Water Use

	Goal	1993 CCMP
	Problem Statement	Revised 2007
	Existing Management Structure	Revised 2007
	Achievements	Revised 2007
	Recommended Approach	Revised 2007
Objective WU-1	**Develop recycled water and needed facilities**	Revised 2007
Action WU-1.1	Water recycling feasibility studies by POTWs, water districts	Revised 2007
Action WU-1.1.1	Construct feasible water recycling facilities	New 2007
Action WU-1.2	Municipalities adopt water recycling ordinances	Revised 2007
Action WU-1.3	Public education on water recycling	Revised 2007
Action WU-1.4	Water quality standards and Basin Plans to encourage recycling	Revised 2007
Action WU-1.5	Develop new delivery facilities for recycled water	Revised 2007
Action WU-1.6	Impacts of brine and water softeners	Deleted
Objective WU-2	**Develop water conservation methods & facilities**	1993 CCMP
Action WU-2.1	Ensure efficient agricultural water management	Revised 2007
Action WU-2.2	New methods of agricultural conservation	1993 CCMP
Action WU-2.3	Water districts & municipalities develop conservation measures	Revised 2007
Action WU-2.4	Maximize conjunctive water use through groundwater recharge	Revised 2007
Action WU-2.5	Study new surface water storage options	Revised 2007
Action WU-2.6	Encourage development of new groundwater management plans	Revised 2007
Objective WU-3	**Improve regulatory mechanisms to facilitate water transfers**	1993 CCMP
Action WU-3.1	Continue to utilize water transfers	Revised 2007
Action WU-3.2	Negotiate for state ownership of CVP	Deleted
Objective WU-4	**Promote integrated regional water management**	New 2007
Action WU-4.1	Prepare Bay Area IRWMP and focused IRWMPs	New 2007
Action WU-4.2	Explore desalination to improve water supplies	New 2007

Water Use Goal:

- Develop and implement aggressive water management measures to increase freshwater availability to the Estuary.

Problem Statement

The rivers and streams of the Sacramento and San Joaquin watersheds carry approximately forty percent of the state's available freshwater. The Sacramento-San Joaquin Delta serves as the vital link between most of the state's available water supply and most of its demand. More than 7,000 diversions for purposes such as irrigation and drinking water storage reduce the annual volume of freshwater entering San Francisco Bay by more than one-half in dry and critically dry years. The federal Central Valley Project and the State Water Project are the two largest diverters, together removing several million acre-feet per year. Approximately eighty percent of this diverted water is used by agriculture, and twenty percent goes to urban, industrial, and other uses. Construction of currently planned local water development projects and the completion of the State Water Project will likely increase annual diversions from the Estuary water supply by at least 1.1 million acre-feet.

Freshwater inflow is a major determinant of environmental conditions in the Estuary. The volume and timing of freshwater inflow affect the Estuary's circulation and water quality; conditions for wildlife; production and survival of phytoplankton, zooplankton, and all life stages; and survival of aquatic species, including salmon, striped bass, longfin smelt, California bay shrimp, and starry flounder.

As the new century starts, additional water development is pending within the Estuary and in other parts of California. With the state's human population expected to increase from 36.5 million to 48 million by 2030, it is safe to assume that future demands on the Estuary's freshwater will be considerable. As reflected in the 2005 California Water Plan Update, growing urban areas will demand further freshwater supplies, and agricultural uses are likely to hold steady or decline. The amount of additional demand will depend on a number of important factors, including the success of urban water use efficiency programs. California is continuing to struggle to balance competing demands from the urban and agricultural communities with the need to protect the health of the Estuary ecosystem.

Achievements, 1993–2007

While the challenges are great, there have been some successes in the Estuary since the CCMP was adopted in 1993:

- Water use efficiency, especially for urban users, has become much more robust, and a wider variety of urban water conservation programs are being actively implemented. As indicated in the 2005 Water Plan Update and the 2006 CALFED Water Use Efficiency Comprehensive Evaluation, there continues to be strong potential to use water even more efficiently.

- Several water-recycling projects have been constructed and are operating.

- Per capita urban water use around the Bay Area has decreased.

- Groundwater banking, brackish water desalination, and a variety of other innovative approaches are occurring.

- Regional water interests are cooperating throughout the Estuary to plan for the future.

