

Alternative WS-18

Group
Water Supply

Title
Demand Reduction with
Water Transfers

The objective of this alternative is to increase water supply reliability through developing transfer sources and implementing demand management practices in all areas. This alternative will maintain the south Delta export facilities and avoid development of new in-Delta facilities. This alternative will accomplish the following objectives: (1) develop transfer sources that will increase the availability of supplies; (2) increase the available supply through demand management practices, (3) improve management of Delta exports through changes in diversion timing and development of additional off-stream storage linked to south of the Delta conveyance facilities; and (4) develop long-term storage through groundwater management programs in the southern San Joaquin Valley and the Tulare Basin.

This alternative will increase the supply available to urban, industrial, agricultural, and environmental users through a number of programs aimed at remanaging existing supplies and water resources facilities. Managing demand in the export area will reduce the continued growth in demand for export water, while demand management in the areas upstream of the Delta will make more water available for current needs as well as for future growth. Water transfers will help meet both the immediate and long-term need for additional export and environmental water. Through demand management, water transfers, and remanagement of Delta exports, the timing and pattern of exports can be changed away from the critical spring period and increased in more favorable periods to improve spring outflow and reduce diversion impacts. Due to the continued reliance on the south Delta export facilities, this alternative will emphasize protection of key western Delta islands avoid disruption of export operations.

Key Actions

Supplemental Water Transfers— Supplemental transfer supplies will be developed to help the state and federal projects meet their delivery obligations to both contractors and the environment. Supplemental transfer water will be developed from excess surface water stored in local reservoirs and through groundwater substitution or conjunctive use. Supplemental water acquired from surface water sources will be from willing sellers. Water acquired from groundwater sources will be from willing sellers and from new projects. New groundwater substitution or conjunctive use projects will be developed by the state or federal projects where there are adequate resources. It is estimated that such a program could yield more than 400 TAF annually.

New Off-Stream Storage— A moderately sized off-stream storage facility (± 500 TAF) would be developed to increase the management flexibility of Delta exports. This reservoir would be located on the west side of the San Joaquin Valley and linked to the

state and federal conveyance facilities. The reservoir would serve to store Delta diversions made during favorable periods and reregulate those diversions as needed to meet demands south of the Delta or to reduce Delta diversions during environmentally sensitive periods.

In-Lieu Groundwater Banking— To provide additional insurance for drought conditions and to improve the current over-draft conditions in the San Joaquin and Tulare basins an in-lieu groundwater banking program will be developed. Under this program surface water will be supplied to agricultural users currently dependant on groundwater in areas overlying over-drafted groundwater basins. The volume of groundwater replaced with surface water would be credited to the transfer program and be utilized primarily during drought periods through substitution or direct export.

Conservation— Improve implementation of urban Best Management Practices (BMPs) and add BMPs requiring inclining block rates to encourage reduced landscape water use. Implement agricultural Efficient Water Management Practices (EWMPs) that include installation of measurement devices and water pricing and incentives designed to optimize management and efficiency. Conservation practices would be implemented in all areas of the state.

Reclamation— Implement reclamation and reuse projects for urban and agricultural supplies were feasible. Projects would be developed to increase the use of grey water for urban landscape irrigation, particularly in areas of new development. Develop local reclamation projects to supply agricultural users with reclaimed water. This alternative would also investigate more efficient and cost effective water reclamation processes.

Land Retirement and Fallowing— Maximize the retirement of marginal agricultural lands. This program would emphasize the purchase of lands that contribute to regional drainage and discharge problems.

Adaptive Management Program for Supplemental Transfers— The supplemental water transfer program will be coordinated and monitored by a central body to ensure its efficient use and effective long-term management. The program will coordinate timing of water transfers to coincide with in-stream fishery needs both upstream and within the Delta and export capacity at project facilities. The program will also act as a broker to match available transfer supplies with demands. To ease the implementation of water transfers for this program a programmatic environmental impact statement (PEIS) would be prepared to define criteria for transferring water through the Delta. The PEIS would also identify appropriate and streamlined refill impact criteria for both surface and groundwater sources.

