



WATERWAY
RESILIENCY
PROGRAM

WEIR GULCH • SOUTH PLATTE • HARVARD GULCH

South Platte River & Tributaries, Adams and Denver Counties, Colorado Project



Heron Pond/Carpio-Sanguinetti on South Platte River



Weir Gulch precedence (39th Greenway in north Denver)

National Excellence, Vibrant Denver

Agenda

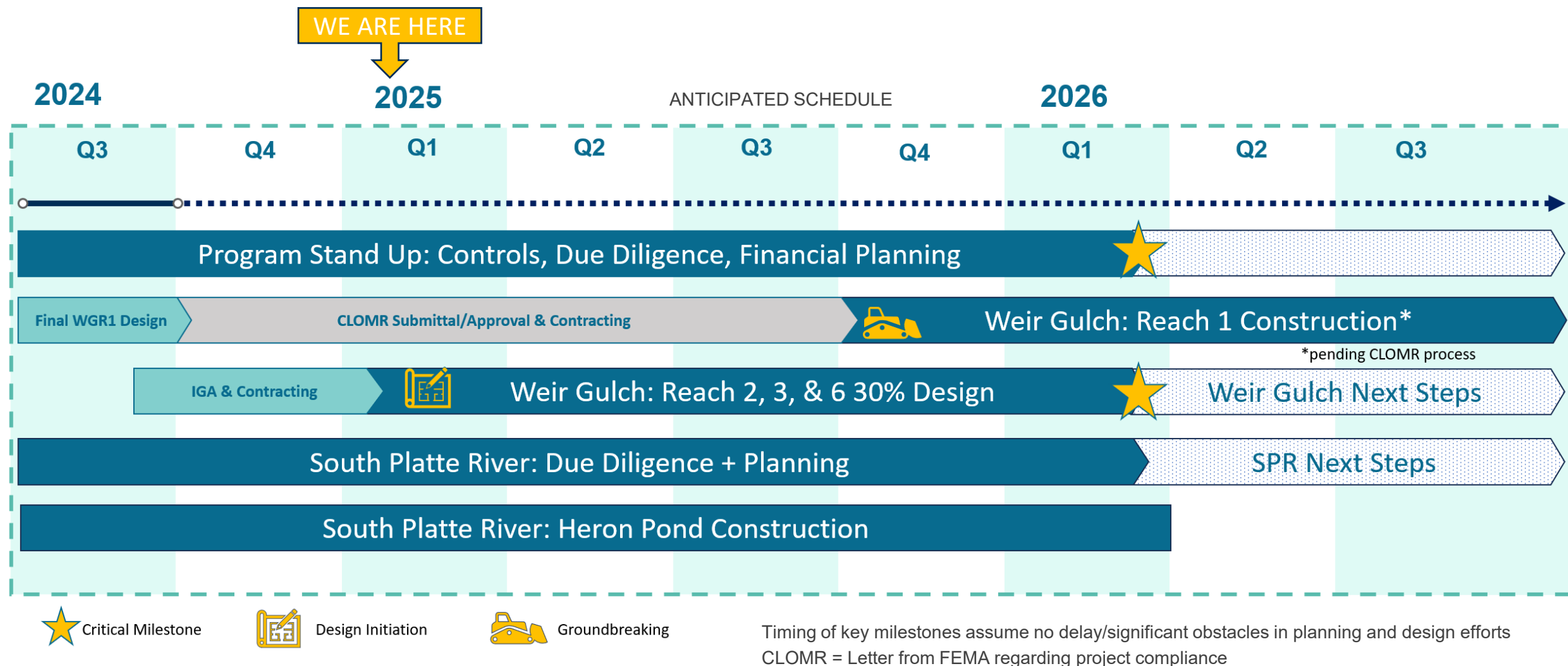
- WATR Program Update
- South Platte River Update
- Weir Gulch
 - Design/Construction Update
 - Upcoming outreach



