California Bay-Delta Program

Levee System Integrity Program
Multi-Year Program Plan (Years 5-8)

Implementing Agencies:
Department of Water Resources
Department of Fish and Game
United States Army Corps of Engineers

April 2004

Goals, Objectives, and Targets

Goals and Objectives:

The goal of the Levee System Integrity Program is to reduce risk to land use and associated economic activities, water supply, infrastructure, and ecosystem from catastrophic breaching of Delta levees. The program is committed to achieving long-term protection of life and property, water quality for in-Delta and export uses, agriculture, recreation, and the environment. This program is implemented by the Department of Water Resources in cooperation with the Department of Fish and Game, the United States Army Corps of Engineers, and more than 60 levee maintaining agencies.

Levee system integrity accomplishments and activities are grouped into the five categories outlined in the Record of Decision:

1. **Provide Base Level Protection** – actions to understand and reduce the risk of catastrophic levee failure and provide base level funding to help levee maintaining agencies reconstruct all Delta levees to the PL84-99 Delta specific standard.

2. **Special Improvement Projects –** actions that will enhance flood protection beyond base level protection for certain islands protecting public benefits such as water quality, life and personal property, agricultural production, cultural resources, recreation, the ecosystem and local and statewide infrastructure.

3. **Levee Subsidence Control Plan –** actions to develop best management practices to minimize the risk to levee integrity from land subsidence.

4. **Emergency Management and Response -** actions to enhance the existing emergency management response capability of local, State, and Federal agencies to rapidly respond to levee emergencies.

5. **Program Management** – actions include monitoring, assessment, implementation commitments, and others necessary for program implementation.

Targets:

The CALFED ROD recognized that the goals of the Levee System Integrity Program, as well as other CALFED elements, could not be accomplished immediately. The ROD proposed a number of targets that should occur quickly and could be accomplished during the first seven years; these are the Stage 1 Actions. For Stage 1 the Levee System Integrity Program 1 targets are:

Levee System Integrity Program and Stage 1 Actions

Category		
	Stage 1 Action	Current Plan
Base Level Protection (PL84-99)	200 Additional Miles	Minimize Risk of Levee Failure
Special Improvements	None	Working on foundations as funding allows
Levee Subsidence Control Plan	None	Continuing multiple studies
Emergency Management and Response	Dec 2000	Plan is in place; work is continuing
Program Management	None listed	Program staff is developing tracking tools

While targets were established in the Record of Decision and a funding stream was proposed, changes have occurred that limit the program in accomplishing the stage 1 actions. Items below are some of the issues facing in the current program:

- Program actions, using the current limited and variable funding, are targeted at preserving the levee stability improvements achieved to date and minimizing the risk of future levee failure rather than achieving a set quantity of miles of levee that meet the PL84-99 Delta-specific standard. This approach of targeting the reduction of risk is the logical method of achieving the stated legislative intent to preserve the Delta as it exists while working toward the CBDA goal of reconstructing all Delta levees to a base level of protection. The program will continue with preservation and improvement on an incremental basis for as long as funding remains insufficient to pursue the longer-range program goals.

- The local cost share required in the current program implementation is significantly different from the plan that was laid out in the 1999 Programmatic EIS/EIR Technical Appendix for the Levee System Integrity Program. Table 13 of that document shows the local share of construction costs was to be approximately 10%. Early planners recognized the financial limitations of the levee maintaining agencies and proposed achievable target contributions. Under the current program, the levee maintaining agencies are being asked to assume not less than 25% of the cost of construction and, with recent funding, most levee maintaining agencies have been paying more than 30% of the costs. This increase of local contribution has reduced participation on many islands to a “maintenance only” program. Further, the current Levee System Integrity Program budget

is insufficient to accomplish CALFED base level protection. With funding at current levels and the local cost share remaining at 30% or greater, the program will not achieve the Stage 1 goals.

- A subsidence control program remains an important goal. However, the contracting problems have delayed one ongoing study and threaten another. Optimistically, a set of best management practices remains several years in the future.

- The Delta Levees Seismic Risk Analysis contract was signed and study commenced in October 2003. This study will develop a risk model for Delta levee failure and the associated risk to the Delta water export facility. The study will provide insight that could be used to assess funding priorities for the most important areas of the Delta to Statewide interests.

- The Department of Water Resources continues with development of an emergency plan to refine and improve its emergency response capability. Emergency response and preparedness is an ongoing activity that must be sustained and strengthened to be effective.

The Resources Agency's Delta Levees and Habitat Committee and the CBDA Levees and Habitat Subcommittee continue to be effective forums for incorporating public comment into the Levee System Integrity Program.

Once adequate, consistent funding is in place, and mechanisms to establish the appropriate local agency share are enacted, it will still require a number of years to consolidate the foundation of the Delta levees before the objectives of CBDA for Stage 1 can be accomplished.