There have also been statewide efforts that complement the regional approach. In 2000, state and federal agencies adopted the CALFED Record of Decision that launched the CALFED program to improve water management and restore the environment. Accomplishments in restoring the environment can be found in many of the projects listed in other sections of the CCMP that have been funded through the CALFED Ecosystem Restoration Program. In addition, CALFED has implemented the Environmental Water Account (EWA), which is a program to purchase water for additional fishery needs in the Delta and its tributaries. The Environmental Water Account has gone through annual reviews, and its effectiveness is now being comprehensively reviewed.

To improve water management, a wide variety of water use efficiency, water recycling, watershed management, groundwater management, and desalination projects have been funded throughout the Estuary that have helped reduce demand and improve water quality.

Existing Management Structure

California's Constitution governs all water use in the state. It provides that all water within the state is the property of the people of California. However, while water remains a public asset, individuals may acquire an exclusive right to its use. The State Water Resources Control Board oversees the allocation of these rights and the protection of water for the people of California. Private rights are conferred to those who exercise physical control over surface water or groundwater, with the condition that the water be put to a reasonable and beneficial use. The State Water Resources Control Board administers water rights by issuing water permits. It retains authority to modify these permits to prevent unreasonable use of water. However, unlike diversions of surface water, there is no state-administered permit system for groundwater extraction except in adjudicated basins (groundwater basins) in which diversions are governed by the courts and carried out by an implementing entity approved by the courts.

The California Department of Water Resources and the U.S. Bureau of Reclamation provide water through contracts to local water entities, including water agencies, water districts, irrigation districts, mutual water companies, and joint powers authorities. The Department operates the State Water Project to supply water users in urban and agricultural communities. The Department provides dam safety and flood control services, assists local water districts in water management activities, including water conservation, and plans for future statewide water needs.

The U.S. Bureau of Reclamation develops water supplies for many uses, but primarily for agriculture, and ensures delivery of water through operation of the federal Central Valley Project. Furthermore, the Bureau holds water permits from the State Water Resources Control Board entitling it to store, divert, and deliver water to the Central Valley through the Central Valley Project. The State Water Project and the Central Valley Project, as appropriative rights holders, supply much of the state's agricultural irrigation water. However, appreciable amounts of irrigation water are supplied from groundwater pumping and local surface water.

The California Department of Water Resources' Office of Water Use Efficiency and Transfers has taken the lead to coordinate state, local, urban, and agricultural water conservation efforts. The State Legislature (AB 3616 Advisory Committee) and the Department of Water Resources are currently taking further steps to develop and implement agricultural water conservation practices. Water suppliers that contract with the U.S. Bureau of Reclamation (Central Valley Project) are required by the federal Reclamation Reform Act to prepare Water Conservation Plans and update those plans every five years.

Longstanding assistance in the wise use of soil, water, and related resources has been provided by the Natural Resources Conservation Service of the U.S. Department of Agriculture and the University of California Agriculture and Natural Resources Cooperative Extension. On a local and urban level, major credit for developing and implementing urban water conservation practices in California must be given to municipalities, water suppliers, and environmental organizations. They successfully created and implemented the document, "Memorandum of Understanding Regarding Urban Water Conservation in California" (MOU).

The urban water conservation MOU, conservation activities of the California Department of Water Resources and the U.S. Bureau of Reclamation, and other activities were incorporated into an overall water use efficiency framework as part of the CALFED Bay-Delta Program. While each program and entity retains its separate authorities and responsibilities, CALFED provides a focal point for additional funding for policy development and implementation. Water conservation has not remained stagnant. The California Urban Water Conservation Council has been an active and vibrant organization as it has worked to implement the MOU since it was signed in 1991. In 2005, a State Landscape Task Force was formed by legislation to develop additional proposals to gain additional water savings from urban landscapes. The Task Force's recommendations were sent to the Governor and Legislature at the end of 2005.

Regional Water Quality Control Boards address regionwide water quality concerns through the creation and triennial update of a Water Quality Control Plan (Basin Plan), which specifies beneficial uses of water, water quality objectives to protect uses, and schedules for achieving objectives.

The California Department of Health Services and local health and regulatory agencies are integrally involved in both development and operation of water reclamation projects.

Implementation of reclamation projects requires the involvement, approval, and support of a number of agencies, including state and local health departments, Regional Water Quality Control Boards, publicly owned treatment works (POTWs), water districts, and land use planning agencies.

