

Alternative Rating for the South Delta Improvements Program

	Impact	technical checklist	Alternative Ratings	
			Single Barrier Alternative	Multiple Barrier Alternative
1	<u>SWP Water Supply Reliability</u>			
1		Average Years, AF		
2		Critical/Dry Years, AF		
3	<u>South Delta Supply/ Agricultural Reliability</u>	Water Availability		
4				
5	<u>South Delta Water Quality</u>			
6	South Delta channels (MR, OR, GLC) and WQCP criteria	Electrical conductivity, Total Dissolved Solids		
7				
8	Middle River	Null zones		
9	Old River at Tracy	Null zones		
10				
11	San Joaquin River near Stockton	Dissolved Oxygen		

DRAFT

Alternative Rating for the South Delta Improvements Program

	Feasibility Issues	Issues to address	Alternative Ratings	
			Single Barrier Alternative	Multiple Barrier Alternative
12	<u>Existing Technology</u>			
13	Questionable or untested technology		1. Intake Structure Screens (10,300-cfs) 2. Agricultural Screening (NRCS Program - recent fish screen failures)	1. Intake Structure Screens (10,300-cfs) 2. Rubber dam at Grant Line Canal barrier site
14	<u>Logistics/Timing</u>	Done in Stage 1	For description of screening sequence see SDI Alternatives items 1-6 and 24a. 10,300 cfs screened intake will not be done by 2006, end of Stage 1.	same as 1
15	<u>Availability</u>			
16	<u>Managable/Jurisdiction To Do the Work</u>	Components	ERP action (Lines 30-41)- need to evaluate feasibility of land purchased before decisions regarding location of mitigation sites can be made.	same as 1
17		Intake Structure		
18		Dredging Old River		
19		Dredge south Delta channels		
20		Extend Ag diversions & add Fish Screens	Extending Agricultural Diversions and Screening- need to identify a CalFed agency with the jurisdiction to mandate farmers to allow CalFed to screen their diversions. (FWS?)	same as 1
21		Flow Structures		
22		Fish Structure at HOR	Conflicts in operating the structure continue between salmon and delta smelt biologists. Need to balance benefits and impacts. Also, need to recognize water needs to be passed to protect the city of Tracy's NPDES permit requirements. (Still being studied by DWR and city of Tracy).	same as 1

DRAFT

E-037274

E - 0 3 7 2 7 4

Alternative Rating for the South Delta Improvements Program

	Feasibility Issues	Issues to address	Alternative Ratings	
			Single Barrier Alternative	Multiple Barrier Alternative
	Cost	Components		
		Intake Structure	The Northeastern location is less expensive, but may impact summer residents of King Island, may impact recreation and safety, may cause erosion of a berm island across from intake location. North Central location will need a siphon to pass under Italian Slough, require a longer intake channel, require the acquisition of approximately 150-200 acres of farm land from the Church of Jesus Christ Latter Day Saints, and construction of new levees for both the intake structure and for Reclamation District 800.	Same as 1
23		Dredging Old River	Screens, Low Head pumps and 10,300 cfs: northeastern intake: Dredge approximately 200,000 cubic yards (\$3-million). Screens, Low Head pumps and 10,300 cfs northwest intake: Dredge less than 50,000 cubic yards (\$750,000). Unit cost to dredge varies between \$7.5 (dredge ponds) and \$15 per cubic yard (barge and reuse in central or western Delta). <u>For amounts less than 500,000 cubic yards, assume clamshell dredging will be used.</u>	Same as 1
24		Dredge south Delta channels	Dredge south Delta channels upstream of barrier sites (2.1-million cubic yards) downstream of barrier sites (and near DMC, Coney Island, Union Island) (500,000 cubic yards) San Joaquin River (1.0-million cubic yards) Total: 3.5-4.0 million cubic yards. Cost \$35-40 Million	Dredge downstream of barriers (for example, near DMC, between Coney Island and Union Island) (100,000 cubic yards). If GLC can not operate until August , dredging will total 350,000 cubic yards to protect ag lands not served by a flow structure needing additional protection (Grant Line Canal, Four Corners Area, Salmon Slough, Old River upstream of Tracy Blvd. to the Head of Old River. Bridge. If GLC can operate from June through September , dredging downstream of Grant Line Canal eastern barrier site (75,000 cubic yards) \$5.25 Million
25		Extend Ag diversions & add Fish Screens	See items 51-54. Over 127 ag diversions in south Delta cost estimate is greater than \$6,350,000, excluding dredging costs	See items 51-54. 12 diversions West of Flow Structures. cost estimate is \$600,000, excluding dredging costs
26		Flow Structures	Not Applicable	Middle River: \$3.9-Million Old River at Tracy: \$7.8-Million Grant Line Canal (rubber dam): \$7-Million Grant Line Canal Radial Gates: \$15.6-Million
27		Fish Structure at HOR	\$12.2 Million	\$12.2-Million

