

Draft Provisions for Authorization of "Core Actions" for CALFED Bay-Delta Program

- (1.) **PROTECT AND ENHANCE EXISTING BAY-DELTA HABITAT** - Develop and implement a program to protect and enhance existing valuable habitat in the Bay-Delta. Such a program shall include, but is not limited to, management, partnerships, acquisition of fee title or conservation easements from willing sellers, and programs to minimize continued habitat loss of existing:

- **shallow areas** adjacent to levees from filling, and from dredging and boat operation,
- **channel islands** from erosion-causing processes such as boat wakes and channel dredging,
- **riparian habitats** from development or other land use practices,
- **wetlands** from development or other land use practices, and
- **upland habitat** from development or other land use practices.

Activities	Estimated Activity Cost (\$1,000)		
	Capital	O&M	Annual
• shallow habitat areas adjacent to levees	26,000	1,600	--
• channel island habitat	8,000	160	--
• riparian habitat	--	--	600
• wetlands habitat	--	--	20
• upland habitat	--	--	160
Total Category Cost (\$1,000)	34,000	1,760	780

- (2.) **RESTORE HABITAT** - Develop and implement a program to restore certain valuable habitats in the Bay-Delta system. Such a program shall include, but is not limited to, management, partnerships, acquisition of fee title or conservation easement from willing sellers, programs, and construction necessary to increase amounts of certain habitats. [Note: "Restoration" is not intended to imply returning habitat conditions to that of any specific period in history. It is intended to be the changing of conditions from less valuable habitat to increase the amounts of certain more valuable habitats that have been significantly reduced in the system. The amount of "restoration" achievable is dependent on funds allocated here to increasing the amount of valuable habitat]. Implement the program to restore:

- **Bay-Delta shallow water (tidal) habitat** by, but not limited to, such actions as

converting existing leveed lands to tidal action and including shallow water habitat in reconstruction of levees; [coordinate with *Improvements to System Reliability*],

- **riparian habitat** by revegetation and expansion at in-Delta tidal areas and within-island sites, and in the river system including the Sacramento River corridor and its tributaries; the San Joaquin River corridor and its three major tributaries: the Merced Stanislaus, and Tuolumne Rivers; and Delta tributaries such as the Mokelumne and Cosumnes Rivers,
- **Suisun Bay habitat** by converting diked wetlands to tidal wetlands habitat while mitigating the conversion of the nontidal wetlands,
- **riverine habitat** on the Sacramento River between Verona and Collinsville and along Delta channels by, but not limited to, such actions as reconstructing river banks and protecting channel islands, and
- **floodway corridor habitat.**

Activities	Estimated Activity Cost (\$1,000)		
	Capital	O&M	Annual
• Bay-Delta shallow water (tidal) habitat	115,000	2,300	--
• riparian habitat	102,300	1,620	--
• Suisun Bay habitat by converting diked wetlands to tidal action	15,000	300	--
• riverine habitat on the Sacramento River between Verona and Collinsville	47,400	220	--
• floodway corridor habitat	21,000	300	--
Total Category Cost (\$1,000)	300,700	4,740	0

- (3.) **EXPAND WETLANDS ACQUISITION PROGRAMS** - Expand funding for existing wetlands programs to purchase of fee title or conservation easements from willing sellers to preserve high priority wetlands in perpetuity. The acquisition shall focus on enlarging important areas of existing freshwater and brackish water wetlands and riparian habitats to incorporate currently protected areas into larger connected corridors.

Activities	Estimated Activity Cost (\$1,000)		
	Capital	O&M	Annual
• wetland acquisition program	12,800	250	--
Total Category Cost (\$1,000)	12,800	250	0

- (4.) **ACQUIRE ENVIRONMENTAL WATER** - Develop and implement a program for acquisition, from willing sellers, or development of a water supply for use in increasing flows into the Delta from the San Joaquin River for the benefit of ecosystem needs. The program shall identify how the water will be acquired or developed.