Accomplishments (Cumulative Since Year 1)

Program accomplishments include a significant quantity of necessary maintenance, inspection, repair, and restoration of levees along with development of habitat improvements. A summary of activities is listed below:

Provide Base Level Protection

Completed Actions:

Levee Stability Improvements: A total of 43 levee miles of Delta levee, including projects on Sherman, Bradford, and Jersey Islands and Webb Tract were improved. Additional significant levee improvement work was performed on Twitchell Island and Hotchkiss Tract where some segments were brought to the PL 84-99 standard; however, consolidation of the foundation and continuing subsidence will reduce the levee height over time.

Beneficial Reuse of Dredged Material: Projects within the Levee System Integrity Program have reused more than 900,000 cubic yards of suitable dredged material to increase levee stability and to develop enhancements to terrestrial and aquatic habitat within the Delta.

Habitat Enhancement: During Stage 1 the program has removed the overburden from 26 acres of land on Decker Island and built various types of aquatic habitat from land that once was a star thistle-infested pile of sand. Another notable habitat enhancement project is the Twitchell Island Setback Levee. With this project, the Department stabilized a section of unsafe levee and created a reach of shaded riverine aquatic habitat in the tidal zone between the original levee and the newly stabilized portion. Additional land is in development on Bradford Island, at Grizzly Slough, on Sherman Island, Hotchkiss Tract and elsewhere in the Delta and in the Suisun Marsh.

Seismic Risk Study: The Delta levees protect many assets of statewide significance Including the water supply for 23 million Californians and 7 million acres of productive agricultural lands. The levees are built of weak soils on top of a weak foundation. They are under continual assault by many natural forces. Perhaps the most critical natural force is seismic shaking which has the potential to cause several simultaneous levee failures. Recent levee fragility studies show that the islands critical for protecting water quality are the most vulnerable to failure due to seismic activity. The program has initiated a study that will establish the processes and develop a probabilistic model to quantify the risk posed to the State's water supply system as a result of multiple seismic levee failures. The final study results will also help to identify opportunities to minimize damage and provide the basis for additional studies of risk due to other caused of levee failure.

Levee Subsidence Control Plan

Completed Actions:

Subsidence Study: The program provided funding for the US Geological Survey to study the causes of Delta subsidence on Twitchell Island. The Department has managed the efforts to advance the scientific understanding of subsidence and developed demonstration projects for establishing best management practices to slow and, ultimately, reverse Delta subsidence.

Subsidence Reversal Demonstration: This project, also on Twitchell Island, has built a learning laboratory and will demonstrate methods to reverse subsidence through plantings and disbursal of sediment. The goal is to determine cost effective methods to slow and reverse Delta subsidence. These studies provide necessary data that contributes to development of best management practices for subsidence reversal.

Implement a Levee Emergency Management and Response Plan

Completed Actions:

SEMS Template: The program has produced a template for levee maintaining agencies to use in tailoring their own emergency plan to use in the initial response to a Delta flood emergency. Where adopted, this template will assure emergency plans will be SEMS compatible to the greatest extent possible.

Delta Wide Asset Management: Program staff works closely with the six Delta County Offices of Emergency Services to promote interoperability among levee maintaining agencies, the counties, and the Department of Water Resources to provide a coordinated and effective flood fight. One of the major efforts is working with the counties to establish policy in managing flood fight assets across political boundaries. This effort is well under way and must continue on an annual basis in order to be effective when needed.

Flood Fight Supplies: The first few hours of a flood fight are critical to saving an island from flooding. During those hours the flood fighters must have a ready supply of appropriate materials to be effective. The levees program is working to increase the availability of flood fight supplies by strategically placing stockpiles in critical locations in the Delta. Over time, a set of first response supplies adequate for one crew during the first 24 hours of flood fight will be stationed within 15 minutes driving time to all Delta islands.

Flood Fight Methods: Flood fight in the Delta has been a routine process employing well known methods over the last 100 years in the Delta. Recently new products and methods have been introduced to change the status quo. The levees program is participating with the U. S. Army Corps of Engineers and others to evaluate these methods and select those that offer the most promise for preserving the Delta.

Emergency Response: The levees program has the responsibility to support Delta levee maintaining agencies in preserving Delta islands. Since the beginning of Stage 1 the program has provided necessary assistance to respond to flood emergencies on three occasions to keep the islands from flooding. These emergencies occurred in the absence of a significant regional flood event in the Delta.

