CORTE MADERA CREEK FLOOD RISK MANAGEMENT PROJECT
DRAFT EIS/EIR

ROSS VALLEY COMMUNITY MEETING

USACE San Francisco District
Marin County Flood Control and Water Conservation District

November 1, 2018, 5:00 – 6:30, Ross School Gymnasium

“The views, opinions and findings contained in this report are those of the authors(s) and should not be construed as an official Department of the Army position, policy or decision, unless so designated by other official documentation.”
MEETING AGENDA

1. **Project Purpose & Roles**
   
   Tony Williams, Assistant Director
   Marin County Flood Control & Water Conservation District

2. **Ross Valley Flooding & Hydraulic Model**
   
   James Reilly, Stetson Engineers
   Marin County Flood Control & Water Conservation District

3. **Ross Valley Flood Protection & Watershed Program & Draft EIS/EIR Process & Schedule**
   
   Tonya Redfield, Capital Planning & Project Manager
   Marin County Flood Control & Water Conservation District

4. **USACE Process & Project Alternatives**
   
   Benjamin Reder, Project Planner
   U.S. Army Corps of Engineers

5. **Question/Answer Panel**

6. **Information Stations**
HISTORICAL FLOODING IN ROSS VALLEY

PEAK STORM DISCHARGES AT ROSS CREEK GAGE - 1952-2017
PROJECT PURPOSE

• Improve public safety & access for emergency services
• Reduce risk of flood damages up to the 25-year flood event & reduce depth of flooding during a 100-year flood event
• Complete “Unit 4” in Ross
• Improve overall fish habitat conditions
• Minimize operation & maintenance costs

Bolinas Ave, Ross, 1944
# PROJECT ROLES

<table>
<thead>
<tr>
<th>USACE</th>
<th>Flood Control District/ Marin County</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Lead Agency</strong></td>
<td><strong>Local Sponsor</strong></td>
</tr>
<tr>
<td>Develop Project Alternatives</td>
<td>Project Development Team</td>
</tr>
<tr>
<td>&amp; Prepare EIS/EIR</td>
<td>&amp; Review EIS/EIR</td>
</tr>
<tr>
<td><strong>Contribute Federal Funding</strong></td>
<td><strong>Contribute Local Funding</strong></td>
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<tr>
<td>50% Feasibility Phase</td>
<td>50% Feasibility Phase</td>
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<tr>
<td>~65% Final Design &amp; Construction</td>
<td>~35% Final Design &amp; Construction</td>
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<tr>
<td></td>
<td><em>(Grants, Zone 9 Fees)</em></td>
</tr>
<tr>
<td>Project Construction</td>
<td>Project Approval</td>
</tr>
<tr>
<td></td>
<td><em>(District Board of Supervisors)</em></td>
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</tbody>
</table>
ROSS VALLEY 100-YEAR FLOOD
Hydraulic Model Simulation
Ross Valley Flood Protection & Watershed Program - 2018 – 2027 Work Plan

- Corte Madera Creek Flood Risk Management Project - Ph. 1
- Corte Madera Creek Flood Risk Management Project - Ph. 2
- San Anselmo Flood Risk Reduction Project
- Annual Ross Valley Creek Maintenance
- Hillview Neighborhood Pump Station & Storm Drain Improvement Project
- Azalea Ave. Bridge
- Madrone Ave. & Nokomis Ave. Bridges
- Bridge Ave & Sycamore Ave./Center Blvd. Bridges
- Winship Ave. Bridge
- Lower Corte Madera Creek & Geomorphic Dredge Study
- Morningside/Sleepy Hollow Creek Study
- Program Environmental Impact Report

Flood Risk Reduction Project (Project Lead – Zone 9)
Flood Risk Reduction Project (Project Lead – Town/City)
Feasibility Evaluation/Study
Environmental Review Complete
Ross Valley Flood Control & Watershed Program

Foreseeable Future Projects;

• Have funding allocated in Program 2018-19 Work Plan & Budget

• Currently in or moving through environmental review phase

• Are supported by Zone 9 Advisory Board, BOS, representative Towns/City
What is a EIS/EIR?

- Common practice to combine EIS/EIR to evaluate a broad range of environmental topics to reduce duplication & maximize resources
- Combines planning processes, research/studies, public hearings and environmental assessments

What is the purpose of a EIS/EIR?

