

March 9, 1999

Table 1. Draft Early Implementation Bundles							
1	Action Description	Detail/Assumptions	Primary Effects	CALFED Program	Secondary CALFED Program	Implementing Entity	Implementing Authority Required
2	Lower San Joaquin River and South Delta Region Bundle						
3	CVP Tracy Fish Facility, First Stage Module, 2500 cfs screen, plus Sorting, Holding, Transport, and Release	New fish screens for TPP full export capacity to be completed by end of Stage 1 _{1,4}	Improve fish survival	S/C	ERP	USBR	
4	Env. Doc. Permits Process for ₅ SWP Export Capacity to 10,300 cfs: New Screened Intake with Gates and LH Pumps, Head of Old River and ₂ Ag Barriers or Functional Equivalent, Channel Enlargement as Req'd. Potential Selected Channel Improvements, Signage, and Access for Recreation	Interim increase to 8500 cfs export capacity may be sought if benefits justify ₅	Improve fish survival, water supply flex. and reliability, drinking water quality ₂ stages, circulation, and water quality	S/C	ERP	DWR,USBR	
5	VAMP Agreement in Effect and Funded: Flows, Exports, and Studies, and Monitoring	4-5m	Improve salmon survival, cu/gw management u/s, Improve understanding of fish vs flow	External	ERP		
6	Veale Tract Drainage Discharge Relocation Feasibility Study and Environmental Documentation	Environmental impact documentation required; Possible cost share with Contra Costa Water District. Funding in 2000 for studies and documentation.	Improve drinking water	WQ			
7	Evaluate/Implement as Appropriate Release of TDS Buildup during High Flow Periods		Improve late season WQ in lower San Joaquin River, potential drinking water quality impact ₂	WQ: not yet listed		Local Water Distr. W/ grant assistance	
8	Feasibility Study: Evaluate Recirculation Benefits and Impacts		Potential to improve water quality and meet VAMP flow requirements in lower San Joaquin River	S/C	ERP, WQ	DWR,USBR	
9	Study: Investigate Dissolved Oxygen Causes and Solutions for Lower San Joaquin River and begin implementation ₃	Refine and implement real-time management of discharges ₄	Find ways to ₂ Improve WQ in San Joaquin River in vicinity of Stockton	WQ	ERP	Multi-Agency: RWQCB lead	
10	Pilot Studies, Selenium: Integrated On-Farm Management, then Implement ₃	On farm selenium control management practices. Funds may increase in later years if program is successful	Evaluate techniques for reducing Se drainage	WQ	ERP	Grasslands Water District	

March 9, 1999

1	Action Description	Detail/Assumptions	Primary Effects	CALFED Program	Secondary CALFED Program	Implementing Entity	Implementing Authority Required
11	Study: Non-seawater sources of bromine (Br) in San Joaquin drainage.	Determine if non-seawater sources of Br in San Joaquin Drainage are significant and impact water quality ₂	Improve drinking water source quality: ID most important sources; develop abatement strategies	WQ	ERP	RWQCB and Other Entities ₂	
12	Acquire and Convert Land for Various Habitat Types ₅	2,000 ac seasonal wetland, 2,000 ac tidal emergent wetland, 10,000 ac wildlife friendly ag, 1,000 ac tidal perennial aquatic habitat, 100 ac SRA, 1,000 ac riparian (1/2 for riparian brush rabbit) ₅		ERP			
13	Initiate implementation of recovery Efforts for Riparian Woodrat and Riparian Brush Rabbit ₄			ERP			

March 9, 1999

1	Action Description	Detail/Assumptions	Primary Effects	CALFED Program	Secondary CALFED Program	Implementing Entity	Implementing Authority Required
14	Lower Sacramento River, North Delta Bundle						
15	Restore Tidal Marsh and Riparian Habitats along Georgiana Slough		Improve fisheries and wildlife habitat	ERP			
16	Feasibility Study: Lower Mokelumne River channels dredging and limited levee setbacks, Modify/raise levees in selected reaches	Investigate the feasibility of offsetting impacts to fisheries which may result from this action ₄	Flood control and habitat creation w/ levee berms	S/C	ERP	DWR	
17	Acquire and Convert Land for Shallow Water, Wetland, and Riparian Habitat		Flood control and habitat creation w/ breached levees	ERP: Mokelumne Corridor		DWR, DFG, and othes	
18	Study Feasibility of Delta Cross Channel Reop.and 2-4K cfs Hood Diversion		Balance water quality and fisheries benefits, potential for increased drinking water quality ₂	S/C	ERP, WQ	DWR	
19	Acquire and Convert Land for Various Habitat Types ₅	3,000 ac seasonal wetland in sandhill crane core area, 2,000 ac tidal emergent wetland, 10,000 ac wildlife friendly ag in sandhill core area, 1,000 ac tidal perennial aquatic habitat, 100 ac SRA, 1,000 ac riparian (1/2 for riparian brush rabbit) ₅		ERP			

