

**RELIABLE WATER FOR CALIFORNIA AS A COMPONENT
OF A STRATEGIC PLAN
TO IMPLEMENT THE DELTA VISION**

Prepared by:
**The Bay Institute
Environmental Defense Fund**

Submitted to:
**Delta Vision Blue Ribbon Task Force
May 2008**

ENSURING REASONABLE USE AND RELIABLE WATER FOR CALIFORNIA

Reducing Reliance on the Delta

No matter how much we improve our management of the state's water resources, conflicts between diversion of water upstream of, within and from the Delta are likely to continue.

Therefore, the strategic plan should put a premium on water supply and management measures that do not depend on diverting water supplies from our rivers and the Delta. The options should be aggressively pursued in California's cities and agricultural regions, both upstream of the Delta and in export areas.

Fortunately, California has many water management tools at its disposal currently or that will become viable in the future to achieve the vision of reduced Delta diversions and demand reduction, while maintaining or increasing water supply reliability for a growing California.

The 2005 California Water Plan update contains extensive, detailed estimates of the water supply potential of a range of proven water supply tools. Integrated regional water

management planning has also identified many locally appropriate strategies that can increase reliability. Aggressive targets and ambitious programs are required to assure Californians a reliable water future.

DWR estimates that the three tools with the greatest potential – urban water use efficiency and system efficiency, wastewater recycling and reuse, and improved groundwater management – could, together, produce more than six million acre-feet of new water. This represents approximately as much water as the Central Valley Project and the State Water Project have diverted from the Delta in recent years, and more than enough to reduce Delta diversions and meet future growth needs. The potential to meet water supply needs using these and other tools, as well as strategies to achieve maximum water savings, are addressed in two documents previously submitted to the Delta Vision Task Force by the Natural Resources Defense Council - *Effective Solutions To Meet California's Water Supply Reliability Needs*, and *Transforming Water Use: A California Water Efficiency Agenda for the 21st Century*.

The strategic plan should include the higher end of the estimates in the 2005 State Water Plan for urban water use efficiency, recycled municipal water and urban stormwater management. The State Water Plan's estimates of 626,000 acre-feet for improved agricultural efficiency are unrealistically low and the strategic plan should assume a higher target, especially if a complete accounting of gross water savings and reuse potential is included, which allows greater control over the timing and quality of the Delta supplies,. These alternatives for developing additional supply should be afforded high priority because they enhance local self-

sufficiency without any need to transport water or engage in complex multi-agency agreements.

Maximizing reuse and reclamation, including emerging measures such as oilwater reclamation, drain water reuse, and graywater recycling, is arguably the most secure means to enhance local self-sufficiency because it provides a base supply that is relatively drought-proof. In addition to supply and reliability benefits, water reuse opportunities often provide complementary benefits such as reduced wastewater discharge to sensitive surface water and groundwater, and reduced disposal costs. For example, reuse of agricultural drain water in the San Joaquin Valley reduces Delta export demand and reduces salinity in the San Joaquin River.

Although many users of Delta water are implementing efficiency and recycling measures, the full potential is far from realized. To insure that those measures are fully implemented, quantifiable performance targets should be adopted for the different sectors of water use and incorporated into all relevant permits, licenses, and other enforcement mechanisms. For example, indoor residential use with current technology should be about 40 gpcd and a target close to this amount could be included in diversion permits or grants. Outdoor use could be tied to reference water budgets or to the percentage of landscaping or irrigated acreage that implement efficient practices. Recycling targets can be tied to the percentage of the effluent recycled or the amount of potable water replaced.

Transfers

The transfer of water supplies between willing sellers and buyers should be encouraged. While both short- and long-term transfer activity has increased in recent years, there is significant untapped potential for transfers to play an even larger role in meeting water supply needs statewide.

While transfers do not provide additional overall supply, they tend to increase the efficiency with which water supplies are used. Availability of transfer supplies can guarantee that water supply can be available as long as it is economically justified. Appropriately used, water transfers can provide access to business uses that need and can effectively use additional supplies while protecting legal users of water with historic rights.

There are, however, important restrictions that should be imposed on water transfers. Transfers should be allowed only if all residents have access to adequate supplies of clean, safe water for residential use and if local habitats for species of concern are not adversely affected. Transfers from the agricultural sector should prioritize increased irrigation efficiency over permanent fallowing so that the agricultural economy will continue to thrive and farmland will be preserved. Transfers must be monitored so that groundwater is not substituted, causing inappropriate drawdown of aquifers.