DRAFT

E-037275

Alternative Rating for the South Delta Improvements Program

	Feasibility Issues	Issues to address	Alternative Ratings	
			Single Barrier Alternative	Multiple Barrier Alternative
	<i>Cost</i>	<i>Components</i>		
28		O & M	Cost to maintain fish screens and dredge south Delta channels needed.	Cost to maintain fish screens on Grant Line Canal, and dredging south Delta channels downstream of barriers needed. Also, flow structure O&M costs.
29		Mitigation	CalFed ERP actions are to be staged over 30-years. Over 40,000 acres are listed for south Delta restoration, plus another 75-miles of riparian habitat and delta slough improvements (approximately 180 additional acreage of waterside land). \$3,500 per acre, this land acquisition would cost approximately \$140-Million. Assuming Enhancement costs are in addition to acquisition costs.	Same as 1

DRAFT

Alternative Rating for the South Delta Improvements Program

30 Impact		Alternative Ratings	
31 Resource/ Subcategory		Single Barrier Alternative	Multiple Barrier Alternative
32	<u>Aquatic</u>	Cause/Species impacted	
		Direct Fish Losses	Unscreened CCF intake: Predation 75 percent losses from fish entering the Forebay Screened intake: 15 percent
33	Intake Structure		same as 1
34	Fish and Flow structures or equivalent	Predation	Potential for significant losses at structures same as 1
		Blockage	Not Applicable
35			Radial gate operations at Grantline will keep gates open during all of the flood tide and part of the ebb tide (up to 20 of 25 hours in a tidal cycle). Other adaptive management measures are being proposed to avoid blockage and entrainment.
36		Entrainment	Not Applicable
37			See Footnote One
38	Hydrodynamic effects	Increased exports	See Footnote Two
39		Flow Structure	See Footnote Three
40		Fish Control Structure	See Footnote Four
41			
42	Habitat Losses	Biological Communities	
43		Community Energetics	
44		Environmental Water	
46	Stanislaus Steelhead		
47	San Joaquin fall-run chinook survival	Smolt	
		San Joaquin Salmon passing thru south Delta	
48	Adult salmon passage	Juvenile Salmon	
49	Sacramento River Salmon Survival	Delta smelt	
50	Survival of other delta native fishes	Splittail	
51			
52	<u>Terrestrial</u>		
		CVP	See Footnote Six For Summary Table of Water Quality Impacts
54	Water Quality	SWP	See Footnote Six For Summary Table of Water Quality Impacts
55		CCWD	
56			
57			
		Middle River	Not Applicable
58	Navigation/ Transportation	Old River at Tracy	Not Applicable
			A boat ramp and operator will accommodate recreational boat traffic
			Structure will flashboards to allow barges to pass. When the flashboards are not in place, recreational boat traffic may also pass. When the flashboards are in place, boat traffic may use a boat lock.
59			

DRAFT

Alternative Rating for the South Delta Improvements Program

60		Grant Line Canal	Not Applicable	Structure will flashboards to allow barges to pass. When the flashboards are not in place, recreational boat traffic may also pass. When the flashboards are in place, boat traffic may use a boat lock.
61		Head of Old River	Structure will flashboards to allow barges to pass. When the flashboards are not in place, recreational boat traffic may also pass. When the flashboards are in place, boat traffic may use a boat lock.	same as 1
62		Intake		
63	<u>Recreation</u>	Middle River		
64		Old River at Tracy		Mountain House developers see opportunities for fishing
65		Grant Line Canal		
66		Head of Old River	Fishing at this location will improve	Fishing at this location will improve
67		Intake		
68	<u>Delta Levees</u>			
69	<u>Land Use/ Planning</u>		Increased area for dredge disposal sites will take ag land out of production, possibly permanently. For intake at North Central location will take ag land production on Byron Tract.	For intake at North Central location will take ag land production on Byron Tract.

DRAFT