

- **Board of Directors**
Water Planning and Stewardship Committee

March 13, 2007 Board Meeting

7-2

Subject

Approve increases and new membership dues totaling \$85,000 for the WateReuse Foundation, Affordable Desalination Collaboration, and New Water Supply Coalition

Description

Authorization is requested for (1) annual membership dues of \$50,000 to join the WateReuse Foundation, (2) annual membership dues of \$25,000 to join the Affordable Desalination Collaboration, and (3) annual membership dues of \$35,000 (a \$10,000 increase) for continued participation in the New Water Supply Coalition. Supporting these organizations allow Metropolitan to enact its board-adopted regional facilitator role in providing leadership and support to the member agencies in advancing water recycling, groundwater recovery, and seawater desalination development in Southern California.

WateReuse Foundation (\$50,000 per year)

The WateReuse Foundation is a nonprofit research organization comprised of public water and wastewater agencies, and private consulting firms. The Foundation is dedicated to advancing the science of water recycling and desalination. The Foundation provides research funding and supports efforts to create new sources of high quality water while protecting public health and the environment. Current research projects involve emerging water treatment technology and management practices. As a member, Metropolitan would sit on its board and have the opportunity to influence future research activities to address water challenges within our region. To help frame the scope of the Foundation's work in 2006, it received \$2.8 million in federal funding, completed 13 research projects, and expanded its membership from 33 to 47. [Attachment 1](#) provides more information about the Foundation. As a point of clarity, the WateReuse Association is a separate but related advocacy organization of which Metropolitan is a long-standing member.

Affordable Desalination Collaboration (\$25,000 per year)

The Affordable Desalination Collaboration is a nonprofit organization comprised of federal agencies, California government agencies and water districts, and private industry working together on seawater desalination affordability, and environmental issues with a major focus on reducing energy requirements. In June 2005, the Affordable Desalination Collaboration completed construction and started operations of a demonstration plant located at the U.S. Navy's Seawater Desalination Test Facility at Port Hueneme. In the first phase of research, the Affordable Desalination Collaboration was able to demonstrate increased energy efficiency and cost-effectiveness configurations of reverse osmosis technology. The Affordable Desalination Collaboration has recently secured Proposition 50 grant funding of \$1.175 million to implement a second phase of testing additional membrane types, new process designs, improved energy recovery, process pretreatment, and ultra-filtration technology at its test facility. Membership would allow Metropolitan to enhance its role as a regional facilitator by supporting development of new technologies and processes to make seawater desalination more cost-effective and energy efficient. [Attachment 2](#) provides more information about the Affordable Desalination Collaboration.

New Water Supply Coalition (\$10,000 additional for a total of \$35,000 per year)

In May 2003, the Board approved \$25,000 annual membership dues for Metropolitan's participation in the New Water Supply Coalition (formerly known as the U.S. Desalination Coalition). Since then, membership in the coalition has increased from five water agencies in California to a current national coalition of 19 water agencies, utilities, and private firms pursuing development of water recycling; brackish groundwater and seawater

desalination; and recovery of contaminated groundwater for potable use. The Coalition has aggressively pursued legislation for funding assistance and several funding bills have been introduced in the House and Senate, yet they have not advanced to congressional approval.

Now pursuing broader objectives reflected in its name change, the Coalition recently developed a strategy to enact innovative federal tax credit bonds for capital financing of water recycling, groundwater recovery, and groundwater and seawater desalination projects. This new approach would provide capital financing assistance for new local resource development projects in Metropolitan's service area without having to go through the federal authorization and appropriation process. **Attachment 3** provides more information about the Coalition. **Attachment 4** provides more information about the Coalition's proposed Clean Renewable Water Supply tax credit bonds (CREWS). The \$10,000 dues increase is needed to support the expanded efforts of the Coalition. To minimize cost impacts and strengthen political support, the Coalition is adding new members commensurate with inclusion of water recycling and groundwater recovery in its mission.

Linkage to Metropolitan's Role

Through its incentive programs, Metropolitan has committed financial support to 62 water recycling projects, 20 groundwater desalination projects, 5 groundwater recovery projects developing water with other quality constraints and up to 5 seawater desalination projects. Participation in each of the proposed memberships above would be a significant step in Metropolitan carrying out its board-adopted regional facilitator role of helping support efficient and dependable development of these alternative supply projects. The overall objective is sustaining regional supply reliability into the future. Additionally, within the next few months, staff will also present options to the Board for updating implementation procedures for the long-standing Local Resources Program based on collaborative input from the member agencies.

