



● **Board of Directors**

***Special Committee on Desalination and Recycling***

3/9/2010 Board Meeting

---

**8-5**

**Subject**

---

Authorize (1) Joint Groundwater Replenishment Study; (2) a professional services agreement to conduct the study; and (3) appropriate \$947,000

**Description**

---

This action authorizes Metropolitan to enter into a Memorandum of Understanding (MOU) with the Los Angeles County Sanitation Districts (LACSD), specifically County Sanitation District No. 2, to conduct the Joint Groundwater Replenishment Study (Study); and delegates authority to the General Manager to enter into a professional services agreement with a consultant to conduct the Study. The Study will evaluate the feasibility of a regional indirect potable reuse program to purify treated wastewater, which is currently discharged to the Pacific Ocean, for groundwater replenishment.

The potential indirect potable reuse program would involve the purification of treated wastewater using advanced technologies to achieve near-distilled quality that surpasses drinking water standards. The purified water would then be conveyed through a regional distribution system for delivery to member agencies to replenish groundwater basins. The water would be stored by the member agencies for sufficient time to permit additional treatment from natural processes and mixing, and later withdrawn and further treated for potable use.

The Study will quantify member agency needs for purified water to recharge groundwater basins in Los Angeles County, identify technical and regulatory constraints impacting the delivery of water to the member agencies for indirect potable reuse, and estimate potential program costs. LACSD has indicated that up to 200 million gallons per day (mgd) of treated wastewater may be available for purification and reuse. In addition, the study will evaluate how the potential program would complement the City of Los Angeles' Recycled Water Program and the multi-agency Groundwater Reliability Improvement Project (GRIP).

**Timing and Urgency**

Multiple dry years, increased environmental regulations in the Delta, and low storage levels in groundwater basins and reservoirs have placed California in a statewide water shortage condition. The Delta regulations are a result of a 2007 federal court order to protect threatened Delta smelt fish that imposes restrictions on pumping in the Delta, and subsequent new biological opinions for Delta smelt and salmon. These events have led Metropolitan and its member agencies to pursue new and innovative solutions to increase their dependable water supply. A program to purify wastewater that is currently discharged to the Pacific Ocean, and to deliver the purified water to member agencies for groundwater replenishment, would be consistent with Metropolitan's overall efforts to seek long-term solutions to enhance supply reliability.

**Background**

Metropolitan's 1996 Integrated Resources Plan (IRP) developed a Preferred Resource Mix that identified reclamation as an integral source of a balanced water portfolio. The 2004 IRP update further reinforced the importance of using reclaimed water as an alternate water supply to balance imported demands and to increase the contribution of highly treated wastewater to the overall portfolio. Thus far, Metropolitan has engaged in water

reuse through small-scale member agency projects funded in part by Metropolitan through the Local Resources Program. LACSD has estimated that up to 200 mgd of treated wastewater may be available for purification and reuse at this time. Implementing a large-scale regional indirect potable reuse program utilizing treated wastewater could provide the region a significant local supply of reliable, drought-resistant water to meet member agency needs for replenishment.

LACSD is a partnership of 24 independent districts that provide wastewater and solid waste management for approximately 5.3 million people in Los Angeles County. LACSD published its first report on potential water reclamation in 1949 and its first formal plan for water recycling, "A Plan for Water Reuse" (Plan), in 1963. Since that time, the Plan has been endorsed by LACSD's board of directors and has been updated multiple times. In accordance with the Plan, LACSD's goal is to maximize the use of purified wastewater from its facilities for the benefit of the region.

LACSD currently treats an average of 450 mgd of wastewater at ten water reclamation plants and at the Joint Water Pollution Control Plant (JWPCP) located in Carson. It should be noted that presently LACSD wastewater system flows are approximately 15 percent below peak historical levels due to water restrictions and the economic downturn. Approximately 165 mgd out of the total 450 mgd is currently treated to surface-discharge standards at the ten water reclamation plants that are located in the Antelope Valley region (2), the Santa Clarita Valley region (2), and in metropolitan Los Angeles (6). The treated wastewater from these reclamation plants that is not required for habitat maintenance is either being reused currently, or is or will soon be under contract for future reuse, with the exception of 25 mgd that is available for reuse at the Los Coyotes Water Reclamation Plant in Cerritos.

