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

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

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 2,000 cfs
  - 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
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