Program Roadmap

PRIORITIES

1. Mitigate life/safety risks caused by flood risk along Weir Gulch
2. Continued due-diligence to properly and responsibly mitigate and manage program risks to ensure proper stewardship of public funds

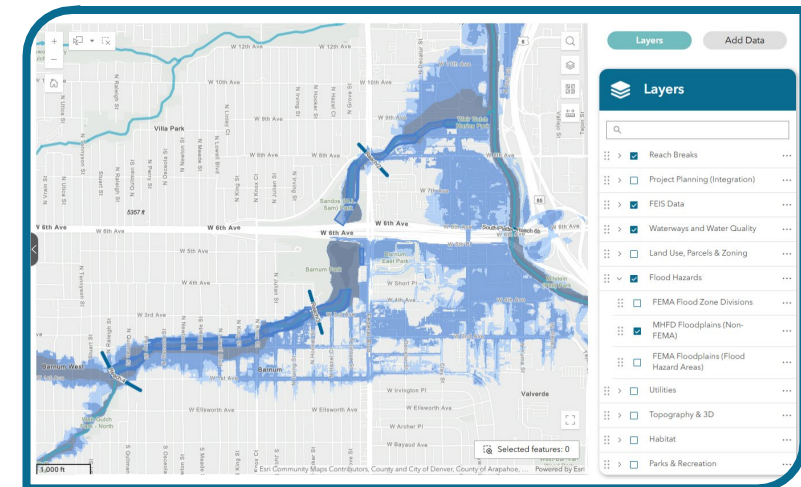
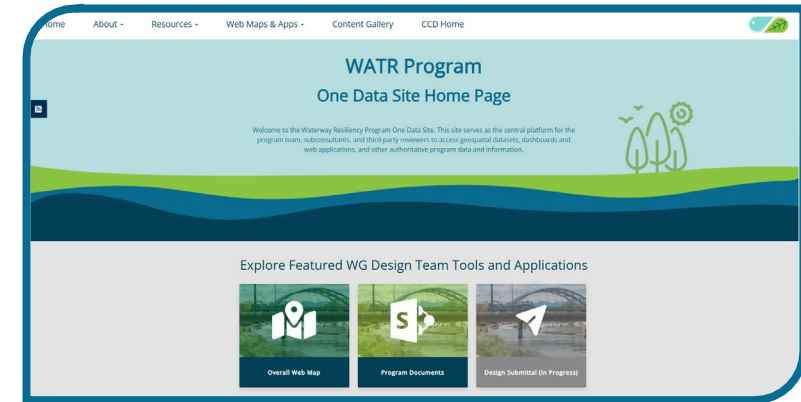


Program Updates

HNTB Staff Augmentation/Owner Advisor **contract executed in November 2024**

FOCUS:

