

Delta Islands and Levees Feasibility Study (Delta Study)

Draft Integrated Feasibility Report and Environmental Impact Statement (FR/EIS)

Delta Stewardship Council Briefing
26-Jun-2014

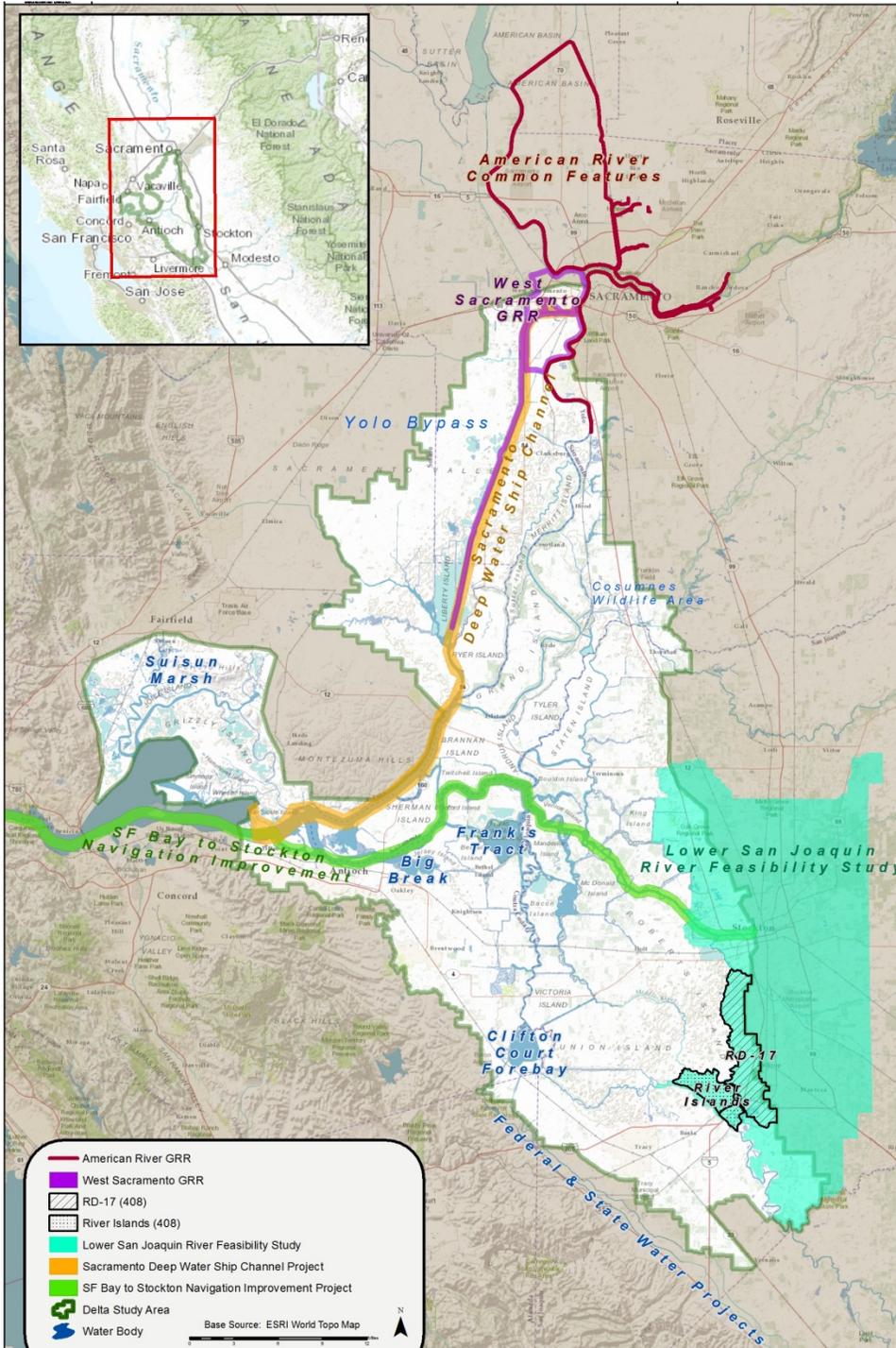
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BUILDING STRONG



Study Area



- Study area includes the “Legal Delta” and Suisun Marsh
- Overlaps with other Corps studies – Flood risks for Sacramento, West Sacramento, and Stockton areas are being addressed by other studies
- Flood Risk Management analysis focused on risks to life and property within the Delta
- Ecosystem Restoration analysis focused on areas not under consideration by others



Goals and Constraints

Goal 1 - Restore sustainable ecosystem functions in the Delta

Goal 2 - Improve flood risk management in the Delta

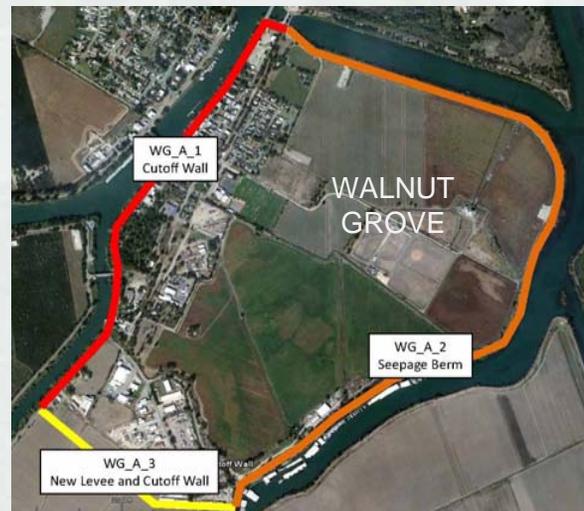
Planning Constraints:

- Formulated alternatives and the recommended plan must not impede the BDCP; and
- Formulated alternatives and the recommended plan must not be dependent upon the BDCP



Flood Risk Management Assessment

- Federal flood risk management projects must save more in prevented damage than they cost to build.
- The Delta Study looked at the most populated Delta islands to gauge economic feasibility of structural improvements (like levees) where the benefit would be highest.



