

# Seawater Desalination

## Binational Plant Studies



### DIVERSIFICATION Enhancing Water Supply Reliability



### Improving INFRASTRUCTURE

#### Binational Seawater Plant Feasibility Study

Local supply development is a cornerstone of the San Diego County Water Authority's plan to enhance the region's water reliability by diversifying water supplies. Desalinated seawater is a drought-proof local water supply that will represent 7 percent of the San Diego region's water supply by 2020.

The Water Authority is evaluating several potential projects to meet this need, including a binational seawater desalination plant located in Baja California, Mexico. The water could be delivered directly to San Diego County through construction of a new pipeline, or it could be exchanged for a portion of Mexico's 1.5 million acre-feet annual apportionment of Colorado River water under a 1944 treaty with the U.S.



#### Colorado River Supply and Management Efforts

The Water Authority is participating in a binational review of Colorado River management, operations, and projects. In addition to the Water Authority, agencies involved in this effort include representatives from the seven Colorado River Basin states, the International Boundary and Water Commission, U.S. Bureau of Reclamation, and Mexican federal, state, and local agencies.

As part of this effort, the Water Authority, Metropolitan Water District of Southern California, Southern Nevada Water Authority, Central Arizona Water Conservation District and the Republic of Mexico decided to study the costs and feasibility of a large-scale binational seawater desalination plant at Rosarito Beach in Baja California, Mexico.

#### Study Phases

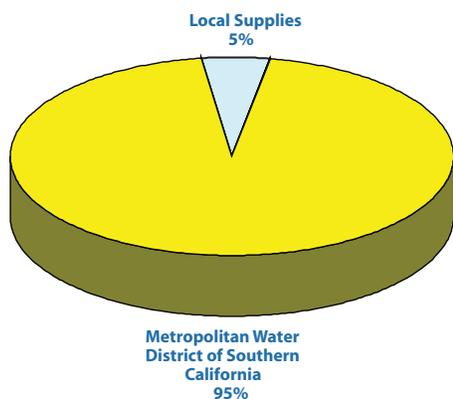
The potential plant is being evaluated in four separate phases, each requiring funding approval by the Water Authority and other participating agencies before it can move forward.



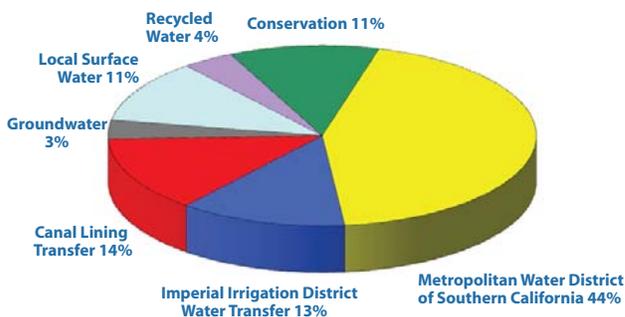
*A binational seawater desalination project in Rosarito Beach might use this existing water intake facility for a local electric power plant as a source of ocean water for treatment.*

## Seawater Desalination

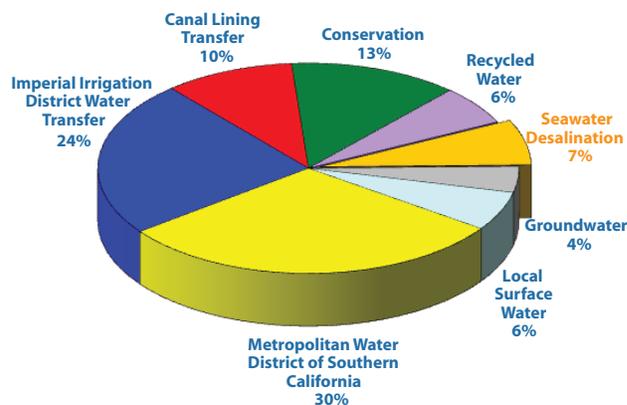
### Water Supply Diversification in 1991



### Water Supply Diversification in 2011



### Water Supply Diversification in 2020



The first phase, completed in March 2010, included a detailed evaluation of potential sites in or near Rosarito Beach, review of the environmental permitting requirements, preliminary analysis of pipeline routes on both sides of the border that could be used to deliver water to the United States and Mexico, and updated American and Mexican water demand projections. The Water Authority provided \$30,000 of the \$100,000 needed to complete the initial study, with the other participating agencies sharing the remaining costs.

The study found:

- Sites are available with adequate electrical power to support a plant with a capacity of producing up to 75 million gallons of drinking water daily.
- There is demand on both sides of the border for all the water produced by the plant.
- Water conveyance routes are available for water produced by the plant.
- There were no “fatal” flaws that would prohibit construction of the project.

### What's next?

The second phase will confirm operational requirements, assess environmental and regulatory issues, and refine construction and operational costs. It will also provide the Water Authority with information on integrating the plant's water into existing Water Authority and member agency distribution systems.

As part of the second phase, Mexican water agencies completed a study in June 2012 of alternative pipeline alignments that could convey water from the plant across the border into San Diego County. This study identified a preferred alignment that would deliver desalted water to a location at Otay Mesa near an existing emergency water connection that crosses the border to supply Tijuana. For 2013, Mexico is planning to complete a study of environmental permitting requirements for the plant and related infrastructure.

The third phase of the study, if approved, includes development and operation of a pilot plant. The fourth phase involves preliminary design of the full-scale plant. ■



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