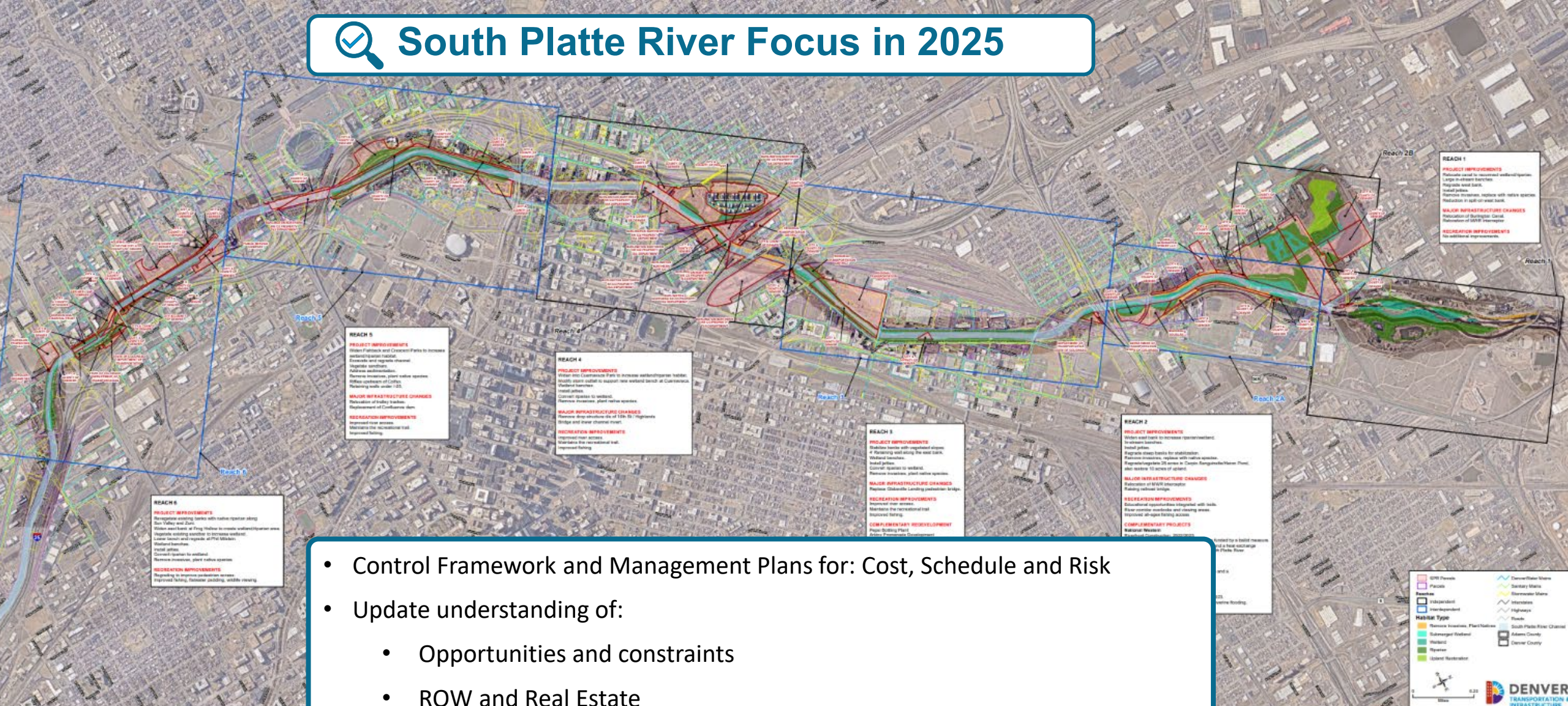
- **Program Controls:** Cost, Schedule and Risk management plans and tools
- **Communication and outreach**
- **Strategic planning and support**
- **Data management and collaboration platform**
 - **One source of truth** = clear and consistent information across all users
 - **Data-driven decision-making, collaboration and transparency**
 - **Efficient design process** through integration of design and fieldwork datasets
 - **Streamlined review portal** and process for USACE/CCD/MHFD



Key Risk	Cause	Mitigation Actions
Lack of cost certainty	Minimal design maturity	<ul style="list-style-type: none">• Develop cost estimate tools and scenarios• Advance planning, engineering, and design
Remittance Clause	Legislative requirement that transfers significant risk to CCD per separable element	<ul style="list-style-type: none">• Matrixed USACE/CCD partnership and decision making• Exploring options to reduce/mitigate risk in partnership with USACE
Stakeholder & Community Concerns	Strong interest in program from diverse range of stakeholders; concerns about potential property acquisition	<ul style="list-style-type: none">• Comprehensive communication and stakeholder management strategies throughout program• Progress design to better understand impacts, opportunities and clearer next steps
Hazardous, Toxic, Radioactive Waste (Environmental)	Lack of investigations resulting in unknown cost and scale of potential environmental challenges	<ul style="list-style-type: none">• Early investigations to identify areas of contamination and refine understand of cost and impact
Real Estate	Minimal design resulting in unknown cost and scale of potential right-of-way/real estate needs	<ul style="list-style-type: none">• Work with USACE to expand eligible real estate tools• Advance design to minimize project footprint• Due diligence of parcel ownership along SPR