- Review environmental effects of a proposed project and a reasonable range of alternatives (5 Alts + No Action Alt)
- Identify potential significant impacts and mitigation measures
# TOPICS EVALUATED IN EIS/EIR

<table>
<thead>
<tr>
<th>Section</th>
<th>Topics</th>
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<tbody>
<tr>
<td>4.1</td>
<td>Hydrology and Hydraulics</td>
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<tr>
<td>4.2</td>
<td>Water Quality</td>
</tr>
<tr>
<td>4.3</td>
<td>Geology and Soils</td>
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<tr>
<td>4.4</td>
<td>Air Quality</td>
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<td>4.5</td>
<td>Climate Change</td>
</tr>
<tr>
<td>4.6</td>
<td>Biology Resources</td>
</tr>
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<td>4.7</td>
<td>Cultural Resources</td>
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<td>4.8</td>
<td>Aesthetics</td>
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<td>4.9</td>
<td>Recreation</td>
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<td>4.10</td>
<td>Noise</td>
</tr>
<tr>
<td>4.11</td>
<td>Land Use</td>
</tr>
<tr>
<td>4.12</td>
<td>Human, Health, and Safety</td>
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<tr>
<td>4.13</td>
<td>Traffic, Transportation and Circulation</td>
</tr>
<tr>
<td>4.14</td>
<td>Environmental Justice</td>
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<tr>
<td>4.15</td>
<td>Socioeconomics</td>
</tr>
<tr>
<td>4.16</td>
<td>Utilities and Public Services</td>
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</tbody>
</table>
# EIS/EIR ROLES

<table>
<thead>
<tr>
<th>USACE</th>
<th>Flood Control/ Marin County</th>
<th>Public/Agencies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prepare EIS/EIR</td>
<td>Review EIS/EIR</td>
<td>Review EIS/EIR</td>
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<tr>
<td>Respond to Public Comments</td>
<td>Support Response to Comments</td>
<td>Public Comments on EIS/EIR</td>
</tr>
<tr>
<td>Certify EIS (Federal) Record of Decision</td>
<td>Certify EIR (State) Project Approval</td>
<td>Public Comment, Attend Public Hearing</td>
</tr>
</tbody>
</table>

Comments on Adequacy of Draft EIS/EIR (received by **November 27, 2018**) will be Addressed in the Final EIS/EIR, Scheduled for September, 2019
# Public Review/Comment Period

Ends November 27, 2018

**Comments May Be Submitted By:**

**MAIL:**
U.S. Army Corps of Engineers, San Francisco District  
Attn: Cynthia Jo Fowler  
1455 Market Street, San Francisco, CA 94103-1398  
*Postmarked by November 27, 2018*

**EMAIL:**
Corte.Madera@usace.army.mil  
Attn: Cynthia Fowler

**ORAL:**
Public Hearing, November 13, 2018, 5:30 pm  
Civic Center, Rm 330, San Rafael  
*Oral Comments Recorded, Written Accepted*

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**No Oral Comments Recorded Tonight**

### SCHEDULE & PUBLIC INPUT

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
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<tbody>
<tr>
<td>10/12/18</td>
<td>Public Draft EIR/EIS Release, 45-day Comment Period Begins</td>
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<tr>
<td>10/23/18</td>
<td>Community Workshop #1, Town of Ross Residents 6:00 pm - 7:30 pm, Ross Town Hall</td>
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<tr>
<td>10/24/18</td>
<td>Community Workshop #2, Ross Commercial Businesses 10:00 am – 11:30 am, Ross Town Hall</td>
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<tr>
<td>10/25/18</td>
<td>Community Workshop #3, Kentfield &amp; Unincorporated County 6:00 pm - 7:30 pm, Ross Town Hall</td>
</tr>
<tr>
<td>11/1/18</td>
<td>Ross Valley Watershed Community Conversation w/ Congressman Huffman 5:00 – 6:30 pm at Ross School Gym</td>
</tr>
<tr>
<td>11/13/18</td>
<td>Public Hearing on Draft EIS/EIR 5:30 pm, District Board of Supervisors, Marin County Civic Center, Rm 330</td>
</tr>
<tr>
<td>11/27/18</td>
<td>Draft EIS/EIR Comment Period Closes</td>
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<tr>
<td>Sept. 2019</td>
<td>Final Project EIR/EIS Released</td>
</tr>
<tr>
<td>Oct. 2019</td>
<td>Public Hearing on Final Project EIS/EIR</td>
</tr>
<tr>
<td>2019 - 2020</td>
<td>Project Approval and Final Design</td>
</tr>
<tr>
<td>2020 - 2025</td>
<td>Construction (Phase 1, Phase 2)</td>
</tr>
</tbody>
</table>
Focus on alternatives identification and evaluation to identify a recommended plan for more detailed design.

