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Port of Stockton



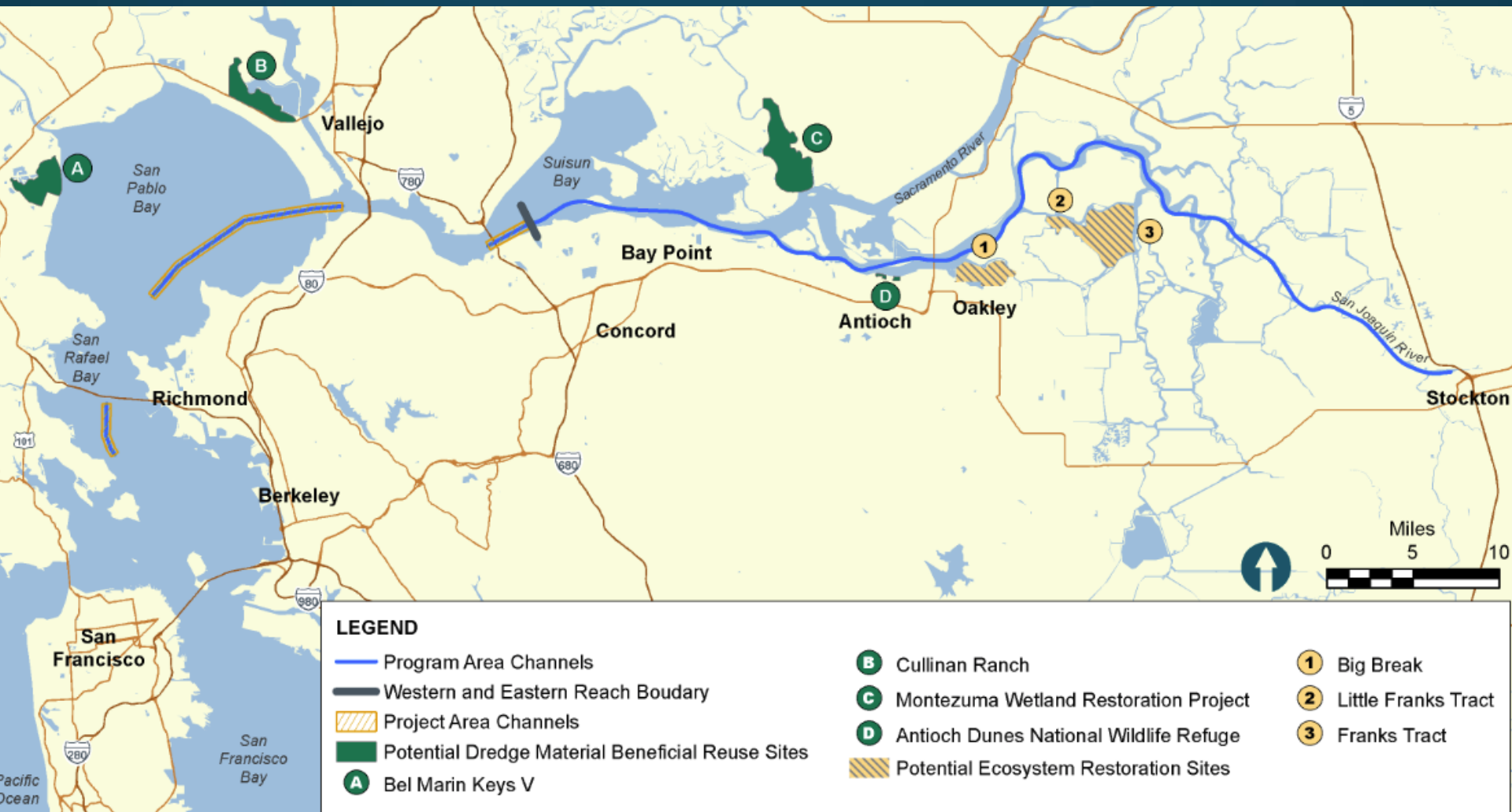
Port of Stockton
CALIFORNIA

San Francisco Bay to Stockton Navigation Improvement Study

- Program design depths
 - Western Reach: -45 feet MLLW + 2 feet overdepth
 - Eastern Reach: -40 feet MLLW + 2 feet overdepth
- USACE 3x3x3 process required phasing of the study in 2014
 - Phase I: Western Reach deepening to -38 feet MLLW (~1 mcy)
 - Phase II: All remaining deepening in both reaches and ecosystem restoration using dredged sediment (~25 mcy)
- EIS/EIR evaluating Phase I currently underway