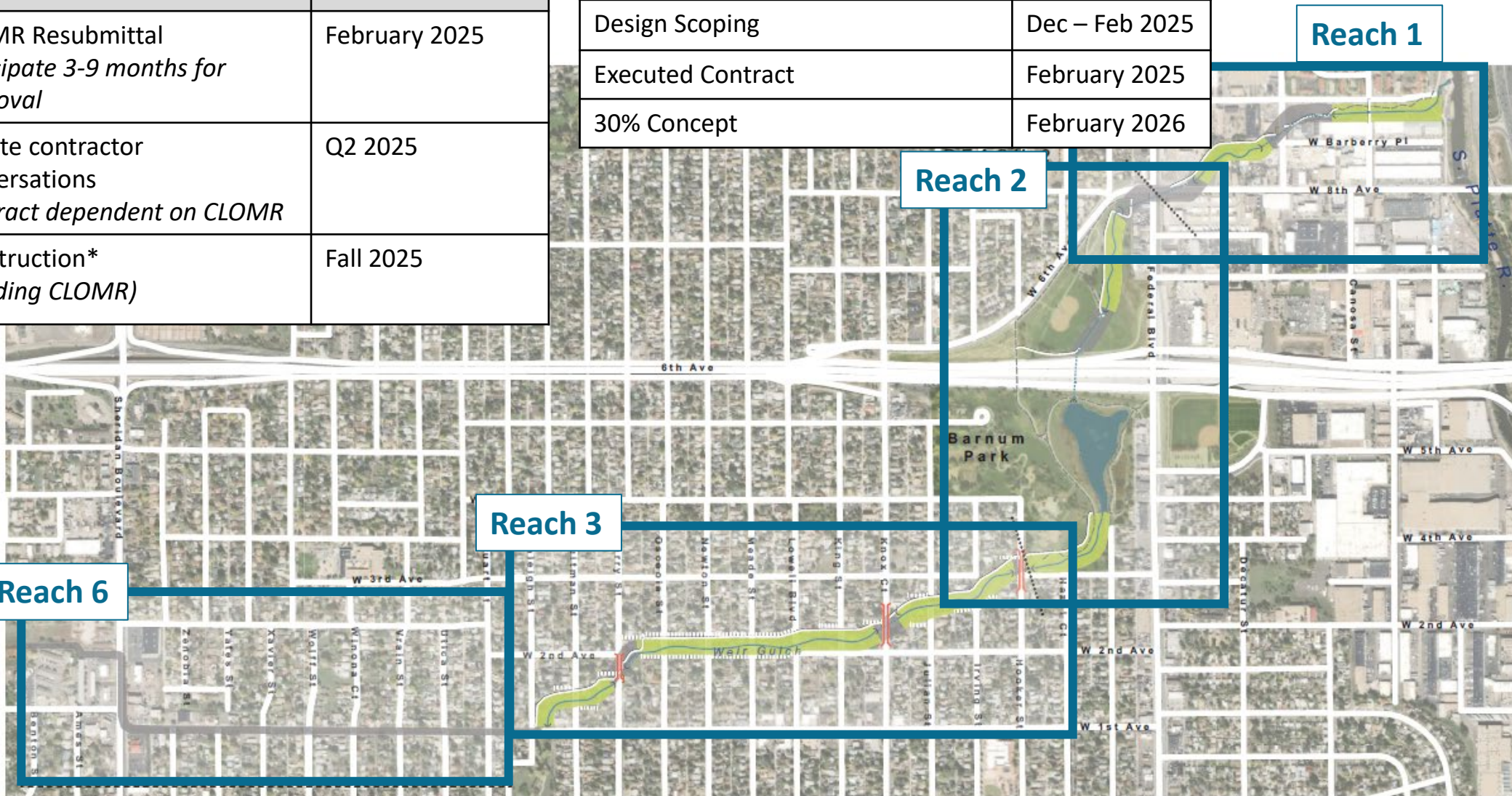
South Platte River Focus in 2025



- Control Framework and Management Plans for: Cost, Schedule and Risk
- Update understanding of:
 - Opportunities and constraints
 - ROW and Real Estate
 - Environmental investigation strategy and efforts
 - Utilities
 - Phasing, prioritization and delivery options

Weir Gulch: Reach 2, 3 & 6 – 30% Design	
MHFD/CCD Intergovernmental Agreement Executed	11/06/24
Team Selection	December 2024
Design Scoping	Dec – Feb 2025
Executed Contract	February 2025