Focus on scaling the measures and features for the recommended plan.

**USACE Feasibility Study Process**

- **Jan 2016**: Scoping
- **Sept 2016 – Oct 2017**: Alternative Evaluation & Analysis
  - Alternatives Milestone
  - Tentatively Selected Plan Milestone
- **Nov 2018 – Feb 2019**: Feasibility Analysis of Selected Plan
  - Agency Decision Milestone
  - Draft Report Released for Concurrent Review
- **2019**: Washington-level Review
  - District Final Report Package Transmittal
  - Chief’s Report Signed

**Key**
- Green Diamond: Decision Milestone
- Blue Diamond: Product Milestone

**We are Here**
- Oct-Nov 2018

**Focus Milestones**
- **Jan 2016**: Scoping
- **Sept 2016 – Oct 2017**: Alternative Evaluation & Analysis
- **Nov 2018 – Feb 2019**: Feasibility Analysis of Selected Plan
- **2019**: Washington-level Review

**Product Milestones**
- **Jan 2016**: Scoping
- **Sept 2016 – Oct 2017**: Alternative Evaluation & Analysis
- **Nov 2018 – Feb 2019**: Feasibility Analysis of Selected Plan
- **2019**: Washington-level Review

- **We are Here**: Oct-Nov 2018

**Decision Milestones**
- **Jan 2016**: Scoping
- **Sept 2016 – Oct 2017**: Alternative Evaluation & Analysis
- **Nov 2018 – Feb 2019**: Feasibility Analysis of Selected Plan
- **2019**: Washington-level Review

- **We are Here**: Oct-Nov 2018

**Timeline**
- **Jan 2016**: Scoping
- **Sept 2016 – Oct 2017**: Alternative Evaluation & Analysis
- **Nov 2018 – Feb 2019**: Feasibility Analysis of Selected Plan
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**We are Here**: Oct-Nov 2018
STUDY AREA

Study focuses on completion of Unit 4 and ties into completed project with possible features in Units 3 & 2
EXISTING CONDITION

- Public Safety
- Property Damage
- Impact on Endangered Species

Ross Fish Ladder, Feb 2017
## Project Alternatives

<table>
<thead>
<tr>
<th>Letter</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>A</td>
<td>Top-of-bank Floodwall</td>
</tr>
<tr>
<td>B</td>
<td>Top-of-bank Floodwall, Setback Floodwall, College of Marin Widening</td>
</tr>
<tr>
<td>F</td>
<td>Bypass, Allen Park Riparian Corridor, College of Marin Widening</td>
</tr>
<tr>
<td>G</td>
<td>Top-of-bank Floodwall, Allen Park Riparian Corridor, College of Marin Widening</td>
</tr>
<tr>
<td>J</td>
<td>Bypass, Allen Park Riparian Corridor, Top-of-bank Floodwall&lt;br&gt;&lt;br&gt;&lt;span style='color: #3D9478'&gt;Tentatively Selected Plan&lt;/span&gt;</td>
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<tr>
<td>No Action</td>
<td>Existing Condition</td>
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## BENEFIT-COST ANALYSIS