The prospects for future reclamation projects are also dependent on effective coordination between reclamation agencies and land use planning agencies. For example, land use planning agencies can mandate the use of reclaimed water as a condition of development approval, and many reclamation ordinances in California require separate piping systems for drinking water and reclaimed water in new high-rise buildings and other new developments. Furthermore, due to public health considerations regarding reclaimed water use, the efforts of the State Water Resources Control Board, the California Department of Health Services, and county health departments must be also coordinated.

In short, no single agency or organization shapes or implements every aspect of water use management throughout the Estuary watershed. Instead, water use management is determined by networks of public and private water organizations and public interaction.

Recommended Approach

Aggressive water conservation measures should be developed and implemented statewide by users in agricultural, urban, and industrial communities. Urban communities have made great progress toward designing and implementing water conservation projects. One of the greatest achievements was the establishment of a memorandum of understanding addressing urban water conservation. Also, agricultural communities have employed conservation practices, most notably the concerted efforts of the farmers of the Imperial Irrigation District, Kern County Water Agency, and Westlands Water District. Some rural areas have installed state-of-the-art irrigation equipment and implemented bold water management practices. The California Department of Water Resources' Office of Water Conservation worked with the AB 3616 Advisory Committee to develop a list of "Efficient Water Management Practices" (EWMPs) and a strategy for implementing them. By providing funding to universities for research and pilot projects, government can foster further conservation of water used by agriculture.

A plan to increase water supplies and the efficiency of water use should include the utilization of reclaimed water to reduce:

1) The existing diversions of freshwater;

2) The demand for increased diversions; and

3) The existing discharge of wastewater directly into the Estuary.

Use of recycled water can be promoted by government on either a local or regional level. Many agencies throughout California, such as the Monterey County Water Resources Agency and the Monterey Water Pollution Control Agency, have implemented

ordinances. The Monterey County Water Resources Agency and the Monterey Water Pollution Control Agency are currently developing a project that will use reclaimed municipal wastewater for irrigating crops.

In areas throughout California that are free from groundwater contamination and have rights to surface water, arrangements can be made for the use of groundwater during years of below-normal runoff and for the use of surface water during wet years (i.e., conjunctive use). Surface water not diverted during dry years can remain in streams to be used for instream needs or other critical needs. In addition, groundwater basins with capacity to store additional water could be employed as water banks. Although the proposed Kern Water Bank did not get implemented as a State Water Project facility, it has turned out to be an important and active local water banking program. Similar programs have been developed, also within Kern County, by the Semitropic Water Storage District and Cawelo Water District. These two additional programs have been set up as partnerships with urban water agencies in other parts of the state, demonstrating that groundwater banking can work if the infrastructure and institutional relationships can be developed. In general, all three programs are able to accept water in wet years and wet months of all years, and extract water for use in dry months and dry years. Groundwater banking has provided an important degree of water supply reliability, particularly for water users who rely on water diversion from the Bay-Delta Estuary.

The legal and regulatory methods that could lead to the development of new water supplies and more efficient use of existing water supplies include pricing incentives, water-marketing arrangements, legal mechanisms for water transfers, water banking, and groundwater management.

Water Use Actions

Objective WU-1
Develop recycled water and the needed facilities to reuse water.

ACTION WU-1.1 (Revised 2007)
Water recycling feasibility studies should be completed by each publicly owned treatment works (POTW), municipality, and/or water district.

Who: Publicly owned treatment works, local governments, water districts, irrigation districts, State Water Resources Control Board, Regional Water Quality Control Boards, California Department of Health Services, California Department of Water Resources, and the U.S. Bureau of Reclamation

What: The studies should include:

1) The specific local uses of recycled water;

2) Present and potential quantity needs;

3) Timing of needs;

4) Water quality needs, including emerging contaminants;

5) Engineering feasibility of recycling systems;

6) Economic feasibility of recycling systems; and

7) Potential environmental effects.

When: Ongoing

Cost: $$$

ACTION WU-1.1.1 (New-2007): ***Construct water recycling facilities and related distribution systems identified as feasible and environmentally sound.***

Who: Publicly owned treatment works, local governments, water districts, irrigation districts, State Water Resources Control Board, Regional Water Quality Control Boards, California Department of Health Services, California Department of Water Resources, U.S. Bureau of Reclamation, water purveyors, and water suppliers

What: Construction and operation of water recycling facilities and related distribution systems.