30% Concept	February 2026

CLOMR = Conditional Letter of Map Revision
(Letter from FEMA regarding project
compliance)



The updated FHAD study considered current data, land use conditions and updated modelling

- Findings:** 600%+ increase of buildings in updated floodplain compared to 1972 floodplain (existing)

- 1972: 80+ buildings (75+ residential)
- 2024: 600+ buildings (400+ residential)

Findings: Significant flood risk for underserved communities

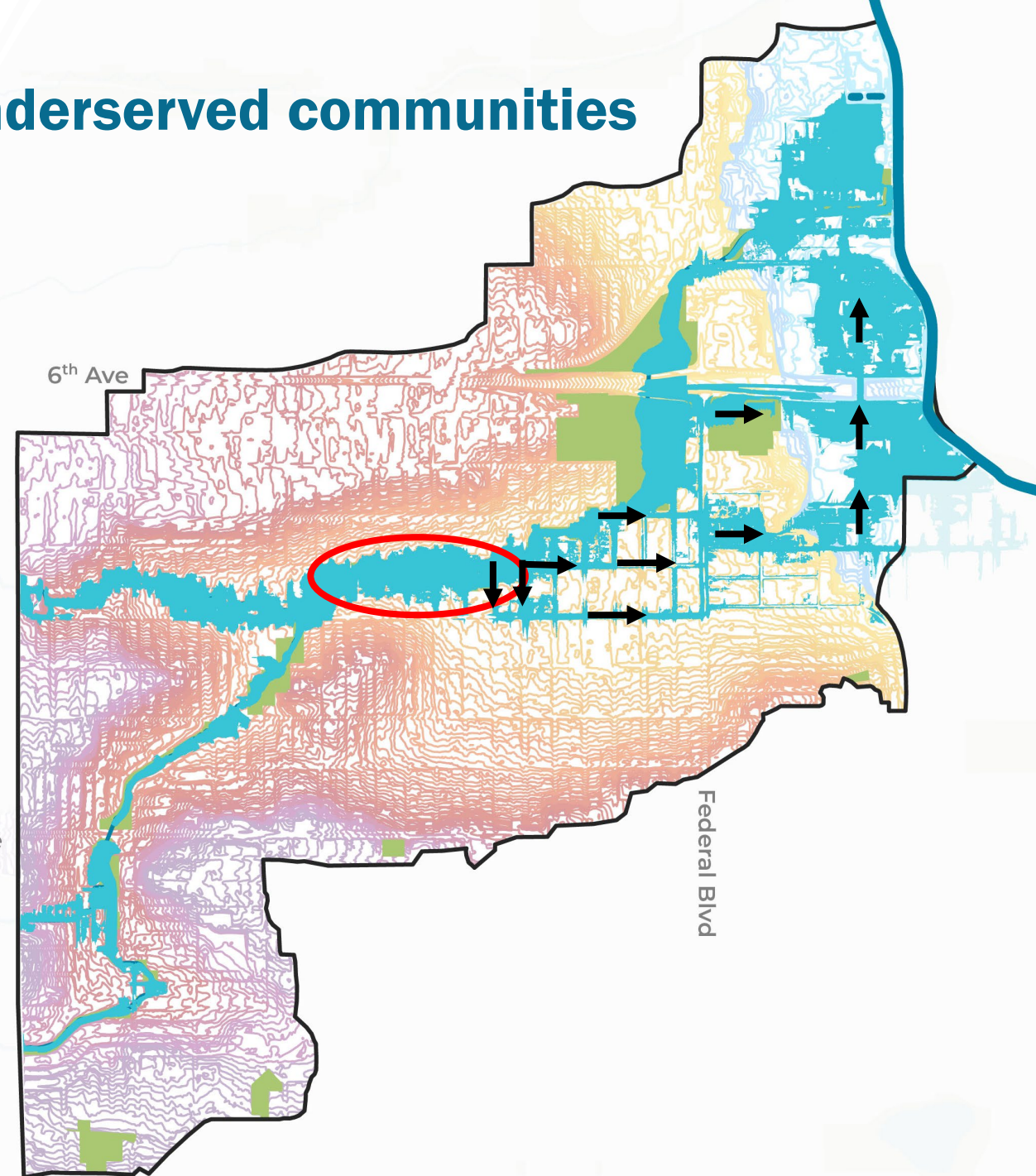
Primary sources of flooding and increased runoff from:

