

# **South Delta Improvements Decision Support Documentation**

**for**

**CALFED Policy Group Meeting  
May 13, 1999**

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**Working Draft for Discussion -- Subject to Change****(All project specific actions are subject to full environmental evaluation and permitting)****Features of the SDI Alternatives**

rev. 5/12/99 @ 1030 smb

**Note: Direct construction impacts, including dredging and facilities, will be avoided, minimized, and mitigated as appropriate.**

<b>Alternative Features</b>	<b>1. Single Barrier Alternative</b>	<b>2. Multiple Barrier Alternative</b>
<b>New Northern CCFB Intake and Fish</b>		
1 <b>Screens</b>		
2	Screen all water diverted for export by the SWP and CVP from the South Delta with best available technology by the end of Stage 1. The most appropriate configuration of intakes will be determined by continuing research and analysis.	same as 1
3	Construct new intake gates and channel on Byron Tract south of the Los Vaqueros screen on Old River. Siphon water under Italian Slough into north end of forebay.	same as 1
4	Construct 500 cfs Tracy Test Fish Facility	same as 1
5	Construct 2500 cfs fish screen module, including fish salvage facilities acceptable to the fish and wildlife agencies for new CCFB intake based on results of TFFF results	same as 1
6	Construct additional screen modules and fish salvage facilities based on experience with first module to achieve screening of full export capacity at 0.2 ft/sec approach velocity.	same as 1
7 <b>Option: SWP/CVP Intertie between Export Pumps</b>		

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	<b>Alternative Features</b>	<b>1. Single Barrier Alternative</b>	<b>2. Multiple Barrier Alternative</b>
8:		Construct intertie between SWP and CVP, expand northern intake of CCFB to 14,900 cfs, with screens and fish salvage facilities and close TFF screened intake OR construct new screens at Tracy Pumping Plant with fish salvage facilities acceptable to the fish and wildlife agencies.	same as 1
9	<b>SWP/CVP Intertie between DMC and California Aqueduct</b>		
10		Construct an intertie downstream of the export pumps between the CVP Delta-Mendota Canal and the SWP California Aqueduct. Its use will be at times and for purposes acceptable to the fish and wildlife agencies	same as 1
11	<b>A. Dredging in Old River</b>		
12		Dredge Old River north of the new intake to avoid, to the extent possible, areas that are < 3 m at MLW. Confine dredging to August 1 through October 14.	same as 1
13	<b>Intake Operations:</b>		
14		During the February through August period, limit pumping to the extent needed to keep intake velocities at or below an approach velocity of 0.2 f/s.	same as 1
15		Report approach velocity criteria data daily and include in the monitoring plan (see Component "Monitoring").	same as 1
16			
17	<b>Fish Salvage Facilities Operation, Enhanced Salvage Data Processing and Reporting at both CVP and SWP Export Facilities</b>		
18		Coordinate salvage procedures, data processing, and reporting with fishery agencies.	same as 1

	<b>Alternative Features</b>	<b>1. Single Barrier Alternative</b>	<b>2. Multiple Barrier Alternative</b>
19		Develop revised formulas for loss estimates that are acceptable to the fish and wildlife agencies using appropriate studies to determine new prescreen loss rates, changed predation effects, and any other changes that could affect take estimates for the SWP and mitigation funding for agreements such as the Four Pumps Agreement.	same as 1
20		Before operating the new CVP facilities or new SWP intake, DWR and USBR will enter into an Operations and Maintenance agreement that is acceptable to the fish and wildlife agencies, and that includes a fish salvage plan.	same as 1
21		Report daily approach velocity criteria data.	same as 1
22	<b>SWP and CVP operations will be modified to allow Joint Point of Diversion.</b>		
23		Implement JPOD using an approach acceptable to the Fish and Wildlife agencies.	same as 1
24	<b>SWP operations prior to completion of new intake and fish screen</b>		
24a		Exports will not be full screened at first; additional operational constraints will limit use of full 10,300 cfs capacity accordingly.	same as 1
24b		Increase average daily exports of up to 8,500 cfs through the existing radial gate intake to Clifton Court Forebay, in phases, corresponding to progress with ecosystem restoration. Incremental increase in exports will be in accordance with the following criteria, except as modified by implementation of the Environmental Water Account.	same as 1
24c		Use the increased diversion capability in February and March only if the previous day's QWEST is positive and is calculated to remain positive during the current day's increased diversions.	same as 1

	<b>Alternative Features</b>	<b>1. Single Barrier Alternative</b>	<b>2. Multiple Barrier Alternative</b>
24d		Limit the increased diversion capability in February so that the increased diversions do not result in a daily E/I ratio of greater than 35 percent.	same as 1
24e		Limit the increased diversion capability in March so that, except in wet and above normal years, the increased diversions do not result in a daily E/I ratio of greater than 30 percent.	same as 1
24f		<del>Restrict exports in April through June to the presently permitted pumping levels. Between April 1 and June 15, extend VAMP flow increases and export reductions for up to 60 days based on fish triggers. For the other 15 days, ramp E/I ratio to reach 0.35.</del>	same as 1
24g		Ramp up increased export capacity in July so that increased exports beyond currently allowed levels are less than 1,000 cfs in the first ten days of July, and 2,000 cfs in the second ten days of July.	same as 1
25	<b>SWP operations after completion of new intake and fish screen and approval by the fish and wildlife agencies</b>		
26		Allow SWP operations to export, consistent with the above operating criteria an average daily amount of up to 10,300 cfs.	same as 1
27	<b>Agricultural and Wetland Diversion Screening</b>		
28		Annually, allocate an appropriate level of funding for the south Delta portion of a Delta Screening Program (including consolidation as appropriate).	same as 1
29		<del>Screen all agricultural diversions in Grant Line Canal.</del>	<del>Ag diversions west of the GLC barrier that are lowered will be screened</del>
30	<b>Aquatic and Terrestrial Habitat Restoration Targets in the South Delta Region</b>		

	<b>Alternative Features</b>	<b>1. Single Barrier Alternative</b>	<b>2. Multiple Barrier Alternative</b>
31		To begin implementation of the ERP and the multi-species conservation strategy, contiguous expanses of terrestrial and aquatic habitat will be identified, protected, and increased in the lower San Joaquin River and South Delta Region. The following target acreages may be modified in accordance with the principles of adaptive management, taking into consideration the specific physical and operational features of the selected alternative.	same as 1
32		Tidal Perennial Aquatic, 2000 ac	same as 1
33		Nontidal Perennial Aquatic, deep open water, 200 ac	same as 1
34		Nontidal Perennial Aquatic, shallow open water, 300 ac	same as 1
35		Delta Sloughs, 50 mi	same as 1
36		Midchannel Islands, 50 to 200 ac	same as 1
37		Fresh Emergent Wetland (Tidal), est. 8,000 ac to 12,000 ac as part of the total estimated acreage for the Delta region	same as 1
38		Fresh Emergent Wetland (non-Tidal), 4000 ac	same as 1
39		Seasonal Wetland, improve 500 ac, restore 12,000	same as 1
40		Riparian and Riverine Aquatic, 25 mi	same as 1
41		Perennial Grassland, 1,000 to 2000 ac	same as 1
42		Wildlife Friendly Ag, est. 8,000 ac to 12,000 ac as part of the total estimated acreage for the Delta region	same as 1
43	<b>Regional Fishery Resources Monitoring</b>		
44		Increase fishery monitoring in order to guide the use of the flexibility associated with the increased export capacity. <i>Add specific monitoring stations for Old River, Middle River, and GLC</i>	same as 1

	<b>Alternative Features</b>	<b>1. Single Barrier Alternative</b>	<b>2. Multiple Barrier Alternative</b>
45		Conduct an Adult Salmon Passage Evaluation to determine if adult salmon are delayed or blocked by the flow or fish control structures. If impediments occur, develop and implement mitigation measures.	same as 1
46	<b>Component: Water Quality</b>		
47		Take appropriate measures to manage dissolved oxygen in San Joaquin River in vicinity of Stockton, including the Port of Stockton turning basin. Includes studies and appropriate implementation actions.	same as 1
48		Evaluate and if demonstrated to be feasible, implement release of TDS buildup during Pulse Flow Period.	same as 1
49		Conduct a feasibility study to evaluate recirculation benefits and impacts.	same as 1
50		Enhance existing studies in the San Joaquin Valley to evaluate integrated on-farm management of selenium. Based on the results of these studies, contribute to full implementation of the program.	same as 1
		Evaluate and if demonstrated to be feasible, implement consolidation, relocation, and/or treatment of agricultural drainage in the south Delta region (i.e. Veale Tract drainage, RD 800 drainage, and other possibilities).	same as 1
51	<b>Consolidation and Extension of Agricultural Diversions as appropriate</b>	<b>Note: This element pertains to coping with stage effects of project operations only. See 27, "Agricultural and Wetland Diversion Screening"</b>	
52		Fund and implement a program to consolidate, extend, and screen agricultural diversions in the south Delta region as appropriate	Limited to diversion locations which must be relocated because they are west of the barrier locations.
53		Fund and set up an Operation and Maintenance Team funding for agricultural diversions by 2001.	Limited to diversion locations which must be relocated because they are west of the barrier locations.

	<b>Alternative Features</b>	<b>1. Single Barrier Alternative</b>	<b>2. Multiple Barrier Alternative</b>
54		Conduct maintenance dredging as appropriate to assure proper operation of the screened intakes.	Limited to diversion locations which must be relocated because they are west of the barrier locations.
55	<b>SJ River &amp; Tributaries Management for WQ standards within SDWA service area.</b>		
56		Seek the cooperation of San Joaquin River basin reservoir operators to achieve re-operation and/or purchase water for release during summer months to achieve existing WQ standards within SDWA service area and at Vernalis. Determine the amount of flow needed to achieve this through modeling.	Continue with existing operational approach
57	<b>Component: Head of Old River Fish Control Structure</b>		
58		Construct a permanent, operable Head of Old River (HOR) Fish Control Structure. Continue fishery monitoring, reevaluate, and modify operations of structure as appropriate. Continue temporary barrier placement until the permanent structure is in place.	same as 1
59	<b>HOR Operations:</b>		
60		Begin HOR Fish Control Structure operation in the spring at the discretion of the fish and wildlife agencies, in <del>consultation</del> <b>coordination</b> with project operators and subject to San Joaquin River flow conditions, as early as April 1 and continue operation through no later than June 15.	same as 1, except installation by April 15 and removal by May 30
61		Begin HOR Fish Control Structure operation in the fall at the discretion of the fish and wildlife agencies, in <del>consultation</del> <b>coordination</b> with project operators and subject to San Joaquin River flow conditions, as early as September 1 and continue operation through no later than November 30.	same as 1, except begin operation on October 1
62	<b>Flow Control Structures</b>		

	<b>Alternative Features</b>	<b>1. Single Barrier Alternative</b>	<b>2. Multiple Barrier Alternative</b>
63		Remove Temporary Flow Control Structures in phases, by year 2003 with Channel Dredging as required to achieve appropriate water supply utility. This dredging could include most of Old River upstream of Tracy Pumping Plant, Grant Line Canal, and Middle River, and the Salmon Slough area channels.	Construct operable Flow Control Structures at Middle River and Old River at Tracy. Grant Line Canal Flow Control Structure may or may not be constructed (Option A, no GLC, Options B,C, construct GLC. See Operations section below). For GLC, construct with an inflatable rubber dam and stop logs. Other flow control structures will either be inflatable rubber dams or operable radial gates.
64	<b>Flow Control Structures Operations</b>		
65		n/a	Operate Middle River (MR) Flow Control Structure only from April 15 through October 31. <b>Coordinate operation with HOR operation to improve fisheries, water quality, and water supply availability.</b>
66		n/a	Operate Old River at Tracy (ORT) Flow Control Structure no earlier than April 15 and no later than October 31. <b>Coordinate operation with HOR operation to improve fisheries, water quality, and water supply availability.</b>
67		n/a	The Grant Line Canal (GLC) Flow Control Structure: Option B, limit operation to the period of August 1 through October 31. If operations occur prior to September 1 it will be for no more than two days in any seven day period. Option C, operation from June through October 31, <b>operated daily for 9 hours or less as required to improve fisheries, water quality, and water supply availability.</b>
68	<b>Flow Control Structures Monitoring</b>		
69		Continue monitoring program for temporary structures until they are phased out.	Monitor impacts on fish, stages, effects on circulation and water quality, and San Joaquin flows.
70			
71	<b>Other</b>		