Policy

By Minute Item 46491, dated Dec. 13, 2005 the Board adopted the CEQA determination and approved Metropolitan's role of regional facilitator to address seawater desalination and other local projects, as set forth in the revised letter signed by the Interim CEO/General Manager on Nov. 30, 2005.

Metropolitan Water District Administrative Code Section 11202: Authorizes each department head to join organizations whose purposes serve the interests of Metropolitan, provided that new memberships with annual dues of \$3,000 or more be approved by the Board.

By Minute Item 45336, dated May 13, 2003 the Board authorized participation in the U.S. Desalination Committee.

By Minute Item 44356, dated Feb. 13, 2001 the Board adopted updated policy principles for brackish and seawater desalination addressing legislation that facilitates financing.

California Environmental Quality Act (CEQA)

CEQA determination for Options #1 and #2:

The proposed action on the funding components associated with the membership dues is not subject to CEQA because it involves government fiscal activities, which do not involve any commitment to any specific project that may result in a potentially significant physical impact on the environment (Section 15378(b)(4) of the State CEQA Guidelines). For carrying out a variety of studies in conjunction with the participation through these memberships, the proposed action is exempt under the provisions of CEQA and the State CEQA Guidelines, since it involves basic data collection and resource evaluation activities which do not result in a serious or major disturbance to an environmental resource. These activities may be strictly for information gathering purposes, or as part of a study leading to actions that a public agency has not yet approved, adopted, or funded. Accordingly, the proposed action qualifies under a Class 6 Categorical Exemption (Section 15306 of the State CEQA Guidelines). For future, and not yet known, proposed projects associated with the New Water Supply Coalition, the WaterReuse Foundation, or the Affordable Desalination Collaboration, the appropriate lead agencies will be responsible for complying with all applicable federal and state environmental laws and regulations.

The CEQA determination is: Determine that the proposed action is exempt from CEQA pursuant to Sections 15306 and 15378(b)(4) of the State CEQA Guidelines.

CEQA determination for Option #3:

None required

Board Options

Option #1

Adopt the CEQA determination and approve increased and new membership dues totaling \$85,000 for participation in the WateReuse Foundation, the Affordable Desalination Collaboration, and the New Water Supply Coalition.

Fiscal Impact: \$85,000 increased annual membership payments. The increased costs would be included in future budgets.

Business Analysis: Research projects and federal tax credits could expand the production of water recycling, groundwater recovery and desalination in Southern California to help realize Metropolitan's Integrated Water Resources Plan.

Option #2

Adopt the CEQA determination and approve payment of membership dues in one or two of the following organizations: the WateReuse Foundation, the Affordable Desalination Collaboration, and the New Water Supply Coalition.

Fiscal Impact: \$10,000 to \$75,000 increased annual membership payments depending on membership approval decision. The increased costs would be included in future budgets.

Business Analysis: Declining to participate in energy and treatment research activities and withdrawing pursuit of federal funding assistance may impact Metropolitan and its member agencies' technical and funding options for local resource development opportunities. Declining to approve the dues increase in the New Water Supply Coalition may result in Metropolitan dropping out of the Coalition.

Option #3

Do not approve payment of membership dues for participation in the WateReuse Foundation, the Affordable Desalination Collaboration, and the New Water Supply Coalition.

Fiscal Impact: None

Business Analysis: Declining to participate in energy and treatment research activities and withdrawing pursuit of federal funding assistance may impact Metropolitan and its member agencies' technical and funding options for local resource development opportunities. Declining to approve the dues increase in the New Water Supply Coalition may result in Metropolitan dropping out of the Coalition.

Staff Recommendation

Option #1



Stephen N. Arakawa
Manager, Water Resource Management

2/21/2007
Date



Jeffrey Kightlinger
General Manager

2/26/2007
Date

Attachment 1 – WaterReuse Foundation’s Activities, Goals, and Budget

Attachment 2 – Affordable Desalination Collaboration’s Activities, Goals, and Budget

Attachment 3 – New Water Supply Coalition’s Activities, Goals, and Budget

Attachment 4 – Clean Renewable Water Supply Tax Credit Bonds

BLA #5105

WateReuse Foundation’s Activities, Goals, and Budget

Activities

The main focus of the WateReuse Foundation’s research is to advance the science of water reuse and desalination to create new sources of high quality water. Research provides information on the safety and quality of recycled and desalinated water, and provides water utilities with the tools and knowledge to meet the commitment of increasing the reliability and quality of the nation’s water supplies. The Foundation strives to meet these objectives through scientific integrity, collaborative partnerships to address critical needs, leverage of research dollars, member involvement, and demonstrated benefits. A collaborative partnership with the Joint Water Reuse & Desalination Task Force has expanded the Foundation’s role in desalination research. The main areas of desalination and water recycling research that the Foundation directs its activities are:

