32	0	11,911	4,988.63
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	11,284.48
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	10,916.54
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	12,886.15
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	10,965.00
Laguna Beach CWD	283	93	118	74	149	306	220	85	271	118	32	26	29	6	0	1,810	785.75
La Habra	594	146	254	775	703	105	582	645	1,697	1,225	12	31	6	7	0	6,782	2,733.13
La Palma	65	180	222	125	44	132	518	173	343	193	31	27	20	17	0	2,090	858.31
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	7,114.85
Moulton Niguel WD	744	309	761	698	523	912	716	891	728	684	410	381	187	100	0	7,607	3,119.21
Newport Beach	369	293	390	571	923	1,223	438	463	396	1,883	153	76	36	16	0	7,219	2,927.69
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	6,798.18
San Juan Capistrano	1,234	284	193	168	323	1,319	347	152	201	151	85	125	42	39	0	4,663	2,170.00
San Clemente	225	113	191	65	158	198	667	483	201	547	91	66	37	34	0	3,076	1,212.77
Santa Margarita WD	577	324	553	843	345	456	1,258	790	664	260	179	143	101	29	0	6,522	2,785.02
Seal Beach	74	66	312	609	47	155	132	81	134	729	29	10	6	12	0	2,396	994.45
Serrano WD	81	56	68	41	19	52	95	73	123	98	20	15	14	2	0	757	313.59
South Coast WD	110	176	177	114	182	181	133	358	191	469	88	72	32	22	0	2,305	913.71
Trabuco Canyon WD	10	78	42	42	25	21	40	181	102	30	17	20	12	14	0	634	252.02
Tustin	968	668	557	824	429	1,292	1,508	1,206	1,096	827	69	89	26	12	0	9,571	4,106.91
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	6,544.89
Yorba Linda WD	257	309	417	457	404	1,400	759	1,690	1,155	627	158	136	81	41	0	7,891	3,148.16
<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>105,621.20</b>

Anaheim	447	1,054	1,788	3,661	1,755	7,551	4,593	6,346	9,707	5,075	473	371	482	341	1	43,625	16,914.77
Fullerton	1,453	1,143	694	1,193	1,364	2,138	1,926	2,130	2,213	1,749	172	77	44	23	2	16,321	6,894.71
Santa Ana	1,111	1,964	1,205	2,729	2,088	8,788	5,614	10,822	10,716	9,164	279	134	25	5	0	54,644	21,078.27
<b>Non-MWDOC Totals</b>	<b>3,011</b>	<b>4,161</b>	<b>3,687</b>	<b>7,563</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>44,887.75</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>150,508.96</b>
-----------------------------	---------------	---------------	---------------	---------------	---------------	---------------	---------------	---------------	---------------	---------------	--------------	--------------	--------------	--------------	----------	----------------	-------------------