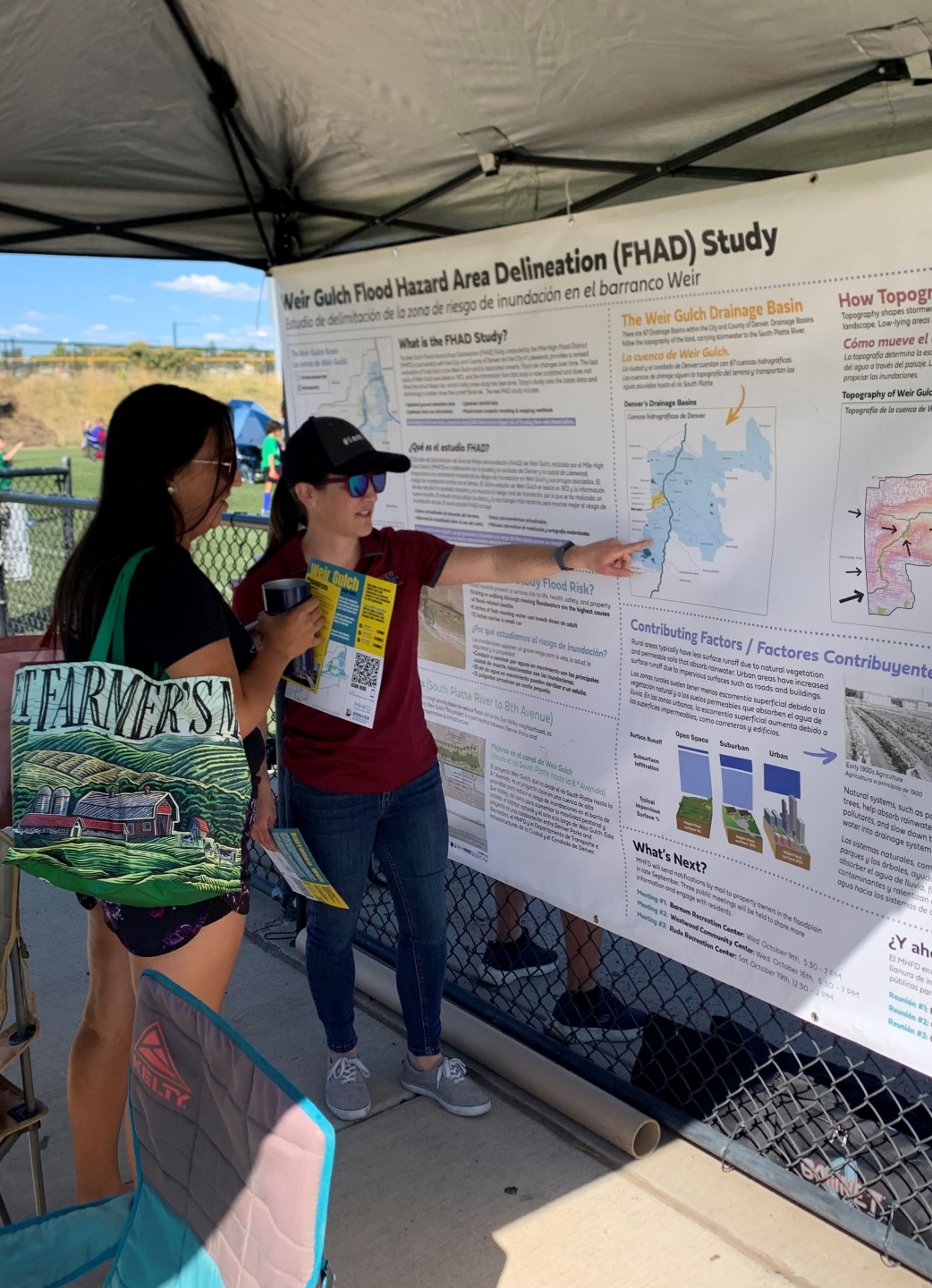
- More impervious surfaces
- Undersized culvert

