Setting Priorities with a Delta Levees Investment Strategy

October 2014

TWO HUNDRED YEARS AGO most of the Sacramento-San Joaquin Delta (Delta) was a vast wetland. Early settlers built an intricate levee system to create dry "islands" suitable for farming. Today, these levees help protect people, property, natural resources, and infrastructure of statewide importance.

The Delta is home to more than 515,000 people and 750 animal and plant species; supplies drinking water to 25 million Californians and irrigation water for the majority of California's agricultural industry; and attracts 12 million recreational visits annually.

Since the 1970s, the State of California (State) has committed approximately $700 million to levee operation, maintenance, and improvements. However, the State does not currently have a long-term strategy to guide future investment of its limited funds.

The Delta Reform Act of 2009 called on the Delta Stewardship Council (Council) to lead a multi-agency effort to update priorities for state investments in the Delta levee system to reduce the likelihood and consequences of levee failures, while advancing the coequal goals of improving water supply reliability and restoring the Delta ecosystem.

In response, the Council has launched the Delta Levees Investment Strategy (DLIS) that will combine economics, engineering, and decision-making techniques to identify funding priorities and assemble a comprehensive investment strategy for the Delta levees.

This investment strategy will be developed in collaboration with State agencies, local reclamation districts, Delta landowners and businesses, and other interested stakeholders. It will be based on the best available data, research, and lessons learned from other State and local programs and planning efforts.

Why Worry about the Delta Levees?

The Delta levees are vulnerable to damage caused by floods, wave action, seepage, subsidence, earthquakes, and sea-level rise. While the occasional levee break is a fact of Delta life, a catastrophic levee failure could cause injury to people or loss of life. It could also damage property, highways, energy utilities, water supply systems, and the environment —all with regional and statewide consequences.

Much of the Delta is subsiding, so that the ground surface is below the water level of adjacent channels. A rising sea level will only worsen this differential. The aging levees are also settling and cracking over time, requiring ongoing maintenance and making them more vulnerable to damage.

What can be done to reduce risks in the Delta?

A variety of actions are used to reduce risk in the Delta, including upgrading levels of protection, building channels that redirect floodwaters, elevating structures to protect against floods, and improving emergency response preparations. The Delta Levees Investment Strategy will help prioritize State funding for actions throughout the Delta and Suisun Marsh.

Creating a Comprehensive, Long-term Investment Strategy

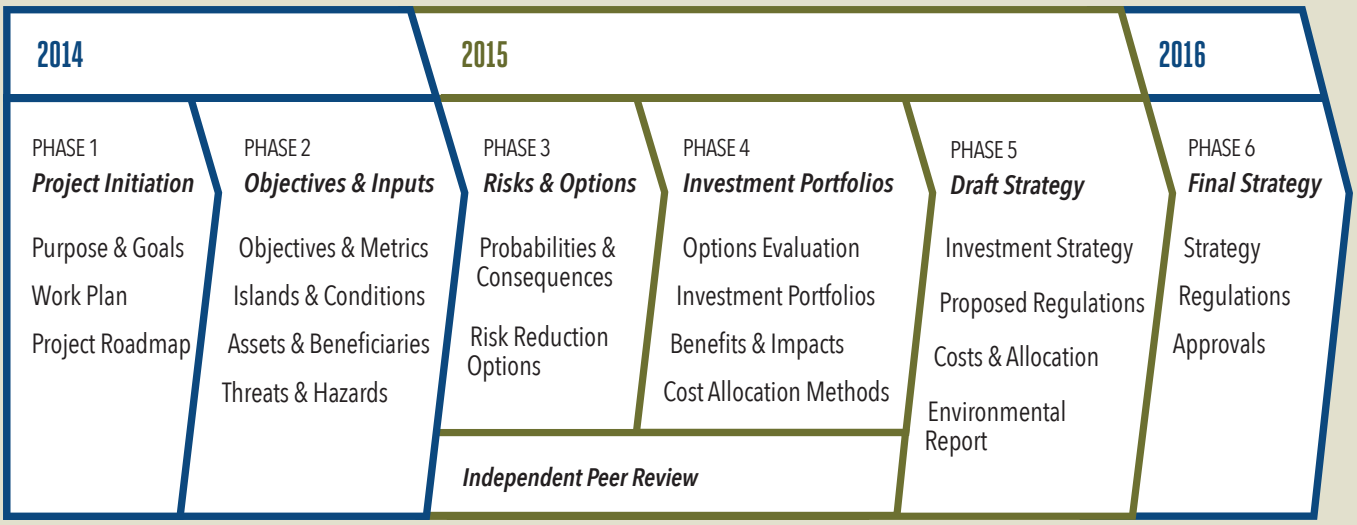
Steps to a Delta Levees Investment Strategy

