

Delta Levees Investment Strategy: Information Requests, Investment Strategy Principles, and General Updates

Summary: This progress report on the Delta Stewardship Council's (Council) activities to update the Delta Plan priorities for State investment in Delta levees includes information previously requested by Council members, a list of proposed flood management investment principles, a project schedule for the remainder of the year, and general updates on progress including the status of the methodology review by an independent scientific review panel. This agenda item contains both informational items as well as an action item related to the proposed flood management investment principles.

Requested Action: Endorse the proposed flood management investment principles to guide future work in developing the Delta levees investment strategy.

Background

Over the past few months, staff has provided updates and presentations related to the Delta levees investment strategy (DLIS). In March, the Council approved a list of State interests for further consideration during development of the DLIS and other Delta Plan provisions related to levee investments and risk reduction measures. In April, staff and our consultant, Arcadis, provided information on two key elements: a presentation on the cost allocation methodology and the status of the independent peer review process.

At this meeting, staff will provide information requested by the Council about State expenditures in the Delta, accomplishments of the Department of Water Resources (DWR) Delta levees programs, maps of project and non-project levees within the Delta and Suisun Marsh, and the status of levee-related habitat restoration projects.

The Council also will review proposed principles for Delta flood management that can be used to guide further development of the investment strategy for Delta levees. Staff recommends that, after consideration of the staff's report and public testimony, the Council endorse the flood management investment principles proposed in Attachment 5 to this memo.

In addition, at this meeting staff will provide general project updates and discuss upcoming project milestones.

Information Requests

A. Map of Project and Non-project levees

Council members requested a map more clearly showing project and non-project levees throughout the Delta and Suisun Marsh. Attachment 1 is a map of project, non-project, and other levees, such as those in Suisun Marsh.

B. Levee expenditures

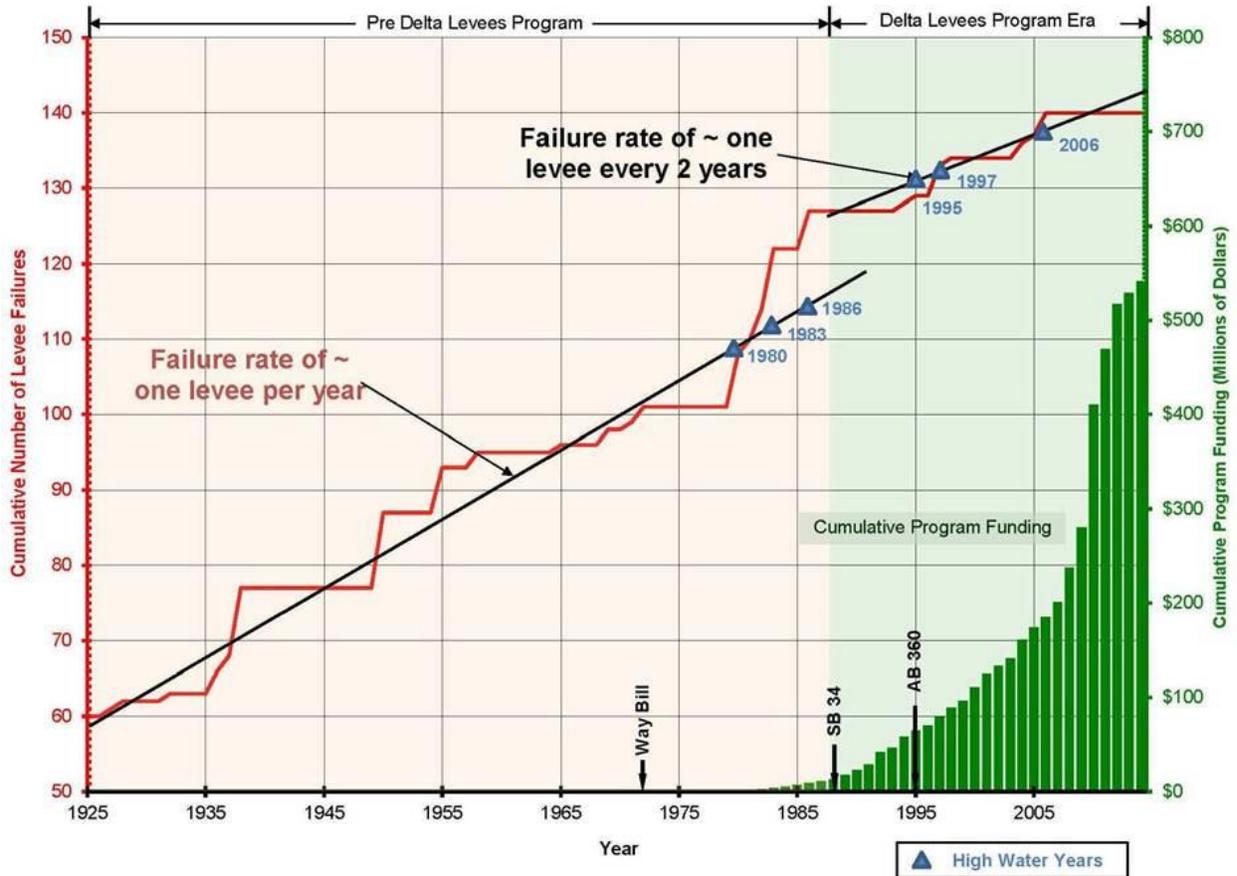
At the February Council meeting, staff presented maps showing State expenditures for Delta levees made through DWR's Delta Levee Maintenance Subventions Program and the Delta Levees Special Flood Control Projects Program. At that time, Council members requested an updated analysis showing expenditures from a broader array of sources, including urban levee programs and other levee repair programs. Since February, DWR has provided a portion of the information to address the Council's request.