When: 2020

Cost: $$$$$

Performance Measure:
Acre-feet of recycled water produced and used for beneficial uses

ACTION WU-1.2 (Revised 2007)
Municipalities and counties should adopt water recycling ordinances and code changes encouraging the use of recycled water for all state-approved uses while providing for the protection of public health and the environment.

Who: Municipalities, counties, publicly owned treatment works, water districts, and irrigation districts

What: Continue to work cooperatively to develop ordinances that encourage the use of recycled water where it is acceptable from an environmental and public health perspective.

When: Immediately

Cost: No direct cost

ACTION WU-1.3 (Revised 2007)
Local entities should develop and conduct public education programs to increase public acceptance of use of recycled water for appropriate water quality applications.

Who: Publicly owned treatment works, water districts, irrigation districts, municipal and county governments, California Department of Health Services, county health departments, city health departments, and the environmental community

What: Publicly owned treatment works, county governments, municipal governments, and other entities involved in the promotion, development, and implementation of water recycling projects should develop and conduct public education programs. Methods of public education should include public involvement in project development through citizen advisory committees, public workshops, public education programs, and the environmental review process (California Environmental Quality Act). Topics covered through public education should include:

1) Water reliability and sustainability benefits;

2) Protection of public health and safety of operation;

3) Siting of treatment facility, delivery system, and application;

4) Environmental benefits and impacts;

5) Quality of recycled water and specific use; and

6) Economic benefits.

Assistance in developing and conducting the public health component of public education and outreach programs should be sought from the California Department of Health Services and local health departments. Programs should be consistent with the State Recycled Water Task Force Recommendations.

When: Immediately

Cost: No direct cost

ACTION WU-1.4 (Revised 2007)
Ensure that state water quality standards and Basin Plans encourage water recycling and reuse while protecting the Estuary.

Who: State Water Resources Control Board and Regional Water Quality Control Boards

What: The State Water Resources Control Board and the Regional Water Quality Control Boards should continue to update state water quality standards and Basin Plans, as water recycling technology and practices evolve, to require specific standards for water bodies or streams dominated by recycled water.

When: Ongoing

Cost: $$

ACTION WU-1.5 (Revised 2007)
If practical, use existing facilities and develop new facilities in order to deliver recycled water for beneficial reuse.

Who: Bay Area publicly owned treatment works, Bay Area water agencies, Bay Area communities, State Water Resources Control Board, Central Valley Regional Water Quality Control Board, San Francisco Bay Regional Water Quality Control Board, U.S. Bureau of Reclamation, U.S. Army Corps of Engineers, California Department of Water Resources, California Environmental Protection Agency, and Central Valley irrigation districts

What: All Bay Area water and wastewater agencies should continue to work together to develop local water recycling programs. The two primary benefits of full usage of recycled water for the Estuary are: 1) a portion of the water that is freed up by water recycling could remain in the Delta system for the benefit of the environment; and 2) the publicly owned treatment works of the Bay Area will reduce discharge of wastewater into San Francisco Bay.

Feasibility studies should examine all the financial implications and the question of who benefits and who pays. The goal would be to spread the cost among as many beneficiaries as possible in order to make the cost of the recycled water affordable to users.

When: Ongoing

Cost: $$$

Objective WU-2
Develop water conservation methods and facilities to increase the availability of freshwater for instream uses and water supply.

ACTION WU-2.1 (Revised 2007)
Governmental, agricultural, public, and environmental interests should work together to develop a mechanism to ensure implementation of Efficient Agricultural Water Management Practices. They should also place increasing emphasis on achieving quantifiable objectives that produce ecosystem benefits, such as instream flow and timing.

Who: California Department of Food and Agriculture, California Department of Water Resources, CALFED Water Use Efficiency Program, University of California Agriculture and Natural Resources Cooperative Extension, State Water Conservation Coalition, California farmers, California Farm Water Coalition, U.S. Department of Agriculture, agricultural water suppliers, California Farm Bureau Federation, State Water Resources Control Board, U.S. Bureau of Reclamation, Natural Resources Conservation Service, and the environmental community

What: The Department of Water Resources' Office of Water Conservation, working with the AB 3616 Advisory Committee, has developed a list of "Efficient Water Management Practices" and a strategy for implementing it. More recently, the CALFED Water Use Efficiency program also has identified quantifiable objectives for agricultural water conservation by recognizing the ecosystem and water supply benefits that can be achieved through agricultural water conservation. Through 2005, sixty-three CALFED grants have been made to pursue targeted benefits research and education projects. Approximately $18.5 million in grant funding was awarded by the state; local agencies contributed another $9.5 million. Additional state, federal, and local funding for agricultural water use efficiency should be provided to continue to achieve quantifiable objectives and the related ecosystem benefits.