- Microbiology and Disinfection
- Chemistry and Toxicology
- Treatment Technologies
- Desalination and Concentrate Management
- Groundwater Recharge and Storage
- Policy, Social Sciences, and Applications

Goals

The WateReuse Foundation’s goals are to conduct and promote applied research that will increase the viability of reclamation, recycling, reuse, and desalination of water. The Foundation currently has 57 projects under its research programs. The Foundation recognizes that customer and stakeholder needs are diverse and many of the issues of interest are complex and cannot be addressed with a singular approach. As a result, a multiple-program approach is utilized for conducting research and includes the following four funding mechanisms:

- Solicited research program – sponsor research projects that best address current and emerging priority issues.
- Unsolicited research program – promote basic and fundamental research through projects proposed by researchers.
- Tailored collaboration program – provide direct member involvement in regional research projects or projects addressing common issues for a group of water utilities.
- Research partnership program – The Foundation actively pursues opportunities to leverage funding and share knowledge through research partnerships with other organizations.

Fiscal Year 2006/07 Budget:

Revenues	Expenses	
Research Income	Research	\$4,110,000
- U.S. Bureau of Reclamation Agreement	Staff Salaries & Benefits	485,000
- California State Contracts *	Administration - HQ Office	190,000
- Subscriber Research Partnerships	Research Conference - 2007	50,000
- SW Florida Water Management Dist.	Staff Travel	93,000
Annual Research Conference	State Representation	12,000
Subscriptions/Membership	<u>Subscriber Development</u>	<u>30,000</u>
<u>Other (Interest/Publications)</u>	Total Expenses	\$4,970,000
Total Revenues	\$5,070,000	

* State Water Regional Control Board & Department of Water Resources

Affordable Desalination Collaboration's Activities, Goals, and Budget

Activities

The Affordable Desalination Collaboration (ADC) was formed in 2004 to fund and execute the first phase of a multiple phase seawater desalination research and demonstration project. ADC built and operates a demonstration plant at the United States Navy's Seawater Desalination Test Facility in Port Hueneme, California. This plant utilizes a combination of proven technologies developed primarily in California and in the U.S. to demonstrate that seawater desalination can be optimized to make it technically and economically viable. Energy efficiency is emphasized. To date, the demonstration projection has achieved significant energy savings that are approximately 35 percent lower than experts have been previously projecting for seawater desalination.

Goals

The single largest O&M cost component of any desalination plant is energy. Reducing energy consumption of seawater reverse osmosis (SWRO) systems remain ADC's primary focus. To that end, ADC will use its desalination pilot system to demonstrate and test the latest technology from four leading membrane manufacturers. In addition, it will also test and demonstrate new pressure exchanger process designs to increase the practical recoveries that SWRO systems can achieve while maintaining good water quality and low energy performance. Reducing energy requirements and increasing SWRO system efficiency are two important objectives to address long-term affordability.

Budget (Phase 2) - 2-year duration (Starting 1st Quarter 2007)

Administration	\$ 425,000
Engineering	\$ 35,000
Equipment & Materials Procurement	\$ 725,000
Operating Cash	\$ 335,000
Operations	\$ 280,000
Reporting	\$ 5,000
Legal & Insurance	\$ 45,000
Outreach & Information Sharing	\$ 155,000
Overhead (8 percent)	\$ 160,000
Contingency (10 percent)	<u>\$ 200,000</u>
Total	\$2,365,000 *

* Approximately 50 percent of the budget is to be met from Proposition 50 funding

Projects (Phase 2)

1. Test and demonstrate additional manufacturers' reverse osmosis low-energy membranes for performance and energy efficiency in the ADC pilot facility.
2. Develop and demonstrate innovative process designs incorporating energy recovery technologies. These flow scheme designs have the potential to recover energy from the desalination process and return it to the system thereby reducing overall energy demand.
3. Test and demonstrate ultra-filtration technology in the pre-filtration stage to remove biofouling organic material and ensure more reliable operations by improving membrane life and reducing system down time associated with membrane fouling and cleaning operations.

New Water Supply Coalition’s Activities, Goals, and Budget

Activities

The New Water Coalition is a national coalition of water agencies, utilities and engineering firms whose mission is to enact into law federal legislation that provides financing for certain innovative new water projects. Specifically, the Coalition seeks enactment of Clean Renewable Water Supply tax credit bonds (CREWS), the proceeds of which would be dedicated to project financing. Eligible projects would include water recycling, brackish and seawater desalination, and recovery of contaminated groundwater. Definitions of these applications are under discussion.