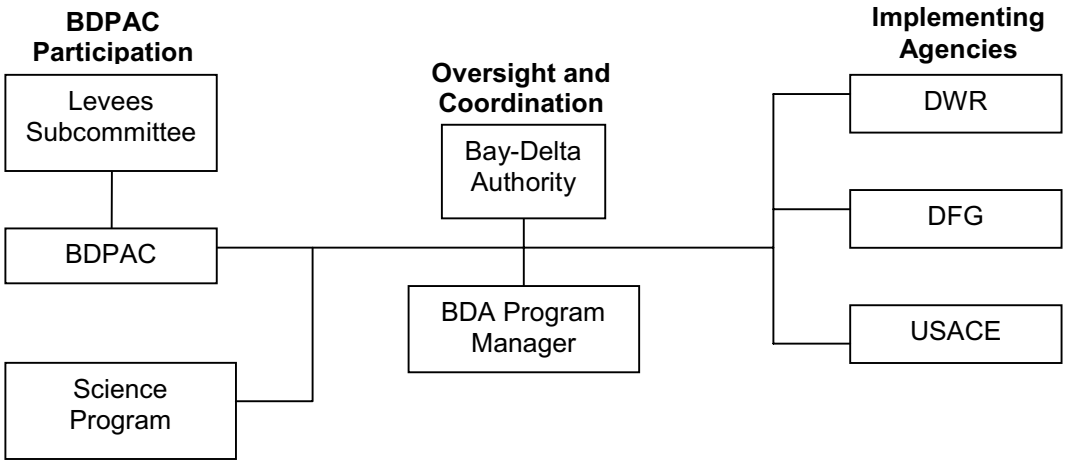
Program Management

Completed Actions:

Program Tracking: The levees program has developed conceptual measures to track progress toward accomplishing base level of protection and other CALFED goals. Working with USGS and others the program has conducted an aerial survey of major portions of the Delta to establish a baseline for determining progress. The program will continue working to refine its measures for determining success.

Implementation Actions: Program staff work closely with Delta levee maintaining agencies through the Delta Levees and Habitat Advisory Committee and the CALFED Delta Levees and Habitat Subcommittee. Through these forum the program discusses issues and seeks to develop consensus before raising them to higher levels within CALFED.

PROGRAM STRUCTURE



Agency	Roles and Responsibilities
Bay-Delta Authority	• Oversight and coordination
Department of Water Resources	• Program management • Subventions • Special projects • Subsidence • Emergency response • Beneficial reuse • Risk assessment • Suisun Marsh
U.S. Army Corps of Engineers	• Program management • Base Level Protection and Special improvements • Emergency response • Beneficial reuse
Department of Fish and Game	• Program management • Subventions • Special Projects • Preserving Delta habitat • Maintenance of Levees
Levee Maintaining Agency	• Contracting • Emergency Response • Inspection • Levee Security

Major Activities

Base Level Protection

Levee Improvements – One goal of CALFED is to raise the Delta levees to base level protection by enlarging the deficient levee cross sections to the PL84-99 Delta specific standard. Achieving this goal requires that the existing levee system, which now protects the Delta islands from daily tidal flooding, be preserved and then enlarged to the new standard. Funds to accomplish this goal are divided into two categories. The first category of funding is distributed to all participating Delta levee maintaining agencies according to procedures which assure the preservation of the existing levee system. The second category of funding is directed to stabilize threatened levee sections on islands of statewide importance and to accomplish other necessary projects with program-wide significance. The levee preservation and the improvements achieved through both funding categories are obtained by working closely with and cost sharing with the Delta levee maintaining agencies. Both the levee preservation and the levee stability improvements directly contribute to levee system integrity, and provide significant benefits to other CALFED elements including water quality, water system reliability, conveyance and the ecosystem restoration. Though this base level protection program, CBDA is cooperatively engaging the Delta levee maintaining agencies to preserve and improve to more than 600 miles of threatened levee. Through this program the Delta has achieved an improving record in resisting flood damage from all causes. Progress made in this program serves as an example of some of the highest achievements obtainable through CALFED.

Schedule: Ongoing annual program
Implementing Agencies: Delta levee maintaining agencies, DWR, DFG, COE
Funding: Proposition 50, local matching funds

Suisun Marsh: The Suisun Marsh Charter Implementation Plan is based upon the premise that water quality, ecosystem, flood control, and management wetland benefits must be achieved in an integrated and coordinated implementation. The levee element is a key cornerstone in the implementation plan. The Suisun Marsh Levee Investigation Report has found that certain levees in the Suisun Marsh can be as essential to preserving water quality as some of the critical Delta levees. The program includes those Suisun Marsh levees that are authorized in legislation for Delta funding, however, additional authorization and funding is needed to develop a comprehensive levee program within the marsh and to provide the type of benefits now accruing to the Delta.

Schedule: Ongoing program
Implementing Agencies: levee maintaining agency, DWR, DFG, COE
Funding: Proposition 50, local matching funds

Beneficial Reuse of Dredge Material – Dredging is an activity that maintains channels, harbors, and conveyance capacity in the Delta. This activity produces significant quantities of material that must be disposed of, at cost to the dredging agency. At the same time, levee maintenance activities ongoing in the Delta require significant volumes of material to counteract subsidence, build levee buttresses, and for other purposes. In the past, the program has advanced the beneficial reuse of dredged material for levee maintenance, rehabilitation, and other projects, thereby reducing the cost of both dredging and levee work. Recently, however, there has been a perceived threat to water quality from use of this material. The Regional Water Quality Control Board has limited the reuse of dredged material and required large scale monitoring programs in those areas where they do allow its use. The cost of obtaining this dredged material, coupled with the cost of permits and monitoring now exceeds the cost of commercial borrow fill.

