



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

August 18, 2009 Board Meeting

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9-2

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**Subject**

Review participation in a proposed funding agreement and other related agreements for the pilot operation of the Yuma Desalting Plant

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**Description**

Staff is pursuing a multi-agency funded one-year pilot operation of the Yuma Desalting Plant (Yuma Desalter). Under the proposed agreements, Metropolitan would:

- participate with the U.S. Bureau of Reclamation (Reclamation),
- contribute a portion of the nonfederal operating costs,
- receive data needed to understand operational and environmental aspects of long-term implementation, and
- receive a share of the conserved Colorado River water, increasing Metropolitan's near-term water supply.

Reclamation has also invited the Southern Nevada Water Authority (SNWA) and Central Arizona Water Conservation District (CAWCD) to participate as nonfederal funding partners.

**Background**

The Yuma Desalter is located near the Colorado River in Yuma, Arizona ([Attachment 1](#)) and was constructed by Reclamation in 1993 to desalt brackish agricultural drainage water. The drainage water is currently flowing into Mexico to wetlands known as the Ciénega de Santa Clara (Ciénega) located east of the Colorado River Delta. The drainage flow does not count as deliveries to Mexico under the Mexican Water Treaty. The desalting facility experienced limited operation in the years following its construction because water supplies and storage in the Colorado River system had been adequate to meet all requirements. However, recent drought conditions and increased demands in the Colorado River Basin have renewed interest in operation of the Yuma Desalter.

In the spring of 2007 the plant operated for three months at 10 percent capacity as a demonstration project. A new one-year pilot operation at one-third capacity is now proposed to provide additional testing and information that can only be obtained through larger scale and longer duration plant operation. Data would be collected about maintenance and repair issues, replacement requirements, operational challenges, process alternatives, environmental constraints and costs of future long-term operation of the plant to determine if operating the Yuma Desalter on a long-term basis is feasible.

Reclamation does not have sufficient financial resources to operate the Yuma Desalter for the one-year pilot and requires nonfederal sources of funding. Under the new guidelines for coordinated operations of Lake Powell and Lake Mead adopted by the Secretary of the Interior in December 2007, Metropolitan, SNWA, and CAWCD could receive Intentionally Created Surplus (ICS) storage credits in Lake Mead in exchange for funding system efficiency projects such as operation of the Yuma Desalter. Reclamation estimates that up to 29,000 acre-feet could be conserved and made available to the project funders as a result of the one-year pilot. Reclamation has published a Draft Environmental Assessment for the pilot operation.

**Funding Agreement**

Reclamation, along with staff from Metropolitan, SNWA and CAWCD, has negotiated an agreement to fund pilot operation of the Yuma Desalter. In order to begin work needed before pilot operation can begin by the target date of February 2010, a funding agreement needs to be in place by August 2009. The one-year pilot operation is expected to develop water for delivery to the Colorado River, allowing for a proportional allocation of additional Colorado River water to the nonfederal contributors. Metropolitan's contribution is anticipated to range from \$8.8 million to \$11 million, providing up to 23,200 acre-feet of additional supply.

To receive storage credits per the funding agreement, Metropolitan will need to execute a new exhibit to the 2007 forbearance agreement and a new delivery agreement for this new ICS program under the guidelines for coordinated operations of Lake Powell and Lake Mead. The new exhibit and new delivery agreement have been drafted and do not require funding. Board authorization for execution of those documents will be requested concurrently with authorization for the funding agreement. Additional supply would be made available as ICS storage credits in Lake Mead. Metropolitan would have the option of taking delivery of the water during 2010, or of storing the water in Lake Mead for later delivery. The water stored in Lake Mead as a result of the pilot operation would not be reduced because of reservoir evaporation loss or spill.

**Related Agreements**Ciénega Monitoring Agreement

As part of a separate agreement, the nonfederal funding partners propose to contribute funding for a monitoring program to identify any potential changes in the Ciénega resulting from the one-year pilot operation and to obtain information to help develop a long-term solution for the Ciénega. The Ciénega is a stopover for migrating birds and provides habitat for a variety of bird species, including the Yuma Clapper Rail, an endangered species. The proposed monitoring effort would be directed and equally funded by the nonfederal partners in coordination with Reclamation, and begin prior to the pilot operation to establish baseline conditions. The anticipated funding is \$89,000 per agency for SNWA, CAWCD and Metropolitan.

Cooperative Research and Development Agreement

Reclamation and the nonfederal funding partners are proposing to enter into a Cooperative Research and Development Agreement (CRADA). The purpose of this agreement is to verify the suitability of the treatment processes and associated facilities currently in place at the Yuma Desalter to reliably produce water. The evaluation will be performed simultaneously with the pilot operation and will test the effectiveness of different pretreatment methods and reverse osmosis membranes, use of an alternative water source, and provide cost data. This will help determine how to minimize long-term operation costs and whether any additional improvements to the Yuma Desalter are necessary to ensure reliable long-term operation and the cost implications of such improvements. The nonfederal funding partners will contribute an equal funding share of \$247,000 each. Reclamation will contribute about one third of the cost.

**Benefits**

The pilot operation would produce technical and research gains to establish future expanded operation parameters of the Yuma Desalter. Metropolitan's participation would also secure needed water supplies. Staff anticipates requesting board approval for the proposed pilot operation and related funding agreements, the new exhibit to the forbearance agreement, and a new delivery agreement in August 2009.

**Policy**

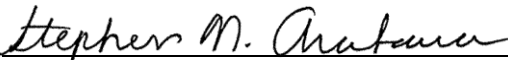
By Minute Item 43344, dated January 2, 1999, the Board recognized that the price of water will differ depending on whether it is from supplies subject to allocation by the Federal Government or secured under other rights.

By Minute Item 47327, dated December 11, 2007, the Board adopted multiple agreements collectively referred to as the "Colorado River Agreements" including the creation of Intentionally Created Surplus credits and the ability to store water in Lake Mead.

**Fiscal Impact**

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Metropolitan’s total contribution toward the pilot operation cost and the related agreements would range from \$9.2 million to \$11.4 million due to the uncertainty of chemical and energy costs. The unit cost of water from the pilot and technical studies ranges from about \$394 to \$489 per acre-foot. Staff expects to make a total of four quarterly payments beginning this fall. Expenditures of \$4 million were budgeted in the Water Supply costs for fiscal year 2009/10. The difference between the expected costs of the Yuma Desalter and the estimated expenditures included in the budget will likely be offset by reduced expenditures for other programs. If all supply programs move forward as estimated in the budget, the water supply costs could exceed the 2009/10 budget by \$4.6 million.

  
Stephen N. Arakawa  
Manager, Water Resource Management

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7/27/2009  
Date

  
Jeffrey Nightlinger  
General Manager

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7/31/2009  
Date

**Attachment 1 – Site Map**

BLA #6368