	<b>Alternative Features</b>	<b>1. Single Barrier Alternative</b>	<b>2. Multiple Barrier Alternative</b>
72		Create an operation coordination team (OCT) <i>with representation by DWR, USBR, USFWS, NMFS, CDFG, and stakeholders chaired by the fish and wildlife agencies.</i>	same

<i>Working Draft for Discussion -- Subject to Change</i>			
<b>Preliminary Evaluations of the SDI Alternatives</b>			
rev. 5/12/99 smb 1100 hr			
Impact	Technical	Alternative Ratings	
Feasibility Issues	Issues to address	Single Barrier Alternative	Multiple Barrier Alternative
2	<b>Existing Technology</b> Questionable or untested technology	1. Intake Structure Screens (10,300-cfs) 2. Agricultural Screening application to tidal locations	same + 3. Rubber dam at Grant Line Canal barrier site (if rubber dam option chosen)
3	<b>Logistics/Timing</b> Completion by end of Stage 1	<b>Based on current draft schedule, 10,300 cfs screened intake will be completed after end of Stage 1. For description of screening sequence see SDI Alternatives items 1-6 and 24a.</b>	same
4	<b>Availability</b> Sufficient flows for interior south Delta water quality	<b>Questionable opportunity to acquire from 0 to more than 240 TAF needed to provide equivalent protection in wet to critically dry years, respectively.</b>	not a component of this alternative
5	<b>Manageability, Jurisdiction To Do the Work</b> <b>Components</b>		
6	Dredge south Delta channels	Initial disposal of 3.5 - 4 million cubic yards of dredge spoils, plus disposal of maintenance dredging	Initial disposal of less than 1 million cubic yards is more manageable
7	Extend Ag diversions & add Fish Screens	<b>Voluntary compliance with this component is questionable</b>	<b>same policy concern but fewer diversions may need to be extended, and likelihood of cooperation is greater. Option A, with no GLC will require the most ag diversion extensions. Option B is similar to A, because GLC barrier is open during peak irrigation period. Option C will require extension of diversion intakes west of barriers only.</b>
9	Fish Structure at HOR	Conflicts in operating the structure between salmon and delta smelt in spring. Need to balance benefits and impacts.  City of Tracy's NPDES permit dilution requirements may be impacted by HOR barrier operation.	same
12	<b>Costs</b> <b>Components</b>		
13	<b>New SWP Intake Structure</b>	Very rough estimated total intake cost is about \$550 million <b>for an average maximum daily export capacity of 10,300 cfs.</b> (The Northeast location is likely to be \$20-\$40 m less expensive than the proposed north west location because it doesn't require siphon under Italian Slough and an extended intake channel.)	same

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		Single Barrier Alternative	Multiple Barrier Alternative
	New Screens for CVP Exports at TPP or CCFB	Very rough estimated cost of building new fish screens for Tracy Pumping Plant or enlarging CCFB intake capacity to include CVP pumping is about \$230 million for an average maximum daily CVP export capacity of 4600 cfs. Cost of 4600 cfs intertie between CCFB and Tracy PP intake is about \$40 million. Total for additional screens plus intertie would be about \$ 270million.	same
14	Dredge Old River and dispose of materials	Dredge less than 50,000 cubic yards (\$500,000). Price will vary with location of dredge disposal site. Potential to offset cost through sale of dredged materials for reuse elsewhere. (Northeast intake: Dredge an additional 150,000 cubic yards (\$1.5-million)).	same
15	Dredge south Delta channels and dispose of materials	Dredge interior south Delta channels (2 million cubic yards); Old River adjacent to CCF and Tracy PP intakes 500,000 cy; San Joaquin River (1.0-1.5 million cubic yards)  Total: 3.5-4.0 million cubic yards; at cost of \$35-40 million	Dredge downstream of barriers ( near DMC, & CCF intake 500,000 cubic yards).  If GLC can not operate until August or is not installed, dredging will total approximately 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.  If GLC can operate from June through September, dredging downstream of Grant Line Canal eastern barrier site (75,000 cubic yards)  Total: 575,000 - 850,000 cubic yards; at cost of \$6 - 9 million
16	Extend Ag diversions & add Fish Screens to provide ag water supply	Consolidate, extend, and screen ag diversions in the south Delta as appropriate. Potentially 127 ag diversions in south Delta could be screened at an estimated cost of \$6,350,000, assuming all intakes are screened. Assume \$10,000/diversion per cfs diversion.	12 - 20 diversions would need to be extended, then screened. cost estimate is \$600,000 to \$1.0m

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17	Flow Structures	Not Applicable	Middle River: \$3.9 Million Old River at Tracy: \$7.8 Million Grant Line Canal (rubber dam): \$7 Million or Grant Line Canal (Radial Gates): \$15.6 Million
18	Fish Structure at HOR	\$12.2 Million	same
22	O & M	O&M costs for: - fish screens - dredging of south Delta Channels ( <b>Assuming 10% annual cost, \$4 m/yr</b> ) - intake facilities - HOR fish structure	O&M costs for: - fish screens, cost reduced compared to single barrier alt - dredging of south Delta Channels ( <b>Assuming 10% annual cost, \$0.9 m/yr</b> ) - flow control structures - intake facilities (same) - HOR fish structure (same)
23	San Joaquin Flow Augmentation	Assume \$100 per acre-feet Total acre-feet required: 0-240 TAF/yr Total cost: up to \$24 m/yr	Not Applicable
24	Restoration	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). At \$3,500 per acre, this land acquisition would cost approximately \$140-Million. Assume restoration costs are in addition to acquisition costs.	Same as 1
25	Mitigation for...	Intake and Screen construction HOR Structure construction Dredging Navigation and Recreation	Intake and Screens (same as single barrier alternative) HOR Structure (same as single barrier alternative) dredging (less than single barrier alternative) 2 - 3 flow control structures footprint impacts Operational impacts on fisheries due to barriers Navigation and recreation impacts greater than single barrier alternative, but impacts reduced for this alternative if GLC not installed.

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28	<b>Aquatic Habitat Effects</b>	<b>Cause/Species Impacted</b>	
29		Direct Fish Losses at SWP/CVP Intake Structure(s)	<p>Predation within the forebay will be eliminated (75-98%), but there will be remaining predation losses (15%) at the screens. Increased flow from central Delta when the HOR barrier is in place will expose a larger number of central Delta and Sac River fish and a fewer number of SJR fish to predators at the new intake in April and May. Improved fish handling procedures will improve fish survival.</p> <p>same as 1 except that multiple barrier alternative operates during late spring and summer and creates larger increases in net upstream flows in channels. Comparably the hydrodynamic alterations cause more numbers of fish to be exposed to predators at the intake and therefore higher mortality rate through predation. If GLC structure is not installed impacts will be less severe.</p>
30		Effects of Flow Control Structures on Fish Predation	<p>Predators are likely to become concentrated around the HORB. Fish near the structure are likely to be exposed to higher rates of predation.</p> <p>Greater increase in predatory opportunity and a reduction in fish opportunity for escapement results in increased fish mortality with multiple barrier structures. Impacts associated with predator concentrations and predation rates will be significantly higher. Due to the limited number of juvenile salmon that are likely to use Middle River the impact in that waterway is likely to be insignificant. The ORT structure represents a greater risk to both salmon and estuarine fish. The greatest risk of impact is associated with the GLC structure. Eliminating the GLC barrier substantially reduces the risk of impact</p>
31		Effects of Flow Control Structures on Migration (blockage)	<p>The HORB, when closed in the spring, will reduce juvenile San Joaquin salmon smolt losses in the south Delta. Comparably this alternative provides a benefit without creating unidirectional flows, avoids blockage within the southern Delta, and maintains the opportunity for other Delta aquatic species to migrate through the Delta.</p> <p>In the fall, barrier operation without flow down the HOR may block adult salmon migration into the San Joaquin River. However, the net effect is improved fish passage</p> <p>Benefits of operating HORB is similar to Single Barrier alternative. Aquatic organisms can be blocked by the flow control structures and become trapped behind the barriers and their movement restricted. Normal transport downstream will be hindered since channel flows will be altered and limited to an upstream instead of downstream direction on the ebb tide. All three flow control structures result in the greatest impact. Limited operation of GLC coupled with monitoring under Options B and C will also reduces impacts. If GLC is not installed impacts will be even less severe.</p>

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<b>Feasibility Issues</b>	<b>Issues to address</b>	<b>Single Barrier Alternative</b>	<b>Multiple Barrier Alternative</b>
32	Effects of Flow Control Structures on Entrainment by SWP/CVP and ag diversions	No consensus on this: The HORB, when closed, will reduce the entrainment of juvenile San Joaquin salmon into CCF and the Tracy Fish Facility. This alternative avoids increases in entrainment by not blocking several channels in the south Delta and reduces prolonged susceptibility to agricultural diversions.	No consensus on this: Reduction in fish opportunity for escapement out of the south Delta and a greater increase in entrainment. Flow control structure operations may increase entrainment of aquatic organisms into agricultural diversions in Old River, Middle River, and Grant Line Canal, upstream of the structures. The multiple barrier alternative provides protection to San Joaquin fall-run but extends the period of potential impacts to other species.
33	Hydrodynamic effects of Increased exports and flow structures	Since increased exports are not likely to occur frequently during the period when the HORB would be operated the impact associated with increased diversions in association with the HORB would be insignificant.	The impacts will be higher with the multiple barrier control structures installed. Increased exports during the time the flow control structures are in operation will increase flows from the central Delta and expose a larger number of central Delta and Sacramento River estuarine fish to predator concentrations and increased entrainment at the new intake into CCF. Eliminating the GLC barrier substantially reduces the impact.
37	<b>Habitat Losses</b>  Construction	Direct losses to aquatic habitat are small (less than 5 acres) with the single barrier alternative. Direct loss of 450 feet nearshore habitat on channel sides. Cofferdam impacts during construction.	Losses are larger with the four barriers (less than 8 ac). Losses are somewhat less absent GLC barrier. Comparably 2,850 feet of total nearshore habitat lost. Cofferdam impacts during construction.
38	Operation	Losses are small and likely insignificant with the HORB.	Losses are larger, in part, due to the flow control structures cutting off full tidal action to significant reaches of several south Delta sloughs. Several hundred acres of current tidal slough with tidal perennial aquatic habitat may be adversely impacted. Estuarine fish would be the species group most likely affected by this habitat loss.
39	Biological Communities	Complex and uncertain. SDIT could not agree. The HORB is expected to contribute to improving trends in abundance of San Joaquin fall-run salmon. Contributions to other organisms such as native phytoplankton or zooplankton assemblages is minor.	Complex and uncertain. SDIT could not agree. Effects of operating HORB is similar to Single Barrier alternative. Flow control structures may degrade the trend in the diversity, abundance, composition, and distribution of native phytoplankton or zooplankton assemblages.