Development of such alternative supply projects in Metropolitan’s service area has generally been expensive, highly regulated and dependent upon advanced water treatment processes and distribution techniques. To encourage a diversity of supplies for Southern California, Metropolitan offers financial incentives to develop each of these supply types.

In the past, the Coalition has sponsored several financial incentive bills to aid projects that would desalt brackish water and seawater for domestic use:

H.R. 1071 (Davis – Florida) and S. 1016 (Martinez – Florida) authorizing the Secretary of Energy to provide up to \$200 million to defer annual incurred energy costs over a 10-year period with a 60 percent cap of funds applied to seawater desalination

H.R. 6230 (Hall – Texas) with similar terms except using a sliding payment scale favoring energy-efficient operations

These bills did not advance out of their houses of origin.

Goals

More recently, the Coalition has introduced a concept for federal tax credit bonds that would be used by local agencies to finance capital for desalination, water recycling and groundwater treatment for potable use. The concept is modeled after existing tax credit bonds used to finance education, clean renewable energy and hurricane Katrina relief programs. The approach could provide significant benefit to financing new local resource and seawater desalination projects in Metropolitan’s service area.

Establishing tax credit bonds for new water projects requires amendments to the federal tax code. The Coalition is expanding membership to gain a broad base of support from agencies pursuing these new water supply options. Legislative strategies are currently being developed. CREWS or tax credit bonds are described in Attachment 4.

The Furman Group, Inc., a professional consulting service involved in the development and financing of water, sanitation, energy, and transportation projects, is charged with the responsibility for leading the Coalition’s efforts to win approval of a new federal program to promote the development of desalination projects and is managing the day-to-day affairs of the Coalition.

2006 Budget:

Revenue		Expenses	
Membership Dues	\$ 375,000	Management & Recruitment Fee	\$ 180,000
Available Net Assets	<u>\$ 75,000</u>	PR, Communications, Ads, Polls	\$ 190,000
Total Revenue	\$ 450,000	Legal, Accounting, Printing, Courier, etc.	\$ 14,000
		Other Coalition Travel	\$ 7,500
		Coalition Meetings	\$ 15,000
		Reimbursable Local Expenses	<u>\$ 15,000</u>
		Total Expenses	\$ 421,500

Clean Renewable Water Supply Tax Credit Bonds

Tax Credit Bond:

Provides zero-interest capital funding for eligible projects. Instead of interest payments, bondholders receive annual tax credits for the life of the loan. General characteristics:

1. Capital Financing for:
 - a. Water recycling
 - b. Brackish desalination
 - c. Seawater desalination
 - d. Recovery of contaminated ground water
2. Interest-free loan, where reductions in the federal government's tax revenues through credits provide the incentive for private investors to loan capital funds.
3. An option for no annual capital payments is under consideration. Under this option, a balloon payment of full principal is made upon maturity. Borrowing agency would only incur the project operation and maintenance cost during the life of the loan. Alternately, annual repayment of principal may be required.
4. Administrative rules to be set in the federal tax code.
5. Bondholder receives annual tax credit at a fixed rate set by the Treasury Department on the date of bond issuance. Annual tax credit equals Treasury rate multiplied by the loan amount. The bondholder may trade the loan and associated tax credits to willing buyers.
6. Bond proceeds to be expended within five years of date of issuance. Phased construction can be financed through phased bond issuance.

Advantages:

1. Federal support of capital financing of eligible local projects without federal appropriations process.
2. Reduces the financial burden associated with cash-flow problems that typically, occur in early years of recycled water project development when the customer base is typically small (i.e. annual costs are high and revenues are low).
3. Could reduce Metropolitan's Local Resources Project payments under the sliding-scale incentive payment approach.
4. Precedent set – Federal tax credit bonds legislation has already been passed for:
 - a. Qualified Zone Academy Bonds – \$400 million limit
 - b. Clean Renewable Energy Bonds – \$800 million limit
 - c. Gulf Zone Tax Credit Bonds – \$350 million limit
5. Upon maturity, tax credit bonds obligations may be refinanced with traditional tax-exempt bonds.
6. At current interest rates, federal assistance would support in excess of 50 percent of capital financing for a 20-year tax credit bond compared to traditional tax-exempt bond funding.

Example:

Financing Structure	Principal (\$ million)	Interest Rate	Life of Bond (years)	Principal & Interest (\$ million)	Present Value of Debt Service (\$ million)
Tax Credit Bond Program	\$100	4.5%	20 + 20 *	\$152.2	\$35.3
Tax-Exempt Bond Issue	\$100	4.5%	40	\$214.5	\$92.0
Savings				\$62.3	\$56.7

* Assumes refinancing after 20 years into a tax-exempt bond