Attachment 2: Updated Summary of State Expenditures in Delta Levees provides this information. In addition to the expenditures reported in February, the attachment presents data on post-disaster expenditures made by the State for the Jones Tract levee repair and approximately \$16 million expended in geo-technical studies of levees in urban areas within the Delta. Not detailed in Attachment 2, DWR reports that it has expended more than \$74.8 million in Delta levee repairs through the Sacramento River Bank Protection Project, PL 84-99 improvements, and other levee repairs for which it was unable to provide location information at this time.

C. Benefits of levee expenditures

Council members also requested a summary of benefits achieved through investments made by DWR's Delta levee programs. One measure of these benefits is the reduction in levee failures since the programs were initiated. Figure 1 depicts this reduction, indicating that the rate of levee failures has decreased by 50 percent since the Subventions and Special Project programs were initiated.

Figure 1. Delta levee failure rate compared to DWR’s Delta levee program expenditures



(from DWR’s Dave Mraz presentation to Council. March 10, 2015)

Another measure of benefits derived from Delta levees program expenditures can be discerned from the types of levee improvements funded specifically through the Delta Levees Special Flood Control Projects Program, which is the principal source of State funds for improvement of non-project Delta levees. Since 1997, the program has awarded 93 levee improvement grants to 28 local maintaining agencies, about 30 percent of the Delta’s reclamation districts. Of these grants, 20 percent rehabilitated levees to FEMA’s Hazard Mitigation Program standard, 14 percent improved levee crown roads for flood fighting and inspection, 10 percent improved levees to the Corps of Engineers PL 84-99 standard, 10 percent added revetment to levees, and 46 percent funded other improvements. Attachment 3 summarizes these improvements.

The Delta levee programs have also funded fish and wildlife habitat enhancements and have mitigated projects’ adverse effects on habitats. According to the Department of Fish and Wildlife’s testimony at the Council’s February meeting, these include enhancements to 3.6 linear miles of channel margin habitat and, to mitigate

adverse effects, planting of 2.4 linear miles of shaded riverine habitat and creation of 380 acres of wetland.

Nevertheless, despite the investments in Delta levees for around 40 years and the benefits these investments have provided, periodic studies of Delta levees report that there is significant work still to be done to improve levees to desired levels. The Council's issue paper *State Investments in Delta Levees* (January 2015) reported that these studies' estimates of levee improvement needs had grown with each subsequent study (see Figure 2), in part because earlier studies looked at levees mostly within the central portion of the Delta whereas the Delta Risk Management Strategy (DRMS) evaluated the majority of non-project levees throughout the Delta.

Figure 2. Levee Improvement Cost Estimates from Prior State Delta Levee Plans

	Improvement Miles Needed	Estimates of Recommended Improvements	Per Mile Cost of Recommended Improvements
Bulletin 192 (1975)	310	\$115 M	\$370,968
Bulletin 192-82 (1982)	500	\$930 M	\$1,860,000
CALFED (2000)	521	\$1,000 M	\$1,919,386
<i>DRMS (PL 84-99 standard)</i>	764	\$1,200 M	\$1,570,681
<i>DRMS (Urban Project Levee standard)</i>	187	\$750 M	\$4,010,695
DRMS Total (2009)	951	\$1,950 M	----

(from *State Investments in Delta Levees*.2015).