There are a number of legal and institutional barriers within the current approval process that prevent transfers from proceeding, even in cases where the transfer would not adversely affect

local communities, the environment or other water users. The strategic plan should pursue criteria to eliminate many of these barriers. An interagency team should be created to develop and implement criteria that simplify the approval process for “fully compliant” transfers that should be allowed to proceed.

Wet Period Capture

To sustain the Delta ecosystem and achieve ecosystem targets, diversions from the Delta will need to be decreased in all but the wettest years and all but the wettest periods of the other years. This reduced reliance on the Delta will require that diversions in these less sensitive wet periods from the Delta and upstream of the Delta will have to be more efficiently managed for water supply yield. Local self-sufficiency in the Delta export areas can also be increased if the wet period runoff opportunities can be developed in a manner that does not degrade the local environment.

Increasing the yield from wet periods and decreasing the yield at other times will require a more integrated and coordinated use of the existing surface storage and conveyance systems with an improved groundwater and flood management system while also recognizing the environmental values of floodplains and high flows. Enhanced conjunctive use and groundwater storage along with coordinated reservoir reoperation and expanded reservoir outlets, floodplain area and floodway capacity, can increase water supply and help the state better manage floods and reduce the vulnerability to extreme events. In addition, watershed

management and land use controls in both undeveloped and urban watersheds to promote detention and infiltration can also increase the effective capture of the existing runoff.

Groundwater basin storage (including underutilized storage in the Central Valley and Delta export urban areas) will become the new carryover or dry year storage of choice as new surface reservoir development is prohibitively expensive and cannot be economically developed. In wet years, seasonal surface storage that temporarily holds runoff when existing reservoirs are full, demand is low and conveyance and recharge capacity limited, can be valuable if the water can be used later in the year. New seasonal storage opportunities that provide flood attenuation and potential environmental benefits may exist in the flood plains and the natural flood basins of the Sacramento and San Joaquin Rivers and the Tulare and Buena Vista Lake bottoms. Modifying existing local connectors can be effective in integrating existing storage and new seasonal storage with areas of expanded groundwater storage.

Conjunctive use

The Department of Water Resources estimates that improved groundwater management could provide up to 2 million acre-feet of additional supply annually. The average cost in a recent round of applications received by DWR for conjunctive use projects was \$110 per acre-foot, well below any estimates of surface storage development. The appropriate target for conjunctive use will be determined in part by decisions on water management in the Delta, which will influence potential yield from groundwater storage. Such investments are likely to yield greater benefits south of the Delta (including Southern California), where projects may be

less constrained by Delta operations and provide greater independence from the Delta. This effort could also be coordinated with floodplain and habitat restoration efforts in the Central Valley.

The strategic plan should seek to eliminate barriers to cost-effective and sustainable groundwater management where they exist, including barriers that prevent the recharge of appropriately treated reclaimed water in groundwater basins. To this end, statewide guidelines should be adopted to manage aquifers that will encourage efficient and sustainable projects and eliminate unsustainable projects. It will also be necessary to provide guidance to all state and federal agencies to work together and with local agencies to eliminate unwarranted conflicts.

Evaluating New Storage Options

The Delta Vision proposes new storage to be part of a broad solution. It is not possible to assess water supply benefits of additional storage without first defining baseline criteria.

Making such a clear definition is often difficult and will be subject to debate by interested parties, but a baseline still must be defined in order to determine what additional supply will be generated and how it might be used to generate additional beneficial uses.

It will be important of course to fully assess the capital and operating costs of new storage, including any and all costs for water pumping, fish screens, land acquisition, environmental mitigation etc. etc. A strict “beneficiary pays” principle should be applied. If the supplies are

provided to cities or farms, they should pay the full costs of the supplies and any loans should be repaid at market interest rates.

Additional storage is a tool to increase water supply. To the extent that new storage is developed to provide environmental flows, it should be regarded as mitigation for already existing projects. As a result, funding for the “environmental” portion of any storage projects should be derived from water uses fees as described above. In addition, existing and future State bond funding for groundwater storage projects must require that a significant portion of the storage is dedicated to reducing reliance on the Delta.

The strategic plan should include priorities for the most cost-effective strategies to manage California’s water needs for its residents, businesses, fisheries and habitat. Investing in water management strategies that focus on reducing water use, improving system and end-use efficiency, recycling, and groundwater management will decrease our reliance on the Delta, decrease our energy use and will provide greater reliability in the future.