March 9, 1999

1	Action Description	Detail/Assumptions	Primary Effects	CALFED Program	Secondary CALFED Program	Implementing Entity	Implementing Authority Required
20	Yolo Bypass, Suisun Marsh ⁴, and West Delta Bundle						
21	Implement Suisun Marsh Diversion Screening Program		Reduce fisheries entrainment impacts	ERP			
22	Suisun Marsh and Van Sickle Island	Evaluate, ² Restore Tidal Wetlands; Funding for property acquisition, restoration planning, and a levee component. Delete the levee component of this action as it has not been agreed upon that Suisun Marsh Levees are part of the Program ⁴ .		ERP			
23	Suisun Marsh and San Pablo Bay ⁴	Tidal Restoration of diked wetlands near Potrero Hills and Morrow Island. For San Pablo Bay, Napa River, Sears Point, Petaluma River areas ⁴ . Restore 2000 ac ⁵		ERP			
24	Provide Needs and Opportunities Analysis for Improving Ecosystem Restoration and Flood Bypass Habitat for the Yolo Bypass area (Delete here, since shown elsewhere ⁴)	This is a portion of a general effort for flood bypass areas, including Colusa Basin, Butte Basin, Sutter Bypass, Yolo Bypass, Chowchilla Bypass, Eastside, Fresno Slough, and James Bypass. See action 42	Improve diverse habitat, fish passage, and WQ	ERP		CALFED: Multi-Agency	
25	Cache Creek Mercury Source Control Study		Develop ways to reduce Hg transport to waterways	WQ/ERP		RWQCB	
26	Clear Lake upper watershed mercury remediation actions			WQ/ERP		RWQCB,DWR ²	
27	Frank's Tract Habitat Restoration (Delete this item and replace with DEFT action recommendations ⁴)	Evaluate, ² Restore Frank's Tract to tidal marsh using clean dredge materials and natural sediment accretion in conjunction with the eradication and control of nuisance, introduced aquatic plants.	Create shallow water habitat, riparian	ERP		DWR, Corps	
28	Dredged Materials Reuse Implementation (response to 4)		Materials for habitat, levees	Levees	ERP	DWR, Corps	
29	Barker Slough Watershed Restoration		Improve WQ, sediment, and habitat (Watershed severely impacts NBA export wq ₂)	WQ	ERP	Local: County and Special Districts	

March 9, 1999

1	Action Description	Detail/Assumptions	Primary Effects	CALFED Program	Secondary CALFED Program	Implementing Entity	Implementing Authority Required
30	Acquire and Convert Land for Various Habitat Types ₅	3,000 ac seasonal wetland, 2,000 ac tidal emergent wetland, 10,000 ac wildlife friendly ag, 1,000 ac tidal perennial aquatic habitat, 100 ac SRA, 1,000 ac riparian ₅		ERP			
31	Study Expansion of Jepson Prarie Preserve East toward Travis AFB and South toward Suisun Marsh ₄				ERP		