The JWPCP is LACSD's largest wastewater treatment plant. The JWPCP provides primary and secondary treatment to the remaining 285 mgd of wastewater before it is discharged through outfall tunnels to the Pacific Ocean. Water recycling at the JWPCP is currently limited to in-plant uses. LACSD estimates that, dependent on regulatory compliance issues associated with the brine discharge, approximately 200 mgd of treated wastewater from this plant may be available for purification and reuse at this time. By 2050, the JWPCP is projected to treat approximately 400 mgd and the amount of treated wastewater available for purification and reuse may increase beyond 200 mgd. LACSD believes that participation from multiple agencies throughout its service area is necessary to reuse the large volume of available wastewater at the JWPCP. Accordingly, LACSD recognizes that a regional program would be the most efficient approach to maximize reuse from the JWPCP.

### **Indirect Potable Reuse in California**

As rising demands are being placed upon more limited local and regional water supplies, there has been increased support for indirect potable reuse within Southern California. One of the earliest examples of wastewater reuse is at the Montebello Forebay Spreading Facilities. The Water Replenishment District (WRD) and Los Angeles County Flood Control District have used treated wastewater from LACSD water reclamation plants to recharge the local aquifers since 1962. The WRD and Los Angeles County Flood Control District have spread an average of 43,000 acre-feet per year (AFY) of treated wastewater over the last ten years.

More recently, the Orange County Water District began operation of an indirect potable reuse program in 2008. Its Groundwater Replenishment (GWR) System will ultimately provide 72,000 AFY of purified water for local groundwater recharge and seawater barrier intrusion protection. The GWR System uses advanced purification technologies including microfiltration, reverse osmosis, and disinfection via ultraviolet light and hydrogen peroxide, to purify the water to near-distilled quality before injection into the local aquifer. In addition, the San Diego County Water Authority (SDCWA) is currently embarking upon an indirect potable reuse program to purify water using advanced technologies similar to the GWR system. The purified water would supplement the supply to an existing surface water reservoir, to be followed by additional purification at a water treatment plant.

### **Regional Groundwater Replenishment Concept**

Over the past several months, LACSD and Metropolitan have engaged in discussions regarding the potential for a regional indirect potable reuse program that could provide member agencies with a new, firm supply of highly purified water to replenish groundwater basins throughout Los Angeles County. Such a program would provide

the region with a significant local supply of reliable, drought-resistant water to supplement imported raw water supplies. This program would also greatly contribute to LACSD's goal to maximize reuse of treated wastewater throughout the region.

The proposed regional indirect potable reuse program would be modeled after the Orange County Water District's GWR System and would focus primarily on the JWPCP. Treated wastewater from the JWPCP would be diverted to new advanced water treatment facilities to purify the water to near-distilled quality. The purified water would then be conveyed through a new regional distribution system for firm delivery to member agencies to meet their groundwater replenishment needs. The water would be stored for sufficient time to allow additional natural treatment processes and mixing to occur, and would later be withdrawn and further purified for potable use. Implementation of such a program would require new advanced purification facilities, a new regional distribution system to deliver water to member agencies, and may require new injection and extraction wells for the member agencies to store and recover the purified water.

### **Memorandum of Understanding**

In order to proceed with the Study, staff recommends that Metropolitan enter into a MOU with LACSD. County Sanitation District No. 2 of Los Angeles County will be the signatory to the MOU on behalf of LACSD. County Sanitation District No. 2 is the appointed agent under LACSD's Amended Joint Outfall Agreement and has the authority to enter into contracts for the acquisition, construction, operation, maintenance and management of LACSD facilities.