Where feasible, the AB 3616 Advisory Committee's and the California Department of Water Resources' list of "Efficient Water Management Practices" should also include:

1) Lands that cause the most severe environmental threats when irrigated should revert to dryland farming when feasible or should be permanently retired. Revegetation with native plants should be considered when land taken out of production is subject to wind or water erosion and growth of unwanted weeds.

2) Delivery of water by districts at time of need rather than a predetermined schedule.

3) Research the use of plant breeding for shorter-season crops and adopt planned water shortage techniques during targeted periods of plant growth.

4) Develop crops that consume less water.

5) Use of sprinklers and drip irrigation systems where applicable and feasible.

6) Implement more efficient irrigation scheduling practices and use of other scheduling tools, such as tensiometer and neutron probes, for measuring soil moisture, California Irrigation Management Information System (CIMIS), gypsum blocks, soil probes, and the pressure chambers of cotton.

7) Implement agricultural water metering.

8) Efficient use of surface irrigation systems.

9) “Efficient Water Management Practices” should also include upgrading existing surface irrigation methods by reducing field lengths and set times, converting to surge irrigation, improving field slopes, compacting furrows, and installing and properly managing tailwater recovery systems.

In addition to stating and defining the “Efficient Water Management Practices,” the AB 3616 and California Department of Water Resources list should include performance standards with explicit goals. An oversight council should be formed to enforce the performance standards and the implementation schedules for the “Efficient Water Management Practices.”

When: Immediately

Cost: $$$$

ACTION WU-2.2 (1993 CCMP)
New methods of agricultural water conservation should be researched through pilot projects and implemented where feasible.

Who: California Department of Food and Agriculture, University of California Agriculture and Natural Resources Cooperative Extension, California farmers, California Farm Bureau Federation, Natural Resources Conservation Service, California Department of Water Resources, California Farm Water Coalition, U.S. Environmental Protection Agency, California Environmental Protection Agency, State Water Resources Control Board, and U.S. Department of Agriculture

What: Pilot project studies should provide agriculture with new water conservation practices. They should also provide data on the cost-effectiveness of currently available conservation practices. Funding for research is sometimes available through federal and state agencies in the form of research grants. Participating agencies include California Department of Water Resources, State Water Resources Control Board, U.S. Environmental Protection Agency, and California Environmental Protection Agency.

Dissemination of pilot project information will be achieved through public outreach to the agricultural, environmental, and urban communities.

When: Immediately

Cost: $12,640,000 estimated total ($12,640,000 federal)

ACTION WU-2.3 (Revised 2007)
Existing best management practices (BMPs) and additional water conservation measures developed through feasibility studies should be implemented by municipalities and/or water districts.

Who: The California Urban Water Conservation Council, municipalities, and water districts

What: Water conservation methods considered in the feasibility studies should include the best management practices (BMPs) as defined and set forth in the Memorandum of Understanding Regarding Urban Water Conservation in California. Methods should also include new recommendations being developed.

Some have questioned the long-term effectiveness of the voluntary best management practices implementation process. CALFED program staff drafted a framework for certifying best management practices implementation in 2002, which was not approved by its advisory committee. Some stakeholders have suggested legislation is needed to accelerate best management practices implementation, but no entities are known to be pursuing legislative fixes.

When: Immediately

Cost: Unknown

ACTION WU-2.4 (Revised 2007)
Maximize conjunctive use of water through groundwater recharge.

Who: State Water Resources Control Board, California Department of Water Resources, California State Lands Commission, water agencies, U.S. Bureau of Reclamation, U.S. Fish and Wildlife Service, U.S. Environmental Protection Agency, and private landowners

What: In areas in California that have usable groundwater and have water rights to surface water, arrangements should be made for the use of groundwater during years of below-normal runoff and for the use of surface water during wet years, i.e., conjunctive use. The surface water not diverted during dry years should remain in streams to be used for instream needs or other critical needs.

In addition, groundwater basins with capacity to store additional water should be employed as "water banks." Any flows in excess of those needed to meet aquatic resource needs in the Delta and streams of origin could be diverted for storage in aquifers for use during dry periods. Existing successful water banking programs should be evaluated to see if they can be duplicated elsewhere and/or expanded.