Schedule: Ongoing
Implementing Agencies: DWR, DFG, COE
Funding: Proposition 50, where economically justified

Risk Assessment Study – The Levee Risk Assessment Team has made significant progress in developing the system model of the Delta, the characteristics of a breach, and the effects of saltwater intrusion resulting from seismic levee failure on export water quality. The team has, also, studied the capability of contractors to respond to single and multiple levee breaches on critical Delta islands. Recent contracting difficulties have placed this work in suspension, however, the program committed to continue this study awarded a contract to J.R. Benjamin to conduct a system analysis and build a probabilistic model for the Delta. The model will be used to determine the economic risk associated with each potential cause of levee failure.

Schedule: Ongoing, completion is expected in 2007.
Implementing Agencies: DWR, CBDA, COE
Funding: Proposition 50

Special Improvement Projects

Special improvement projects enhance levee stability on levees that have particular importance in the system above the PL84-99 Delta-specific standard. This portion of the program will be deferred until base level of protection is achieved on critical islands.

Schedule: No activity
Implementing Agencies: Delta levee maintaining agencies, DWR, DFG, COE

Funding: None available

USACE Studies: The US Congress Conference Report 108-357 dated November 7, 2003 of the FY 04 EWDAA states: "The conferees have provided $1,100,000 for the Sacramento-San Joaquin Delta, California, study including $350,000 for a reconnaissance study to evaluate environmental restoration, flood protection, recreation, and related purposes for the California Bay-Delta Authority North Delta Improvements project, and $500,000 to initiate and complete a reconnaissance study to prioritize and evaluate environmental restoration, flood protection and related purposes for the Delta Islands and Levees. The remaining funding is provided for the Delta Special Study." In 2005, USACE will initiate Reconnaissance Studies on North Delta and Delta Islands and Levees.

Levee Subsidence Control Plan

Subsidence Studies: Subsidence studies have been ongoing for several years on Twitchell Island and they have shown that it is possible to stop and reverse subsidence by shallow flooding of the land. This study is continuing.

Schedule: Ongoing
Implementing Agencies: DWR, USGS
Funding: Proposition 50

Subsidence Reversal: The demonstration project to develop cost effective means to slow and reverse Delta subsidence has been in process since year 1. The project was actively evaluating the methods necessary for large scale reversal when contract problems resulted in the abrupt stoppage of all work. Program staff is working to restore these contracts and continue the ongoing studies and bring this important work to completion.

Schedule: Ongoing
Implementing Agencies: DWR, CBDA, USGS
Funding: Proposition 50

Emergency Management and Response

Emergency Response: The Department and has worked diligently on a number of items under the emergency response heading. Among these are Delta-wide asset management, flood fight inventory improvements, and SEMS compatibility.

Delta–Wide Asset Management: Program staff has worked closely with the 6 counties and the State Office of Emergency Services to develop a system that will allow distribution and management of emergency response assets across political boundaries. The goal is to improve the responsiveness and effectiveness of agencies engaged in flood fight efforts to keep high water and/or strong winds from causing catastrophic levee failures in the Delta that could have consequences of statewide impact. While we are nearing completion on a number of memoranda of understanding, the efforts at coordination and cooperation must continue to enhance the management system and maintain its state of readiness.

Schedule: Ongoing
Implementing Agencies: DWR, Sacramento, Yolo, Contra Costa, San Joaquin, Alameda, Solano Counties, State OES, COE
Funding: Proposition 50, federal, and local funding

Flood Fight Inventory Improvements: The critical time in the prosecution of any flood fight is the first few hours, through the first day. To be effective, manpower and materials must be mobilized and employed early to prevent overtopping, erosion, and internal damage to the levees. Since the levee maintaining agencies have limited supplies with which to flood fight there is a need to stockpile additional materials in key locations to supplement those assets. This project will acquire and distribute approximately 10 flood fight boxes and necessary materials for flood fight, including sandbags, plastic sheeting, wood stakes, and hand tools to key areas within the Delta for use in that first critical time period.

Schedule: Ongoing
Implementing Agencies: DWR
Funding: Proposition 50

Standardized Emergency Management System (SEMS) Compatibility – Organization of emergency response teams and coordination of efforts among escalating jurisdictions is critical to effectively respond to any emergency; flood fighting is no exception. Program staff have developed a SEMS template for use by individual levee maintaining agencies to assure they have those critical elements in their plan to support coordinated escalation. This is needed to assure proper coordination, is required by law, and is a prerequisite to receive State reimbursement for damage claims and expenses connected with a flooding incident. Staff will continue to work with local agencies, mutual aid partners, and others to assure full SEMS compatibility and proper coordination during actual flooding incidents.