**Preliminary Evaluations of the SDI Alternatives**

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Impact	Technical	Feasibility Issues	Issues to address	Alternative Ratings
				Multiple Barrier Alternative
				Single Barrier Alternative
	Community Energetics			<p>Complex and uncertain. SDIT could not agree. Effects of operating HORB is similar to Single Barrier alternative. Flow control structures may degrade and interfere with the natural rates of productivity, nutrient transport, and nutrient loading trend in the diversity, abundance, composition, and distribution of native phytoplankton or zooplankton assemblages. Effects in Middle River will be minimal. If GLC flow control structure is not installed impacts will be less severe.</p>
40	San Joaquin River Basin Steelhead			<p>HORB barrier improves smolt survival however, when operating the other flow control structures contribute to increased mortality.</p>
41	San Joaquin fall-run chinook survival			<p>HORB barrier contributes to flow changes which, on the whole, improve survival</p>
42	Smolt			<p>HOR barrier contributes to flow changes which, on the whole, improve survival</p>
43	Adult salmon passage	San Joaquin Salmon passing thru south Delta		<p>HOR barrier contributes to flow changes which, on the whole, improve survival. However, delays in migration of adult San Joaquin salmon which move upstream through Old River, GLC, and Middle River are likely to impact their survival.</p>
44	Sacramento River Salmon Survival	Juvenile Salmon		<p>Operation of the HORB barrier contributes to flow changes that could affect SR salmon smolt survival.</p>
45	Survival of other delta native fishes	Delta smelt and splittail		<p>Operation of the HOR barrier contributes to flow changes that reduce delta smelt and splittail survival.</p>
47	Terrestrial Impacts			<p>Construction of the HORB will result in only small impacts on terrestrial habitat. Dredging will be significant and will result in impacts of 500 to 1,000 acres due to dredge spoil storage in impacts of 500 to 1,000 acres due to dredge spoil storage</p> <p>Construction of the HORB will result in only small impacts on terrestrial habitat. Dredging in GLC if GLC is not constructed will be significant and will result in impacts of 200 to 300 acres due to dredge spoil storage Construction Activities: Prolonged period affecting: Raptor nests, loss of 5.8 A cropland. ORT removes 1000 feet Mason's Lili Colony</p>

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51			Construction Activities: Prolonged period affecting; Raptor nests, loss of 5.8 A cropland. ORT removes 1000 feet Mason's Lil. Colony
52	<b>Navigation/Transportation Impacts</b>	Middle River	Not Applicable
53		Old River at Tracy	Not Applicable
54		Grant Line Canal	Not Applicable
55		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. The delay and inconvenience of lock passage constitutes a minor impact on navigation and recreation because the barrier is only operated for 2 months out of the year, before and after peak recreational use.
57	<b>Recreation Impacts</b>	Middle River Barrier	Conflict with San Joaquin County General Plan. Significant adverse impact
58		Old River at Tracy Barrier	Conflict with San Joaquin County General Plan. Significant adverse impact
59		Grant Line Canal Barrier	Conflict with San Joaquin County General Plan. Significant adverse impact
60		Head of Old River Barrier	Conflict with San Joaquin County General Plan. Significant adverse impact

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		<b>Single Barrier Alternative</b>	<b>Multiple Barrier Alternative</b>
68	<b>Land Use/ Planning</b>	Increased area for dredge disposal sites <i>may</i> take ag land out of production, possibly permanently. <b>Alternative disposal sites on Delta levees or for Franks Tract Restoration could minimize or eliminate this impact.</b> -Intake at North Western location will reduce ag land production on Byron Tract.	Intake at North Central location will reduce ag land production on Byron Tract.
	<b>South Delta Stages</b>	HOR operation causes drop in south Delta water levels up to 2 ft when closed in spring and fall. Increasing summer flows by 1000 cfs in June - September may raise stages by about 1.0 foot at Vernalis, about 0.5 foot at HOR, and decreasing slowly westward to insignificance by the longitude of Tracy Blvd. Channel dredging and lowering ag diversion intakes where required would address water availability for all diversions in the south Delta area.	HOR operation causes drop in south Delta water levels up to 2 ft when closed in spring and fall. MR and ORT operation improves water levels by about 1 foot. GLC operation increases south Delta water levels another 1 to 1.5 feet when operated according to Option C ( <b>9 hours or less</b> )
71	<b>South Delta Water Quality: Electrical conductivity, Total Dissolved Solids</b>	SWP Intake	Slightly worse – HOR causes more SJR water at pumps.
72		CVP Intake	Slightly better- HOR causes less SJR water at pumps.
73		CCWD Intakes	Slightly worse – HOR causes more SJR water at pumps.
74		South Delta Region, Local Intakes	Slightly better- HOR causes less SJR water at pumps.
75		Central Delta Region, Local Intakes	Slightly worse during HOR operation; slightly better from increased SJR
76	<b>South Delta Water Quality: Effluent Dilution</b>	City of Tracy Effluent Discharge Dilution	HOR operation in spring and fall degrades ability to meet NPDES requirements. Additional SJR flows slightly improve water quality
77	<b>San Joaquin River Dissolved Oxygen</b>	San Joaquin River near Stockton	DO improves w/HOR barrier operation. Additional SJR flows also improves summer DO and Ec
	<b>San Joaquin River Salinity</b>	San Joaquin River at Vernalis	Increased summer flows will improve VNS water quality
			no effect

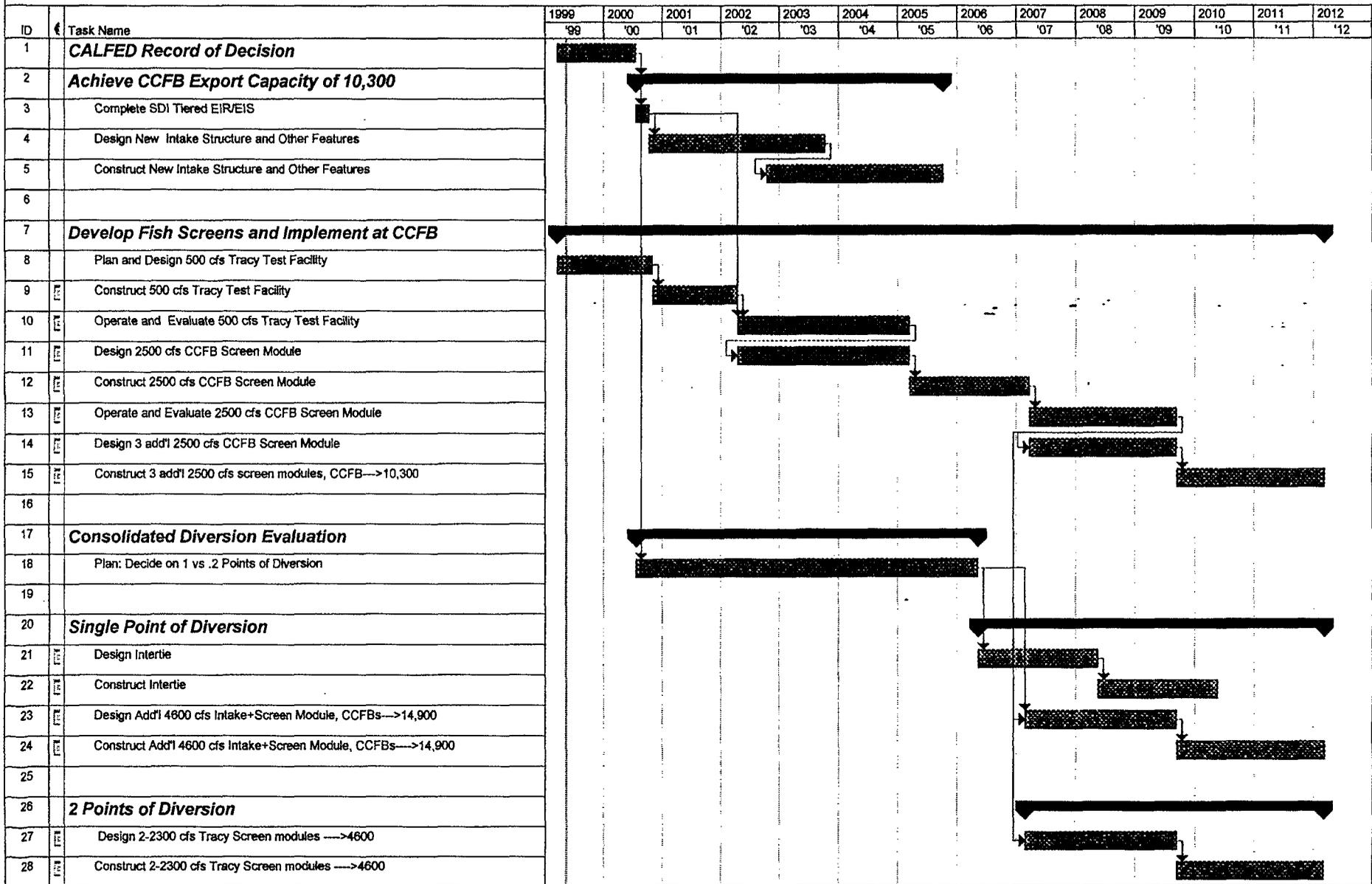
Working Draft for Discussion -- Subject to Change		Preliminary Evaluations of the SDI Alternatives	
Impact	Technical	Issues to address	Feasibility Issues
		Actions for which benefits and impacts were not evaluated	
		Screening Tracy Fish Facility or enlarging CCFB	Single Barrier Alternative
		SWP/CVP Intertie	Multiple Barrier Alternative
		Ag Intake screening	
		Aquatic and terrestrial habitat restoration	
		Manage dissolved oxygen in SJ River, Stockton area	
		Ag discharge relocation, consolidation, and/or treatment in soil	
		Implement release of TDS during pulse flow period	
		Recirculate Delta exports for water quality and flow benefits	
			same
			Alternative Ratings

rev. 5/12/99 smb 1100 hr

D-012007

D-012007

Draft Implementation Schedule, SWP and CVP Fish Screening Facilities



Task		Summary		Rolled Up Progress		Project Summary	
Progress		Rolled Up Task		Split			
Milestone		Rolled Up Milestone		External Tasks			

From: matthew\_vandenberg@mail.fws.gov  
X-Mailer: ccMail Link to SMTP R8.20.00.25  
Date: Wed, 05 May 1999 08:22:18 -0700  
To: <mford@water.ca.gov>, <sford@water.ca.gov>, <parviz@water.ca.gov>, <chung@water.ca.gov>, <millier@water.ca.gov>, <tara@water.ca.gov>, <fwernett@delta.dfg.ca.gov>, <Gary.Stern@NOAA.gov>, <jmonroe@spk.usace.army.mil>, <pdhillon@water.ca.gov>, <KARL.HALUPKA@NOAA.gov>, <markho@water.ca.gov>, <ngm@water.ca.gov>, <kkelly@water.ca.gov>, <sroberts@water.ca.gov>, <abrandt@ios.doi.gov>, <pbrantle@delta.dfg.ca.gov>, <jrenning@mp.usbr.gov>, <paunger@mother.com>, <sbuer@water.ca.gov>, <lee@water.ca.gov>, <barron@water.ca.gov>, <acandlish@mp.usbr.gov>, <mmcgee@delta.dfg.ca.gov>, <tdang@water.ca.gov>, <bjunell@spk.usace.army.mil>, <sroberts@water.ca.gov>  
Subject: Re: More revisions from Stein

Going over the Table the other day, I noticed a few minor changes that need to be made. They are as follows:

1. Line 24f should be rewritten to read: Between April 1 and June 15, extend VAMP flow increases and export reductions for 60 days based on fish triggers. For the other 30 days, ramp E/I ratio to maintain 0.35.
2. Line 44: We need to add specific language so new monitoring stations are included in Old River, Middle River, and Grant Line Canal.
3. Line 60 and 61: Remove the word "consultation" and replace it with "coordination". We consult with Federal Agencies and coordinate with nonFederal Agencies.
4. Lines 52 - 54: In Line 28, we have agreed to a south Delta Screening Program. In Lines 52 - 54, this seems to be limited to only those diversions west of the barriers. If the Multiple Barrier Alt. is selected, consolidation, extension, and screening may be required on diversions east of the barriers as appropriate. Some rewording is needed here so we all understand that the south Delta screening program covers all diversions in the south Delta.
5. We still have issues with the indirect effects of barrier operations. To at least minimize the adverse affects, the ORT and MR barriers should be tied to HOR barrier operation for the times specified in Lines 60 and 61.
6. Line 72: Rewrite as follows: "Create an operation coordination team (OCT) chaired by the fisheries agencies."

