West Sacramento Area Flood Control Agency
September 13, 2012

Southport Sacramento River Levee
Early Implementation Project

Segment B Value Engineering Study
Summary of Final Results
Southport EIP
Segment B – Value Engineering

• Background
• Underseepage Mitigation Measures
• Public Outreach and Property Owner Meetings
• Alternative 2 Alignment
• Investment Analysis
• Potential Impacts to Homes
• Summary of Results
• Project Schedule
• Staff Recommendations
Background

• February 2012 – Approved HDR TO #4 for 65% Design
  ✓ Excluding Segments F and B

• March 2012 – Identified EIS-EIR Preferred Alternative

• May 2012 – Identify Segment F Alignment for 65% Design

• June 2012 – Segment B Value Engineering Briefing

• Aug 2012 – Present Segment B Value Engineering Update


• Sept 2012 – Present Segment B Value Engineering Results
Southport EIP
Property Owner Outreach

- Aug. 2011 – Initial Meeting with Segment B Property Owners
- Dec. 2011 – Final Preliminary Design Analysis Results
- Jan. 2012 – 15 % Design Results
- July 2012 – Segment B Preliminary VE Study Results
- Aug. 2012 – Meetings with Affected Property Owners
- Sept. 2012 – Meetings with Affected Property Owners

In addition to public meetings, project team members met with many property owners to discuss and answer questions regarding the project throughout the design process to date.
VE Study Underseepage Mitigation Measures

- VE Study Cost Approximately $200,000
- Total of 20 VE Study Scenarios Were Evaluated
- Relocation of Utility Corridors
- Location of South River Road
- Conventional Slurry Cutoff Wall
- Varied Width Seepage Berms
- Shallow Slurry Cutoff Wall/Varied width Seepage Berms
- Conventional Slurry Cutoff Wall with Clam Shell
- Deep Slurry Cutoff Wall TRD/CSM
- Relief Wells
  - Agency Concurrence/Historic Performance Issues
Alternative 2 (250-foot Berm)
Alternative 2 (Shallow Cutoff Wall & Limited Berm)
## WSAFCA Investment

### Alternative 1 Alignment

<table>
<thead>
<tr>
<th>Estimated Project Cost and State Cost Share Summary</th>
<th>Total Cost ($ MM)</th>
<th>State Share %</th>
<th>WSAFCA Share %</th>
<th>State Funding ($ MM)</th>
<th>WSAFCA Funding ($ MM)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>S1</strong>: Conventional cutoff wall to St. 47+00, 250 foot berm from St. 47+00 to 99+28</td>
<td>$38.8</td>
<td>57%</td>
<td>43%</td>
<td>$22.2</td>
<td>$16.6</td>
</tr>
<tr>
<td><strong>S2</strong>: Conventional cutoff wall to St. 47+00, deep cutoff wall (TRD/CSM) from St. 47+00 to 99+28</td>
<td>$61.9</td>
<td>36%</td>
<td>64%</td>
<td>$22.2</td>
<td>$39.7</td>
</tr>
<tr>
<td><strong>S3</strong>: Conventional cutoff wall to St. 47+00, shallow cutoff wall with a 70 to 80 foot berm from St. 47+00 to 75+40, &amp; a 230 foot berm from St. 75+40 to 99+28</td>
<td>$38.0</td>
<td>58%</td>
<td>42%</td>
<td>$22.2</td>
<td>$15.8</td>
</tr>
</tbody>
</table>

### Alternative 2 Alignment

<table>
<thead>
<tr>
<th>Estimated Project Cost and State Cost Share Summary</th>
<th>Total Cost ($ MM)</th>
<th>State Share %</th>
<th>WSAFCA Share %</th>
<th>State Funding ($ MM)</th>
<th>WSAFCA Funding ($ MM)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>S4</strong>: Conventional cutoff wall to St. 47+00, 250 foot berm from St. 47+00 to 99+90</td>
<td>$39.4</td>
<td>61%</td>
<td>39%</td>
<td>$24.1</td>
<td>$15.3</td>
</tr>
<tr>
<td><strong>S5</strong>: Conventional cutoff wall to St. 47+00, deep cutoff wall (TRD/CSM) from St. 47+00 to 99+90</td>
<td>$63.0</td>
<td>38%</td>
<td>62%</td>
<td>$24.1</td>
<td>$38.9</td>
</tr>
<tr>
<td><strong>S6</strong>: Conventional cutoff wall to St. 47+00, deep cutoff wall (TRD/CSM) from St. 47+00 to 65+00, shallow cutoff wall with a 70 to 80 foot berm from St. 67+00 to 99+90</td>
<td>$44.6</td>
<td>54%</td>
<td>46%</td>
<td>$24.1</td>
<td>$20.5</td>
</tr>
<tr>
<td><strong>S7</strong>: Conventional cutoff wall to St. 47+00, shallow cutoff wall with a 70 to 80 foot berm from St. 47+00 to 99+90</td>
<td>$37.2</td>
<td>65%</td>
<td>35%</td>
<td>$24.1</td>
<td>$13.1</td>
</tr>
</tbody>
</table>
## Impacts to Homes & WSAFCA Investment