1. CREATE A COMPREHENSIVE STRATEGY that updates State investment priorities for Delta levee operations, maintenance, and improvements. This strategy will use a comprehensive methodology that considers the assets protected by Delta levees, threats to Delta levees, multiple beneficiaries of Delta levee investments, and both structural and non-structural approaches for reducing risk. The work builds on the results of previous Delta levee planning efforts. The strategy will be developed using:
   - Extensive stakeholder engagement
   - Independent peer review of the approach and methodology
   - Compliance with the California Environmental Quality Act and the 2009 Delta Reform Act

2. BUILD A COMPUTER-BASED DECISION-MAKING TOOL that can be used interactively to compare the benefits, impacts, costs, and tradeoffs associated with various risk-reduction measures. After a viable set of options have been assembled for each Delta island, the project team will use the tool to analyze those options to arrive at an optimized suite of investments. This tool can be used to analyze future scenarios as conditions or assumptions change over time.

3. PREPARE A REPORT OUTLINING THE INVESTMENT OPTIONS that best address the State's many goals and priorities. The strategy will recommend risk reduction actions for each island, tiered priorities for State investments, and a method for allocating costs to beneficiaries. Based on this report, the Council will update its regulations and recommendations for Delta risk reduction. The report will be submitted to the California Legislature.

Project Planning Process



Key Project Questions

1 WHAT ARE THE COUNCIL'S GOALS FOR THE DELTA LEVEES INVESTMENT STRATEGY?

- Comply with 2009 Delta Reform Act directive to reduce Delta risks to people, property, and State interests
- Update priorities for State investments in levee operations, maintenance, and improvements in the Delta
- Further advance the coequal goals of improving water supply reliability and restoring the Delta ecosystem

2 WHAT ARE THE THREATS TO THE DELTA AND TO STATE INTERESTS AND GOALS?

- Flood damage to people, property, farms, businesses, infrastructure, and recreation
- Interruptions of water supply and impacts to water quality
- Damage to the health of the Delta ecosystem
- Future uncertainties (extreme weather, sea-level rise, etc.)

3 WHAT INVESTMENTS COULD REDUCE THIS RISK?

- What is the appropriate level of protection?
- What are the potential investments, such as levee upgrades; new levee setbacks, bypasses, and floodways; and improved emergency response preparation?
- Who benefits?

4 HOW SHOULD THESE INVESTMENTS BE PRIORITIZED AND ASSEMBLED INTO A STRATEGY?

- Which investments are most cost effective at reducing risk?
- How do investments further the coequal goals?
- What sets of investments best account for State and stakeholder goals?
- How do funding and other constraints shape an investment strategy?