Please let me know what you all think.

USFWS

matthew\_vandenberg@mail.fws.gov, 08:22 AM 5/5/99 -0700, Re: More revisions from Stein

Matt Vandenberg  
979-2739, ext 327

\_\_\_\_\_  
Reply Separator \_\_\_\_\_

Subject: More revisions from Stein  
Author: Steve Roberts <sroberts@water.ca.gov> at ~INTERNET  
Date: 05/02/1999 10:38 AM

Stein asked me to mail you this updated SDI Alternatives Table. Let me know if you can't open it. My email seem to be playing games with me today.

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Printed for Stein Buer <sbuer@water.ca.gov>

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D-012010

**Stephen Roberts, 02:55 PM 5/7/99 -0700, Grant Line Canal Operation**

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X-Sender: sroberts@doppop2.water.ca.gov

X-Mailer: QUALCOMM Windows Eudora Pro Version 4.1

Date: Fri, 07 May 1999 14:55:40 -0700

To: mford@water.ca.gov, sford@water.ca.gov, parviz@water.ca.gov, chung@water.ca.gov, miller@water.ca.gov, tara@water.ca.gov, fwernett@delta.dfg.ca.gov, Gary.Stern@NOAA.gov, jmonroe@spk.usace.army.mil, pdhillon@water.ca.gov, KARL.HALUPKA@NOAA.gov, markho@water.ca.gov, ngm@water.ca.gov, Matthew\_Vandenberg@mail.fws.gov, kkelly@water.ca.gov, sroberts@water.ca.gov, abrandt@ios.doi.gov, pbrantle@delta.dfg.ca.gov, jrenning@mp.usbr.gov, paunger@resourceinsights.com, sbuer@water.ca.gov, lee@water.ca.gov, barron@water.ca.gov, acandlish@mp.usbr.gov, mmcgee@delta.dfg.ca.gov, tdang@water.ca.gov, bjunell@spk.usace.army.mil

From: Stephen Roberts <sroberts@water.ca.gov>

Subject: Grant Line Canal Operation

DWR has just completed our review of Delta Modeling studies that show the level of protection Grant Line Canal Flow Structure provides with different operations. We modeled GLC to be:

1. fully closed during the ebb tide
2. fully open during the ebb tide
3. closed 5, 7, and 9 hours during the ebb tide

Using a low energy tide, we compared levels of protection for each of these runs. With the radial gate operation at CCF, DWR was comfortable with a 5 hour operation at GLC.

However, the low head pumps at CCF (to facilitate screening the intake) lower stages even more than radial gates in south Delta channels. After looking at the data, and comparing the results with the stages that have caused problems for SDWA, it does not appear that the neither the five year nor the seven hour operation provide adequate protection for SDWA. As a result, Mike Ford and I are recommending to Kathy Kelly that we revise the Grant Line Canal operation to provide 9 hours of operation per tidal cycle.

Stein, can you please not this before the meeting on Tuesday?

Thanks

Steve Roberts, Chief  
South Delta Management Section  
(916) 653-2118  
FAX (916)653-6077  
1416 Ninth Street, Room 215-30  
Sacramento, California 95814

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Printed for Stein Buer <sbuer@water.ca.gov>

DWR

**DRAFT**  
**Summary of Public Comments on the Two South Delta  
Alternatives Developed by the SDIT on April 30, 1999**

During the public meeting the features of the two alternatives were described, and comments solicited on each feature. Most of the comments were provided by Alex Hildebrand, Jerry Robinson, Rogene Reynolds. They are generally keyed to the summary table, Features of the South Delta Alternatives, rev. 4/30/99.

**New Northern CCFB Intake and Fish Screens, 1-6:** The new screened intake operations will exacerbate stage concerns in the south Delta region because pumping will continue around the clock, including during low tide periods. The additional permitted export capacity will also make this worse since stage impacts increase with diversion rate.

**SWP Operations prior to completion of new intake and fish screens, 24g:** A detailed operational analysis is needed to assure that ramping up exports above existing export levels does not impact local water availability.

**SWP Operations after completion of new intake and fish screen and approval by the fish and wildlife agencies, 25-26:** This language should be modified to indicate that an export rate of 10,300 cfs is accompanied by full implementation of the features which will protect local water users from the adverse effects of existing and increased exports by the SWP and CVP.

**Agricultural and Wetland Diversion Screening, 27-29:** Extending and screening local agricultural diversions will not address circulation and water quality problems.

**Aquatic and Terrestrial Habitat Restoration Targets in the South Delta Region, 30:** There is concern about the specific locations of ERP targeted lands as well as about reclamation district revenues for levee maintenance once land goes into public ownership. Italian slough levees are in public ownership and levees are not in good shape. Concerns about how ambitious ERP targets are, and impacts upon Delta farmers.

**Water Quality, 47:** It is not enough to target dissolved oxygen in the Stockton area with treatment and control measures. It is also necessary to control reverse flow in the San Joaquin River, which can be accomplished with the Head of Old River barrier. A combination of hydraulic and treatment measures is needed. CALFED should refer back to the SWRC Water Quality Control Plan measures.

**Consolidation and Extension of Agricultural Diversions as Appropriate, 51-54:** Concern that this approach in Alternative 1 may not be economically or technically feasible, so the feature should be reworded to indicate that the concept would be studied and only implemented if found to be feasible. Concern that consolidated diversions may not be logistically feasible since farmers have diverse crop types and irrigation

Public

scheduling needs. Concern that larger diversions may entrain proportionately more fish than small ones because they set up a more intense and larger inflow velocity field. Fish may tend to avoid the existing unscreened pumps due to pump noise. Concern that consolidated diversions may have greater local and regional stage impacts than the existing diversions. Concern that assumptions about losses at existing diversions are unverified by field studies, which should be conducted before calling for screening. The previous studies did not cover the critical time period of February through June; there is no objection to conducting those studies at the same locations as the previous studies were conducted.

Concern that with Alternative 1 a great deal of dredging will be required to accomplish water availability without barriers. There is also a concern with respect to levee stability after dredging is completed. (CALFED has not yet evaluated the change in geometry which might be required, but preliminary estimates indicate that over 2 million cubic yards would need to be dredged.) Concern that this is too much material to be disposed of locally to reinforce levees.

Dredging extensively in Alternative 1, from HOR downstream in Old River, Grant Line Canal, and Middle River will alter the flow split at HOR, resulting in less flow passing Stockton. This will exacerbate reverse flows, water quality, and fish passage problems for salmon migrating in this corridor.

Concern that this dredging will also result in lower stages on the mainstem San Joaquin River upstream of the HOR split, creating new stage problems for farmers up as far as Vernalis.

**San Joaquin River and Tributaries Management for Water Quality Standards within SDWA service area, 55-56:** The proposed approach in the Single Barrier Alternative is impractical because reservoirs rarely spill in the region. Releasing water from tributary reservoirs for water quality simply reallocates the water over time, rather than increase flows. Unless you recirculate and thus use existing water more than once, purchase water from CVP or SWP exporters, or build additional Friant storage, this approach will not work. Land fallowing to make more water available for streamflow can only work if those who are selling water are the ones who fallow their land.

**Head of Old River Fish Control Structure, 57-61:** Alternative 1 calls for operating the HOR barrier alone, which creates water supply problems for the south Delta because the south-east portion of the SDWA area drains as soon as the barrier is closed, leaving water levels too low, especially at low tide. It will be necessary to dredge very extensively to get Old River to run backwards to diverters clear up to the Head of Old river when the HOR barrier is operating in spring and fall.

Fundamental concern that operation of HOR alone will drive farmers out of business.

Closure of the barrier on April 1 under Alternative 1 will be a problem since spring irrigation is underway in April. Prefer the coordinated installation of HOR and ag barriers at the same time to avoid water stage impacts.

It was noted that the HOR barrier trapped upmigrating adult salmon. Anecdotal description of salmon rushing through cut in HOR when it is removed. Move like sheep through the breach for the first half hour after opening barrier.

Concern about compatibility of HOR barrier and other barriers during flood events. The barrier and channel might need to extend onto existing ag land since part of the structure remains in river, even when opened to accommodate flood flows.

**Flow Control Structures, 62-67:** Alternative 1 was viewed as unacceptable because without barriers it would not be practical to manage stages, circulation, and water quality in the south Delta region. Alternative 2 has three options with respect to Grant Line Canal Barrier. Option A, no GLC barrier is unacceptable. For option B, how will farmers achieve adequate conditions prior to August 1? July and August are the peak irrigation periods. Option C, operation throughout the irrigation period is the best of the options presented, but must do an adequate job of maintaining minimum stages.

**Additional Flood Control Concerns:** Paradise cut needs to be improved to address regional flood concerns. The weir at the connection with the San Joaquin River needs to be lowered, Paradise cut needs to be cleared of brush and dredged downstream to Grant Line Canal, and some levee setbacks are needed to achieve a flow capacity of about 20,000 cfs.

**Export Rates and Local Impacts:** Will the SWP and CVP be prepared to cut back on exports whenever local water supply availability is impacted in the event these alternatives don't work?

99-138

**SOUTH DELTA WATER AGENCY**

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**MAY 10 1999**

**Directors:**

Jerry Robinson, Chairman  
Peter Alvarez, Vice-Chairman  
Alex Hildebrand, Secretary  
Robert K. Ferguson  
Natalino Bacchetti

**Counsel:**

John Herrick

**Engineer:**

Gerald T. Orlob

May 5, 1999

Via Fax (916) 653-8102

Ms. Mary D. Nichols  
Secretary for Resources  
Co-Chair CALFED Policy Committee  
1416 Ninth Street, Suite 1311  
Sacramento, CA 95814

Via Fax (916) 654-9780

Mr. Lester Snow  
Executive Director  
CALFED Bay-Delta Program  
1416 Ninth Street, Suite 1155  
Sacramento, CA 95814

Re: South Delta Improvement Investigation

Dear Secretary Nichols and Executive Director Snow:

Pursuant to the request of Assemblyman Mike Machado, CALFED recently undertook to investigate the adverse impacts currently experienced by South Delta diverters which result from the operation of the CVP and SWP. This has been attempted by the South Delta Investigation Team consisting of CALFED staff. Staff has insisted on excluding South Delta interests from any direct participation in consideration of alternatives to the original DWR, USBR, and SDWA plan for protection of the South Delta's in-channel water supply. The SDIT has largely ignored concerns and suggestions offered by the SDWA in the three public workshops that have been held.

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Mr. Lester Snow  
May 5, 1999  
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The existing adverse impacts experienced in the South Delta are lowered water levels, poor quality resulting from artificially created null zones and reverse flows, and decreases in San Joaquin River flows and quality.

At the April 30 workshop, the Staff presented two alternative plans; a "Single Barrier Alternative" and a "Multiple Barrier Alternative". Seventy-two "Features" of the alternatives were listed. We were told that our comments on these alternatives would be noted but that there would be no substantive changes and that the CALFED Policy Committee will be asked to choose one of these alternatives at its May 13 meeting.