March 9, 1999

1	Action Description	Detail/Assumptions	Primary Effects	CALFED Program	Secondary CALFED Program	Implementing Entity	Implementing Authority Required
32	Delta Wide ERP/Levees Bundle						
33	Levees Subventions		Levee System Integrity	Levees		DWR, Corps	
34	Levees Special Projects		Levee System Integrity	Levees		DWR ₂	
35	Emergency Response Program		Levee System Integrity	Levees		DWR ₂	
36	Evaluate the Need to Screen Small Diversions in the Delta and implement ₄		Reduce fisheries entrainment impacts	ERP		DFG, DWR ₃	
37	Nonnative Invasive Species (NIS) (Note: Expand to actions in SF Bay and Suisun Marsh, to reduce further invasions and eradication of <i>Lepidium</i> ₄)	demonstration projects		ERP		USFWS ₂	
38	Total Organic Carbon Evaluation	General Evaluation and Pilot Study: Total Organic Carbon Reduction, DWR to do engineering and technical oversight. (\$5 m), Monitoring Studies - relocation of drains (\$4 m)	Improve In-Delta drinking water source quality: Note Rick suggested Twitchell; consider south Delta since it is most wq impacted	WQ/ERP		DWR, Local RD	
39	ERP Levee Relocations, Berms, Veg. Management	Cost Included with In-Channel Island Restoration	Delta Shallow Water, tidal wetlands, and riparian habitat	ERP		DWR,DFG	
40	In-Channel Islands Restoration		Tidal wetlands, riparian habitat, special status species: Check with Daniel; not on short list	ERP		DWR,DFG	
41	Assessment of sources and magnitudes of loadings of constituents of concern for drinking water ₃	Includes TOC, nutrients, salinity, pathogens, and Br on Delta wide basis ₃		WQ			
42	Acquire and Convert Land for Various Habitat Types ₅	Implement a Delta Diversion Screening Program, 5,000 ac seasonal wetland, 2,000 ac tidal emergent wetland, 10,000 ac wildlife friendly ag, 2,000 ac tidal perennial aquatic habitat, 100 ac SRA, 1,000 ac riparian, 5,000 ac of non-tidal emergent wetland ₅		ERP			

March 9, 1999

1	Action Description	Detail/Assumptions	Primary Effects	CALFED Program	Secondary CALFED Program	Implementing Entity	Implementing Authority Required
43	Determine Key Acquisition Areas for Conservation of Special Status Plant Species in the Delta, Suisun Marsh, and Portions of S.F. Bay ₄			ERP			
44	Studies to Determine Propagation Techniques and Restoration Protocols of Rare Plants in the Delta, Suisun Marsh, and Portions of S.F. Bay ₄			ERP			
45							
46	Sacramento River, San Joaquin River, and Tribs Bundle						
47	Sacramento River Meander Corridor Studies and Implementation	Continue studies and demonstration projects which address potential changes in hydrology and geomorphology, local economic impacts, and other issues associated with ongoing riparian restoration work.		ERP		DWR ₂	
48	American River Corridor Management Plan	Develop a corridor management plan		ERP			
49	Tuolumne River Sediment Management Plan (This is applicable to numerous other water courses which should also be covered.)	Develop a sediment management plan that includes evaluating coarse and fine sediment transport and the need to augment gravel supplies, and is consistent with efforts to restore the Tuolumne River corridor		ERP			
50	Tuolumne River Restoration Implementation Actions ₄			ERP			
51	Fish Management	Develop Biological and Genetic Management Plans to Address Restoration and Recolonization of Streams in the Central Valley by Chinook Salmon and Steelhead		ERP			
52	Hatchery Operations	Develop a comprehensive Implementation Plan for a statistically designed marking and tagging program for Chinook Salmon produced at Central Valley facilities consistent with existing programs throughout the West		ERP			

March 9, 1999

1	Action Description	Detail/Assumptions	Primary Effects	CALFED Program	Secondary CALFED Program	Implementing Entity	Implementing Authority Required
53	Upgrade Weir at Battle Creek Coleman Fish Hatchery	Repair and Modify Weir		ERP			
54	Butte Creek Restoration			ERP		DWR ₂	
55	Deer Creek Restoration			ERP		DWR ₂	
56	Comprehensive Flood Control Study			External	Coord. Levees, S/C	Corps, DWR	
57	Sacramento River Mercury Source ID and Control/Remediation Study			WQ			
58	Sacramento River Levees Restoration			S/C		Corps, DWR	
59	San Joaquin River Meander Corridor & Tribs Study, Implementation, and Acquisition			ERP		DWR, Corps ₂	
60							

1	Action Description	Detail/Assumptions	Primary Effects	CALFED Program	Secondary CALFED Program	Implementing Entity	Implementing Authority Required
61	Integrated Water Management Bundle						
62	Identify service areas and species where possible indirect effects are already covered by another mechanism such as HCP.			ERP			
63	Conduct a critical needs analysis for these species in those parts of the service area not already addressed by another mechanism.			ERP			
64	Implement habitat protection and enhancement measures to address the highest priority critical needs.			ERP			
65	Contribute to ongoing efforts to protect and conserve these species in service areas that are covered by other mechanisms.			ERP			
66	Develop tools to address long-term direct or indirect effects of CALFED water supply reliability projects.			ERP			
67	Support existing or future recovery efforts for species in service areas affected by CALFED water supply reliability projects.			ERP			
68	Environmental Education Programs	Programs designed to develop a broader understanding of natural resource conservation issues at the individual and community level.	Increase public awareness.	ERP	WQ		
69	Develop a Long-Term Plan for In-Stream Flows	Clarity: Should be developing and implementing.	Improve fisheries and wildlife habitat	ERP			
70	Develop Ecologically-based Hydrologic Models and Water Management Strategies			ERP			