Activities	Estimated Activity Cost (\$1,000)		
	Capital	O&M	Annual
• environmental water from willing sellers	-	--	20,000
Total Category Cost (\$1,000)	0	0	20,000

- (5.) **IMPROVE HABITAT MANAGEMENT**- Develop and implement a program to improve management of Bay-Delta system habitat. Such a program shall include, but not be limited to:

- provide incentives and willing partnerships with local reclamation districts to **restore shoreline and shallow-water edges** of channels, such as construction of riverside berms at selected sites, during levee protection and channel maintenance work,
- provide incentives and willing partnerships with local reclamation districts and landowners to **retain riparian vegetation** by implementing alternative levee maintenance practices and to leave habitat areas undisturbed,
- provide incentives to encourage Delta farmers to adopt agricultural practices that improve habitat values while maintaining agricultural productivity including, but not limited to, 1) cooperate with California Department of Fish and Game (DFG) and provide funding for outreach programs and dissemination of literature, such as the DFG manual describing **wildlife-friendly agricultural practices that provide wildlife habitat while maintaining agricultural productivity**, and 2) establish cooperative partnerships with willing landowners to **retain crop types and cropping practices that provide valuable wildlife habitat**,
- **coordination**, in cooperation with state and federal agencies, of other habitat programs, and
- establishment of a **CALFED Team** to coordinate and expedite habitat restoration permits.

Activities	Estimated Activity Cost (\$1,000)		
	Capital	O&M	Annual
• restore shoreline and shallow-water edges during levee protection and maintenance work	--	--	5,500
• retain riparian habitat by implementing alternative levee maintenance practices and to leave habitat areas undisturbed	--	--	155
• preserve agricultural land uses and encourage wildlife-friendly agricultural practices	--	--	5,300
• coordination of other habitat programs	--	--	1,000
• CALFED Team to expedite habitat restoration permits	--	--	1,000
Total Category Cost (\$1,000)	0	0	12,955

- (6.) **INCENTIVES FOR WATERSHED MANAGEMENT** - Develop and implement a program to provide incentives and undertake cooperative partnerships with landowners and local agencies to improve watershed management in the Sacramento and San Joaquin River basins and tributaries. The program shall implement a variety of measures to:

- **manage land uses** to protect water quality and enhance water yield,
- **manage riparian zones** to protect aquatic and drinking water quality, and
- **reduce erosion rates.**

Activities	Estimated Activity Cost (\$1,000)		
	Capital	O&M	Annual
• manage land uses	2,500	50	--
• manage riparian zones	--	--	1,000
• reduce erosion rates	--	--	1,000
Total Category Cost (\$1,000)	2,500	50	2,000

- (7.) **IMPROVE CONTROL OF INTRODUCED SPECIES** - Coordinate with the State of California to improve management and control of non-native species that could become introduced to the Bay-Delta ecosystem. Such measures shall be coordinated with efforts

to protect and enhance the natural ecosystem values of the Delta. The control measures shall include, but not limited to:

- promoting and coordinating California interest in applying existing federal law for regulating **ballast-water releases** to California ports,
- funding additional staffing and more rigorous **vehicle inspections** at **California border stations**, and
- coordinate **monitoring for early detection** of new introductions of invasive aquatic and terrestrial species and promote, coordinate, and fund a **rapid response program** to eradicate detected populations before they have an opportunity to spread.

Activities	Estimated Activity Cost (\$1,000)		
	Capital	O&M	Annual
• promote and coordinate laws regulating ballast-water releases	--	--	500
• increase staffing for more vehicle inspections at California borders	--	--	1,000
• monitor for early detection and fund a rapid response program	--	--	250
Total Category Cost (\$1,000)	0	0	1,750

- (8.) **PROVIDE FUNDING FOR CVPIA PROVISIONS** - Coordinate with the Secretary of Interior and provide funding for the State of California cost-share portions of selected provisions of the Central Valley Project Improvement Act (CVPIA), Public Law 102-575, October 31, 1992. [Note: 1) not all CVPIA provisions with California cost-share are included here; 2) only those provisions related to CALFED objectives are included; and 3) only high priority portions of provisions are included]. Funding shall be provided for the State cost-share of the following CVPIA provisions:

- 3406(b)(5) - mitigate for fishery impacts from operations of **Contra Costa Canal Pumping Plant No. 1**,
- 3406(b)(6) - **Shasta Dam temperature control device**,
- 3406(b)(10) - minimize fish passage problems at **Red Bluff Diversion Dam**,
- 3406(b)(12) - **Clear Creek Restoration**,
- 3406(b)(13) - restore and replenish **spawning gravel**,
- 3406(B)(16) - establish a comprehensive assessment program to **monitor fish and wildlife**,
- 3406(b)(17) - resolve fishery passage problems at the **Anderson-Cottonwood Irrigation District Diversion Dam**, and

- 3406(b)(20) - mitigate fishery impacts associated with operations of the Gelsen-Colusa Irrigation District's Hamilton City Pumping Plant.

In addition to funding for the above Shasta Dam temperature control device, evaluate the need for similar facilities at Whiskeytown, Folsom, and New Melones dams, releasing sufficient flows from the dams to maintain adequate temperatures in the downstream rivers without significantly affecting water supply, and a temperature management control plan for return flows from the Colusa Drain and Sutter Slough.