Schedule: Ongoing
Implementing Agencies: DWR
Funding: Proposition 50, local funding

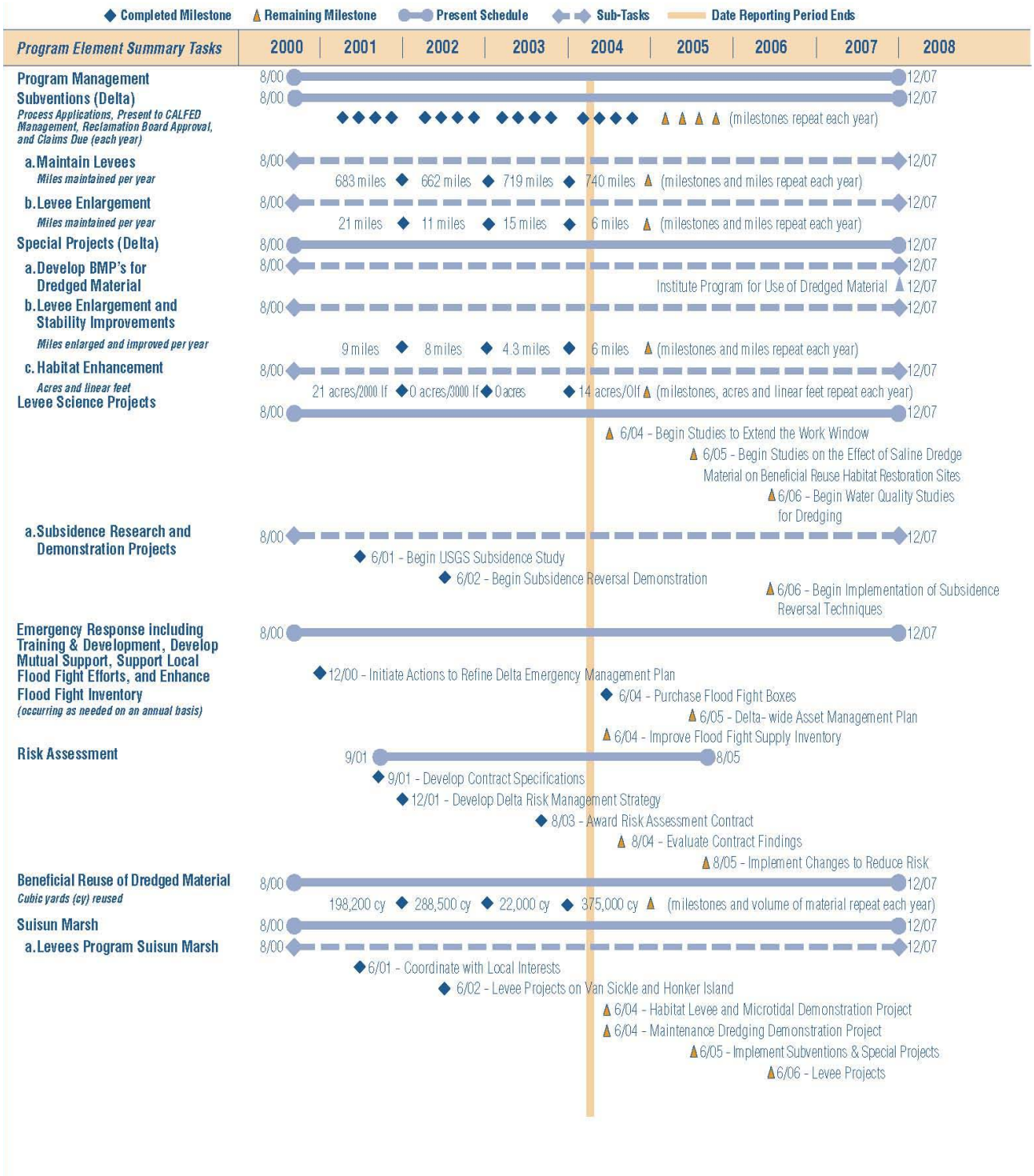
Program Management

Program Tracking: The levees program will continue working with CALFED Science to refine the program tracking measures to develop a full set of metrics that accurately depict program accomplishments. Staff is working to identify other program needs that would benefit from periodic surveys of the Delta to reduce the necessary recurring cost to the program

Implementation Actions: Program staff will continue to work closely with Delta levee maintaining agencies through the Delta Levees and Habitat Advisory Committee and the CALFED Delta Levees and Habitat Subcommittee and to raise appropriate issues to higher levels within CALFED.