We ask that you not adopt either of these alternatives or any minor modification thereof. Each is technically unsound and has little or no underlying data to indicate how or if it will address the existing adverse impacts. Further, some of the proposed actions in the alternatives substantially increase those impacts without taking notice that these impacts will be exacerbated by the proposal to allow Clifton Court Forebay inflow during low tides.

#### Single Barrier Alternative

The Single Barrier Alternative would involve massive dredging to maintain water depth for diverters downstream of the Head of Old River Barrier (HOR). It is not reasonable to expect that such comprehensive dredging would ever be permitted. Even if it were, this dredging would exacerbate the inadequacy of water depth in undredged channel reaches, including channel reaches upstream of the HOR barrier when it is not operating. It would also increase rather than prevent the reverse flow upstream of Stockton which is a major contributing cause of inadequate dissolved oxygen for fish in that reach. This reverse flow also draws small fish from the central Delta to the export pumps via that route, a fact ignored by the fishery agencies. Operating the HOR barrier without tidal barriers would stagnate water in the downstream channels so that there would be inadequate dispersal of Tracy's sewage outfall, and no net unidirectional flow to maintain quality or to convey fish from the proposed fish screens on local diversions. In the absence of the tidal barriers there would be no protection for San Joaquin salmon smolts or Steelhead trout that migrate before or after the operation of the HOR barrier.

There is a several hundred thousand ton salt load in the river which derives from nearly a million tons of salt contained in water imported via the Delta Mendota Canal to

Ms. Mary Nichols  
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May 5, 1999  
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the CVP service area. Due to the failure to build a valley drain, part of this imported salt drains to the river. When the HOR barrier was not functioning and with no tidal barriers, this salt load would continue to be drawn to the export pumps and re-exported, thereby increasing the salinity of exported water. It is not possible (Feature 56) to correct these violations of water quality standards by the purchase of tributary water. Purchases merely reallocate the time of use of a water supply that is already inadequate for that purpose. In order to do much for water quality at either Crows Landing or Vernalis, or for fish flows (through Features 48 and 49), there must be three tidal barriers.

There are about 150 local diversions distributed over 75 miles of channel. Combining diversions per Feature 52 is seriously impractical and might increase fish losses due to higher approach velocities at diversion points. This is particularly true when the action is combined with no net flow to convey fish away from the proposed screens. There is also no legal authority by which riparians can be forced to combine their diversion points. Several other concerns of this alternative were discussed on April 30.

#### Multiple Barrier Alternative

Feature 56 in this alternative proposes to "continue with (the) existing operational approach" to San Joaquin River Management. This apparently includes the Bureau's Interim Operating Plan which would lead (as shown by the Bureau's own analysis) to very frequent and substantial violations of South Delta salinity standards on a multi-year basis. It is only in the rare occurrence of years in which flood releases would occur that water for the increased fishery flow water would be available to make up for the previous shift in flows. The violations expected under the Bureau's Operating Plan would be far greater than the troublesome past violations.

In dry years the drawdown of water depths by export pumping has in the past conflicted with agricultural diversions as early as the first half of March. There have also been frequent problems experienced by asparagus farmers who irrigate in mid-winter resulting from previous export rates which cause inadequate depth. Yet operation of the Middle River and Tracy Old River tidal barriers is limited in CALFED's alternative to April 15 through October 31 per Features 65 and 66. Three options are listed within this alternative for the Grantline barrier per Features 63 and 67. Who will select among these three options? The first option is no Grantline barrier. The second is no Grantline barrier until August 1 and only two days of operation per week in August; a major month for

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local diverters. The third option is no barrier until June, and then only 5 hours per day. The first two options would be devastating for South Delta agriculture. It is true that the Grantline barrier must be periodically or partially opened to provide circulation, but it must never be fully opened during a combination of tides and export schedules that dewater South Delta channels at any time of the year. Non-operation must also be minimized in order to be compatible with smolt protection and with a comprehensive plan for optimum management of the river system for salinity control, for efficient use of the river system's limited water supply, for resolution of dissolved oxygen problems, etc.

If the three tidal barriers and the HOR barrier are installed and operable as needed at any time, we can then develop through experience an optimum method of operation to satisfy all interests. We cannot prejudge what this operating plan will be. It will depend export rates during tidal cycles, on tides, on local diversion rates throughout the year, on real-time fishery needs, on dissolved oxygen problems, and on the river flows and salt load.

The alternatives contain no provision for curtailing exports during periods when no other adequate provision is made to mitigate the impact of exports on the South Delta's in-channel water supply. When the three tidal barriers are not all operable, the impact is caused primarily by project diversions during low tides. When all three tidal barriers are operable, the governing impact is primarily the reduction in high tides. CALFED has not yet modeled to determine whether permanent, operable barriers can trap enough high tide water to maintain local diversions during low tides with the newly proposed increased export rates. It is unlikely that the temporary barriers can do so.

#### SDWA's Lawsuit

In 1982 the South Delta Water Agency (SDWA) sued the CVP and SWP for damaging the South Delta's in-channel water supply. The Complaint survived a summary judgment motion and the lawsuit was then suspended to attempt a negotiated settlement. In 1991 the Department of Water Resources, SDWA, and the Bureau signed an agreement to resolve the portion of the suit relating to export pumping by installing three tidal barriers, providing that necessary permits could be obtained to install and operate them on an as needed basis. No other way was found to mitigate the impacts of export pumping. The only other solution appeared (and still appears) to be to limit exports whenever they are forecast to cause damaging impacts on the in-channel water supply.

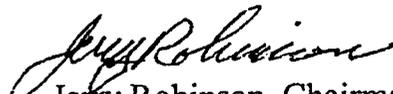
Ms. Mary Nichols  
Mr. Lester Snow  
May 5, 1999  
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The DWR has diligently attempted to comply with the 1991 agreement, but has so far been only partially successful in obtaining permits. Either of these CALFED alternatives would prevent the resolution of this lawsuit. There would then again be a need to mitigate by the only other known method which is to limit exports.

For all of the above and other reasons, SDWA requests that the CALFED Policy Committee not adopt either alternative 1 or alternative 2, and that it direct the Staff to seek an alternative that fully protects South Delta's in-channel water supply from the impacts of export pumping; and that it develop an alternative that is technically sound and gives equal priority to protecting fish and protecting the in-channel water supply from project impacts; and that the Staff make SDWA a full partner in developing an acceptable plan. We would welcome an opportunity to discuss this in greater detail.

Thank you for your consideration of our concerns and suggestions.

Sincerely,

  
Jerry Robinson, Chairman

  
Alexander Hildebrand, Secretary

cc: Assemblyman Michael Machado  
Central Delta Water Agency  
San Joaquin County  
The Record  
Tracy Press  
Sacramento Bee  
All districts within SDWA  
San Joaquin Farm Bureau  
Dan Nelson  
Mr. Wayne White

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REALTORS, INC.

MAY 10 1999

Rogene Reynolds, Realtor

May 4, 1999

Lester Snow  
Executive Director  
CALFED Bay-Delta Program  
1416 Ninth Street #1155  
Sacramento, CA 95814

RE: South Delta Improvement Plan

Dear Lester,

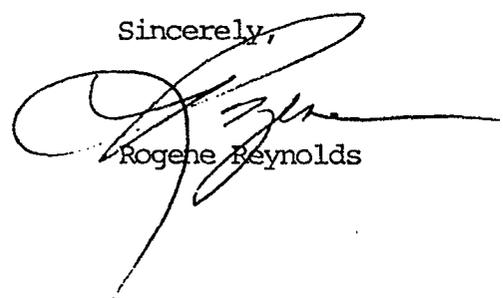
It has been said before, but bears repeating once again: TOP DOWN planning, without considering the true impact to local landowners, will doom CALFED's program to failure.

The recent South Delta Improvement Plan is a prime example of CALFED's failure to deal with the real world. The SDIT met behind closed doors, then brought proposals to the public meetings which were questioned. Our comments and concerns WERE NOT incorporated into the final two alternatives presented April 30.

Lester, you said long ago, you wanted to "get beyond bumper stickers". I'm sorry, but the way CALFED staff responds to our concerns only results in distrust and disgust. For example - we have opposed conversion of prime farmland to habitat - and the SDI plan looks for 40,000 acres. And how can the water exports be doubled, a single barrier close the flow of Old River, no tidal barriers be operated, and STILL ensure water in the South Delta for us to irrigate our crops? Oh, yes, and dredge 1,000,000 cubic yards to deepen channels and beg water from the reaches above us? Lester, we discussed these problems over a month ago with the SDIT, and the agencies ignored us.

I doubt the Policy Committee knows of our concerns. I wonder if they will be surprised to see CALFED's options in court.

Sincerely,



Rogene Reynolds

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**4444 W. UNDINE ROAD  
STOCKTON, CA 95206**

May 3, 1999

Secretary Mary D. Nichols  
State of California  
Resources Agency  
1416 Ninth Street Suite 1311  
Sacramento, CA 95814

RE: CALFED Bay-Delta Program  
South Delta Improvement Plan

Dear Secretary Nichols,

At the April 30 CALFED South Delta Improvement Public Meeting two proposals were put forth by the SDI Team for flow alterations in the South Delta. Both proposals fall short of solving the flow problems caused by operation of the CVP and SWP pumps. Alternative 1, will seriously harm our farms. (I live one mile north of Old River, and two miles east of Middle River. I've been here all my life -50 years. So, please accept these comments as from one who is a witness to the facts.)

SID Alternative 1. "Single Barrier Alternative" will put South Delta farmers out of business by "de-watering" the San Joaquin. This plan calls for a single fish barrier installed at the head of Old River, without the operation of the three tidal barriers in Old River, Middle River and Grant Line Canal. This configuration, at low tides, with the project pumps "ramped up" to 10,300 cfs, will turn our South Delta into a mud flat; water levels will be well below our irrigation siphons.

Fish agencies are calling for Alternative 1. They concede they are not "sure" about the effects on farming. They "think" they will have to dredge 1 million cubic yards of silt from Old and Middle Rivers, and Grant Line Canal to ensure water for our crops. This is not economically feasible. Nor will it improve water quality, as more saline water will intrude from the West.

Secretary Nichols, please question this Alternative. We need the tidal barriers to give South Delta farms enough water (albeit of questionable quality) to keep our farms healthy in the summers. A better course would be to use Alternative 2 (install 3 flow structures) and utilize them whenever necessary to keep the South Delta watered.

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Nichols  
May 3, 1999  
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A further problem with the SDI Alternatives rests with the conversion of farmland into wildlife habitat. This plan calls for over 40,000 acres of our privately owned farms to be converted and/or managed for wildlife.

Secretary Nichols, we have been farming here in the South Delta for over 100 years. Most of our acreage is above sea level, and is not suitable for tidal restoration. Our farm production creates jobs, and supports our families – (we have children and grandchildren who need to get to college, too!). This land is our investment, our retirement, our life. *We are a community*, Secretary Nichols, not potential swamp for the State to use as an “adaptive management” experiment.

We have expressed our concerns at the many CALFED public meetings – lately at the two South Delta Improvement meetings. We are trying very hard to work with the CALFED program, but the various agencies seem bent on making it impossible for us to farm. Can it be that CALFED staff is not informing the Policy Committee of the facts?

It is not the fault of farmers on Old River, Middle River or the Grant Line Canal that the operation of the Central Valley Project and the State Water Project have caused our rivers to dry up or flow backwards, harming and confusing the fish. Solving the problem by destroying our farms is not the course CALFED should be pursuing.

I am asking for your help in keeping CALFED true to its own Solution Principals. Drying up our source of irrigation water is not “everyone getting better together”.