Funding shall be provided for the California cost-share of the highest priority portions of the following CVPLA provision:

- 3406(b)(21) - avoid losses of fish resulting from **unscreened or inadequately screened diversions**.

Activities	Estimated Activity Cost (\$1,000)		
	Capital	O&M	Annual
• Shasta Dam temperature device 3406(b)(6)	20,000	400	--
• Red Bluff Diversion Dam 3406(b)(10)	20,000	400	--
• restore spawning gravel 3406(b)(13) and Clear Creek Restoration 3406(b)(12)	5,000	100	--
• monitor fish and wildlife 3406(b)(16)	--	--	50
• Contra Costa Canal PP 3406(b)(5), ACID Diversion Dam 3406(b)(17), and screening of high priority diversions upstream of the Delta 3406(b)(21)	8,000	160	--
• GCID Pumping Plant 3406(b)(20)	7,000	140	--
• screening of high priority unscreened in-Delta diversions 3406(b)(21)	15,000	300	--
Total Category Cost (\$1,000)	75,000	1,500	50

(9.) **IMPROVE FISH PROTECTION AND MANAGEMENT** - Develop and implement a program to improve fish protection and management in the Bay-Delta system. Such a program shall include, but not be limited to:

- improve recruitment of natural spawning gravels in the Sacramento and San Joaquin River basins and tributaries,
- **modify natural barriers** where they are most restrictive to anadromous fish passage and migration,
- continue to evaluate an acoustic barrier at the Delta Cross Channel to deter outmigrating fish from entering the interior of the Delta,
- use **real-time monitoring and adaptive management** to reduce losses of fish to south-Delta pumping plants; [*Note: Real time monitoring focuses on the distribution patterns of important anadromous and resident fish relative to their vulnerability of being drawn into the pumps; adaptive management refers to the process under which adjustments are made in operations of the State Water Project (SWP) and Central Valley Project (CVP) to minimize effects on key fish based on the available real-time monitoring information*],
- **mark salmon** produced in hatcheries to help manage effects on wild populations,
- **modify hatchery operations** to reduce effects on wild fish populations, and
- coordinate with the Pacific Management Council and the Department of Fish and Game to **improve data collection** and analysis needed to regulate fish harvest.

Activities	Estimated Activity Cost (\$1,000)		
	Capital	O&M	Annual
• improve recruitment of natural spawning gravels	200	4	--
• modify natural barriers to fish passage and migration	300	5	--
• evaluate an acoustic barrier at the Delta Cross Channel	1,000	20	--
• improve real time monitoring	--	--	3,750
• mark salmon produced in hatcheries	--	--	2,000
• modify hatchery operations	--	--	2,000
• improve data collection and analysis needed to regulate fish harvest	--	--	500
Total Category Cost (\$1,000)	1,500	29	8,250

(10.) **INCENTIVES FOR WATER CONSERVATION** - Develop and implement a program to establish incentives and education for increased conservation practices. Such a program shall include incentives, but is not limited to, loans, cost-sharing for voluntary implementation, and evaluations in cooperation with water districts to determine changes to programs that would further encourage conservation. These include:

- incentives to achieve broader application of **Efficient Water Management Practices (EWMP's)** by more agricultural water suppliers and users, and to expand the EWMP's to include additional practices and higher implementation rates,
- incentives to achieve improved use of **Best Management Practices (BMP's)** by more municipal/industrial water suppliers and users, and to expand the BMP's to include additional practices and higher implementation rates,
- funding educational outreach programs and providing **technical and planning support** to water districts requesting that support, and
- incentives to encourage **temporary land fallowing** during drought periods to reduce dry year demand.

Activities	Estimated Activity Cost (\$1,000)		
	Capital	O&M	Annual
• incentives for broader application of agricultural EWMPs	--	--	1,500
• incentives for improved use of municipal/industrial BMPs	--	--	900
• technical and planning support to water districts	--	--	750
• encourage temporary fallowing of agricultural lands	--	--	20,000
Total Category Cost (\$1,000)	0	0	23,150

(11.) **INCENTIVES FOR CONJUNCTIVE USE** - Develop and implement a program to expand conjunctive use/groundwater banking for the SWP /CVP, establish incentives for conjunctive use by local water districts, and promote easing of institutional factors that complicate implementation of conjunctive use. Such a program shall include, but not limited to:

- **financial incentives** including cost-sharing for studies of conjunctive use feasibility and low-interest loan programs to fund capital improvements to conjunctive use operations,
- assist water districts in resolving issues of legal protection and other **institutional factors** that currently complicate implementation of conjunctive use programs,

- and
- design, install, and operate facilities to expand groundwater banking and conjunctive use to improve the flexibility of the SWP and CVP.

