

## IRVINE RANCH WATER DISTRICT POLICY POSITION ON DESALINATION PROJECTS

Revised: November 10, 2014

### Issue Summary:

Locally available brackish and ocean water sources may provide alternative supplies of water once treated to acceptable standards. Desalination projects should be implemented when costs for treatment and distribution are competitive with existing reliable supplies or with other supplies or alternative supplies under development. Funding should be recovered on a beneficiary pays basis. Efforts to develop desalination projects, technologies, and outside funding sources should move forward consistent the policy principles described below.

### Background:

Desalination is the process of converting water with high salts and mineral concentrations into water usable for potable use or irrigation. The process typically involves treatment with membrane systems (such as reverse osmosis), ion exchange, or thermal distillation. Using current technology, desalination could provide southern California with supplemental supplies of high quality drinking water that are reliable, though expensive. This water supply would be locally available, and less vulnerable to hydrological and other uncertainties. Developing desalination facilities would diversify the region's water supply portfolio leading to greater overall reliability. Metropolitan Water District of Southern California (MWD) recognizes desalination in its Integrated Resources Plan as a key future water supply component for the region only after exhausting other options.

Without substantial outside subsidies, ocean desalination is generally not cost effective at this time. Much less expensive water supply options are available including water transfers, treatment of impaired groundwater and water recycling. As technological improvements reduce the cost of reverse osmosis membranes and the amount of energy used by the membrane process, the cost of desalinated ocean water may decline. This is why the water industry, including IRWD, should support development of desalination technologies, regulatory streamlining, and public acceptance.

Poseidon Resources Corporation, a private company, is proposing to develop an ocean water desalination facility in Huntington Beach. The project concept advanced by Poseidon envisions development of a 50 MGD ocean water desalination plant at the AES power plant in Huntington Beach. Poseidon Resources Corporation is soliciting interest from local water agencies for commitments to purchase desalinated water from the Huntington Beach Plant.

Over the last few years, a working group of agencies that are interested in participating in the Huntington Beach project met on a regular basis at the Municipal Water District of Orange County (MWDOC) to review project study results and to discuss the proposed attributes and costs of the proposed project. This working group process ended in 2013 with limited interest among agencies to participate in the project. Since then, the Orange County Water District

(OCWD) has been considering taking action related to the proposed Huntington Beach Ocean Desalination Project. The MWDOC is also investigating the feasibility of developing the proposed Doheny ocean water desalination project in Dana Point and could take action on the project at some point in the future. The policy principles provided below address policy areas that will be important in providing comments on reports and analyses being prepared by OCWD and/or MWDOC related to the projects.

A key issue in Orange County affecting the implementation and acceptance of ocean desalination is cost recovery. Some retail agencies may receive greater benefit from ocean desalination than others. Moreover, some agencies may have other more cost effective supply options and may not want to have any participation in a desalinated supply. As such, an acceptable financial participation mechanism, such as a voluntary Joint Powers Authority (JPA), needs to be established to appropriately recover and allocate past and future costs associated with an ocean desalination project. This will not only resolve cost recovery issues related to these projects, but will build focused support at the retail level for implementation of desalination projects.

Following are policy principles related to potential desalination projects.

Policy Principles:

- IRWD supports the investigation of cost effective alternative supplies of water. IRWD also supports the development of desalination technologies, regulatory streamlining, public acceptance and the pursuit of regional, state, and federal funding programs to ensure the feasibility of future water supplies.
- Based upon the diversity and reliability of IRWD's existing and planned water supplies and IRWD's current and projected cost of water, the IRWD may consider participation in ocean desalination projects when economics become more favorable and delivered costs to IRWD's system become comparable to alternative supplies then available to IRWD.
- IRWD's consideration of participation in desalination projects shall be consistent with the Board's adopted Potable Water Supply Reliability Policy Principles.
- The need for ocean desalination projects should be identified considering the frequencies, magnitudes, timing and durations associated with events that could affect the reliability of existing and future alternative cost effective supplies.
- Projects utilizing ocean desalination for a new water supply should be funded exclusively by the retail water agencies that voluntarily participate in the projects. Participation in county wide desalination projects should be available to agencies on an optional basis.
- Desalination projects that exceed the cost of import water from Metropolitan Water District of Southern California (MWD) should not be considered when imported water is available from MWD, unless an agency determines that imported water supplies from

MWD are not reliable. Such projects would disproportionately benefit other agencies over agencies participating in the projects.

- MWD's Water Supply Allocation Plan formulas for sharing reliability during periods of allocation should be taken into consideration when evaluating the water supply benefits of desalination projects and in making estimates of the costs of water from the projects to its participants.
- The evaluation of the cost of construction, operation and maintenance of desalination projects should take into consideration the risks and uncertainties associated with significant features including intake and brine disposal facilities as well as uncertainties associated with rates of increases in electricity that are expected in the future.
- Future operational cost reductions associated with improvements to efficiencies of membrane technologies should be shared among all participants in a desalination project.
- The consideration of Local Resources Program incentives from MWD for a desalination project should take into consideration that the sliding scale and fixed incentives would only be available to the extent that the incentives reduce the cost of water from the project towards the cost of treated water from MWD (i.e., the subsidy cannot reduce the cost of water below the MWD treated rate).
- MWD should provide LRP incentives to desalination projects through separate funding initiatives that do not impair the ability of non-desalination related local projects to receive funding under existing MWD limits for LRP investments.
- Local and regional partnerships for the construction, operation and maintenance of ocean desalination projects should rely on the experience of local agencies with proven track records constructing and operating desalination facilities.
- Agencies volunteering to participate in ocean desalination projects should take into consideration comparisons of the costs and methods of delivery of the design, construction and operation of desalination facilities by public agencies with the costs and methods of delivery of the design, construction and operation through private partnerships. Participant should select the most cost effective and least risk method of project implementation.
- Comparisons of the cost of water from a desalination project should not be made against the cost of full service treated water from MWD when the water from the desalination project is displacing purchases of available untreated water from MWD.
- The financing of desalination projects should occur using methods that result in the lowest cost of water and debt to the participating agencies. Project costs should not be "back-loaded" to initially understate the true cost of desalinated water.

- Potential participating retail agencies in Orange County should continue efforts to evaluate an ocean desalination project at the Huntington Beach site while less expensive sites located inland from the beach should be considered as an alternative to expensive beach-front sites.
- MWD should consider the development of cost effective regional desalination projects that provide benefits to all MWD's service area in an equitable fashion.
- Desalination product water must meet all applicable drinking water standards, and must not create water quality impacts that impair the production of recycled water, reduce the quality of potable water delivered to IRWD customers or result in corrosive impacts to facilities.