Depths range from **3-5 feet** in many parts of the floodplain, resulting in:

- Widespread hazardous and unsafe conditions
- Significant property impacts

In a major event, these neighborhoods will flood, prompting **emergency response for some of our most vulnerable communities and costly recovery efforts**





2024 FHAD Outreach

September – October 2024

Reached approximately 3,000 residents across 8 neighborhoods through:

- Mailers, flyers & yard signs
- Social media
- 11 in-person events
 - 3 pop-ups
 - 4 RNO mtgs
 - 3 public meetings





What We Heard

- Frustration over the expanding floodplain
- Questions about flood insurance costs & requirements
- Questions about how people can protect their property
- Residents shared past experiences, including the 1965 flood
- **Questions about timing and involvement in upcoming flood improvement efforts and concerns about property impacts**



Next Step: Weir Gulch 30% Concept Design

CONTRACTING:

- Intergovernmental Agreement with Mile High Flood District (MHFD) and CCD executed November 2024
- MHFD to lead contracting
- CCD to co-project manage, coordinate matrixed WATR team, and ensure USACE compliance



- 70 years of collective experience working with the District and Denver
- Increased capacity with 3 trusted District design firms and 60 local engineers and specialists
- Fresh ideas from urban drainage and alternative delivery projects





- DOTI: Wastewater, Green Infrastructure, Transportation & Mobility, Bridge
- DPR: Parks, Trails and Forestry
- DDPHE
- MHFD
- CPD
- DEDO
- HOST



Design Approach

Concept development to assess a range of options:

