PORTLAND METRO LEVEE SYSTEM
FLOOD RISK MANAGEMENT PROJECT

Public Meeting
December 12, 2018

The Columbia River Levee System

CCDD
Joint Contracting Authority

US Army Corps of Engineers

U.S. Army
PURPOSE OF MEETING

- Provide an overview of the proposed action and the preliminary alternatives process
- Allow members of the public, stakeholders, and agency representatives to provide input, feedback, and share information
Agenda

- Open House
  - Information Tables
- Presentation
  - Valerie Ringold, U.S. Army Corps of Engineers
- Information Tables
THE FEASIBILITY STUDY PROCESS:
KEY DECISION & PRODUCT MILESTONES IN A 3-YEAR, $3M STUDY (3X3)
### CORPS FEASIBILITY STUDY PROCESS

<table>
<thead>
<tr>
<th>Step</th>
<th>Scoping</th>
<th>Alternatives Formulation &amp; Analysis</th>
<th>Feasibility-Level Design</th>
<th>Chief’s Report</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current Stage</td>
<td>Jan 2019 – April 2020</td>
<td>April 2020-April 2021</td>
<td>April 2021-Oct 2021</td>
<td></td>
</tr>
</tbody>
</table>

**Scoping**
- Public input on issues to be addressed
- Data gathering
- Environmental coordination begins

**Alternatives Formulation & Analysis**
- Formulate & evaluate alternatives
- Draft Feasibility Report and Environmental Assessment released for public review & comment
- Agency endorsement for further design of recommended plan

**Feasibility-Level Design**
- Further refine recommended plan; develop ~35% designs and cost estimate
- Final Feasibility Report and Environmental Assessment released

**Chief’s Report**
- Report to Congress to seek authorization for Construction
- Environmental compliance complete
STUDY AREA OVERVIEW
STUDY AUTHORITY AND SPONSOR

• Authority: Section 216 of the Flood Control Act of 1970 (33 U.S.C. § 549a)

• SMART Planning Status: Study is 3x3x3 compliant; Title IV, Division B of the Bipartisan Budget Act of 2018, Public Law 115-123, enacted February 9, 2018 authorizes the Government to conduct the Study at full Federal expense.

• Non-Federal Sponsor: Columbia Corridor Drainage Districts Joint Contracting Authority
WHAT IS FLOOD RISK?

Risk = Hazard + Performance + Exposure + Vulnerability + Consequences

Flood Risk (simplified) = Flood Probability x Flood Consequences
FEDERAL INTEREST

• All 4 drainage districts were authorized and constructed in either or both the 1936 and 1950 Flood Control Acts.
• Additional work has occurred on the flood control system in all 4 drainage districts in subsequent years

Significance: The study area is a cornerstone to the regional, statewide, and national economy with over $16 billion in annual economic activity generated from businesses and over $7.3 billion in property values within the levee protection area.

• Population At Risk estimated at nearly 50,000
• Hundreds of businesses, 10% of Multnomah County’s jobs,
• Drinking water supply to 966,600
• Major natural gas pipeline that serves two states
• 2 airports including Portland International Airport (50k passengers daily/18.4 million/year), US Air National Guard Base
• 3 Interstate highways (I-5, I-205, I-84)
• 2 Transit and a Class I freight rail lines
PROBLEMS

Life Safety Risk
- Population at risk / critical infrastructure – difficult in evacuation

Economic Losses Due to Flooding
- Overtopping of existing levees
- Railroad embankment at risk of failure
- Potential increases in flood risk due to climate change / future operations
- Backwater effects of Willamette River causing flooding in project area
- Loss of business earning / employment due to flooding

Safety of Existing Levees
- Weak points in existing system
- Levee encroachments
- Aging infrastructure
- Pump stations lack adequate pumps / relief wells and redundancy
- I-walls and stop log structures meet current standards but some concerns
- Sloughing due to high flows
PROJECT OBJECTIVES

• Reduce flood damages, in particular critical infrastructure, in the vicinity of the Portland Metro Levee system over the period of analysis

• Reduce threats to life safety from flooding and increase awareness of flood risk in the Portland Metro Levee system over the period of analysis

• Increase resiliency of the flood management system over the planning period of analysis

• Increase reliability of the flood management system over the planning period of analysis