Study Area



Sediment Management Opportunities

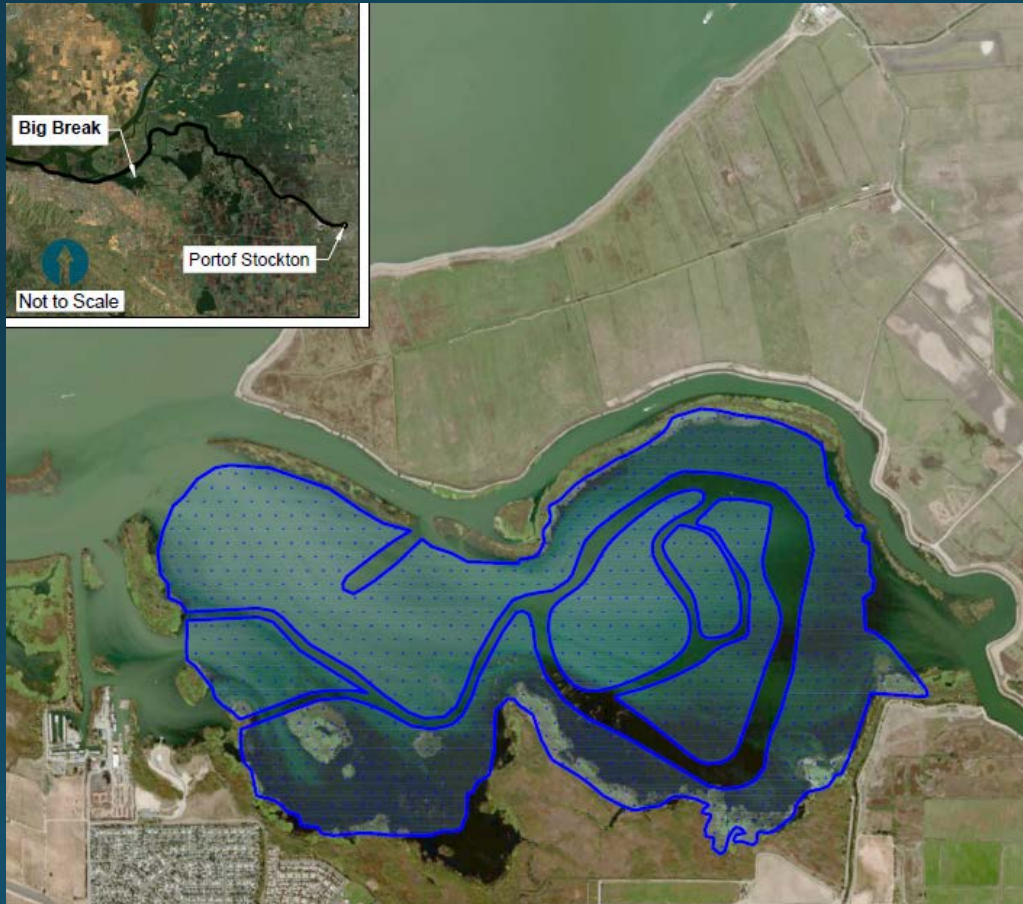


Antioch Dunes National Wildlife Refuge

- 1 mcy of dredged sediment from Phase I will be placed at existing beneficial reuse sites
- Potential reuse of 25 mcy of dredged material from Phase II:
 - Tidal marsh restoration
 - Sand dune restoration
 - Levee stabilization



Ecosystem Restoration Concepts



Conceptual marsh restoration plan for Big Break

- Port evaluated using dredged sediment to restore subsided Delta islands to valuable marsh habitat at Big Break
- Synergistic with USACE Sacramento District Delta Islands and Levees Feasibility Study



Sediment Management Considerations

- Ability to pump hydraulically dredged sediment from dredging areas to ecosystem restoration sites (distance, logistics, etc.)
- Identify opportunities to collaborate with resource agencies or stakeholders



Upland placement along Stockton DWSC

Unique Environmental and Engineering Challenges



Hydraulic dredging at the Port of Stockton

- Dredging must be completed within 4 to 6 month windows
 - Phase I can be completed in 1-2 years
 - Phase II will require multiple years and/or operating 2 dredges
- Underwater sill may be required to mitigate for salinity impacts from increased Phase II channel depths
 - Location, size, and other design features of sill are critical considerations



Public Outreach

- Since 2013, the Port has led extensive agency and stakeholder outreach
 - Coordinated with 30+ agencies and formed technical expert groups
 - Key coordination topics: salinity impacts and mitigation (underwater sill); endangered species and habitat impacts
- Phased program re-scoped under NEPA and CEQA in January 2016



Unique Planning Challenges



- Decision to phase the program meant direct benefits to the Port are deferred to unfunded Phase II
- Deepening program not an ideal fit for USACE 3x3x3
 - Complex and dynamic environment
 - 3 years not enough time to identify, study, design, and gain support for necessary restoration and mitigation components
 - 3x3x3 waiver was not granted



Lessons Learned

- Valuable to make the project multi-purpose (navigation and ecosystem restoration)
- Ensure agency and stakeholder support for restoration and mitigation concepts early on
- For complex projects like this, conduct as much planning and design as possible in advance of starting the 3x3x3 clock

