ADAMS & DENVER COUNTIES, COLORADO
GENERAL INVESTIGATIONS STUDY

WEIR GULCH
Meeting Purpose – To share the proposed plan with the community and receive feedback/input.
Study Authority

- 24 September, 2008, by the Committee on Transportation and Infrastructure, U.S. House of Representatives, Docket 2813
  - “Resolved by the Committee on Transportation and Infrastructure of the United States House of Representatives, That the Secretary of the Army review the report of the Chief of Engineers on the South Platte River and Tributaries, Colorado, Wyoming and Nebraska, published as House Document 669, 80th Congress, and other related reports to determine whether any modifications of the recommendations contained therein are advisable at the present time in the interest of flood damage reduction, floodplain management, water supply, water quality improvement, recreation, environmental restoration, watershed management, and other allied purposes, in Adams and Denver Counties, Colorado”.

Who is the Non-Federal Sponsor?

- City and County of Denver
- Signed a Feasibility Cost Share Agreement in May 2014
Overall Project Timeline

How long will the study take?
Expected Submittal of Final Report – December 2018
Expected Chief’s Report to Congress – July 2019

URBAN WATERWAYS RESTORATION PROJECT TENTATIVE TIMELINE: 25 YEARS

2019
- SEEK PRECONSTRUCTION ENGINEERING & DESIGN
- STUDY COMPLETE

2020
- CONGRESSIONAL AUTHORIZATION (2020 WATER RESOURCE DEVELOPMENT ACT)
- SEEK APPROPRIATIONS

2022
- EARLIEST CONSTRUCTION FUNDING

2023-2043
10-20 YEAR FUNDING/CONSTRUCTION PERIOD
- PROJECT COMPLETION
Three Reaches:

1. South Platte River
   - 58th Ave. to 6th Ave. (Phil Milstein Park)
   - Ecosystem Restoration Focus

2. Weir Gulch
   - Sheridan Blvd. to South Platte River
   - Flood Risk Management Focus

3. Harvard Gulch
   - Nonstructural Project
   - Flood Risk Management Focus
Reduce flood risk by finding an technically feasible, economically viable, and environmentally acceptable solution that will be beneficial to the public.

Why is a solution needed?
• Most common and costly natural disaster
• 1% annual chance (100-year) flood is the national standard
• 26% chance of experiencing the 100-year flood over the life of a 30-year mortgage
• 5 times more likely to experience flood than fire.
Need – Existing Flood Risk

- **Current 100-Yr Floodplain Boundary**
- **DRAFT Updated 100-Yr Floodplain Boundary**
Study assessed the existing flood risk within the community

Developed alternatives that would reduce the flood risk

Determined which alternatives provided the most benefits to the community and the nation.
Alternatives Evaluated & Compared:

1. Open Flood Channel
2. Closed Channel/Open Channel (Culvert) Combination
3. Nonstructural
4. Combined Structural & Nonstructural

Alternatives Considered but Eliminated:

- Detention Basin(s)
- Levees
- Floodwalls
Structural vs. Nonstructural

Structural – Alter the flow of the water

Nonstructural – Alter buildings within the path of the water
Benefits of flood risk management include reduced flood damages, clean up costs avoided, and reduced detours and delays. While not monetized, reduced life and safety risks are clear benefits as well.

USACE determines the economical viability of an alternative by calculating a Benefit Cost Ratio (BCR) score.

\[
\frac{\text{Benefits}}{\text{Costs}} > 1.0
\]

A BCR > 1.0 indicates that the flood risk management benefits of proposed action are greater than the financial cost.

If multiple alternatives have a BCR > 1.0 then the alternative with the highest Net Benefits is the selected alternative.

Net Benefits = Flood Risk Benefits – Project Costs
Weir Gulch
Tentatively Selected Plan
Weir Gulch Tentatively Selected Plan
Reach 1 | S Platte River to 6th Avenue
Weir Gulch Tentatively Selected Plan
Reach 2 | Barnum Park
Weir Gulch Tentatively Selected Plan
Reach 3 | Barnum Park to 1st Avenue

LEGEND

CHANNEL
- Open Channel
- Channel in Culvert

GULCH ACCESS
- Street Connections

TRAILS
- Regional Trail
- Existing Trail to Remain
- Low Flow Crossing

ROADS
- White New Roads
- Vehicular Bridge

DENVER
THE MILE HIGH CITY

Barnum Park
Weir Gulch Tentatively Selected Plan
Reach 3 | Typical Section

WEIR GULCH - FLOOD CONTROL CHANNEL ALTERNATIVES
TYPICAL SECTION
Weir Gulch Tentatively Selected Plan
Reach 6 | Storm Sewer Down 1st Avenue
Weir Gulch Tentatively Selected Plan
Reach 6 | Typical Section

WEIR GULCH - WEST 1st STREET NEAR STUART
TYPICAL SECTION
Weir Gulch Tentatively Selected Plan
Recreation Plan
<table>
<thead>
<tr>
<th>Cost Breakdown</th>
<th>Total Project</th>
<th>Weir Gulch</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Cost</td>
<td>$515M</td>
<td>$92M</td>
</tr>
<tr>
<td>BCR</td>
<td>N/A*</td>
<td>1.45</td>
</tr>
<tr>
<td>Annual Net Benefits</td>
<td>N/A*</td>
<td>$1.47M</td>
</tr>
<tr>
<td>Federal Cost Share (65%)**</td>
<td>$337M</td>
<td>$59.2M</td>
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<tr>
<td>Local Sponsor Cost Share (35%)**</td>
<td>$184M</td>
<td>$32.8M</td>
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</tbody>
</table>

*No overall BCR because Ecosystem Restoration (South Platte River) measures benefits differently than Flood Risk Management (Weir & Harvard Gulch)

**Recreation components are cost-shared 50/50 between the Federal and Non-Federal partners, the rest of the project is 65/35 (Fed/Non-Fed).
Remaining Study Schedule

URBAN WATERWAYS RESTORATION FEASIBILITY STUDY TIMELINE: 4 YEARS

SCOPING & PROJECT UNDERSTANDING

ALTERNATIVE FORMULATION & ANALYSIS

FEASIBILITY-LEVEL ANALYSIS

CHIEF’S REPORT

2014 PROJECT BEGINS

SPRING 2015 ROUND 1 PUBLIC MEETINGS

DEC 2015 FLOODPLAIN EDUCATION SESSIONS FOR HARV. & WEIR

JAN 2016 ROUND 2 EDUCATION SESSIONS & PUBLIC MEETINGS

AUG 2018 ROUND 3 PUBLIC MEETINGS

AUG 28, 2018 END PUBLIC REVIEW OF DRAFT FEASIBILITY REPORT

2019 R.O.D. CHIEF’S REPORT
How to Provide Input

Draft Report available for review at:
http://www.nwo.usace.army.mil/Missions/Civil-Works/Planning/Project-Reports/

You may submit comments or questions via email:
Jeff Bohlken, Project Manager: Jeffrey.C.Bohlken@usace.army.mil
Dave Crane, Biologist, David.J.Crane@usace.army.mil

OR by mail:
U.S. Army Corps of Engineers
ATTN: CENWO-PMA-A – Bohlken
1616 Capitol Avenue
Omaha, Nebraska 68102
QUESTIONS?

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THANK YOU!