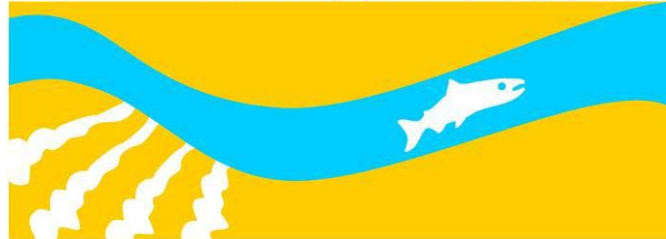


SAN JOAQUIN RIVER
RESTORATION PROGRAM



SJRRP Levee Evaluation Project

April 8, 2013



Relationship between Geotechnical Integrity and Restoration Flows

- Reclamation has initiated restoration releases from Friant Dam (Interim Flows) and is evaluating alternatives for routing of long-term Restoration Flows
- Restoration flows and SJRRP actions may impact flood system facilities, operations, and maintenance
- Current understanding of levee conditions in the Restoration Area is insufficient to accurately assess flood risk impacts
- DWR's Division of Flood Management (DFM) has been tasked to assess the impacts of Restoration flows
- DFM has developed the SJRRP Levee Evaluation (SJLE) Project to assist the SJRRP in identifying potential flood impacts to levee seepage



Current Flow Limitations

Reach	Design Capacity (cfs)	Restoration Flows (cfs)	Current Capacity Limitation – Levee Stability (cfs)
1A/1B	8,000	~ 4,000	None
2A	8,000	3,850	1,060
2B	2,500	~ 3,850	810
3	4,500	3,655	2,140
4A	4,500	3,655	630
4B1	1,500	TBD	Not Analyzed
4B2	10,000	3,655	990
5	26,000	4,055	1,690
Eastside Bypass	13,500 to 18,500	TBD	600

Note: Design capacities for Reaches 1A/B and 2A reflect objective releases which may be exceeded if release from Friant Dam exceeds 8,000 cfs.

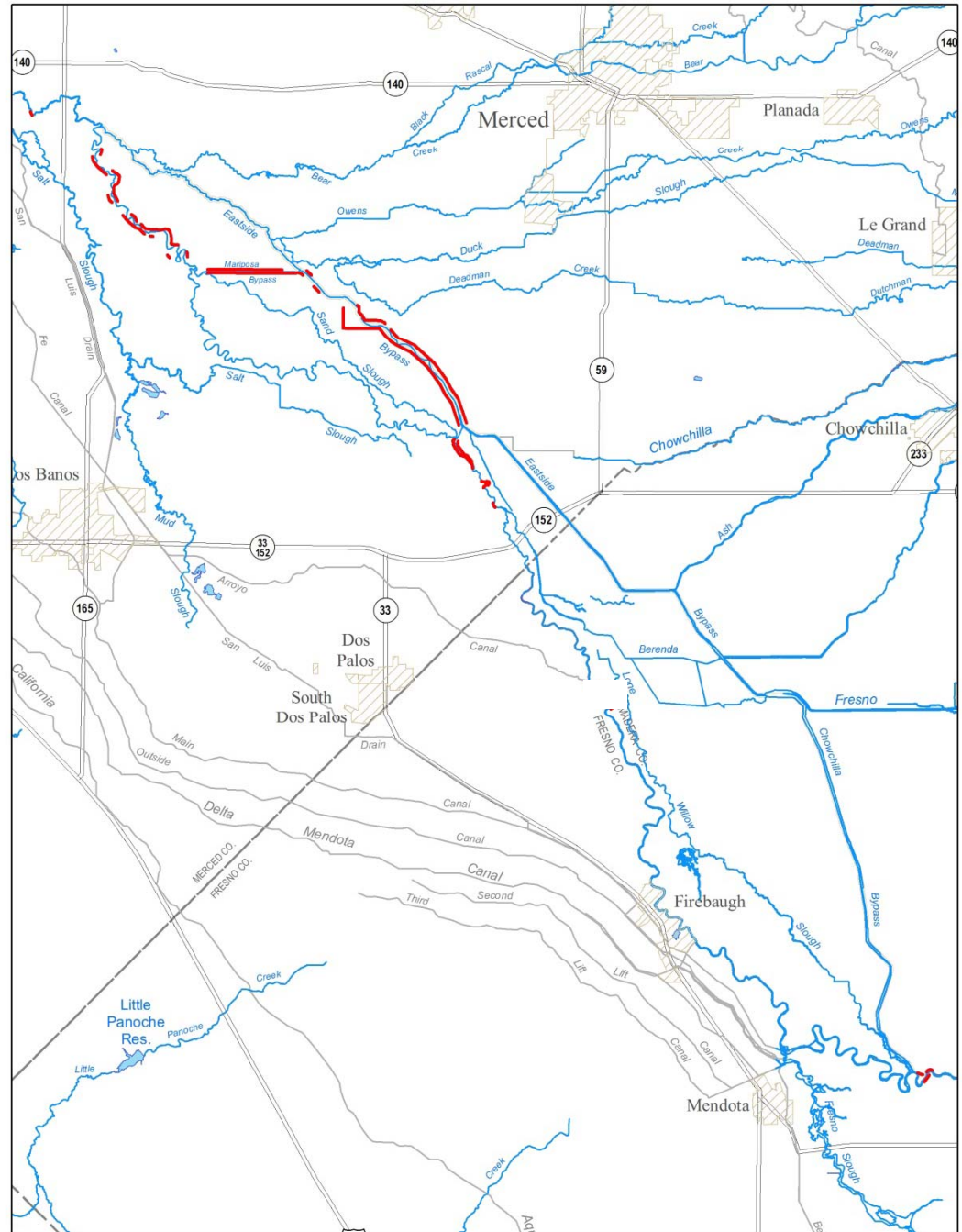


Strategy

- Prioritize based on:
 - Potential hydraulic impacts to the levees
 - Ability to convey 2,000cfs
 - Use for near-term and long-term restoration flows
- First Priority
 - Do not have 2,000 cfs in-channel capacity
 - Convey near-term restoration flows