• To the extent practicable, provide opportunities for recreation, natural resources, and cultural resources

• Improve operability of the flood management system and decrease flood response and recovery time
INITIAL ALTERNATIVES STRATEGIES

Alt 1 - Future Without Project Condition/No Action
Alt 2 - Non-Structural
Alt 3 - Prioritize Life/Safety
Alt 4 - Maximize Resilience/Reliability
Alt 5 - Uniform Annual Exceedance Probability (AEP) (AEP similar to Level of Protection – i.e. “100-year flood”)
Alternative Strategy 1
Future Without Project Conditions

Alternative Strategy One
Future Without Project Condition/NoAction

<table>
<thead>
<tr>
<th>No.</th>
<th>Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td>Increase Levee heights (this includes cross levees, mainstem, slough)</td>
</tr>
</tbody>
</table>
Alternative Strategy 2
Nonstructural

Key to Features
- Pump Stations

Alternative Locations
- Measure Type
  - Nonstructural
  - Structural
  - Levee Centerline

<table>
<thead>
<tr>
<th>Alternative Strategy Two</th>
<th>Non-Structural</th>
</tr>
</thead>
<tbody>
<tr>
<td>No.</td>
<td>Measures</td>
</tr>
<tr>
<td>1</td>
<td>Raise Structures</td>
</tr>
<tr>
<td>3</td>
<td>Buyouts</td>
</tr>
<tr>
<td>6</td>
<td>Flood evac plan</td>
</tr>
<tr>
<td>12</td>
<td>Ring Levee</td>
</tr>
<tr>
<td>23</td>
<td>Relocate HQ (COOP Plan)</td>
</tr>
<tr>
<td>48</td>
<td>Setback Levee</td>
</tr>
</tbody>
</table>
Alternative Strategy 3
Prioritize Life/Safety

Key to Features
- Pump Stations

Alternative Locations
Measure Type
- Nonstructural
- Structural
- Levee Centerline

Alternative Strategy Three
Prioritize Life/Safety
No. Measures
1. Elevate Structures
2. Build out
3. Widen Levee
4. Flood Warning in Residential/Par areas
5. Increase Levee Heights
6. Ring Levee
7. Seismic Retrosfits
8. Education
9. Signs/Exit Routes
10. Removal of Levee Veg
11. Safe Zones
12. Zoning
13. Floating Homes
Alternative Strategy 4
Maximize Resilience and Reliability
Alternative Strategy 5
Uniform AEP

Alternative Strategy Five
Uniform AEP

<table>
<thead>
<tr>
<th>No.</th>
<th>Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>Widen levees</td>
</tr>
<tr>
<td>7</td>
<td>Increase levee heights (this includes cross levees, mainstem, slough)</td>
</tr>
<tr>
<td>13</td>
<td>Riprap</td>
</tr>
<tr>
<td>30</td>
<td>build additional levees/floodwalls</td>
</tr>
<tr>
<td>33</td>
<td>Adjust/ensure levee slopes meet current standards</td>
</tr>
</tbody>
</table>

Key to Features
- Pump Stations
- Nonstructural
- Structural
- Levee Centerline

Alternative Locations
- MCDD Headquarters
- MCDD West
- MCDD East
- SDIC
- Gresham City Hall
EVALUATION OF ALTERNATIVES

- Costs
- Economic benefits
  - Number of structures damaged, depth of water, duration of flood, etc.
- Environmental effects
  - Fish & wildlife resources, cultural resources, wetlands, etc.
- Life safety
- Other Criteria may be added as study continues to develop
Study Timeline & Public Involvement

- **December 2019**
  - Draft Feasibility Report / Environmental Assessment Available for Public Review

- **Summer 2021***
  - Final Feasibility Report / Environmental Assessment Released

- **2022***
  - Initiate Design & Construction (*subject to Congressional authorization and appropriation*)

* Contingent on funding
Get Involved

Provide Input
Provide comments to the Corps of Engineers:
- In Person: tonight’s meeting
- Email
- Mail
- Phone

During Public comment period
Winter 2019

Contact Information
Online: Do we have a website??
Email: Do we have a project mailbox??@usace.army.mil

Mail:
USACE PORTLAND DISTRICT
ATTN: Laura Hicks - CENWP-PM-F
PO BOX 2946
PORTLAND OR 97208-2946

Phone: 503-808-4760