



**WEST BASIN MUNICIPAL WATER DISTRICT**  
17140 S. Avalon Blvd., Suite 210  
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**AGENDA NO. 25**

**FEBRUARY 11, 2010 – Water Resources**

Little (Chair), Gray

**FEBRUARY 22, 2010 – Board Meeting**

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Approved by: Rich Nagel

## ACTION CALENDAR

### HIGH SALINITY AQUARIUM RESEARCH PROFESSIONAL SERVICES

#### SUMMARY:

As West Basin Municipal Water District (West Basin) continues to move forward in the ultimate development of its Ocean-Water Desalination Program, West Basin will focus on key regulatory issues to ensure that maximization of environmental and marine life protection is implemented. As such, concentrate management and the potential environmental concerns associated with high salinity discharges that result from the desalination treatment process are of paramount importance in obtaining the required regulatory approvals and as part of the planning and design of a future full-scale ocean-water desalination facility.

Evaluation and assessment of high salinity impacts can be difficult to quantify as several parameters (i.e., temperature, ambient salinity, marine habitat, prevailing currents, time of year, thermo cline movement, etc.) influence the movement and mixing ability of the high salinity plume at the point of discharge from the outfall. As a result, the goal of this project was to develop a research program that would comprehensively establish a research protocol that evaluates all life stages of the marine environment in relation to blended high salinity discharges. In late October 2009, West Basin released a "Request for Proposals" (RFP) soliciting professional marine biology research services to assist West Basin in providing a comprehensive study to assist with this goal. The RFP "Scope of Work" requested that interested consultants provide a research program that addressed the following research objectives:

1. Establishment of NPDES regulatory salinity thresholds;
2. Evaluate short-term (acute) high salinity impacts;
3. Evaluate long-term (chronic) high salinity impacts;
4. Development of regulatory data for the permitting process; and
5. Develop research data to gain environmental support.

The RFP also requested that the consultants conduct at least 50% of the research approach in a public forum at West Basin's Ocean-Water Desalination Demonstration Project. The research objectives are setup to demonstrate (as part of the Water Education Center at SEA Lab) the de minimus impacts that a high salinity blended and appropriately mixed discharge has on the environment. As part of the research project, West Basin will be providing two high salinity tanks (provided under a separate contract) for the consultant to use as part of the research work and exhibit.

On November 17, 2009, West Basin received four proposals in response to the RFP. All four teams were invited for an interview on December 21, 2009 to present their research approach and understanding of the research objectives. The interview team consisted of an environmental science expert from the County Sanitation Districts of Los Angeles County, a representative from the Municipal Water District of Orange County, a representative from the National Water Research Institute, and two West Basin staff. The four consultants, results of the proposal review, the interview process, and proposed costs are outlined in Exhibit "A."

While each of the teams displayed a basic understanding of the requested research goals and objectives, Weston Solutions provided the most comprehensive and balanced approach to assist West Basin in developing the high salinity thresholds necessary to pursue the regulatory permitting process and establishing the baseline conditions for the design of a future full-scale ocean-water desalination discharge system. Weston proposed a dual research program that proposes to evaluate the EPA standardized Whole Effluent Toxicity (WET) Tests and biometric test approach. To ensure that West Basin is comprehensively evaluating all aspects of the embryonic (WET method) and juvenile/adult life stages (Biometric method), West Basin believed that studying the effects of a high salinity blended discharge from both the WET test method and biometric approaches was the best proposed model. Additionally, Weston Solutions brings a full service lab as part of their team to perform the WET test phase of research and are familiar with the EPA mandated protocols and regulatory challenges in developing quality and meaningful data that can be used by West Basin in future permitting activities. Weston has indicated that based upon the initial biometric research results, additional biometric testing may be necessary. Additional biometric testing will cost \$18,000 per trial. Each trial lasts approximately six to eight weeks in duration and Weston expects that only one additional trial may be necessary.

While the priority for this project is to develop meaningful regulatory and design data to be used as part of the permitting process, West Basin will also get the dual benefit of having the high salinity research aquarium integrated into the public education center at the Ocean-Water Desalination Demonstration Project. A high salinity aquarium and control aquarium (with ambient ocean water) will be populated with identical species to demonstrate the deminimus effects that the high salinity blended discharge has in comparison to regular ocean water. West Basin anticipates operating this visual demonstration beyond the high salinity research project and will need Weston Solutions professional marine biology consulting services to ensure that the health of the high salinity aquarium environment is maintained throughout the operational life of the demonstration project. The proposed fee for this "Scope of Work" is \$40,800 for the scheduled 24 months of operation. A summary of the complete scope of work elements are as follows:

1. Microcosm WET Testing (3 test cycles)
2. High Salinity Aquarium Biometric Test Setup
3. Biometric Research (2 test cycles)
4. Final Report
5. Marine Consulting Aquarium Support Services (24 months)
6. Public Education Coordination
7. Regulatory Expert Witness Services

The total proposed fee for all the aforementioned services (i.e. research scope, reporting, one additional biometric test, and 24 months of marine consulting services) is \$158,500.

STRATEGIC BUSINESS PLAN IMPLEMENTATION:

Goal 1: Water Reliability – West Basin is committed to innovative planning and investments to provide water supply reliability and drought protection.

Goal 2: Water Quality – West Basin is committed to providing safe, high quality water by meeting current and anticipated water quality requirements.

Goal 5: Environment – West Basin is committed to sustainable and environmentally-friendly business practices.

FISCAL IMPACTS:

Funds for this project are included in the Fiscal Year 2010-11 Ocean-Water Desalination Capital Budget.

ENVIRONMENTAL COMPLIANCE:

Environmental compliance for this project is part of the Ocean-Water Demonstration Project construction and is in accordance with the Environmental Impact Report (State Clearing House No. 080032692) authorized by the West Basin Board at the December 2008 Board Meeting.

COMMITTEE STATUS:

This item was reviewed by the Communications Committee on February 12, 2010 and recommended for approval at the February 22, 2010 Board meeting.

RECOMMENDED MOTION:

That the Board authorizes the General Manager to enter into an agreement for professional marine biology research services to assist West Basin in developing and maintaining a high salinity research program at the Ocean-Water Desalination Demonstration Project at the SEA Lab Facility in Redondo Beach with Weston Solutions for an amount of \$158,500, plus a 10% contingency, for a total not-to-exceed contract amount of \$174,350.

LIST OF EXHIBITS:

Exhibit "A" – Interview Results