D. Delta habitat restoration projects

In February, Council member Mary Piepho requested information about the status of habitat restoration projects in the Delta and Suisun Marsh. A summary of this information is presented in Attachment 4: *Habitat Restoration Projects in the Delta*. Information in the attachment includes projects funded by DWR's Delta levees program pursuant to Water Code section 12310's requirement to contribute to long-term habitat improvement in the Delta, with net benefit for aquatic species. Also listed are projects being implemented by other programs, such as the Fish Restoration Program (FRP). The FRP is funded by DWR through the State Water Project (SWP) to meet permit compliance for SWP Delta operations, as defined by the federal biological opinions. Several other habitat restoration projects are funded, in whole or in part, by the Department of Fish and Wildlife (DFW) Ecosystem Restoration Program (ERP), which administers a multi-agency grants program aimed at improving ecosystem health. Many of these restoration projects involve breaching, relocating, or otherwise altering a Delta levee.

Delta Levee and Flood Management Investment Principles

Following the March Council meeting, Vice Chairman Phil Isenberg and Council members Susan Tatayon and Patrick Johnston, in response to suggestions at the Council meeting, developed a statement of principles to guide further development of the Delta levees investment strategy (Attachment 5). These principles reflect discussions among Council members at the March and April meetings and advice from the Council's March 11, 2015 risk management/levee expert workshop, as well as from stakeholders and staff.

Staff recommends that, after consideration of the staff's report and public testimony, the Council endorse the flood management investment principles proposed in Attachment 5 to guide future work by the staff and the Arcadis team in developing the Delta levees investment strategy.

Project Schedule and Milestones

Attachment 6: *Delta Levees Investment Strategy - Project Schedule* depicts the project's schedule through fall 2015. To date, the DLIS has focused on data gathering and developing a methodology in preparation for the review by an independent scientific panel. Memoranda describing the methodology were submitted to the panel in mid-April and are posted on the Council's website at <http://deltacouncil.ca.gov/delta-levee-prioritization-methodology-peer-review-meeting-review-materials-supplemental-documents>. Council staff and the consulting team gave a presentation on these materials and the methodology's development to the panel at a public meeting on May 19-20. During the meeting, the panel provided some initial feedback from its review, asked questions of the staff and also heard from stakeholders and the public during the public testimony portion of the meeting.

The review panel will submit its final report to the Delta Science Program's Lead Scientist in late June. Suggestions from the panel's final report will be considered by Council staff and Arcadis to improve the methodology used in the development of the Delta levees investment strategy.

Council staff also is accepting public comments on the technical memoranda until 5 p.m. on June 5. Comments should be submitted in writing to

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Between June and December, staff will lead three parallel and interrelated components to further develop the investment strategy: analysis, strategy and policy development,

and CEQA compliance. Attachment 6 shows key tasks and milestones within each component through the end of the year.

- Analysis. The analysis component will include adjustments to the methodology developed as a result of the independent panel's report and suggestions. This portion will also include the development of levee project concepts that will be used as input, complementing other projects proposed by reclamation districts and urban flood control agencies, leading to proposed alternative levee investment portfolios for the overall analysis.
- Strategy and policy development. The strategy and policy development will produce a report that will inform policy changes to the Delta Plan, including regulatory policy RR P1: Prioritization of State Investments in Delta Levees and Risk Reduction.
- Programmatic EIR. The CEQA compliance component will focus on the Council's preferred draft DLIS policy and evaluate the potential for significant environmental effects to result from implementation of the proposed policy; if potential significant environmental effects are identified the EIR will identify mitigation measures and consider alternatives to address such effects.

Each component will entail technical and stakeholder engagement either at public meetings, small group meetings, and/or formal review and comment periods.

Key points on the schedule where the Council will be asked to provide input include the Deliberation and Analysis task and finalizing the Draft Delta Levees Investment Strategy, including selecting a preferred alternative for the Draft EIR. The Deliberation and Analysis task will involve the Council in evaluating alternative investment portfolios to identify features that further state interests and reduce risks to acceptable levels. Draft documents produced describing the levees investment strategy and draft EIR will need to be reviewed and accepted by the Council members, including a consideration of public comments received.

General Updates

Two public meetings were held since the March Council meeting, the first in Stockton on April 27 and the second in Walnut Grove on April 29. Staff presented updates on project progress and the peer review process including public meeting dates for stakeholder involvement. The audience members were encouraged to bring their comments and questions to the scientific review public meeting on May 19 and 20.

Staff met with representatives from Contra Costa Water District, Delta Wetlands Properties, and State Water Contractors to discuss the methodology developed to analyze risks of water supply disruption. Staff will continue to meet with key stakeholders and technical experts to solicit input on the information being assembled as the project moves towards the analysis phase of work.

List of Attachments

- Attachment 1: Map of Project and Non-project Delta levees
- Attachment 2: Updated Summary of State Expenditures in Delta Levees
- Attachment 3: Summary of DWR's Special Projects Program Improvements
- Attachment 4: Habitat Restoration Projects in the Delta
- Attachment 5: Delta Flood Management Investment Strategy Principles
- Attachment 6: Delta Levees Investment Strategy Project Schedule

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