When: Immediately

Cost: Unknown

ACTION WU-2.5 (Revised 2007)
Study storage of surface water at locations identified in the Record of Decision (ROD) for the CALFED Bay-Delta Program.

Who: California Department of Fish and Game, U.S. Fish and Wildlife Service, California State Lands Commission, State Water Resources Control Board, U.S. Bureau of Reclamation, California Department of Water Resources, U.S. Army Corps of Engineers, U.S. Environmental Protection Agency, California Environmental Protection Agency, municipal water districts, farmers, landowners, and the environmental community

What: Agencies should continue to work to determine costs, benefits, and impacts of additional surface water storage identified in the CALFED Record of Decision. Studies should discuss the significant impacts on fish and wildlife resources and supplies available for instream flows and drinking water.

When: Immediately

Cost: $$$$$

ACTION WU-2.6 (Revised 2007)
Encourage continued development of local groundwater management plans to protect the long-term integrity of groundwater basins.

Who: Water agencies, Regional Water Quality Control Boards, California Department of Water Resources, State Water Resources Control Board, U.S. Bureau of Reclamation, U.S. Environmental Protection Agency, U.S. Geological Survey, landowners, and groundwater users

What: Use changes in law that allow for development of groundwater management plans to prepare local plans to protect basins.

When: Immediately

Cost: Unknown

Objective WU-3

Improve the legal and regulatory mechanisms to facilitate the voluntary transfer of water in order to increase the availability of freshwater for instream uses and water supply.

ACTION WU-3.1 (Revised 2007)
Continue to fully utilize water transfers among agricultural, urban, and environmental interests.

Who: State Legislature, the Governor, State Water Resources Control Board, California Department of Water Resources, U.S. Bureau of Reclamation, California Department of Fish and Game, U.S. Fish and Wildlife Service, farmers, water utilities, and the environmental community

What: Voluntary water transfers, such as the State Drought Water Bank in the early 1990s and more recent transfers, have shown success at meeting water supply needs without development of new infrastructure. Transfers should continue to be developed as part of integrated regional water management in a way that is environmentally acceptable.

When: Immediately

Cost: $$$

Objective WU-4 (New-2007)

Promote integrated regional water management and development of diversified portfolios of water management strategies to ensure better water quality, and to foster environmental restoration and stewardship, efficient urban development, protection of agriculture, sustainable water uses, reliable water supplies, and a strong economy.

ACTION WU-4.1 (New 2007)

Prepare and implement a Bay Area integrated regional water management plan that links flood control, wastewater, water supply, environmental stewardship, habitat restoration, and watershed management needs of the Bay Area and promotes solutions that integrate these various needs. Where appropriate, there should also be smaller, more focused integrated regional water management plans prepared and implemented.

Who: Water, wastewater, and flood control agencies; Association of Bay Area Governments; cities and counties; state and federal agencies; and partners in watershed management. This should reflect integrated regional water management plans (IRWMPs) within and adjacent to the region.

What: Work collaboratively to develop an integrated regional water management plan for the nine Bay Area counties that addresses water management problems and solutions.

When: The Bay Area Integrated Regional Water Management Plan has been prepared and will need to be updated as needed.

Cost: $$ (For planning, with funding coming from the partners and from the California Department of Water Resources. Implementation costs will vary depending on the selected solutions.)

Performance Measure:

Prepare an annual status report tracking the number and types of priority projects that are underway.

ACTION WU-4.2 (New 2007)

Explore desalination of various water sources, including effluent, brackish groundwater, and Bay and ocean water, to improve water supplies in a manner that is environmentally sustainable.

Who: Water supply agencies, Regional Water Quality Control Boards, California Department of Water Resources, San Francisco Bay Conservation and Development Commission, National Oceanic and Atmospheric Administration, U.S. Army Corps of Engineers, California Department of Fish and Game, U.S. Fish and Wildlife Service, and the environmental community

What: Study the feasibility of desalination of brackish Bay and ocean water to determine if it has become cost-effective relative to other water supply sources, such as recycling, and if it can be developed in an environmentally acceptable manner, including addressing entrainment impacts and impacts of brine disposal. As part of the feasibility work, develop pilot projects.

When: Regional desalination studies and pilot projects are underway. A brackish groundwater project is already operational.

Cost: $$$$

Performance Measure:
Number of acre-feet of desalinated water that increases the overall water supply