### Table 2-4 Benefit-Cost Analysis of Final Array of Alternatives

<table>
<thead>
<tr>
<th>Economic Factor</th>
<th>Alternative A</th>
<th>Alternative B</th>
<th>Alternative F</th>
<th>Alternative G</th>
<th>Alternative J</th>
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<tbody>
<tr>
<td>Construction Cost</td>
<td>$57,000,000</td>
<td>$59,600,000</td>
<td>$72,800,000</td>
<td>$60,800,000</td>
<td>$26,882,000</td>
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<tr>
<td>Real Estate</td>
<td>$92,393,000</td>
<td>$75,794,000</td>
<td>$22,318,000</td>
<td>$75,238,000</td>
<td>$19,232,000</td>
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<tr>
<td>Mitigation</td>
<td>$1,789,000</td>
<td>$0*</td>
<td>$0*</td>
<td>$0*</td>
<td>$0*</td>
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<tr>
<td>Total First Cost</td>
<td>$151,183,000</td>
<td>$135,394,000</td>
<td>$95,118,000</td>
<td>$136,038,000</td>
<td>$46,114,000</td>
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<tr>
<td>Construction Period</td>
<td>25 months</td>
<td>26 months</td>
<td>28 months</td>
<td>28 months</td>
<td>28 months</td>
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<tr>
<td>Interest During Construction (XX months construction, 2.75%)</td>
<td>$4,354,000</td>
<td>$4,058,000</td>
<td>$3,075,000</td>
<td>$4,398,000</td>
<td>$1,491,000</td>
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<tr>
<td>Total Investment</td>
<td>$155,537,000</td>
<td>$139,452,000</td>
<td>$98,193,000</td>
<td>$140,436,000</td>
<td>$47,605,000</td>
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<tr>
<td>Avg. Ann. Cost (2.75%, 50 yr. project life)</td>
<td>$5,761,000</td>
<td>$5,165,000</td>
<td>$3,637,000</td>
<td>$5,202,000</td>
<td>$1,763,000</td>
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<tr>
<td>Operations, Maintenance, Repair, Replacement, and Rehabilitation</td>
<td>$400,000</td>
<td>$400,000</td>
<td>$400,000</td>
<td>$400,000</td>
<td>$265,000</td>
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<tr>
<td>Total Avg. Annual Cost</td>
<td>$6,161,000</td>
<td>$5,565,000</td>
<td>$4,037,000</td>
<td>$5,602,000</td>
<td>$2,028,000</td>
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<tr>
<td>Equivalent Avg. Annual Benefits</td>
<td>$3,544,000</td>
<td>$3,276,000</td>
<td>$2,934,000</td>
<td>$3,220,000</td>
<td>$2,559,000</td>
</tr>
<tr>
<td>Benefit/Cost Ratio</td>
<td>0.60</td>
<td>0.62</td>
<td>0.73</td>
<td>0.57</td>
<td>1.26</td>
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<tr>
<td>Net Benefits</td>
<td>-$2,617,000</td>
<td>-$2,289,000</td>
<td>-$1,103,000</td>
<td>-$2,382,000</td>
<td>$531,000</td>
</tr>
</tbody>
</table>
ALTERNATIVE J
Tentatively Selected Plan – Figure 3-5a

• Bypass, Allen Park Riparian Corridor, Top-of-bank Floodwall
ALTERNATIVE J – Figure 3-5b
ALTERNATIVE J – Figure 3-5c
ALTERNATIVE J – Figure 3-5e
ALTERNATIVE J – Figure 3-5f

Alternative J

Maximum Top of Bank
Floodwall Heights (feet)
- 2
- 3.5 - 4
- 6 - 6.5

Existing Features
- Corte Madera Creek Centerline
- Ross Valley Sewer Line
- Access Routes
- Bridges
- Existing Bike Lane
- Staging Area
Structures removed from floodplain

Flooding Changes at 4% AEP (25-Yr Flood)
Flooding Changes at 2% AEP (50-Yr Flood)
Structures removed from floodplain

Flooding Changes at 1% AEP (100-Yr Flood)
ALTERNATIVE A
Figure 3-1a

- Top-of-bank Floodwalls
ALTERNATIVE B
Figure 3-2a

- Top-of-bank Floodwall, Setback Floodwall, College of Marin Widening
ALTERNATIVE F
Environmentally Preferred Alternative, Figure 3-3a

- Bypass, Allen Park Riparian Corridor, College of Marin Widening
ALTERNATIVE G
Figure 3-4a

- Top-of-bank Floodwall, Allen Park Riparian Corridor, College of Marin Widening
ALTERNATIVE J
Tentatively Selected Plan – Figure 3-5a

- Bypass, Allen Park Riparian Corridor, Top-of-bank Floodwall
PUBLIC REVIEW/COMMENT PERIOD ENDS NOVEMBER 27, 2018

Comments May Be Submitted By:

| MAIL: | U.S. Army Corps of Engineers, San Francisco District  
|       | Attn: Cynthia Jo Fowler  
|       | 1455 Market Street, San Francisco, CA 94103-1398  
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