

Alternative 12

Dual Transfer Facility

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Emphasis

This alternative reduces diversion effects on fish and provides a more reliable more reliable water supply from the Delta by providing a screened intake to supply both a new, small isolated transfer facility, and through-Delta conveyance.

Distinguishing Features

Physical and Structural Features

Constructs an isolated diversion facility from the Sacramento River. Constructs a small isolated conveyance facility and improves north Delta channels by dredging, levee setbacks and gradient control facilities to maximize Delta conveyance capacity. Isolated conveyance facility and north Delta channels served through a single screened diversion. Provides a moderate package of habitat restoration and also creates seasonal and tidal wetland, riparian, and upland habitat by acquiring Delta island and tracts in floodplains from willing sellers.

Operational and Management Features

Allows pumps to operate at full export capacity, under appropriate conditions, to increase supply flexibility and reliability. Uses real-time monitoring to avoid fish entrainment. Obtain 100 TAF on San Joaquin River and manage for environmental purposes.

Institutional and Policy Features

Recommends protecting Delta functions through a stable-funded levee management plan. Institutes introduced species control programs to combat negative impacts of established introduced species and limit further introductions. Obtains permit allowing maximum pumping flexibility.

Benefits

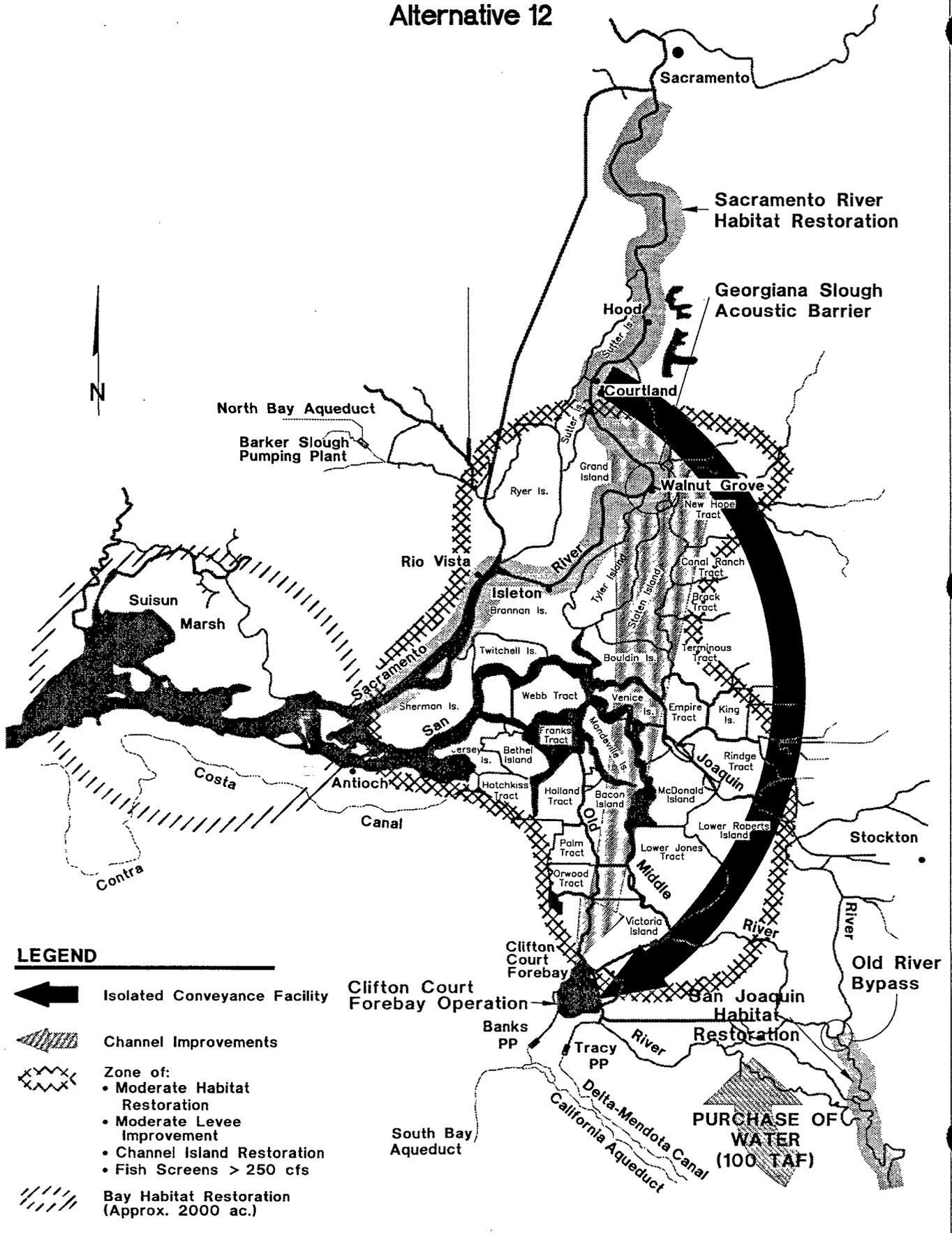
- Improves export water quality
- Decreases loss of anadromous and Bay-Delta native fish
- Improves water supply flexibility and reliability
- Increases opportunities for transfers
- Moderately improves quantity and quality of Delta habitat
- Reduces vulnerability of Delta water supplies
- Moderately reduces Delta vulnerability