Flood Risk Management

Net Benefits – **Not Economically Justified**

Net benefits: The difference between the annual benefits and the annual costs

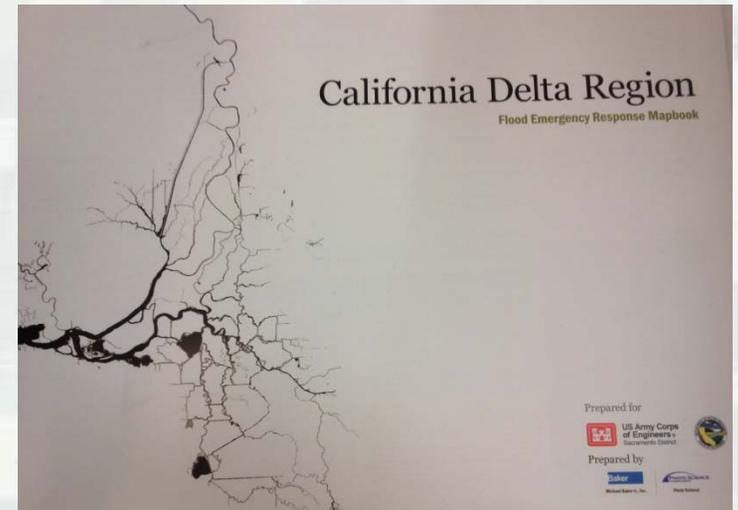
- All island measures have **negative net benefit**
- Even our most generous reading of the cost estimates to improve any Delta levees showed on average it would cost \$2 to prevent \$1 in flood damage.
- **No island has a benefit/cost ratio (BCR) above 1 to 1. The cost was shown higher than the benefit in every scenario.**

Island/Measure	Cost	Best Case Scenario Benefit/Cost Ratio (assumes project prevents all damage)
Bethel Island	\$683 million	0.57
Walnut Grove	\$99 million	0.26
Isleton	\$204 million	0.76
Discovery Bay	\$129 million	0.27



Flood Risk Management Life Loss Risk

- Although a structural FRM solution is not economically justified, risk remains for those who reside behind Delta levees
- Recommend non-structural FRM measures:
 - Risk communication
 - Advanced warning system
 - Evacuation planning (transportation corridors likely to be disrupted)
 - Flood fight/response
 - Continued Emergency Response Planning (such as that previously completed and currently being conducted through the USACE CALFED Levee Stability Program)



Ecosystem Restoration – Preliminary Assessment

Process:

- Developed general measures (restore intertidal marsh, restore riparian habitat, etc.)
- Identified potential locations where measures could be implemented
 - Largely limited by study constraints (successful with or without BDCP in place)
- Screened measures based on economic and implementation considerations

Drivers:

- Setback levees increase restoration cost per acre (not required at Big Break, Franks Tract, or Little Franks Tract)
- Public lands decreased restoration cost per acre (Big Break, Franks Tract, and Little Franks Tract)

Results:

- *Measures at Big Break, Little Frank's Tract, and Frank's Tract are retained for further consideration in Final Array of Alternatives*



Ecosystem Restoration – Final Measures Considered

- Proposed restoration would use same proven subsidence reversal technique used at Donlon Island project.
- Island is filled in with dredged material and seeded with native plantings.
- Native vegetation quickly took hold and the return to marshland was naturally occurring.
- Infill material could come from existing dredging operations and stockpiled dredged material.



Previously flooded, Donlon Island has seen a nearly complete return of native vegetation/habitat quickly following a subsidence reversal project in the 1987.



Ecosystem Restoration – Tentative Recommendation

- The Delta Study interim recommendation is to restore 89 acres of wetlands at an estimated cost of about \$29 million, separate from the state's planned restoration efforts.
- Plan would use proven restoration/subsidence reversal method to infill previously flooded islands at Big Break, Frank's Tract and Little Frank's Tract and trigger native vegetation resurgence. **Does not require private land acquisition or affect available water.**
- Restoration would contribute to improved habitat for listed species and combat invasive species.
- Scale of recommendation determined by proximity to available fill material -- distance quickly increases cost of pumping/transporting fill by as much as 10x.



Next Steps

- This is a draft report and recommendation, currently under review.
- We'll be revising the study as appropriate based on comments received during the summer and expect to release a final report in fall 2014.
- Final report must be approved by the U.S. Army Chief of Engineers (then called a Chief's Report) before it can be submitted to Congress to consider for authorization. We are planning to have a Chief's Report within a year.
- If project is authorized and funded, work could begin as soon as 2018.