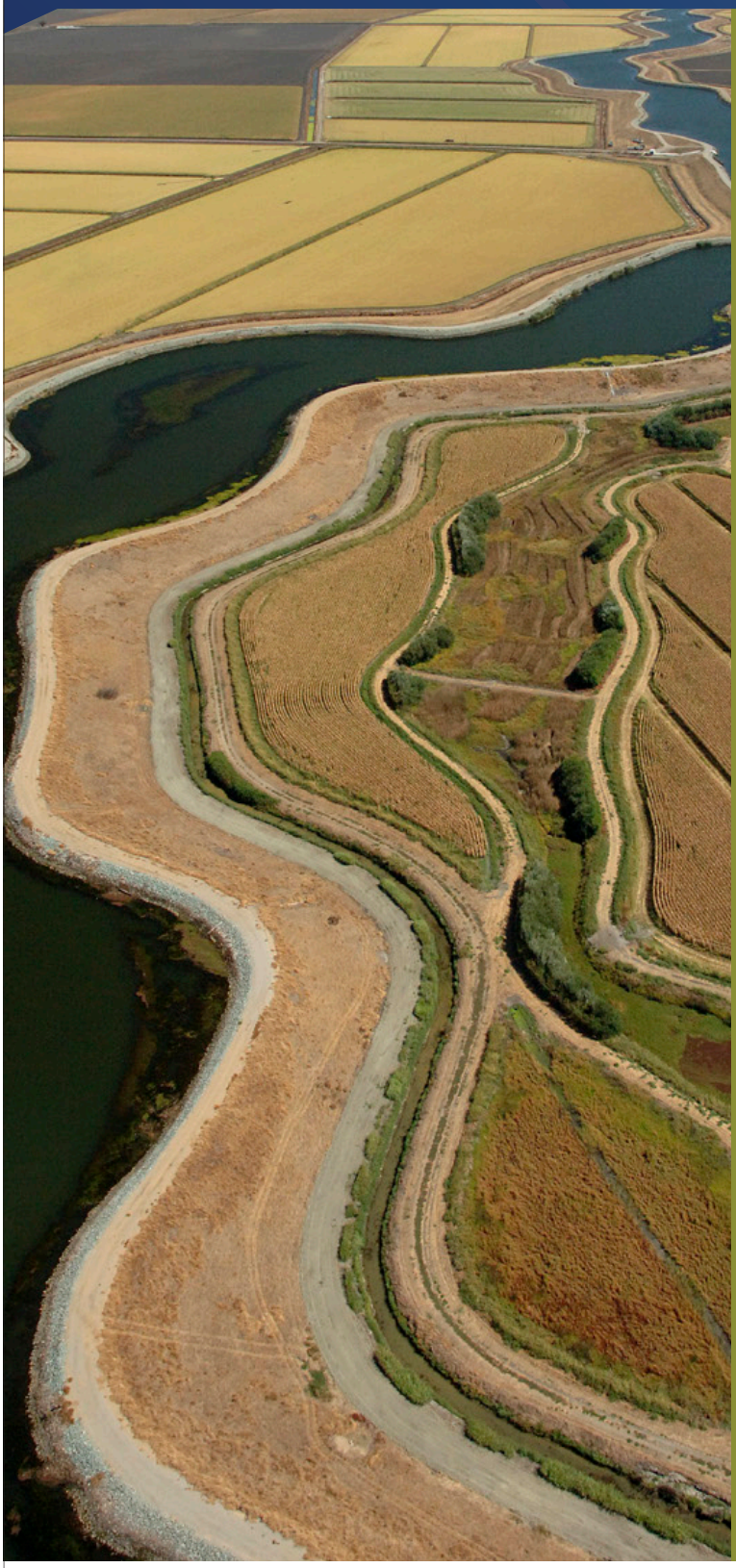
5 WHAT ARE THE IMPLICATIONS OF A LEVEES INVESTMENT STRATEGY?

- How much will it cost, and how will those costs be allocated to beneficiaries?
- What are the environmental effects?
- What are the residual risks?

6 WHAT ARE THE EXPECTED PROJECT OUTCOMES?

- A Delta levees investment and risk-reduction report will be submitted to the California Legislature
- Revisions to the interim Delta Plan risk-reduction regulations and recommendations
- A computer-based, decision-support tool that readily updates investment priorities based on new information

Getting Involved



A Partnership Approach

The Delta Stewardship Council knows that many individuals and organizations are interested and engaged in Delta levee issues. The Delta Levees Investment Strategy will be developed in close coordination with state agency partners, including the California Department of Water Resources, Delta Protection Commission, California Water Commission, Central Valley Flood Protection Board; local and regional flood management and emergency response planning agencies; and many other interested parties.

The Council will conduct meetings with representatives of the various groups to review and request feedback on data, analysis methods, evaluation results, options and tradeoffs, and implementation mechanisms. The input from these meetings will be vital to developing the investment strategy.

At key milestones, the Council will conduct public meetings and workshops in the Delta to review project activities, gather input, and refine the proposed investment priorities. Project reports will also be available for review and comment.

For more information about the Delta Levees Investment Strategy and opportunities for participation, visit: deltacouncil.ca.gov/delta-levee-investment-strategy.