Levee Improvements— Provide land side buffer zones to minimize and reduce Delta island subsidence. Also improve habitat levee maintenance and stabilization to at least hazard mitigation plan standards (HMP; a level of protection less than the 100-year flood) for all islands containing existing infrastructure. Levee protection on selected western

Delta islands will be improved to the National Flood Insurance Program standards (NFIP; 100-year flood protection). The exact level of levee improvements will be tempered by economic feasibility and need. In some instance the cost of levee protection may out way the benefits or cost of infrastructure relocation.

Supporting Actions

Migration Barriers— Install fish migration barriers at Georgiana Slough and the Delta Cross Channel to reduce fish entrainment in the interior Delta. Migration barriers, acoustic or otherwise, will allow the Delta Cross Channel to remain open a for a greater period of time to increase flows to the south Delta to improve the availability and flexibility of Delta export to export water.

Reduce Fish Entrainment and Losses at CVP and SWP Facilities— Reduce entrainment and mortality of fish salvaged at Banks and Tracy pumping plants. Measures to reduce entrainment and losses should include:

- Increase diversion screen efficiencies.
- Improve fish salvage and handling.
- Monitor entrainment on a real time basis to identify periods of peak susceptibility of various species.
- Improve predator control at both facilities.
- Coordinate operations of two diversions, including interchangeable pumping, to reduce combined losses.

Hatchery Management—Improve hatchery production for various fish species that use the Bay-Delta Estuary. Improved hatchery production and coordination would serve to: mitigate the loss of stream spawning and rearing habitat; mitigate increasing harvest pressures; and provide short term support for various species until other programs to improve fish survival and habitat conditions are implemented.

Delta Adaptive Management Programs— Develop adaptive management programs for efficient operations of the Delta Cross Channel, migration barriers, export and Delta outflows, fish salvage operations and hatchery programs. An adaptive management program should consider the appointment of a Delta water master to oversee the effective management of Delta programs related to movement of water for export, local diversion, and environmental needs. To ensure genetic diversity hatchery production should be practiced to compliment, not replace, measures to improve the natural production and survival of fish species.

Delta Habitat Restoration— Develop an intensive program of habitat restoration that would improve the availability of riverine, riparian, wetland, and terrestrial habitat within the Delta. These habitat improvements would be focused on increasing the natural productivity and survival of species that rely on the Bay-Delta Estuary.

Preliminary Assessment

Ecosystem Quality— Core habitat restoration actions would be implemented near the maximum levels within the Bay-Delta Estuary and on the Sacramento and San Joaquin Rivers. The habitat measures undertaken as part of this alternative would improve habitat availability and quality. Because this alternative is focused on retaining the south Delta export facilities and increasing the volumes of water exported from Delta, habitat and ecosystem restoration measures in the Delta would be focused on reducing the impacts of diversions and reverse flows associated with Delta exports.

Water Supply— This alternative would rely on both reducing demand and increasing the supply availability. The results of demand management will reduce the growth of demand in the export area and increase the available supply in the area upstream of the Delta. Along with developing water transfers these two action will ensure continued management of demands and supplies. Off-stream storage and in-lieu groundwater banking will be operated to store excess water as groundwater for insurance against drought deficiencies.

Water Quality— Water quality will be improved through implementation of core actions and through the retirement of marginal lands which contribute to drainage problems. Key actions implemented to the maximum levels feasible will be to control agricultural drainage. Changes in agricultural drain management to reduce the overall pollutant loads of the system will be preferred, including modifications to agricultural practices to reduce the discharge of pollutants.

System Reliability— System vulnerability is improved in this alternative, above the current levels. Because this alternative continues to rely on water exports in the south Delta, the level of levee protection will be increased to an appropriate level to reduce the risk of catastrophic failures that would interrupt supply availability.