The purpose of the MOU is to establish the rights of each party, define the roles and responsibilities of respective staffs, and establish cost sharing provisions for a professional services agreement to conduct the study. Following execution of the MOU, staff from both agencies will jointly develop the detailed work plan for the Study, and select a consultant to conduct the Study.

### **Joint Groundwater Replenishment Study—Study and Investigations (\$947,000)**

The objective of the Study is to quantify member agency needs for firm delivery of highly purified water to replenish groundwater basins in Los Angeles County. This Study will also: identify technical and regulatory constraints impacting the delivery of water to member agencies; develop a finance plan; develop alternative cost structures for delivery of water for replenishment; identify opportunities to incorporate renewable energy; develop a public education and communication strategy; and develop an implementation schedule. The Study will also include an evaluation of how this program would complement other relevant water reclamation programs (e.g., City of Los Angeles' Recycled Water Master Plan and the multi-agency GRIP).

Costs for the Study will be shared between Metropolitan and LACSD as described in the MOU. Each agency will contribute its internal staff as in-kind services without reimbursement of the other party. The planned cost for a consultant to provide specialized technical support is \$1 million, which will be shared equally between each agency. Metropolitan will approve and pay for the consultant's invoices, and will in turn invoice LACSD for 50 percent of the billing.

This action appropriates \$947,000 in capital funds for Metropolitan's portion of the Study. The requested funds include \$500,000 to fund Metropolitan's portion of an agreement with a consulting firm for specialized technical support; \$362,600 for staff activities including direction of the consultant, assessment of member agency replenishment needs, development of a public education and communication strategy, and overall project management; and \$84,400 for remaining budget.

The Study will be conducted over an approximately 12-month period. Initial efforts will evaluate member agency needs for firm delivery of purified water and identify technical and regulatory issues impacting delivery of the water. Based on initial findings at the mid-point of the effort, staff will evaluate the feasibility of the groundwater replenishment program and report to the Board on the Study's findings.

At the conclusion of the Study, staff will return to the Board with findings.

### **Technical Engineering Support—New Professional Services Agreement**

In late 2009, Request for Qualifications (RFQ) No. 927 was issued by Metropolitan to prequalify firms for engineering services in the areas of conveyance, storage, distribution, and treatment facilities. In response to RFQ No. 927, Statements of Qualifications were submitted by 16 firms. In January 2010, 13 firms were prequalified for a multi-year period to provide the types of services planned. Following board approval of this action, staff will issue a Request for Proposals to the prequalified firms for the subject Study. A joint selection committee comprised of Metropolitan and LACSD staff will recommend a consultant to provide support for the Study based on the submitted proposals and interviews with short-listed firms.

This action delegates authority to the General Manager to enter into a professional services agreement for a not-to-exceed total of \$1 million for specialized technical support for the Study. The planned scope of work for the agreement includes: (1) evaluation of facility requirements, (2) evaluation of technical constraints impacting delivery of water to member agencies; (3) opportunities for renewable energy; (4) development of a finance plan; (5) development of an implementation plan; and (6) documentation of the Study with a final report. Metropolitan's portion of the cost for these services will not exceed \$500,000.

### **Advisory Committee**

As part of the effort, Metropolitan will convene an advisory committee comprised of Metropolitan member agency representatives and subject matter experts. The purpose of the committee is to seek input from member agencies and to identify issues that would need to be addressed during implementation of a full-scale program.