Preliminary Hydraulic Analysis Potential Impacts at 2,000 cfs





Priority 1

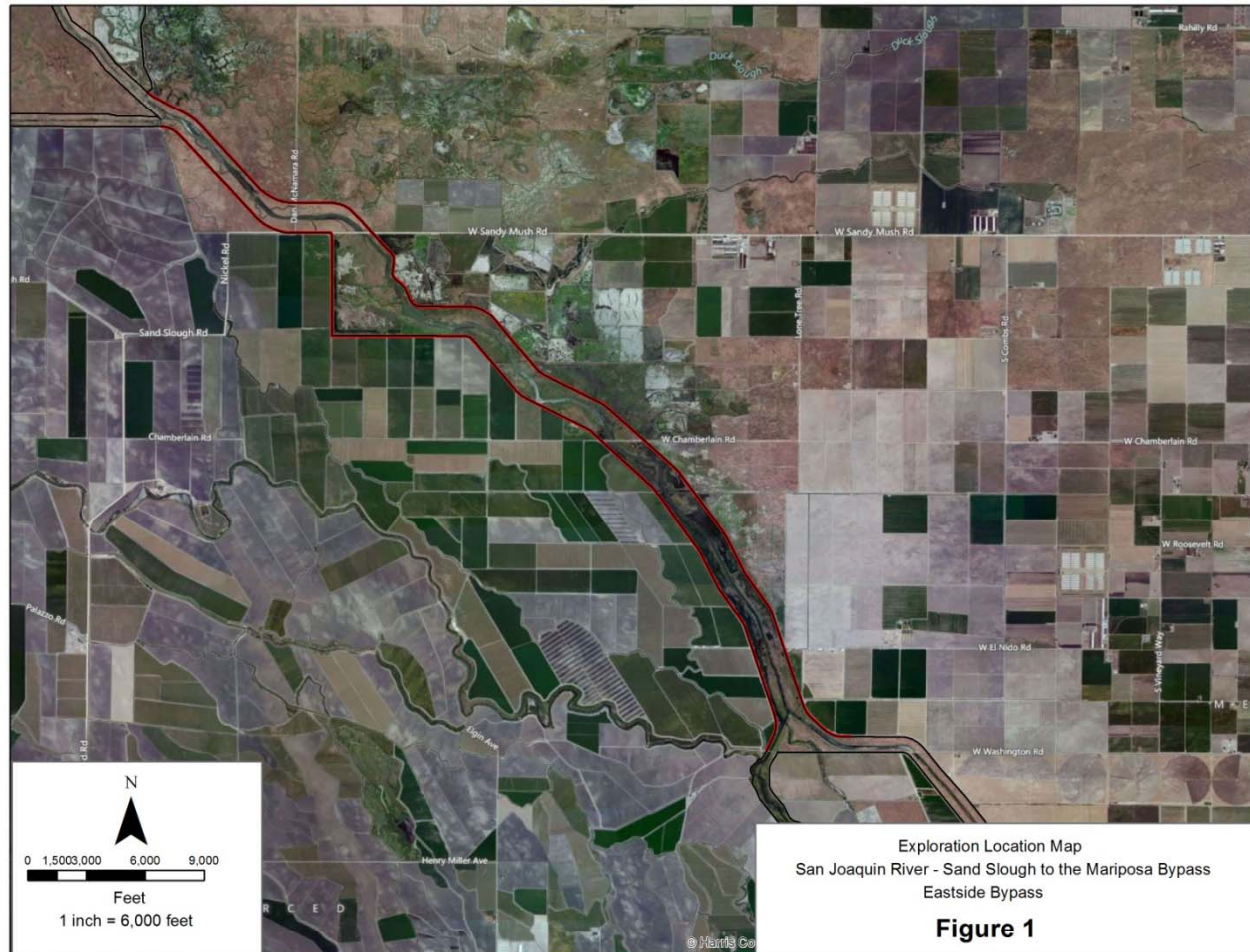
Total Levee Miles = 39.6 miles

- Reach 2A
 - Lowest 4 miles of the left bank
- Middle Eastside Bypass
 - Sand Slough to Mariposa Bypass both banks
- Reach 4A
 - Lowest 2 miles both banks
- Upper Eastside Bypass
 - Backwater above Sand Slough 0.5 miles both banks

DWR is currently conducting evaluations on these reaches



Current Investigations





Current Investigations





Current Drilling Progress

Total Levee Miles = 21 miles

Priority 1:

- Eastside Bypass
- Reach 2A

30 Standard Penetration Test (SPT)

122 Cone Penetration Test (CPT)



Next Steps

- Complete evaluations of Priority 1 segments
- Do the testing for Priority 1
- Develop criteria and process for updating in-channel flow
 - coordination with ACOE & CVFPB
- Recommendations for in-channel flow capacities

SCHEDULE

- Geotechnical Investigation Field Work Completed June 2013**
- Geotechnical Data Reports End of 2013**
- Hydraulics for the Identification & Prioritization of Levees End 2013**