Sincerely,



Rogene Reynolds

(209) 464-8054

cc: Congressman Richard Pombo  
Senator P. Johnston  
Assemblyman M. Machado  
Delta Protection Commission  
San Joaquin County Bd of Supervisors  
South Delta Water Agency  
Central Delta Water Agency  
L. Snow, CALFED

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**MWD**

METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

Office of the General Manager

May 12, 1999

Mr. Stein Buer  
CALFED  
1416 9<sup>th</sup> Street, Room 1155  
Sacramento, CA 95814

Dear Mr. Buer:

Thank you for the opportunity to comment on the Draft Features of the South Delta Improvement (SDI) Alternatives presented during the South Delta Public Meeting held on April 30, 1999. The Metropolitan Water District of Southern California is supportive of proposed SDIs, however, we do have some concerns with features that introduce operational criteria inconsistent with the current Bay/Delta operating requirements. Additionally, we look forward to the review of the modeling demonstrating the overall benefits of the alternatives.

Feature 24, SWP operations prior to completion of new intake and fish screen, raises concerns. The specific criteria for this feature are inconsistent with existing Bay/Delta standards and go against CALFED's efforts to enhance flexible operations of the State and Federal facilities through an Environmental Water Account. The existing Bay/Delta operating requirements are based on D-1485, D-1422, winter-run and Delta smelt Biological Opinions, and in conformance with the December 15, 1994 Principles for Agreement (Bay/Delta Accord). Additionally, there have been extensive efforts by the CALFED Operations Group to coordinate the needs of urban, agricultural, and environmental uses through flexible operations with an Environmental Water Account. Introduction of additional "rigid" regulatory constraints threatens to destroy efforts to reach a mutually agreeable solution. Furthermore, no scientific justification has been advanced for such criteria. Implementation of any such additional criteria should come via the Environmental Water Account, and must take into account CALFED's overall objectives of improving water supply, water quality and the environment. Specifically, the following criteria should be removed from feature 24:

***(24c) "Use of the increased diversion capability in February and March only if the previous day's QWEST is positive and is calculated to remain positive during the current day's increased diversions."***

THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

Mr. Stein Buer

-2-

May 12, 1999

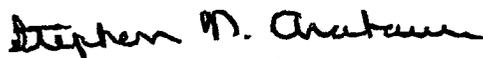
- (24d) ***"Limit the increased diversion capability in February so that the increased diversions do not result in a daily E/I ratio of greater than 35 percent."***
- (24e) ***"Limit the increased diversion capability in March so that, except in wet and above normal years, the increased diversions do not result in a daily E/I ratio of greater than 30 percent."***
- (24g) ***"Ramp up increased export capacity in July so that increased exports beyond currently allowed levels are less than 1,000 cfs in the first ten days of July, and 2,000 cfs in the second ten days of July."***
- (24b) ***"Increase average daily exports of up to 8,500 cfs through the existing radial gate intake to Clifton Court Forebay, in phases, corresponding to progress with ecosystem restoration."***

Feature (24b) needs better definition of the phasing and how the progress with ecosystem restoration would be measured. Water users are expecting the increase of Banks average daily exports of up to 8,500 cfs in the near term. The increased export capability is needed to provide operational flexibility to benefit fisheries, water quality and water supply. CALFED should not hamper the development of the EWA and continuous improvements of water quality and water supply if land use issues or other problems delay the ecosystem restoration program.

Feature 14 should also be removed because it introduces more stringent operational constraints based on an approach velocity of 0.2f/s. Approach velocities are not currently used to restrict pumping.

We look forward to future progress of the South Delta Improvements as these features add flexibility to the system that will be critical to the success of an Environmental Water Account, as well as CALFED's overall success. If you have any questions please feel free to contact me at (213) 217-6052.

Very truly yours,

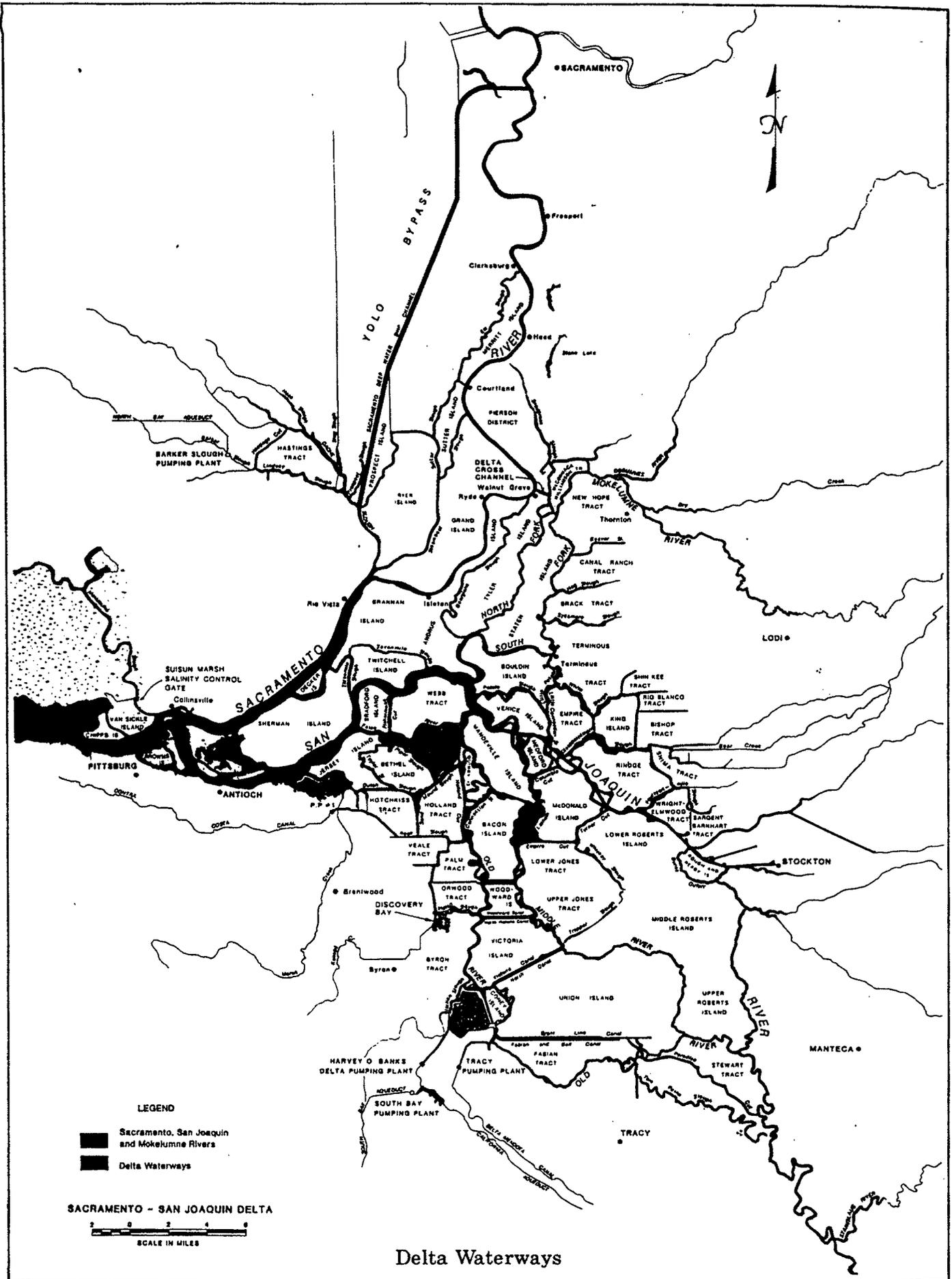


Stephen N. Arakawa  
Assistant Chief  
Planning and Resources Division

AMP:bvf

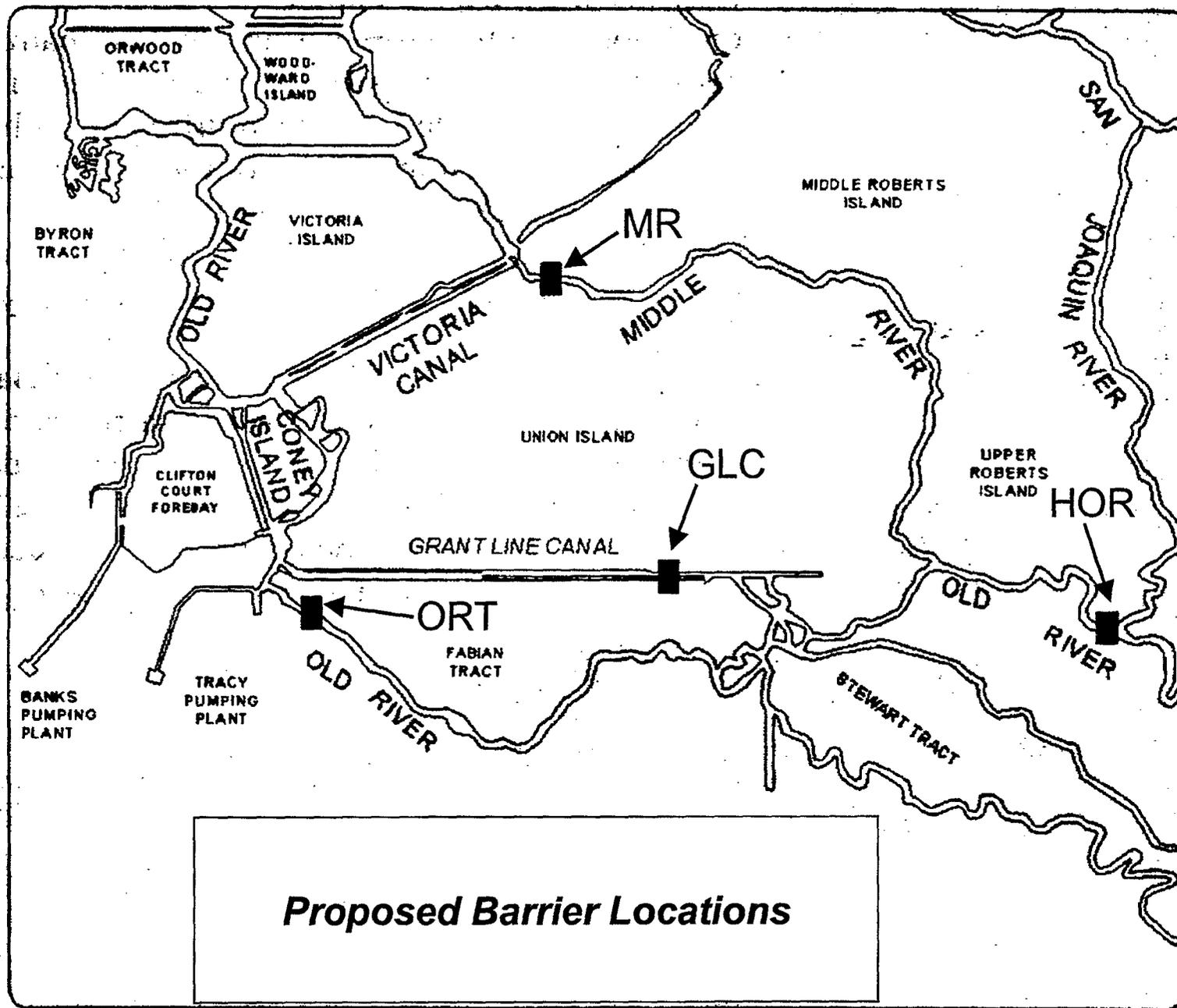
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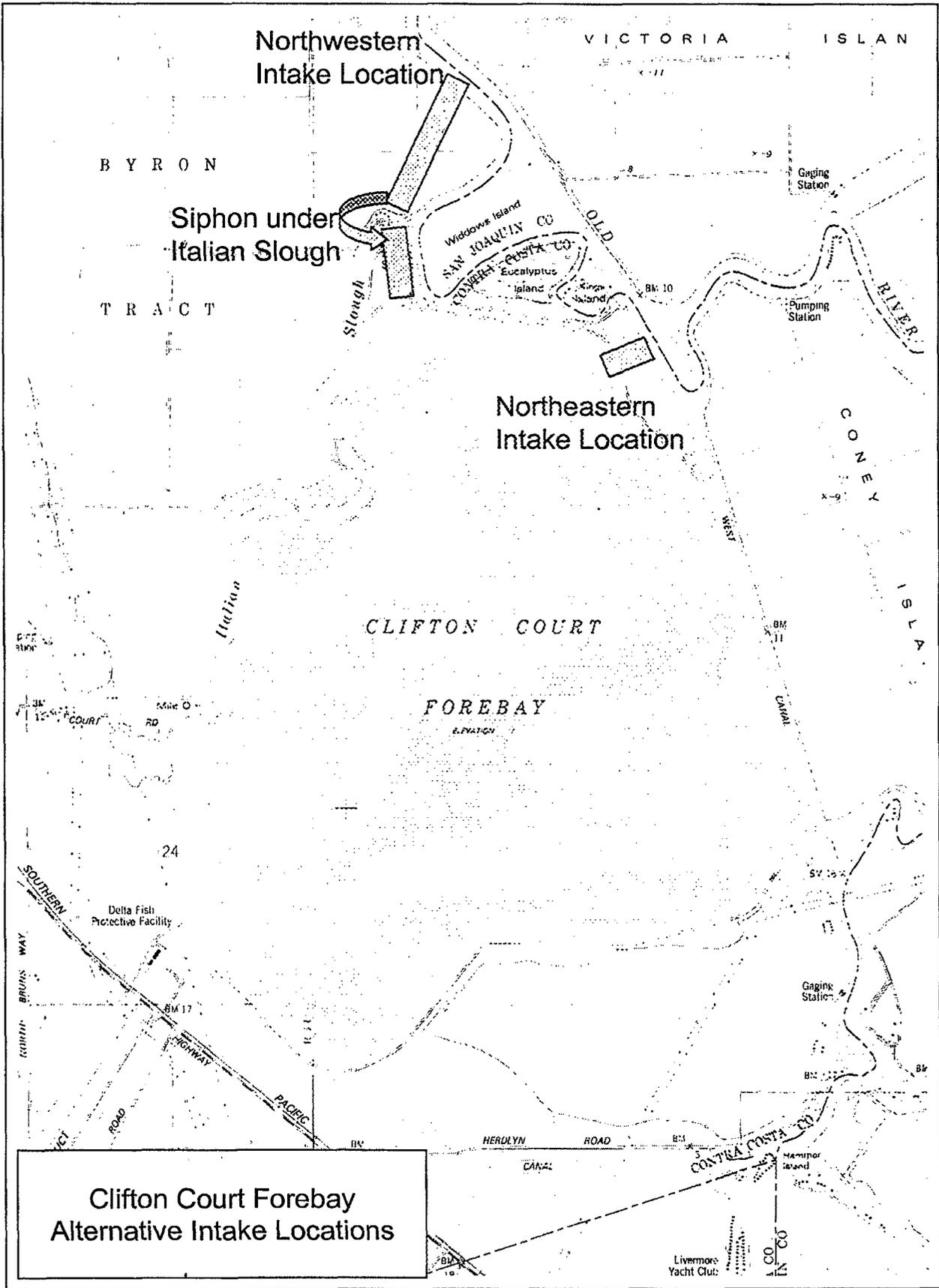


