

# **Water Desalination**

## **Findings and Recommendations**

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# Water Desalination

## Findings and Recommendations

### Introduction

In recent years, desalination has re-emerged as a viable water supply source in California. In the late 1980s, during a period of extended drought, several localities either considered or built desalination facilities along the California coast. But with the end of the drought, the high cost of desalinated water could not be justified for many of these localities and some closed their desalination facilities. By the late 1990s, however, desalination was receiving renewed interest as demands for water supply mounted and improvements in technology reduced the cost of desalination significantly.

In September 2002, AB 2717 (Hertzberg) was signed into law, directing the Department of Water Resources to convene a Desalination Task Force to “make recommendations related to potential opportunities for the use of seawater and brackish water desalination.” No later than July 1, 2004, the Department is to report to the legislature on potential opportunities for and impediments to the use of seawater and brackish water desalination in California, and what role, if any, the State should play in furthering the use of desalination technology. As specified in the legislation, the report was prepared with significant input from the Water Desalination Task Force comprised of representatives from twenty-seven organizations.

The potential for the increased use of desalination in California is significant. The opportunities are great for providing water supply from seawater and brackish water desalination as well as recovering contaminated groundwater. Although most estimate that desalination will contribute less than 10 percent of the total water supply needs in California, this still represents a significant portion of the State’s water supply portfolio.

Potentially, desalination can provide significant value and numerous benefits.

These include:

- Providing additional water supply to meet existing and projected demands
- Replacing water lost from other sources and relieving drought conditions
- Enhancing water reliability and supplying high quality potable water
- Reducing groundwater overdraft and restoring use of polluted groundwater
- Replacing water that can be used for river and stream ecosystem restoration

## **Key Findings**

The Department identified several key findings related to desalination that help provide the context for evaluating desalination. One of the primary findings is that economically and environmentally acceptable desalination should be considered as part of a balanced water portfolio to help meet California's existing and future water supply and environmental needs. Others include:

### **General**

- 1. California's population is projected to increase by 600,000 per year, largely from natural increases (births minus deaths), which will impact demands for potable water supply.**
- 2. Some areas of the State have serious groundwater overdraft problems, adding pressure on existing water supplies to meet agricultural and urban demands.**
- 3. Every region of California has unmet environmental water needs (e.g., insufficient water availability to meet habitat needs).**
- 4. Desalination can provide a reliable supply during California's periodic droughts.**
- 5. Properly designed, maintained and operated desalination facilities can produce water of equal or higher quality than from alternative drinking water sources.**
- 6. Desalination is receiving increased attention as the cost of desalination decreases and the cost of many other water supplies continues to rise.**
- 7. Many communities and water districts are interested in developing desalination facilities as a local, reliable source of water to reduce their dependence on imported water and/or to meet existing or projected demand. Some communities see desalination as a way to reduce their diversions from rivers and streams, thus contributing to ecosystem restoration.**
- 8. Technologically, desalination is a proven, effective mechanism for providing a new source of water. A variety of desalination technologies have been applied in many locations throughout the world.**
- 9. Energy generation capacity would not be a constraint to implementation of currently proposed desalination projects. California's peak load demand is currently 52,000 MW; currently proposed desalination projects would require approximately 200 MW.**
- 10. Because energy is a major cost component of desalination, economic viability of seawater desalination, in some areas, is dependent on the availability of low-cost power.**