Schedule: Ongoing
Implementing Agencies: DWR
Funding: Proposition 50

Schedule


◆ Completed Milestone
▲ Remaining Milestone
Present Schedule
Sub-Tasks
Date Reporting Period Ends
Program Element Summary Tasks
2000
2001
2002
2003
2004
2005
2006
2007
2008
Program Management
Subventions (Delta)
Process Applications, Present to CALFED Management, Reclamation Board Approval, and Claims Due (each year)
(milestones repeat each year)
a. Maintain Levees
Miles maintained per year
683 miles
662 miles
719 miles
740 miles
(milestones and miles repeat each year)
b. Levee Enlargement
Miles maintained per year
21 miles
11 miles
15 miles
6 miles
(milestones and miles repeat each year)
Special Projects (Delta)
a. Develop BMP's for Dredged Material
Institute Program for Use of Dredged Material
b. Levee Enlargement and Stability Improvements
Miles enlarged and improved per year
9 miles
8 miles
4.3 miles
6 miles
(milestones and miles repeat each year)
c. Habitat Enhancement
Acres and linear feet
21 acres/2000 lf
0 acres/3000 lf
0 acres
14 acres/0lf
(milestones, acres and linear feet repeat each year)
Levee Science Projects
6/04 - Begin Studies to Extend the Work Window
6/05 - Begin Studies on the Effect of Saline Dredge Material on Beneficial Reuse Habitat Restoration Sites
6/06 - Begin Water Quality Studies for Dredging
a. Subsidence Research and Demonstration Projects
6/01 - Begin USGS Subsidence Study
6/02 - Begin Subsidence Reversal Demonstration
6/06 - Begin Implementation of Subsidence Reversal Techniques
Emergency Response including Training & Development, Develop Mutual Support, Support Local Flood Fight Efforts, and Enhance Flood Fight Inventory
(occurring as needed on an annual basis)
12/00 - Initiate Actions to Refine Delta Emergency Management Plan
6/04 - Purchase Flood Fight Boxes
6/05 - Delta- wide Asset Management Plan
6/04 - Improve Flood Fight Supply Inventory
Risk Assessment
9/01
8/05
9/01 - Develop Contract Specifications
12/01 - Develop Delta Risk Management Strategy
8/03 - Award Risk Assessment Contract
8/04 - Evaluate Contract Findings
8/05 - Implement Changes to Reduce Risk
Beneficial Reuse of Dredged Material
Cubic yards (cy) reused
198,200 cy
288,500 cy
22,000 cy
375,000 cy
(milestones and volume of material repeat each year)
Suisun Marsh
a. Levees Program Suisun Marsh
6/01 - Coordinate with Local Interests
6/02 - Levee Projects on Van Sickle and Honker Island
6/04 - Habitat Levee and Microtidal Demonstration Project
6/04 - Maintenance Dredging Demonstration Project
6/05 - Implement Subventions & Special Projects
6/06 - Levee Projects
8/00
12/07

Integrating Science, Environmental Justice and Tribal Relations

Science: The Levee System Integrity Program's approach to developing a "science-based" program is multi-faceted. It gleans the most recent scientific findings as appropriate from other California Bay-Delta Authority-related actions in the estuary. The program seeks independent peer reviews of our projects from the California Bay-Delta Authority Science Program and stakeholders. It develops appropriate conceptual models for project designs based on testable hypotheses. The program develops and implements project monitoring plans that support research needs identified by the conceptual models. It uses monitoring results to inform future projects and guide adaptive management. The program integrates ERP/Science goals whenever possible into levee program actions and seeks cooperative partners that bring science knowledge and experience to each project. And finally, the program develops and communicates science information through conferences, appropriate publications, and general public outreach.

The Levee System Integrity Program is focusing on several critical areas of interest to water managers and the science community:

1. What are the causes and solutions of land subsidence on Delta lands?
2. What is the risk of levee failure from seismic activity?
3. How do the Delta's important, native fish use and interact with recreated wetland habitats?
4. How, why, and when is dissolved organic carbon produced from wetlands, subsidence reversal, or accidental island flooding?
5. What is the nature of current sediment balance in the Delta, and how does it affect potential ecosystem restoration and subsidence reversal?
6. What is the effect of exotic species on wetland restoration activities?
7. How can wildlife benefits be better integrated into flood control levees?

Environmental Justice: The program is committed to continue working with the Environmental Justice Program to address environmental justice issues related to implementation of the levee system integrity program, as they arise.

Tribal Relations: Currently there are no Federally-Recognized tribes located in the Delta region. However, if a tribe becomes Federally-Recognized, the program will actively engage those tribal governments in the planning and development of Delta region levee projects through tribal briefing and consultation meetings. The CBDA's Tribal Coordinator will assist in coordinating meetings between the tribes and the lead agencies.

Cross-Program Relationships

Ecosystem Restoration Program – The program has achieved notable success in preserving existing habitat and developing new critical habitat in the Delta. There are additional opportunities, such as the Dutch Slough Project, to improve the volume, type and quality of enhancements through cooperation between Levee System Integrity and the Ecosystem Restoration Program. The Levee System Integrity Program staff remains committed to working with ERP for mutually beneficial projects that advance common program goals.