SACRAMENTO - SAN JOAQUIN DELTA  
SCALE IN MILES

Delta Waterways



**Proposed Barrier Locations**



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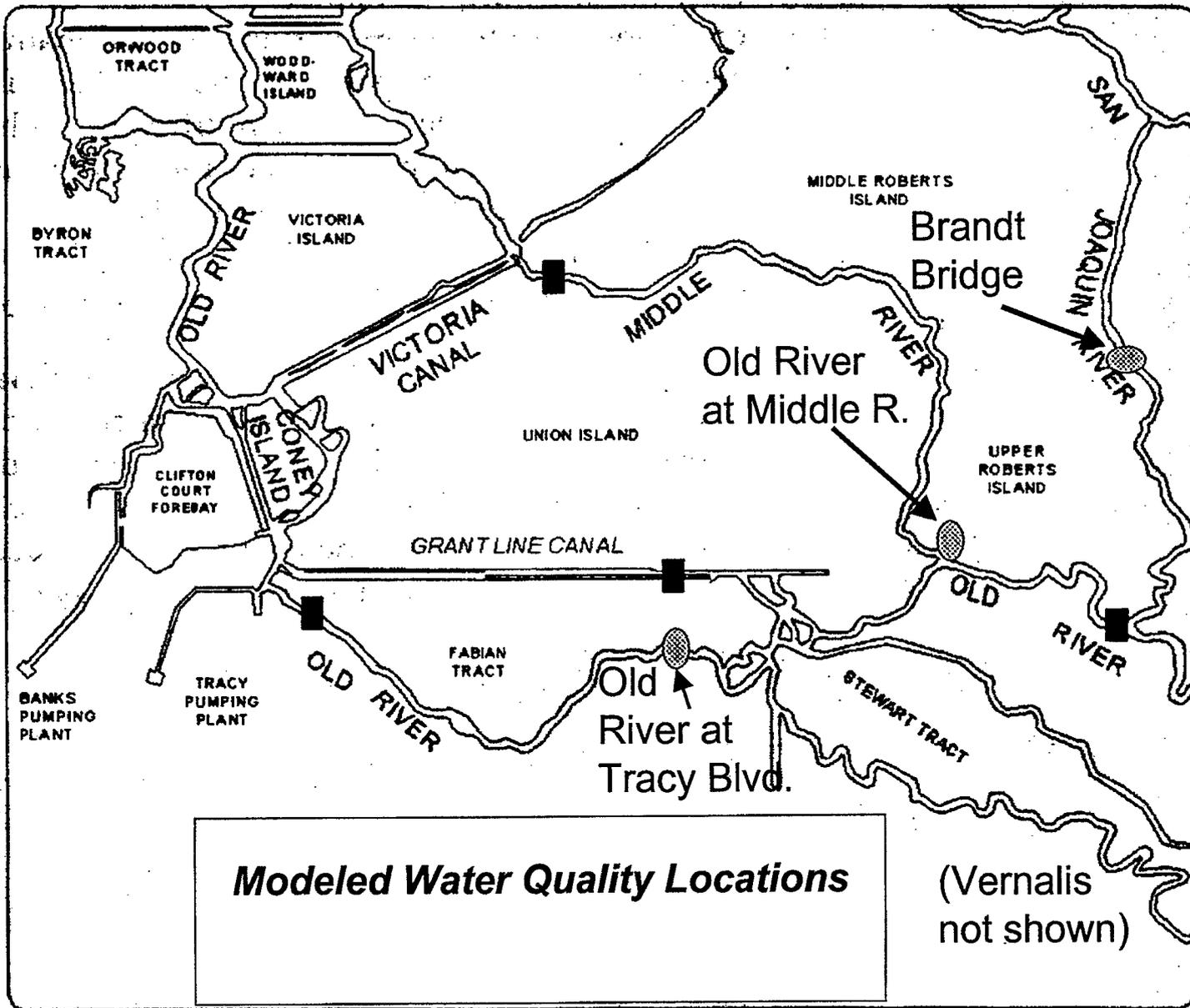
## ***Water Quality Impact Comparison between Single Barrier Alternative and Multiple Barrier Alternative***

Water quality impacts were Modeled using DWR's Delta Simulation Model DSM2, based on 16-year hydrology, 1976-1991. Output is shown in terms of 16 year average monthly electrical conductivity, EC. Four runs are compared in the following bar charts, with the following run criteria.

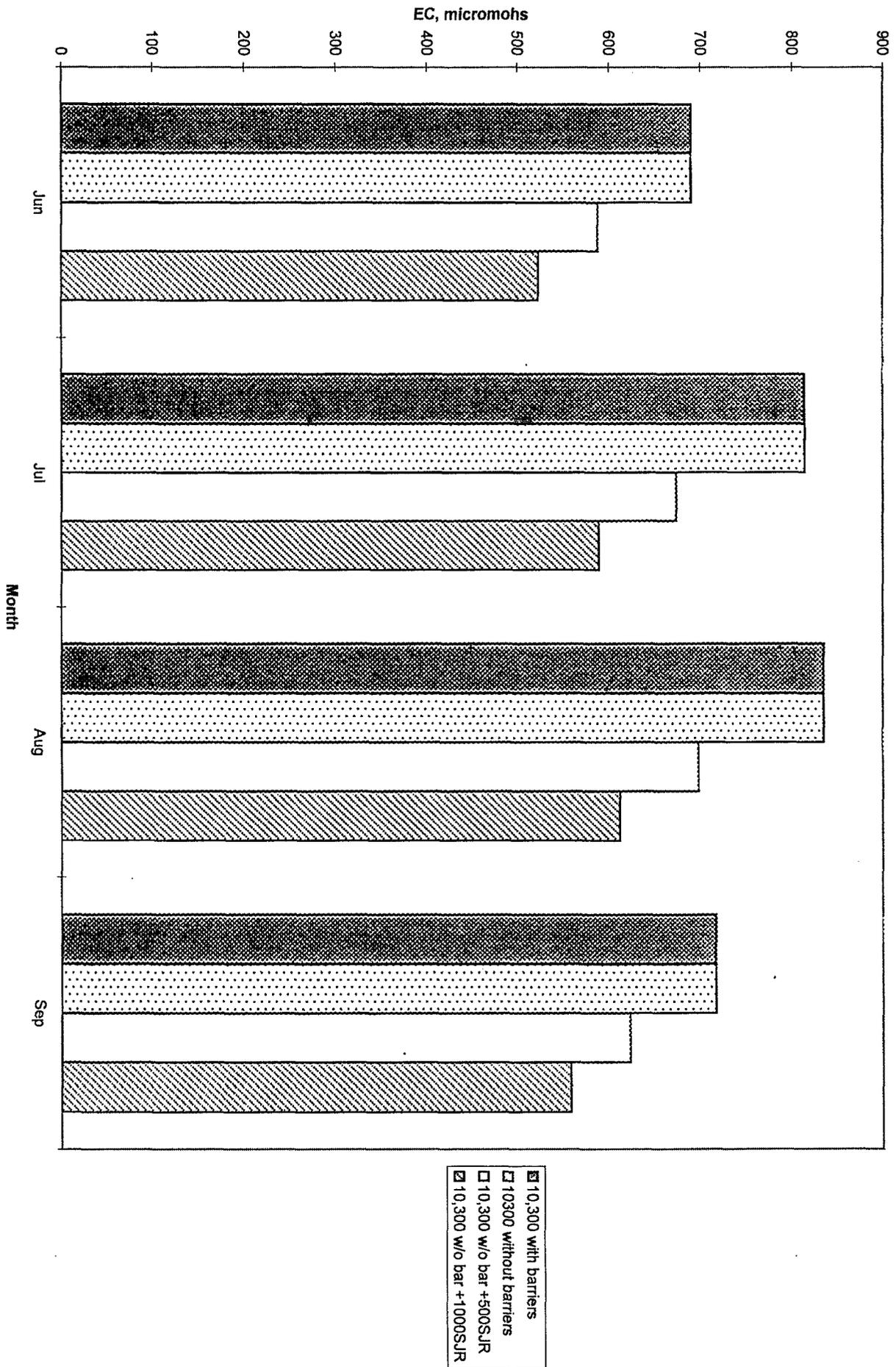
- 10,300 cfs SWP Export capacity, with barriers
- 10,300 cfs export capacity, without barriers
- 10,300 cfs export capacity, with additional 500 cfs San Joaquin River Q, June-Sep
- 10,300 cfs export capacity, with additional 1000 cfs San Joaquin River Q, June-Sep

Four locations were evaluated as shown on the accompanying map:

5/12/99 smb

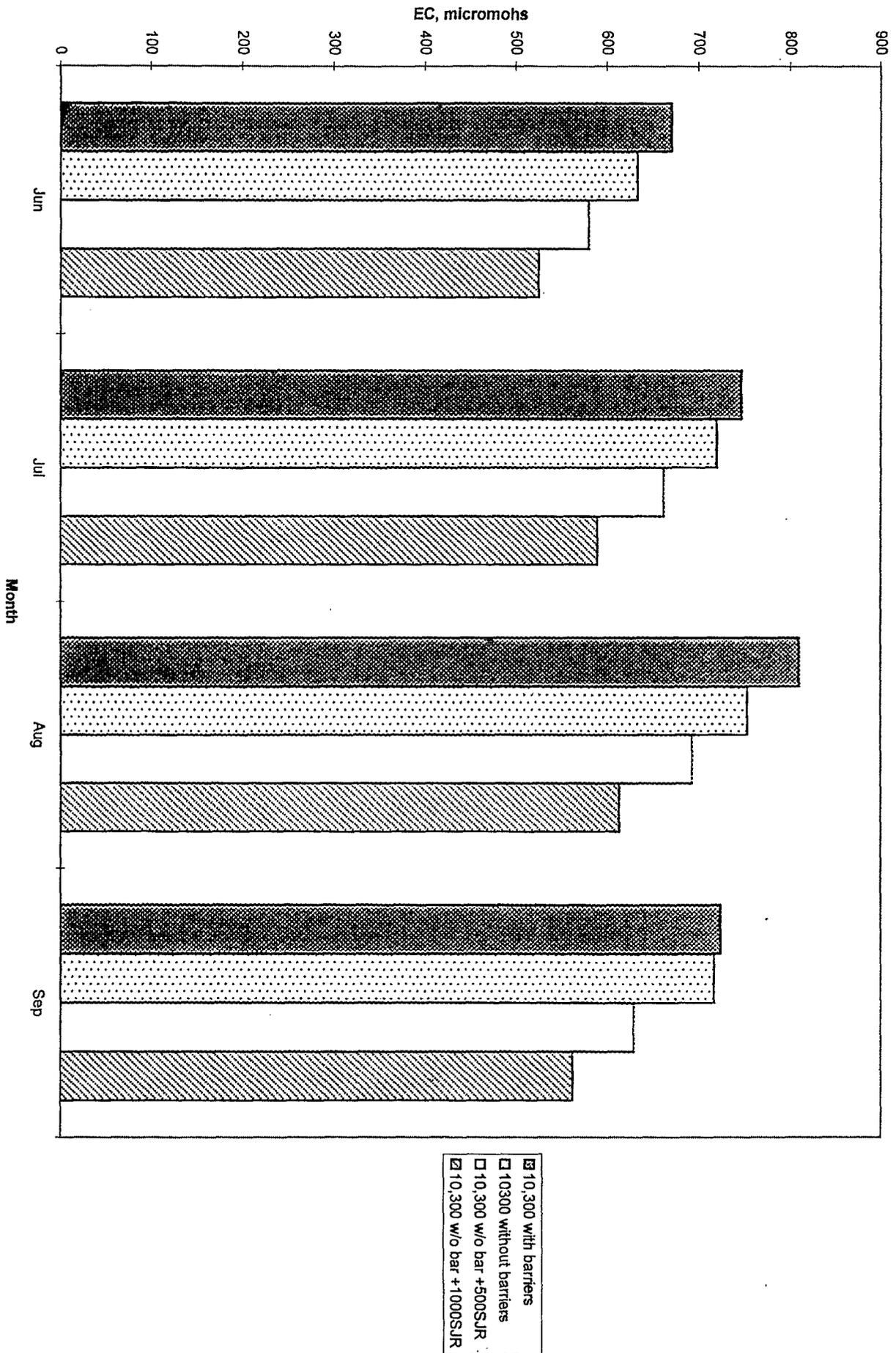


San Joaquin River at Vernalis



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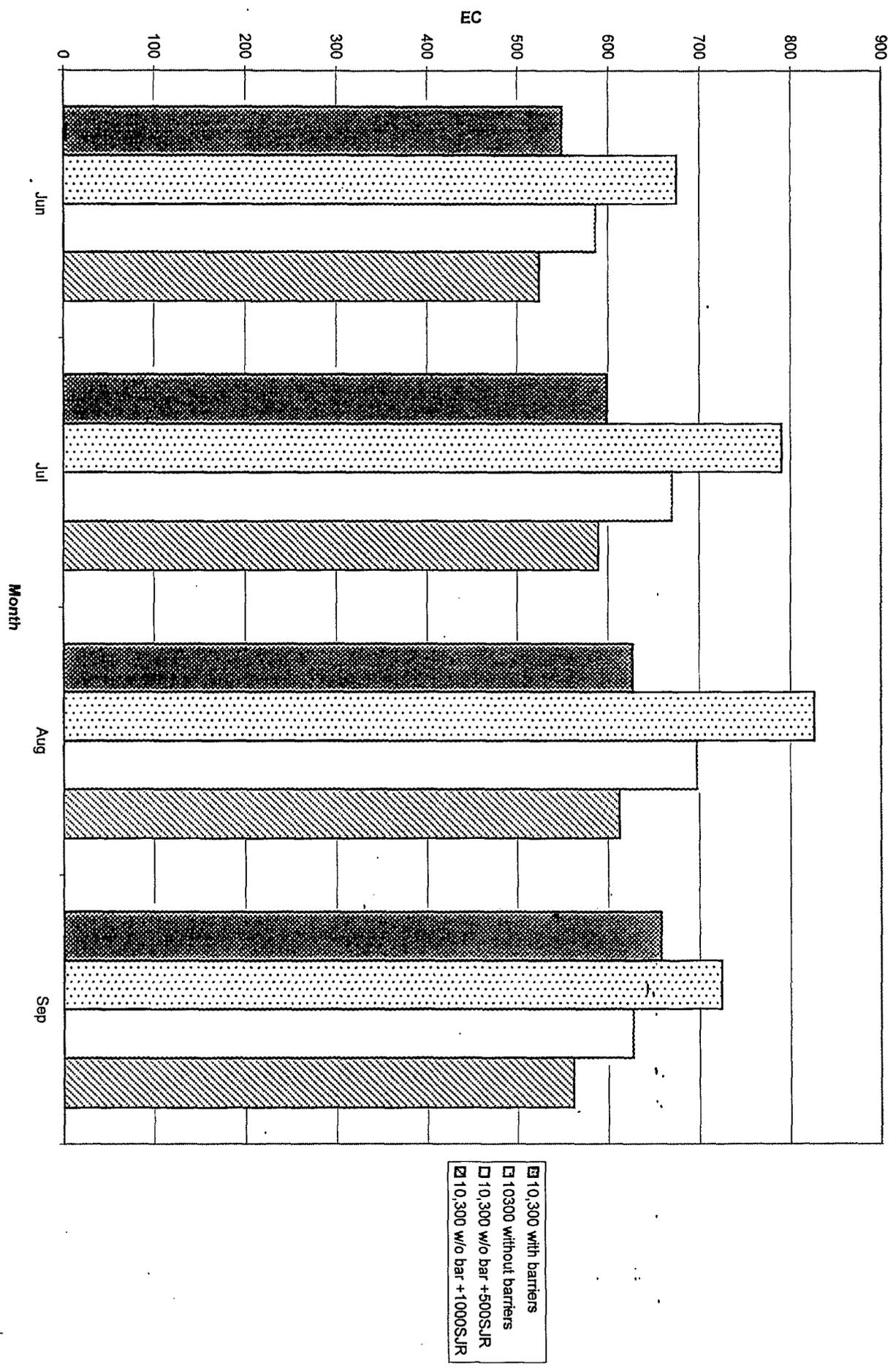
San Joaquin at Brandt Bridge



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sdw, 5/12/99

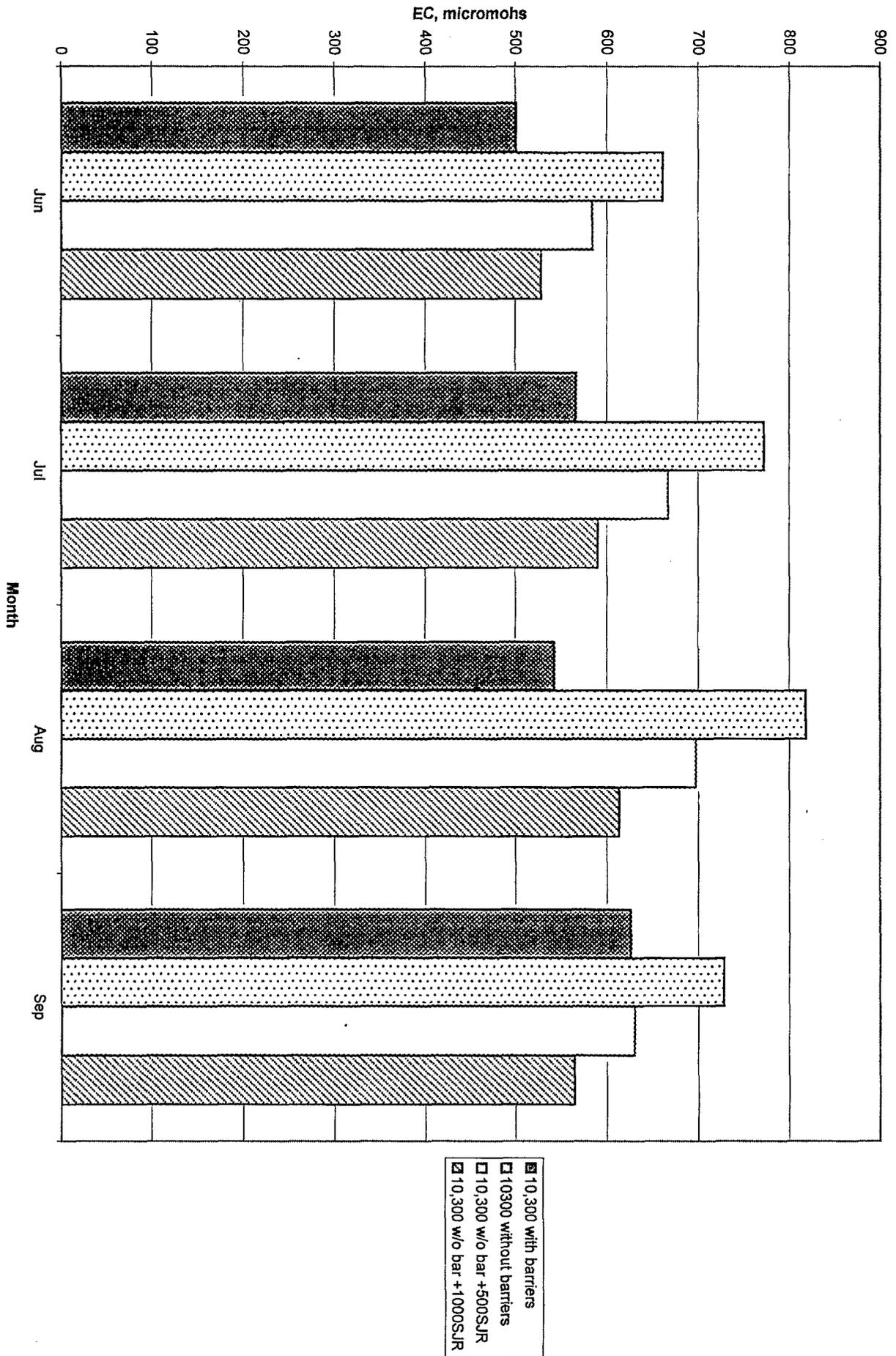
Old River @ Middle River



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Old River at Tracy Road



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