Activities	Estimated Activity Cost (\$1,000)		
	Capital	O&M	Annual
<ul style="list-style-type: none"> provide incentives to local districts and water users for long-term conjunctive use 	--	--	7,500
<ul style="list-style-type: none"> resolve institutional factors complicating conjunctive use programs 	5,000	--	--
<ul style="list-style-type: none"> expand groundwater banking and conjunctive use to improve flexibility of SWP and CVP 	80,000	13,600	--
Total Category Cost (\$1,000)	85,000	13,600	7,500

(12.) **FACILITATE WATER TRANSFERS** - Develop and implement a program to better coordinate and facilitate water transfers. Such a program shall:

- promote and fund development of **long-term drought contingency planning** by local water agencies, and develop such plans at state and federal level,
- improve operational procedures** by coordination among operators of facilities to achieve more efficient use of physical conveyance capacities,
- establish a **permanent water transfer brokering** mechanism or institution to link potential sellers and buyers of water,
- coordinate statutory and regulatory responsibilities** for water transfers to improve the review and approval process of proposed transfers while continuing to maintain protections for the ecosystem, and assist in removing other institutional factors that impede market-based water transfers, and
- improve planning and coordination** procedures such as consolidating anticipated transfers to effectively address cumulative impacts.

Activities	Estimated Activity Cost (\$1,000)		
	Capital	O&M	Annual
<ul style="list-style-type: none"> long-term drought contingency planning 	--	--	500
<ul style="list-style-type: none"> improve operational procedures 	--	--	1,150

Activities	Estimated Activity Cost (\$1,000)		
	Capital	O&M	Annual
• establish a water transfer brokering mechanism	2,400	--	400
• coordinate statutory and regulatory responsibilities	--	--	320
• improve planning and coordination procedures	1,600	--	--
Total Category Cost (\$1,000)	4,000	0	2,370

(13.) **IMPROVE PROJECT OPERATIONS** - Develop and implement a program to improve operation of the projects affecting flow to the Delta. The program shall include, but not be limited to:

- develop an incentive driven program to **modify upstream reservoir releases** on all tributaries to maximize coordination with water quality, fish and wildlife, and water supply needs;
- improve **coordination of CVP and SWP operations**,
- improve **coordination of land use and water supply planning** by: 1) developing incentives for local and regional coordination of land use and water supply planning; and 2) implementing long-term institutional measures to increase coordination of state and federal project planning and operations with local and regional water planning and operations.

Activities	Estimated Activity Cost (\$1,000)		
	Capital	O&M	Annual
• modify upstream reservoir releases	--	--	4,000
• improve coordination of CVP and SWP operations	--	--	300
• improve coordination of land use and water supply planning	--	--	1,000
Total Category Cost (\$1,000)	0	0	5,300

(14.) **IMPROVE WATER QUALITY MANAGEMENT** - Develop and implement a program to improve water quality in the Delta by managing upstream pollutant sources. Such a program shall include, but not be limited to:

- land use conversion, by compensated agreement with willing participants, whereby agricultural lands contributing to the most significant drainage associated water quality problems in the San Joaquin River would be converted to alternate uses,
- manage agricultural **drainage timing** to reduce instream and Delta impacts of water quality,
- manage **urban stormwater runoff**,
- **construct wetlands** to treat upstream wastewater effluent and Delta agricultural drainage,
- increase enforcement of **source control regulations** and develop programs to provide financial incentives and cooperative partnerships with willing landowners to assist them in adopting and implementing **pollution source control measures** such as delaying timing of drainage discharges, modifying field drainage systems to reduce drainage volumes, managing irrigation tailwater to reduce pesticide residues, and adopting management practices to reduce rainfall induced discharge of pesticides into water courses,
- implement on-site **mine drainage remediation** measures and control runoff from high priority mine sites based on current water quality objectives for pollutants.

Activities	Estimated Activity Cost (\$1,000)		
	Capital	O&M	Annual
• convert, to other uses, drainage affected agricultural lands contributing to water quality problems on the San Joaquin River	17,600	880	--
• manage drainage timing to reduce impacts	--	--	440
• manage urban stormwater runoff	--	--	2,500
• construct wetlands to treat wastewater effluent and drainage	14,400	720	--
• increase enforcement of source control regulations and provide incentives for pollution source control	--	--	1,500
• implement on-site drainage remediation	30,000	600	--
Total Category Cost (\$1,000)	62,000	2,200	4,440

- (15.) **LAND USE CONVERSION** - Convert, to other uses, agricultural lands having drainage problems through use of incentives and agreements with willing participants for the purpose of reducing exports from the Delta and reducing drainage problems in the San Joaquin Valley and total salt load entering the Delta. The lands shall be those identified for agricultural wastewater management in the final report of the San Joaquin Valley Drainage Program (September, 1990). This activity shall be coordinated with the Secretary of Interior's land retirement activities under section 3408(h) of CVPIA.