### Alternative 1 Alignment

<table>
<thead>
<tr>
<th>Estimated Displaced Homes</th>
<th>Maximum Homes Saved</th>
<th>WSAFCA Additional Investment ($MM)</th>
<th>Potential Southport EIP Funding Gap ($MM)</th>
<th>Potential WSLIP Funding Gap ($MM)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>S1:</strong> Conventional cutoff wall to St. 47+00, 250 foot berm from St. 47+00 to 99+28</td>
<td>12</td>
<td>0</td>
<td>$3.5</td>
<td>$12.6</td>
</tr>
<tr>
<td><strong>S2:</strong> Conventional cutoff wall to St. 47+00, deep cutoff wall (TRD/CSM) from St. 47+00 to 99+28</td>
<td>5</td>
<td>7</td>
<td>$26.6</td>
<td>$95.1</td>
</tr>
<tr>
<td><strong>S3:</strong> Conventional cutoff wall to St. 47+00, shallow cutoff wall with a 70 to 80 foot berm from St. 47+00 to 75+40, &amp; a 230 foot berm from St. 75+40 to 99+28</td>
<td>9</td>
<td>3</td>
<td>$2.8</td>
<td>$9.8</td>
</tr>
</tbody>
</table>

### Alternative 2 Alignment

<table>
<thead>
<tr>
<th>Estimated Displaced Homes</th>
<th>Maximum Homes Saved</th>
<th>WSAFCA Additional Investment ($MM)</th>
<th>Potential Southport EIP Funding Gap ($MM)</th>
<th>Potential WSLIP Funding Gap ($MM)</th>
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<tbody>
<tr>
<td><strong>S4:</strong> Conventional cutoff wall to St. 47+00, 250 foot berm from St. 47+00 to 99+90</td>
<td>12</td>
<td>0</td>
<td>$2.2</td>
<td>$8.0</td>
</tr>
<tr>
<td><strong>S5:</strong> Conventional cutoff wall to St. 47+00, deep cutoff wall (TRD/CSM) from St. 47+00 to 99+90</td>
<td>9</td>
<td>3</td>
<td>$25.8</td>
<td>$92.3</td>
</tr>
<tr>
<td><strong>S6:</strong> Conventional cutoff wall to St. 47+00, deep cutoff wall (TRD/CSM) from St. 47+00 to 65+00, shallow cutoff wall with a 70 to 80 foot berm from St. 67+00 to 99+90</td>
<td>10</td>
<td>2</td>
<td>$7.5</td>
<td>$26.6</td>
</tr>
<tr>
<td><strong>S7:</strong> Conventional cutoff wall to St. 47+00, shallow cutoff wall with a 70 to 80 foot berm from St. 47+00 to 99+90</td>
<td>10</td>
<td>2</td>
<td>$0.0</td>
<td>$0.0</td>
</tr>
</tbody>
</table>
Summary of Results

• Alternative 2 vs. Alternative 1 (Shallow Cutoff Wall with a Berm)
  – Reduces WSAFCA Investment by approximately $2.8 MM
    • $2.8 MM of WSAFCA Funding
    • $9.8 MM Project with State and WSAFCA Funding for Southport
    • $26.2 MM Project with Federal, State, and WSAFCA Funding
  – Requires Potential Displacement of One Additional Home
  – Does not Reduce Estimated Reach B State Cost Share (65%)
  – Increased Flood Risk Reduction for Entire Southport Region
  – Maximizes Flood Control Improvements with Limited Local Funding
Anticipated Project Schedule

Sep. 2012: Reach B VE Study Results & Staff Recommendation

Oct. 2012: Final Reach B VE Study Complete

Dec. 2012: Complete 65% Design


May 2013: WSAFCA Adopts EIR and Certifies Findings
           (ROW Acquisition & Utility Relocation)

Aug. 2013: Finalize Design

Dec. 2013: USACE issues ROD and 408 Permission

Apr. 2014: Initiate Construction
Staff Recommendations

1. Identify Alternative 2 Alignment as the Preferred Design Alternative for Levee Segment B of the Sacramento River Southport EIP;

2. Direct the Project Team to evaluate and disclose the potential environmental and community effects, and propose measures to mitigate significant adverse impacts associated with the Preferred Design Alternative in the draft EIS/R for the project; and

3. Direct the Project Team to integrate the Preferred Design Alternative 2 Alignment for Levee Segment B in the 65% design package for the Sacramento River Southport EIP.
• Q & A

• Discussion