### **Summary**

This action appropriate \$947,000, authorizes an MOU with LACSD substantially in the form of [Attachment 1](#), and delegates authority to the General Manager to enter into an agreement with a consulting firm to conduct the Study. The Study will evaluate the feasibility of a regional indirect potable reuse program to purify treated wastewater and provide firm delivery of the purified water to member agencies to recharge groundwater basins in Los Angeles County

The Study has been reviewed with Metropolitan's updated Capital Investment Plan (CIP) prioritization criteria and is categorized as a Water Supply project. The Study was not included in Metropolitan's fiscal year 2009/10 capital budget because it was identified following adoption of the budget. Staff recommends proceeding with the Study to take advantage of a potentially sizable new water source to supplement imported water supplies. Following approval of this action, the fiscal year 2009/10 capital expenditure plan will be adjusted to reflect the addition of this Study. Approval of this action will not cause Metropolitan's CIP to exceed the fiscal year 2009/10 budget, due to savings experienced on other capital projects (e.g., extremely competitive bid amounts).

This action is consistent with Metropolitan's goals for sustainability through development of alternative local resources. Implementation of an indirect potable reuse program could provide Metropolitan with a new local supply of reliable, drought-resistant water to supplement imported water supplies. Likewise, the program would be consistent with LACSD's goals to reuse treated wastewater throughout the Los Angeles County region.

See [Attachment 1](#) for the draft MOU, [Attachment 2](#) for the Financial Statement and [Attachment 3](#) for a map of LACSD's Wastewater Management System.

### **Project Milestone**

April 2011 - Completion of the Study

### **Policy**

---

Metropolitan Water District Administrative Code Section 8121: General Authority of the General Manager to Enter Contracts

## California Environmental Quality Act (CEQA)

---

### CEQA determination for Option #1:

The current board action involves entering into a Memorandum of Understanding with the Los Angeles County Sanitation Districts for the Study to quantify member agency needs for purified water to recharge groundwater basins in Los Angeles County, identify technical and regulatory constraints impacting the delivery of water to the member agencies for indirect potable reuse, and estimate potential program costs. As such, the proposed action is not subject to CEQA because it involves only feasibility or planning studies for possible future actions which the Board has not approved, adopted or funded (Section 15262 of the State CEQA Guidelines). In addition, the proposed action is categorically exempt under the provisions of CEQA and the State CEQA Guidelines because the proposed action involves basic data collection and research activities which do not result in a serious or major disturbance to an environmental resource. This may be strictly for information gathering purposes, or as part of a study leading to an action which a public agency has not yet approved, adopted, or funded. Accordingly, the proposed action qualifies as a Class 6 Categorical Exemption (Section 15306 of the State CEQA Guidelines).

The CEQA determination is: Determine that the proposed action is not subject to CEQA pursuant to Section 15262 of the State CEQA Guidelines and also qualifies under a Categorical Exemption (Class 6, Section 15306 of the State CEQA Guidelines).

### CEQA determination for Option #2:

None required

## Board Options

---

### Option #1

Adopt the CEQA determination and

- a. Authorize a Memorandum of Understanding with County Sanitation District No. 2 of Los Angeles County, substantially in the form of [Attachment 1](#), for the Joint Groundwater Replenishment Study;
- b. Delegate authority to the General Manager to enter into a professional services agreement to conduct the Study; and
- c. Appropriate \$947,000.

**Fiscal Impact:** \$947,000 of capital funds under Approp. 15462. This study is not budgeted within Metropolitan's CIP for fiscal year 2009/10. However, approval of this action will not cause the 2009/10 CIP to exceed its budget, due to savings experienced on other capital projects.

**Business Analysis:** This option would allow Metropolitan to move forward with the Study to evaluate member agency needs for highly purified water to recharge groundwater basins, identify technical and regulatory constraints impacting the delivery of water to the member agencies, and develop a finance plan for the program.

### Option #2

Do not proceed with the Joint Water Purification Study at this time.

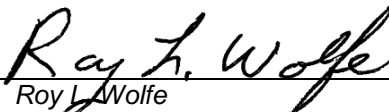
**Fiscal Impact:** None

**Business Analysis:** This option will not allow Metropolitan to benefit from a study of the potential availability of reclaimed water from LACSD through development of a new and dependable source of water to meet member agency needs for groundwater replenishment.

