
Alternative Narrowing Process

Multiple Intakes Conveyance Option

Alternative 2C

The Multiple Intakes Conveyance Option in alternative 2C, would utilize three isolated conveyance channels to convey water to Clifton Court Forebay (CCFB) from two diversion locations on the San Joaquin River and one on Old River near Franks Track. This conveyance option would provide flexibility to divert water from different locations in the Delta depending on need and operating criteria.

Each diversion would be unscreened and would convey water by an isolated open channel to CCFB. At CCFB new "best feasible technology" fish screens would be constructed at the Skinner Fish facility and at the Tracy Pumping Plant (or at the head-end of the CCFB). The Western 15,000 cfs conveyance facility would convey water from a new in-Delta storage on Holland Track (40,000 Ac-ft) via a 12-mile long isolated channel with siphons under five waterways to CCFB. The Northern 15,000 cfs conveyance facility would convey water from the San Joaquin River at the northern end of Lower Roberts Island via a pumping plant and 14-mile long isolated channel with siphons under three waterways to CCFB. The Eastern 5,000 cfs conveyance facility would convey water from the San Joaquin River at the southern end of Upper Roberts Island via a pumping plant and 14-mile isolated channel with siphons under two waterways. The objective of the multiple intakes to use real time monitoring at each intake to determine which intake or combination of intakes to use to reduce fishery impacts while improve water supply and water quality.

Modification to Remove Technical Problems

As stated above all three diversions are unscreened, and would rely on real time monitoring and operations to minimize fisheries entrainment into the isolated channels. Two of the intakes have pumping plants immediately downstream. The western intake may also require a pumping plant at the intake and/or to move water out of the in-Delta storage on Holland Track. Operationally, hydraulically controlling the three "arms" on a real times basis will be difficult. Detailed hydraulic analysis would be conducted to determine the most efficient operational plan given the multiple pumping plans, storage capacities, and tidal influences at the intakes.

Even with real time monitoring and operation, there is a concern that anadromous and in-Delta fishery species would be entrained into the pumps and/or into the isolated conveyance canals, where they would be subject to predation. Those fish that inter Clifton Court Forebay would be

screened, collected, sorted, and held until trucked to various locations in the Delta.

To alleviate the predation concern, the alternative would be modified to include "best feasible technology" fish screens at each intake. These intake screens will require elaborate flow structures for the intake facilities to operate within reasonable flow limits.

Costs

The preliminary cost of the multiple intake conveyance option, with the screens added at all intakes is around \$2,281 Million. This cost was derived from the CALFED Bay-Delta Program's, "DRAFT-Facility Descriptions and Updated Cost Estimates for the Multiple Intakes Option," published June 27, 1997. The costs were revised to include in-Delta storage and diversion facilities on Holland Track and fish screens to the three intakes. Facilities would be added at each intake to hold, sort, and truck fish to release points throughout the Delta. The real time monitoring cost for all the intake facilities is around \$2.4 Million per year.

Other Considerations

A major drawback of this alternative, even though it offers flexibility of diversions in the Delta, is that it's very expensive and still draws Sacramento River water across the Delta continuing some of the same anadromous fishery problems.

Some of the general recommendations that were noted while consulting with in-Delta and anadromous agency fishery experts are:

- It is desirable to keep as many fish in the river from which they came so they may continue their residence or migration
- It may be desirable to divert a portion of the Sacramento River and a portion of the San Joaquin River to minimize the fish impacts in both rivers.
- It is desirable to provide diversion flexibility in the system to adjust diversions between intakes (north and south Delta) to take advantage of river flows and react to specific events like eggs and larvae and hatchery releases.

Alternative 3I, contains the same multiple Delta intake option, but includes many additional options that could address the above recommendations while offering more operational flexibility to the system. The two options included:

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- An extension of the northern conveyance facility (15,000 cfs) up to a “best feasible technology” screened intake on the Sacramento River at Hood. A siphon would convey diverted Sacramento River water under the San Joaquin River to the pumping plant on Lower Roberts Island. The screened intake would remain on the San Joaquin River.
 - Surface and groundwater storage would be added in the Sacramento and San Joaquin Valleys. Off-Aqueduct Surface storage would also be added to the alternative.

For Alternative 3I, extending the multiple intake option in alternative 2C to the Sacramento River offers the flexibility of diverting from five screened diversions, including the Sacramento River, central Delta, western Delta, San Joaquin River, and south Delta at CCFB. This extends the geographical area of possible diversions so that they can be more effectively managed for anadromous and in-Delta species. New storage in 3E also increases the flexibility of managing the diversions. Although this may be an extremely costly alternative, it does offer increased flexibility to the system for environmental, water quality and supply benefits.

Recommendation

The Alternative 2C conveyance option is very expensive and may have limited flexibility without supporting facilities. Alternative 3I includes the conveyance option in 2C as well as the supporting options that would make the conveyance option more effective. Therefore, it is recommended that alternative 2C be dropped from consideration and the multiple conveyance option be analyzed in alternative 3I.