Action costs include 3% admin overhead and 25% monitoring

E-005053

E-005053

March 9, 1999

1	Action Description	Detail/Assumptions	Primary Effects	CALFED Program	Secondary CALFED Program	Implementing Entity	Implementing Authority Required
71	Provide Needs and Opportunities Analysis for Improving Ecosystem Restoration and Flood Bypass Habitats	Areas include but are not limited to: Colusa Basin, Butte Basin, Sutter Bypass, Yolo Bypass, Chowchilla Bypass, Eastside, Fresno Slough, and James Bypass.	Improve diverse habitat, fish passage, and WQ	ERP		CALFED: Multi-Agency	
72	Diazinon and chlorpyrifos Assessment	Assess the fate and transport of diazinon and chlorpyrifos; begin implementation to reduce water quality impacts, using BMP's and providing cost-share to agricultural users.		WQ	ERP		
73	Diazinon and chlorpyrifos Education	Develop an educational program that provides information on ways to reduce water quality impacts. Possible test market areas include Sacramento and Stockton. 1997/1998 Eco funding provided to develop BMPs. 2000-develop BMPs		WQ			
74	Groundwater/CU Feasibility Studies with local sponsors: I.e. Madera Ranch, Stockton East, or others		Improve Storage/CU utility	S/C		Local Cooperating Entities and CALFED	
75	Groundwater/CU: Develop and Impl. GW Monitoring and Modeling Progr., Butte Co. or other		Improve Storage/CU utility	S/C		Local Cooperating Entities and CALFED	
76	Friant Dam Enlargement Recon Study		Improve Flood Control and ₂ Storage/CU utility	S/C		Proposed Joint study: USBR, Corps, and Rec Board ₂	
77	Sites and Alternatives Feasibility Study		Improve Storage/CU utility	S/C		DWR	
78	Shasta 6 ft Raise Feasibility Study		Improve Storage/CU utility	S/C		USBR	
79	In-Delta Storage: Feasibility Study (DW and Alternatives)		Improve Storage/CU utility	S/C		DWR	
80	Power Facilities Reop. For Water Supply Study		Improve Storage/CU utility	S/C	ERP	DWR, FERC, PUC, SWRCB ₃	
81	Overall Storage Strategy		Improve Storage/CU utility	S/C		CALFED ₂	
82	Fish Migration Barrier Removal Prioritization and Evaluations			ERP	S/C		

March 9, 1999

1	Action Description	Detail/Assumptions	Primary Effects	CALFED Program	Secondary CALFED Program	Implementing Entity	Implementing Authority Required
83	Financial Incentive Program	Local assistance (loans & grants) for cost effective water conservation/recycling actions, Low interest loans	reduce Demand	WUE			
84		Urban		WUE			CALFED, Multi-agency
85		Ag		WUE			CALFED, Multi-agency
86		Managed Wetlands		WUE			CALFED, Multi-agency
87		Recycling		WUE			CALFED, Multi-agency
88	Technical Assistance	Recoverable loss studies, on-farm conservation studies, funded through member agencies (USBR, DWR)	reduce Demand	WUE			
89		Urban		WUE			CALFED, Multi-agency
90		Ag		WUE			CALFED, Multi-agency
91		Refuges or Managed Wetlands ₂		WUE			CALFED, Multi-agency
92		Recycling		WUE			CALFED, Multi-agency
93	Directed Studies			WUE			
94		Research ET		WUE			DWR, UC ₂
95		Pilot Measurement Program		WUE			CALFED, Multi-agency
96	Establish water transfer clearinghouse	Features of Clearinghouse in 2000/01; develop website to disseminate transfer information and approval process requirements. No user fees. Possibly house in new division of SWRCB.	Imp. Market efficiency	WT			CALFED
97	Streamline approval process/ Standardize application checklist for water transfers ₂	Working with SWRCB, DWR, USBR to create a more standard application process. Would be available through the Clearinghouse, among other things. Several year effort. Initial effort is to clarify existing process thru SWRCB guidebook.	Assure disclosure of proposed actions	WT			USBR, DWR, SWRCB
98	Expedite approval process for water transfers ₂	SWRCB preparing guidebook on existing approval process. Help ID additional opportunities to expedite.	Imp. Market efficiency	WT			USBR, DWR, SWRCB
99	Develop Definitions of Transferable Water	Develop definitions of transferable water for types of transfers that are of issue as identified in guidebook. Have to have agencies and stakeholders work closely.	Imp. Market efficiency	WT			USBR, DWR, SWRCB