Constraints and Concerns

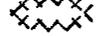
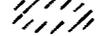
- Continues cross-Delta flow of Sacramento River water
- Entrainment at new diversion
- Potential degradation of water quality in the south Delta

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LEGEND

-  Isolated Conveyance Facility
-  Channel Improvements
-  Zone of:
 - Moderate Habitat Restoration
 - Moderate Levee Improvement
 - Channel Island Restoration
 - Fish Screens > 250 cfs
-  Bay Habitat Restoration (Approx. 2000 ac.)

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This alternative focuses on reducing diversion effects on fish and providing a more reliable water supply from the Delta, primarily through relocation of a portion of export diversions, increased through-Delta conveyance, and moderate levels of habitat restoration.

A new diversion structure would be constructed on the Sacramento River. A small, isolated transfer facility is included to connect the relocated diversion on the Sacramento River to Clifton Court Forebay. The improvements in through-Delta conveyance capacity, coupled with increased diversion rate capacity increases opportunity for diversions. A single screened diversion on the Sacramento River providing water to both facilities would improve the water quality of exports, and reduce constraints on a portion of exports associated with entrainment of fish. Ecosystem benefits include increased habitat value and decreased losses of anadromous and Bay-Delta native fish. Delta water quality is improved through improved Delta circulation, by reducing pollutant loading of the Delta via the San Joaquin River, and through agricultural, industrial, and municipal wastewater reclamation and reuse. The isolated facility greatly reduces the vulnerability of a portion of export supplies to catastrophic failure of the existing Delta water supply system. The vulnerability of Delta land use, Delta water supply, agricultural export water supply and Delta ecosystem function to catastrophic failure is reduced by improving levees throughout the Delta.

Physical and Structural Features

Construct Small Isolated Transfer Facility— Construct a new isolated transfer facility from the Sacramento River between Freeport and Walnut Grove to Clifton Court Forebay with a capacity of about 5,000-8,000 cfs. The isolated facility could serve multiple users such as SWP, CVP, EBMUD, and San Joaquin County.

Channel Capacity Improvements— Improve channel capacities of the north Delta area with dredging, levee reinforcement, and gradient control facilities. Improvements to existing through-Delta conveyance channels would improve the efficiency of water movement to the export facilities for times when exports exceed the capacity of the small isolated transfer facility, thereby reducing fishery entrainment effects and improving water quality in the south Delta. This would also provide some flood control benefits through coordination with levee improvements to improve system reliability.

Screened Diversion on the Sacramento River— The isolated conveyance facility and the north Delta channels would be served from a large screened diversion on the Sacramento River. Provide best available fish screening technology at the new diversion and use real time monitoring to help operate the diversion to minimize fisheries impacts. This relocation of the diversion point significantly reduces the number of fish (especially resident Delta species) exposed to the diversion, the length of time fish are exposed to the diversion, and reduces rerouting of migrating fish caused by flow circulation associated with export pumping. The new diversion point also provides access to higher quality water for export than the existing diversion location.

Increase Diversion Rate Capacity— Install additional gates on Clifton Court Forebay and obtain permit to pump at full export capacity when minimal ecosystem impacts would occur.

Flood Protection Level— Action provides a moderate level of protection to Delta system levees. First, all levees not yet providing a level of protection equivalent to the hazard mitigation plan (HMP) will receive the necessary upgrades to their levees to meet HMP standards. A level of flood protection equivalent to the US Army Corps of Engineers' Public Law (PL)- 99 standard would be provided to: 1) critical western Delta islands (such as Sherman and Jersey islands), with important regional infrastructure (e.g. the Mokelumne Aqueduct, transmission lines, Highway 160, etc.); 2) other islands having infrastructure of local importance (such as New Hope Tract, Bouldin Island, Sherman Island, Palm Tract, Lower and Upper Jones Tracts, and Lower Roberts Island); and 3) islands having valuable habitat, but not necessarily infrastructure, (including, but not necessarily limited to Canal Ranch, Brack Tract, Staten Island, Venice Island, Rindge Tract, Webb Tract, Big Mandeville Island, Twitchell Island, and Bradford Island).

Channel Improvements and Levee Maintenance— A moderate level of channel improvements (e.g. widening for improved conveyance), levee maintenance and stabilization (e.g. stabilizing berms), the modification of agricultural practices to reduce subsidence potential, setback levees, providing funding for maintenance and stabilization, and maintaining and/or reconstructing levees are indicative of the range of actions that would be implemented with the intent of reducing the risk of the Delta levee system with respect to its value in providing water supply, water quality, ecosystem quality, and land use/infrastructure benefits.

