

ALTERNATIVE F - EXTENSIVE HABITAT RESTORATION WITH STORAGE

Reduce Conflicts in the System

A solution will reduce major conflicts among beneficial users of water. A solution should:

- significantly reduce each of the four major conflicts which have been identified for the Bay-Delta system. Most of the problems in the Bay-Delta are embodied in one or more of these conflicts. They are:
 - fisheries and diversions - medium/low, export pumping from the South Delta continues, but its adverse effects are somewhat reduced by new in-Delta storage. If the habitat improvements lead to sufficient recovery of fish species, this alternative would rate high. This uncertainty of production success down rates this alternative.
 - habitat and land use/flood protection - medium/high, a moderate level of vulnerability reduction and habitat restoration are combined.
 - water supply availability and beneficial uses - low/medium, limited water supply benefits associated with the new in-Delta storage and uncertainty of fish production results.
 - water quality and land use - low/medium, limited improvement in export water quality since export pumping from South Delta continues, partially offset by moderate pollutant source controls.

MEDIUM/LOW

Equitable

An equitable solution will focus on solving problems in all problem areas. Improvement for some problems will not be made without corresponding improvements for other problems. Equitable considerations include:

- satisfy some portion of each of the 4 primary and 14 secondary objectives which have been identified for the program - High, addresses some portion of all objectives.

- provide a reasonable balance of reliability weighted improvements for the four resource areas. Balance does not necessarily require an equal level of improvement for each resource areas (e.g. water exporters might be willing to accept less improvement in water supply reliability if water quality is improved). - **low/medium, uncertainty that fish populations will improve in a timely manner or at all, therefore water supply improvements are somewhat uncertain and unreliable . Water quality for urban supply and the south Delta are limited.**

- result in costs allocated to the economic users of water based on the benefits they receive from the solution. However, there is no obligation to provide benefits to those unwilling to contribute towards the solution - **Unable to consider this factor in the absence of a financing plan.**

- result in net benefits and burdens balanced across stakeholder groups - **low/medium, uncertainty of the realized benefits for water supply.**

LOW/MEDIUM

Affordable

An affordable solution will be one that can be implemented and maintained within the foreseeable resources of the Program and stakeholders. An affordable solution should:

- have identifiable revenue and financing provisions which are adequate for implementation and continued maintenance of the solution - **Unable to consider this factor in the absence of a financing plan.**

- be among the least expensive solutions, for a given level of implementation, which achieve the Program objectives - **Low/Medium due to the perceived limited cost-effectiveness of this solution; the new in-Delta storage costs a lot while providing only limited water supply benefits. The alternative offers uncertain fishery improvements, but if the intended population increases result, this may be a relatively cost effective solution.**

- minimize the negative effects on the credit rating of those funding the solution - **Unable to consider this factor in the absence of a financing plan.**

LOW/MEDIUM

Durable

A durable solution will have political and economic staying power and will sustain the resources it was designed to protect and enhance. A durable solution should:

- be adaptive, flexible to changing needs and potential future conditions, and able to address biological uncertainty to sustain the resources it was designed to protect and enhance - **Low/Medium**, this alternative relies primarily on a single remedial theory, that the proposed habitat restoration will lead to sufficient recovery of fish populations to achieve the Program objectives. If this is not effective, an entirely different approach will be required. On the other hand, this alternative can be phased in over time and adapted as more becomes known.
- provide ecosystem improvement using a variety of mechanisms to better face biological uncertainty rather than relying on any single theory of ecosystem improvement - **Low/Medium**, this alternative relies on a combination of habitat improvement (extensive) and limited system reoperation (export diversion timing).
- accommodate hydrological and other physical uncertainties (e.g. increased storage would hedge against the unknown, or consideration of impacts of potentially higher sea levels on the various alternatives could strengthen durability) **Low/Medium**, new in-Delta storage provides some durability in this sense, but continued export diversions from the South Delta are a negative. The continued South Delta export diversions remain suspect to interruption due to higher sea levels (increased flood risk) and additional species listings.
- have adequate legal, operational, or physical provisions to ensure that objectives continue to be met in an equitable way for the long term - **High/Medium**, because the basic conveyance configuration of the Delta is unchanged, existing hydraulic constraints on export diversions remain.
- include a financial plan which has provisions to ensure that the solution will be implemented as intended, while providing flexibility to alter revenues to respond to changing needs - **Low/Medium**, mostly the benefits of this alternative are not readily quantifiable and allocable to specific beneficiaries. Long-term contracts for water supply can be developed based on deliveries from and use of the new in-Delta storage.

MEDIUM

Implementable

An implementable solution will have broad public acceptance, legal feasibility and will be timely and relatively simple to implement compared to other alternatives. An implementable solution should:

- have legal or practical precedents or have a clearly identified series of reasonable steps which could be taken to enable implementation - **High, relative to the other alternatives, development of new storage and habitat restoration projects is reasonably straightforward, requiring Section 404, NEPA, and CEQA compliance.**
- have institutional feasibility - **High, this alternative could be implemented by and within existing institutional authorities. Some contractual or joint powers authorities might be desirable to implement the new storage.**
- include as few major legal and institutional changes as necessary while meeting Program objectives - **High, this alternative could be implemented by and within existing institutional authorities. Some contractual or joint powers authorities might be desirable to implement the new storage.**
- have broad acceptance across the various geographic areas and interest groups as well as the state as a whole - **Medium/Low, discounted because this alternative may be viewed by some groups as offering inadequate water supply, water quality and vulnerability improvements. Also, depending on the specific reservoir location(s), the new storage included in this alternative may face significant local or regional opposition.**

MEDIUM

No Significant Redirected Impacts

A solution will not solve problems in the Bay-Delta system by redirecting significant negative impacts, when viewed in its entirety, in the Bay-Delta or other regions of California. A solution should:

- minimize negative long-term economic impacts at the regional level - **Medium/High, relatively small amounts of land-use change compared to other alternatives. Third party impacts on landuse change for retirement**
- compensate for or mitigate unavoidable negative impacts to the greatest extent practicable - **Medium/High, relatively small amounts of land-use change compared to**

other alternatives. Meander belt land purchase may create redirected impacts.

MEDIUM/HIGH

POTENTIAL REVISIONS

Revision	Principle Improved	Rationale	Potential Adverse Affects
Increase levee maintenance and emergency response	Reduces Conflicts, Durable	Alternative relies heavily on the Delta as it is. Vulnerability protection should be higher for such a single focus.	Cost
Improve in Delta conveyance in specific areas.	Reduces Conflicts, Durable	Improve conveyance, along with habitat improvements, to increase flexibility to pump at full permitted capacity during environmental windows of opportunity.	Increase levee maintenance and emergency response
Add south of Delta storage and increase permitted pumping capacity	Reduce Conflicts, Durable, Implementable	Produces water supply benefits, and more flexibility to meet pumping windows	Site specific impacts, redirected impacts, cost
Any major improvement to this alternative turns it into another alternative		May best be a component of other alternatives	