Conveyance Program – The Delta levees are the borders of the channels for the water conveyance systems through the Delta. Water conveyance capabilities can be affected if a Delta levee fails. The levees program is working with the North Delta Flood-Eco Project to implement mutually beneficial flood control improvements.

Water Quality Program – The Delta levees restrain the daily chloride contamination of export water for more than 23 million Californians and 7,000,000 acres of farmland due to tidal influx of saltwater. Improvement in the reliability of water quality is a natural by-product of the maintenance, preservation, and improvement of the Delta levee system. The program will continue its close coordination on the Franks Tract Project to ensure flood control benefits on neighboring islands.

Water Supply Reliability –Through consistent maintenance, preservation, restoration, and improvements in levee system stability, the risk of levee failure is reduced and the water supply is protected.

Funding

Levees ($ in millions)	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Yr 6	Yr 7	Subtotal	Yr 8	Grand Total
State	$29.2	$13.7	$3.6	$21.6	$21.4	$18.4	$0.4	**$108.3**	$0.4	**$108.7**
Federal		$0.2	$0.2	$0.3	$0.2	$0.2	$0.2	**$1.3**	$ 0.2	**$1.5**
Local	$4.5	$3.0	$3.0	$3.0	$3.0	$3.0	$3.0	**$22.5**	$3.0	**$25.5**
Water User	$0.2	$0.3	$0.3	$0.4	$0.4	$0.4	$0.4	**$2.4**	$0.4	**$2.8**
Program Funding Total	**$33.9**	**$17.2**	**$7.1**	**$25.3**	**$25.0**	**$22.0**	**$4.0**	$134.5	**$4.0**	$138.5
Projected Needs Estimate	$0	$7.8	$17.9	$4.7	$5.0	$8.0	$26.0	**$72.4**	$31.0	**$105.4**
Original ROD Estimate (Aug, 2000)	$33.0	$76.0	$78.0	$82.0	$45.0	$65.0	$65.0	**$444.0**		

NOTES:

1. Original ROD Estimate represents the original Stage 1 funding estimates from the Record of Decision (Aug 2000).
2. Funding for Years 1 - 3 reflect actual State, Federal and Local obligations, commitments, encumbrances and expenditures updated to reflect actual fund amounts for each task. State funds for Years 4 & 5 reflect the April 1st Governor's budget. Federal funds are the Year 4 enacted and President's FY 2005 proposed budget. Projected funding shown in Years 6 - 8 includes remaining state bond funds that have been scheduled for future years and ongoing State base funding, plus estimates for local matching to grants for years where bond funding is available. Federal appropriations beyond Year 5 are unknown.
3. The State budget includes funding for the California Bay-Delta Authority, Department of Water Resources, Department of Fish and Game, State Water Resources Control Board, and the San Francisco Bay Conservation and Development Commission.
4. The Federal budget includes funding for the U.S. Army Corps of Engineers.
5. Water User/Local funding includes State Water Project Funds that are collected from state water contractors but are budgeted and appropriated through the state government. Local grant matching funds are estimated and updated as information becomes available.

Funding by Task

Levees ($ in millions)	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Yr 6	Yr 7	Subtotal	Yr 8	Grand Total
1) Program Management	$0.1	$0.5	$0.5	$3.1	$3.1	$3.1	$.4	**$10.8**	$0.4	**$11.2**
2) Base Level Protection	$33.5	$15.0	$5.9	$20.0	$19.9	$17.0	$3.4	**$114.7**	$3.4	**$118.1**
Risk Assessment			$0.1	$0.3	$0.3			**$0.7**		**$0.7**
3) Levee Subsidence		$0.8	$0.0	$0.8	$0.6	$0.8		**$3.0**		**$3.0**
4) Emergency Response		$0.2		$0.2	$0.2	$0.2		**$0.8**	$0.2	**$1.0**
5) Beneficial Reuse	$0.1	$0.5		$0.2	$0.2	$0.2		**$1.2**	$0.2	**$1.4**
6) Oversight and Coordination	$0.1	$0.2	$0.6	$0.7	$0.7	$0.7	$0.2	**$3.2**	$0.2	**$3.4**
Currently unassigned Tasks *										
Program Funding Total	**$33.8**	**$17.2**	**$7.1**	**$25.3**	**$25.0**	**$22.0**	**$4.0**	**$134.4**	**$4.4**	**$138.8**
Projected Needs Estimate	$0	$7.8	$17.9	$4.7	$5.0	$8.0	$26.0	**$69.4**	$30.6	**$100.0**
Original ROD Estimate (Aug, 2000)	$33.0	$76.0	$78.0	$82.0	$45.0	$65.0	$65.0	$444.0		$444.0

*Amounts showing as unassigned to task are recent additions to the FY 2004-05 Governor's Proposed Budget announced in the April 1, 2004 Spring Finance Letters. Agencies are currently updating the Year 5 tasks to reflect these recent changes. The final version of the Program Plan will include the revised distribution by task.