Activities	Estimated Activity Cost (\$1,000)		
	Capital	O&M	Annual
<ul style="list-style-type: none"> convert, to other uses, agricultural land to reduce Delta exports and provide additional water quality benefits 	320,000	8,000	--
Total Category Cost (\$1,000)	320,000	8,000	0

- (16.) **IMPROVEMENTS TO SYSTEM RELIABILITY** - Develop and implement a Delta Long-Term Levee Protection Plan to address the highest areas of concern for existing Delta levees. This shall identify the plan to monitor, evaluate, maintain, plan for emergency management, and stabilize existing levees and identify financing plans. Specific elements of the plan shall include:

- **Subventions Program** element for long-term levee maintenance and improvements,
- **Special Projects** element for stability work on highest priority sites within the Delta,
- **subsidence reduction program** consisting of cooperative partnerships with landowners to voluntarily cease agricultural practices on peat soils near levees,
- coordinate, with the ongoing Long Term Maintenance Strategy for dredged material disposal for the San Francisco Bay Area, a pilot program to evaluate techniques for **beneficial reuse of dredged materials**,
- establishment of an **Emergency Levee Management Plan** to delineate responsibilities of agencies in responding to levee failures,
- investigate the feasibility of an **insurance fund** in coordination with the Office of Emergency Services and/or FEMA to recover flooded islands, and
- establishment of **habitat corridors as mitigation** for impacts from maintenance and stabilization of existing levees.

Activities	Estimated Activity Cost (\$1,000)		
	Capital	O&M	Annual
• fund a subventions program	--	--	15,000
• fund a special projects program	--	--	15,000
• subsidence reduction program	--	--	210
• evaluate reuse of dredged materials	--	--	50
• establish an Emergency Levee Management Plan	--	--	2,500
• establish habitat corridors as mitigation	--	--	3,000
Total Category Cost (\$1,000)	0	0	35,760

SUMMARY OF TOTAL ESTIMATED COST

	Estimated Activity Cost (\$1,000)		
	Capital	O&M	Annual
Total Estimated Cost (\$1,000)	897,500	32,129	124,305

SUMMARY OF ESTIMATED FEDERAL AND NON-FEDERAL COST

Federal Agency	Estimated Activity Cost (\$1,000)		
	Capital	O&M	Annual
Total Estimated Cost (\$1,000)	897,500	32,129	124,305
Total Non-Federal Cost Share (\$1,000)	486,250	16,815	62,177
Total Federal Cost Share (\$1,000)	411,250	15,314	62,128
Corps of Engineers (COE)	167,450	3,252	18,270
Fish and Wildlife Service (FWS)	7,050	137	21,998
Environmental Protection Agency (EPA)	24,200	685	4,345
Bureau of Reclamation (USBR)	178,790	10,352	17,390
U.S. Coast Guard (USGC)	0	0	125
U.S. Department of Agriculture (USDA)	33,760	888	0

SUMMARY OF ESTIMATED COSTS BY PROVISION

Provision	Estimated Activity Cost (\$1,000)		
	Capital	O&M	Annual
(1.) Protect and enhance existing Bay-Delta habitat	34,000	1,760	780
(2.) Restore habitat	300,700	4,740	0
(3.) Expand wetlands acquisition program	12,800	250	0
(4.) Acquire environmental water	0	0	20,000
(5.) Improve habitat management	0	0	12,955
(6.) Incentives for watershed management	2,500	50	2,000
(7.) Improve control of introduced species	0	0	1,750
(8.) Provide funding for CVPIA provisions	75,000	1,500	50
(9.) Improve fish protection and management	1,500	29	8,250
(10.) Incentives for water conservation	0	0	23,150
(11.) Incentives for conjunctive use	85,000	13,600	7,500
(12.) Facilitate water transfers	4,000	0	2,370
(13.) Improve project operations	0	0	5,300
(14.) Improve water quality management	62,000	2,200	4,440
(15.) Land use conversion	320,000	8,000	0
(16.) Improvements to system reliability	0	0	35,760
Total Category Cost (\$1,000)	897,500	32,129	124,305