**Staff Recommendation**

---

Option #1

  
\_\_\_\_\_  
Roy L. Wolfe  
Manager, Corporate Resources

2/11/2010  
\_\_\_\_\_  
Date

  
\_\_\_\_\_  
Jeffrey Kightlinger  
General Manager

2/11/2010  
\_\_\_\_\_  
Date

**Attachment 1 – Draft MOU for the Joint Groundwater Replenishment Study**

**Attachment 2 – Financial Statement**

**Attachment 3 – Map of Los Angeles County Sanitation Districts Wastewater Management System**

Ref# CR12603110

**MEMORANDUM OF UNDERSTANDING FOR CONDUCTING A STUDY  
OF THE POTENTIAL DEMAND FOR PURIFIED WATER TO RECHARGE  
LOS ANGELES COUNTY GROUNDWATER BASINS, AND TO EVALUATE THE  
FEASIBILITY OF REUSE**

This Memorandum of Understanding is dated \_\_\_\_\_, \_\_\_\_ 2010 (“Effective Date”), and is between THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA (“MWD”) and COUNTY SANITATION DISTRICT NO. 2 OF LOS ANGELES COUNTY (“the District”).

MWD is a metropolitan water district established under the provisions of the Metropolitan Water District Act (Stats. 1969, Ch. 209) for the purpose of developing, storing, and distributing water for domestic and municipal purposes. MWD’s mission is to provide its service area with adequate and reliable supplies of high-quality water to meet present and future needs in an environmentally and economically responsible way.

The District is a county sanitation district organized and existing under the provisions of the County Sanitation District Act, California Health & Safety Code Sections 4700 *et seq.* Together with other county sanitation districts that are parties to an Amended Joint Outfall System Agreement, the District owns and operates facilities for the treatment and disposal of wastewater, including the Joint Water Pollution Control Plant in Carson, California (“JWPCP”). The District is the appointed agent under the Amended Joint Outfall Agreement and has the authority to enter into contracts for the acquisition, construction, operation, maintenance and management of the Joint Outfall System. The JWPCP currently provides secondary treatment to wastewater that is discharged to the Pacific Ocean through ocean outfalls.

The District is authorized under Health and Safety Code Section 4745 to construct, maintain, and operate such wastewater treatment works that may be necessary to conserve and put to beneficial use any water or wastewater recovered from the operation of its sewerage system. The Board of Directors of the District has adopted policies to maximize the reuse of treated wastewater from its facilities for the benefit of the region.

The District has approximately 200 million gallons a day of secondary effluent from the JWPCP and other facilities within the Joint Outfall System that the District can provide to MWD for purposes of indirect potable reuse following advanced treatment, subject to obtaining the necessary regulatory approvals.

MWD and the District wish to jointly conduct an assessment of the firm demand for the indirect potable reuse of JWPCP treated water in groundwater basins in Los Angeles County and evaluate the feasibility of reuse, on the following terms.

The parties therefore agree as follows:

Provisions of Memorandum

1. MWD, the District, and their consultant shall cooperatively perform a study to estimate the firm demand for indirect potable reuse of JWPCP treated water in groundwater basins in Los Angeles County (“Study”).
2. MWD and the District shall jointly develop and approve the work plan for the Study. MWD and the District shall each assign a project manager to implement the work plan (“Project Manager”).
3. MWD shall, subject to approval by MWD’s Board of Directors and the District, enter into a separate agreement with a consultant (“Consultant Agreement”) to perform the Study. The District and MWD shall jointly review and approve the results of the Study.
4. The District and MWD shall jointly select a panel of experts to review the Study (“Expert Panel”).
5. This Memorandum of Understanding will become effective on the Effective Date, and, unless extended by mutual agreement of the parties, will terminate on February 28, 2012.