NOTES:

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2. Funding for Years 1 - 3 reflect actual State, Federal and Local obligations, commitments, encumbrances and expenditures updated to reflect actual fund amounts for each task. State funds for Years 4 & 5 reflect the April 1st Governor's budget. Federal funds are the Year 4 enacted and President's FY 2005 proposed budget. Projected funding shown in Years 6 - 8 includes remaining state bond funds that have been scheduled for future years and ongoing State base funding, plus estimates for local matching to grants for years where bond funding is available. Federal appropriations beyond Year 5 are unknown.
3. The State budget includes funding for the California Bay-Delta Authority, Department of Water Resources, Department of Fish and Game, State Water Resources Control Board, and the San Francisco Bay Conservation and Development Commission.
4. The Federal budget includes funding for the U.S. Army Corps of Engineers.
5. Water User/Local funding includes State Water Project Funds that are collected from state water contractors but are budgeted and appropriated through the state government. Local grant matching funds are estimated and updated as information becomes available.

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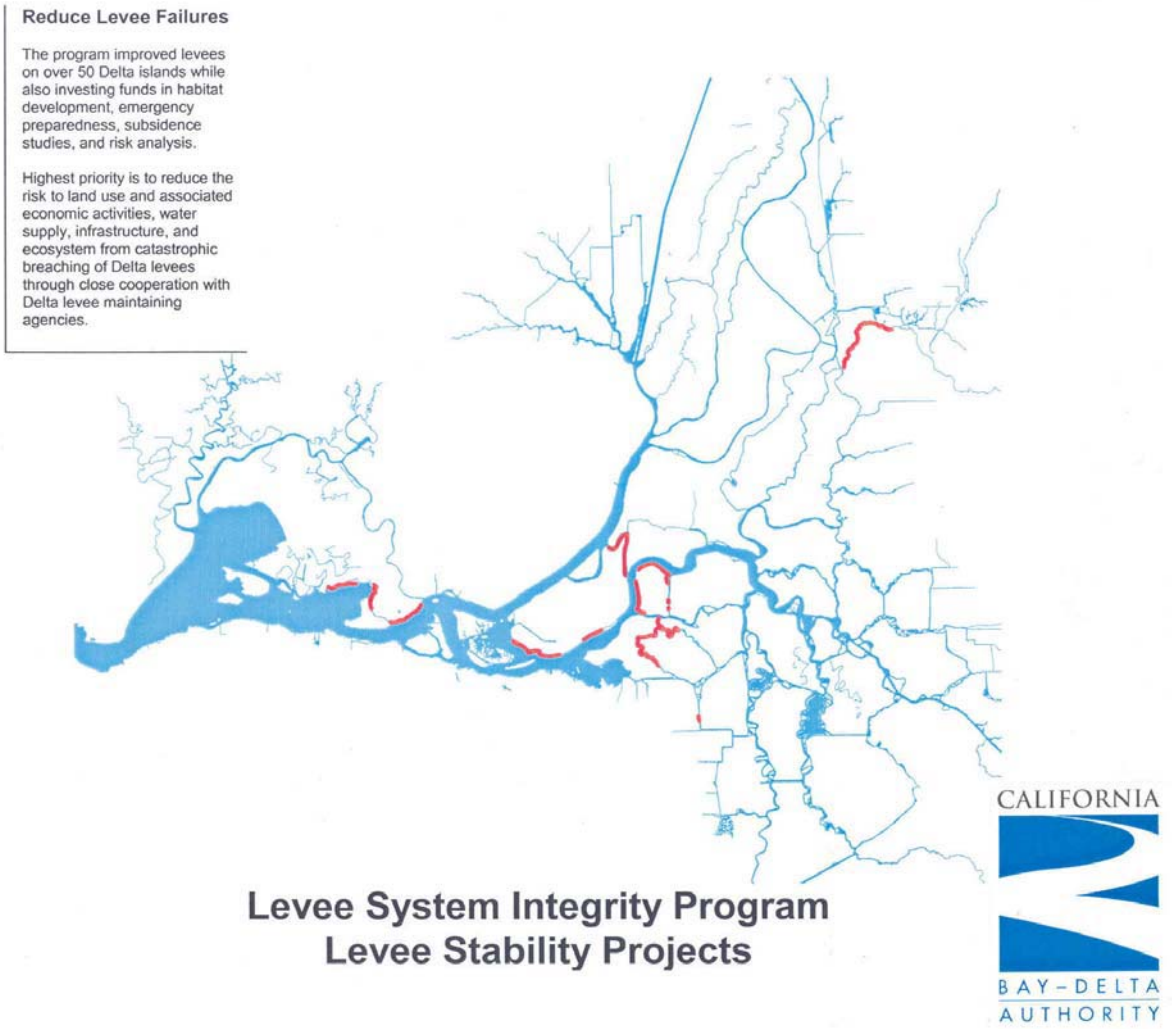
Geographical Distribution of Levee Stability Activities



Geographical Distribution of Habitat Development Activities