March 9, 1999

1	Action Description	Detail/Assumptions	Primary Effects	CALFED Program	Secondary CALFED Program	Implementing Entity	Implementing Authority Required
100	Carriage water Determination for Water Transfers 2	Coordinate with EWA to understand impacts on carriage water. Refine DWR/USBR policies after that. Work effort is dependent on outcome of EWA so defer until FY2001.	Imp. Market efficiency	WT		CALFED, Multi-agency	
101	Refill criteria determination for Water Transfers	Coordinate with SWRCB water rights hearing that involve negotiations on refill criteria (may be completed before stage 1) 2	Imp. Market efficiency	WT		DWR, USBR	
102	Advance Provision for In-stream Water Transfers	Develop accounting/tracking measures for 1707 transfers	Facilitate ERP Impl.	WT		CALFED, Multi-agency	
103	Forecast conveyance capacity	May be increased work effort at DWR and USBR	Imp. Market efficiency	WT		DWR, USBR	
104	Capacity Access	Work with stakeholders and DWR/USBR to make some capacity available for transfers.	Imp. Market efficiency	WT		DWR, USBR	
105	Evaluate Need for Water Rights Leg.	CALFED is preparing a recommendation. No additional funding expected.		WT		CALFED	
106	Funding in ground water/conjunctive use	Incentive program for ground water management. Coordinate with conjunctive use program/incentives. Incentive dollars would not be through this program.	Increase use of groundwater as a water management tool.	WT	S/C	CALFED	
107	Establish Pilot Environmental Water Account	Deferred past WY 1999 2	Improve Delta env. Protection and water supply reliability	ERP	S/C	CALFED	
108	Environmental Water Purchases		Enhance fisheries habitat	ERP	S/C	CALFED	
109	Fund and implement watershed restoration, maintenance, conservation, and monitoring activities.	Assist local watershed groups and government agencies to address common issues on a community basis through grants, directed actions, and technical support.	Manage land use, vegetation, and stream zones to reduce sediment, reduce stream flashiness, improve base flow, Reduce fire danger, reduce pathogens, and TDS ₂	WM	ERP	CALFED	
110	Add all measures needed for fish restoration in DEFT process _{1,4}	See Attachments A and B		ERP			

March 9, 1999

1	Action Description	Detail/Assumptions	Primary Effects	CALFED Program	Secondary CALFED Program	Implementing Entity	Implementing Authority Required
111	Field Surveys for all special status species in and around all potential surface storage and groundwater sites.						
112	Develop and Support Implementation of BMP's to Reduce Pesticide Loads/Inputs.			WQ			

March 9, 1999

1	Action Description	Detail/Assumptions	Primary Effects	CALFED Program	Secondary CALFED Program	Implementing Entity	Implementing Authority Required
113							

March 9, 1999

1	Action Description	Detail/Assumptions	Primary Effects	CALFED Program	Secondary CALFED Program	Implementing Entity	Implementing Authority Required
114	Governance Bundle						
115	CALFED Entity			Gov			Existing Structure or Leg. Required.
116	Determine/Establish governing structure for CALFED Program Elements, including ERP, WQ, Levees, WM, S/C, CMARP, WUE, WT			Gov			Existing Structure or Leg. Required.
117	Water Quality Actions Immunity: Federal Leg.	EPA concern with integrity of CWA if this action not clearly defined ₃	Allow WQ actions to proceed w/o unacceptable liability risk	Gov	WQ	CALFED	New Federal Legislation
118	Identify Urban Water Certification Entity (UWCP)			Gov	WUE	DWR ₂	
119	Implement Ag Water Use Certification ₂					DWR ₂	

E-005059