Management of Consultants

6. MWD shall administer the Consultant Agreement.
7. MWD and the District shall authorize the consultant’s work on the Study through the issuance of task orders. Task orders must be jointly approved by the parties and issued to the consultant before the consultant performs any work under Consultant Agreement.
8. The District and MWD shall be equally entitled to receive all work product prepared by any consultants performing work in connection with the Study, including the work of the Expert Panel, and may use the work product for any purposes not adverse to the other party, as long as the use is otherwise consistent with this Memorandum.

Management of Expert Panel

9. The Project Managers shall make sure that necessary information is provided to the Expert Panel and that comments from the Expert Panel are received, evaluated, and incorporated into the Study.



### Financial Provisions

10. The parties shall each pay one-half of the total cost of the consultant's work under the Consultant Agreement. MWD shall approve and pay the amount of the consultant's invoices, and shall, in turn, invoice the District for 50% of the approved amount. The District shall pay its share of the consultant's invoices within 30 days of receipt.

11. MWD shall authorize and direct the consultant to enter into subcontracts under the Consultant Agreement with the Expert Panel members to provide services for the Study.

12. The District and MWD shall each contribute their internal costs (labor, materials, incidental costs, etc.) as in-kind services without reimbursement from the other party.

### Liability

13. The parties shall be jointly responsible for any liabilities arising out of the Study. MWD shall make sure that the work plan and other contract documents require the consultant to have appropriate general liability, professional liability, workers' compensation, and vehicle insurance covering all aspects of the work to be performed in connection with the Study. MWD shall contractually obligate the consultant to provide appropriate endorsements naming MWD and the District as additional insureds under all insurance required for the work in connection with the Study.

### Effect of Memorandum

14. The obligations of MWD and the District under this Memorandum are limited to the joint preparation of the Study in the manner set forth above. Any agreement to proceed with the development of the facilities that are the subject of the Study will be subject to further agreement between the parties.

The parties are signing this Memorandum of Understanding as of the date stated in the introductory clause.

THE METROPOLITAN WATER DISTRICT  
OF SOUTHERN CALIFORNIA  
Jeffrey Kightlinger  
General Manager

By: \_\_\_\_\_  
Roy L. Wolfe  
Manager, Corporate Resources

Approved as to Form:  
Karen L. Tachiki  
General Counsel

By: \_\_\_\_\_  
Sr. Deputy General Counsel

COUNTY SANITATION DISTRICT NO. 2  
OF LOS ANGELES COUNTY

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

Attest:

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

Approved as to Form:

LEWIS BRISBOIS BISGAARD & SMITH LLP

By: \_\_\_\_\_  
District Counsel

**Financial Statement for Joint Water Purification Study**

A breakdown of Board Action No. 1 for Appropriation No. 15462 for Phase 1 of the Metropolitan/LACSD Joint Water Purification Study\* is as follows:

	<b>Current Board Action No. 1 (Mar. 2010)</b>	<b>New Total Appropriated Amount</b>
Labor		
Owner Costs (Program mgmt)	\$ 235,300	\$ 235,300
Studies & Investigations	107,300	107,300
Materials and Supplies	15,000	15,000
Incidental Expenses	5,000	5,000
Professional/Technical Services	500,000	500,000
Remaining Budget	84,400	84,400
<b>Total</b>	<b>\$ 947,000</b>	<b>\$ 947,000</b>

**Funding Request**

<b>Program Name:</b>	Joint Water Purification Study		
<b>Source of Funds:</b>	Revenue Bonds, Replacement and Refurbishment or General Funds		
<b>Appropriation No.:</b>	15462	<b>Board Action No.:</b>	1
<b>Requested Amount:</b>	\$ 947,000	<b>Capital Program No.:</b>	15462-S
<b>Total Appropriated Amount:</b>	\$ 947,000	<b>Capital Program Page No.:</b>	N/A
<b>Total Program Estimate:</b>	\$ TBD	<b>Program Goal:</b>	Water Supply

\*This is the initial appropriation for the Joint Water Purification Study.

# Los Angeles County Sanitation Districts (LACSD)