Restore Delta Island Habitat— Acquire Delta island properties from willing sellers, convert land use to diverse and permanently flooded wildlife habitat to minimize or

reverse subsidence in the west Delta, which also protects other beneficial functions of the Delta system. Also acquire Delta island and tract properties from willing sellers within the 100 year flood plain for creation of tidal and seasonal wetlands, creation of diverse riparian and uplands habitats, and to provide flood storage areas.

Install South Delta Barriers— Construct barriers on Old River, Grant Line Canal, and Middle River to address water level and water quality impacts of remaining exports from the south Delta.

Riparian and Wetland Habitat Restoration— Portions of some Delta islands or tidelands would be restored to provide substantial increases in brackish and tidal marshes; riparian woodlands; and wildlife breeding, wintering, and feeding habitat. Substantial shoreline areas would be restored to increase shallow and shaded riverine, and tidal slough habitat. Emphasis would be placed on restoring shoreline habitats along Delta levees that require upgrading and protection. Where appropriate, construct water-side berms and setback levees to create riparian and wetland habitat. Because this alternative would retain the current south-Delta location of the export pumps, restoration efforts would be focused principally on the western Delta and Suisun Bay away from the direct influence of these pumps or new diversion point and through conveyance channels.

Fish Passage Improvements— Improve anadromous fish survival through improved habitat, providing passage through obstruction, through improved water quality, and reducing losses of anadromous species at south Delta diversions.

Operational and Management Features

Improve Pollutant Source Controls— Existing source control regulations for pollutants may not be sufficiently comprehensive nor enforced to levels required to protect beneficial uses in the Bay-Delta system and tributary rivers. These actions would provide for an array of increased source reduction activities such as additional regulation of agricultural and urban drainage and better enforcement, establishing BMP's for a range of activities affecting Delta water quality such as levee maintenance and pest control practices, and supporting and enhancing existing land retirement and fallowing programs. Using a watershed management approach, identify and control high priority pollutant sources through a combination of source reduction and treatment actions.

Provide regulatory incentives and develop institutional agreements to enable focusing resources on priority sources. Implement on-site mine drainage remediation measures

based on requirements in current regulations. Through changes in water pollution requirements give urban areas flexibility to fund high-priority mine cleanup in lieu of increasing expenditures on treatment plant improvements.

Intense application of core level actions such as implementing source control regulations for pollutants, retirement of lands with serious drainage disposal problems, retirement or fallowing agricultural lands with salt or other contaminant drainage problems to reduce land-derived salt contamination, management of irrigation tailwater, retention and management of stormwater runoff, and management of discharges from abandoned mining sites would improve water quality management.

Obtain Environmental Water— Obtain about 100,000 acre feet from San Joaquin water users to reduce conflicts between fisheries and diversions. Water could be used to provide pulse flows to move Delta smelt downstream, away from diversion points. Another use might be dilution of poor quality San Joaquin River flows, providing benefits for fisheries, water supply, and water quality. New south-of-Delta storage would allow this water to be used as exchange water so that Delta diversions could be reduced at critical times to protect fisheries without affecting export supplies.

Institutional and Policy Features

Control Introduced and Nuisance Species— Implement programs to reduce the likelihood of introducing non-native species and to combat the deleterious effects of those which have become established.

Subsidence Reduction— Efforts to reduce the subsidence on Delta islands with deep peat soils (such as parts of Grand, Twitchell, Sherman, Andrus, and Bouldin islands) will include the establishment of a landside buffer zone between 50 and 100 yards in width, located adjacent to the levee.

Emergency Levee Management Plan— An emergency levee management plan would provide necessary funding and direction to reclaim Delta islands in the event of inundation to continue protection of Delta functions as an integrated resource system. Funding would be provided to ensure that a suitable amount of equipment and materials would be readily available to rapidly respond to flood fights.

Preliminary Assessment

Benefits

Ecosystem Quality— The small isolated transfer facility and through-Delta conveyance improvements in this alternative would reduce diversion impacts on fish. They would also reduce the reverse flow impacts currently associated with the export pumps. Consequently, improvements in ecosystem productivity would be expected in the western Delta and lower San Joaquin River. Complementary restoration actions, implemented at moderate levels, would increase the extent and quality of habitat, principally in the west Delta. Terrestrial and avian species would also benefit through the creation of wetlands and riparian zones.

Water Supply— Actions will substantially improve water supply reliability and flexibility, through increased opportunity for diversion and through facilities less vulnerable to effects of salinity intrusion. By reducing diversion effects, regulatory intervention in water supply operations is reduced. Water transfer opportunities are improved.

Water Quality— Relatively high quality water from the Sacramento River would be provided for some users.

Constraints and Concerns

Fisheries— The effectiveness of north Delta screens in reducing entrainment is not certain. This alternative could result in loss of smolts and disorientation of adult salmon from the Mokelumne and Calaveras Rivers due to Sacramento River flows in eastern Delta channels.

Water Quality and Supply— Delta water quality may be degraded due to reductions in Sacramento River inflow.