- Detention
- Pipe Infrastructure
- Open Channel
- Hybrid/combinations

URBAN STREAM FUNCTION ELEMENTS

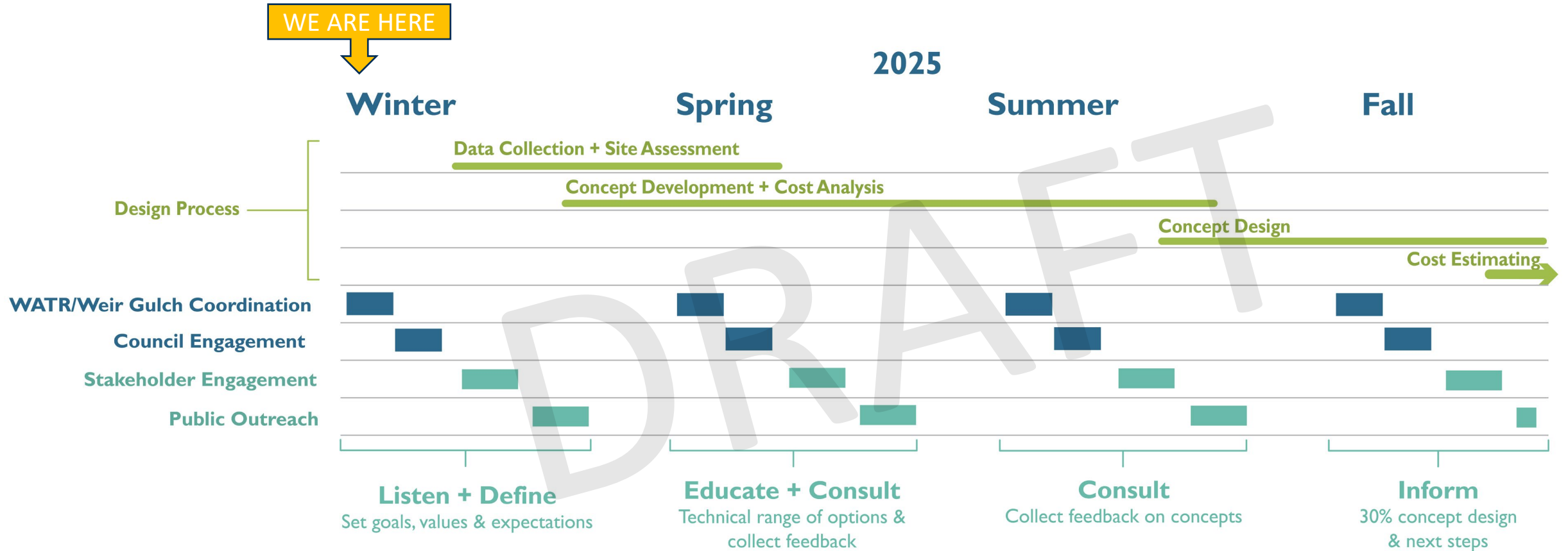


EXAMPLE SCORING MATRIX UTILIZING URBAN STREAM ASSESSMENT METHODOLOGY

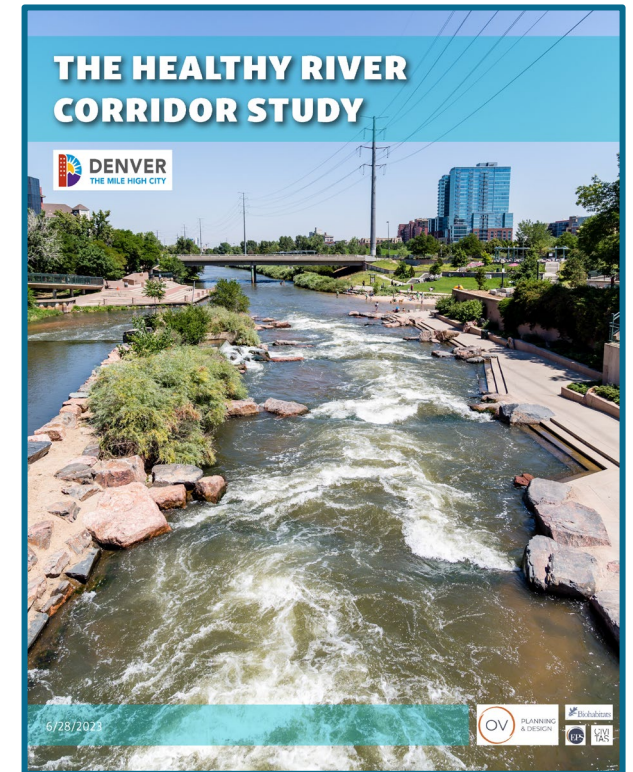
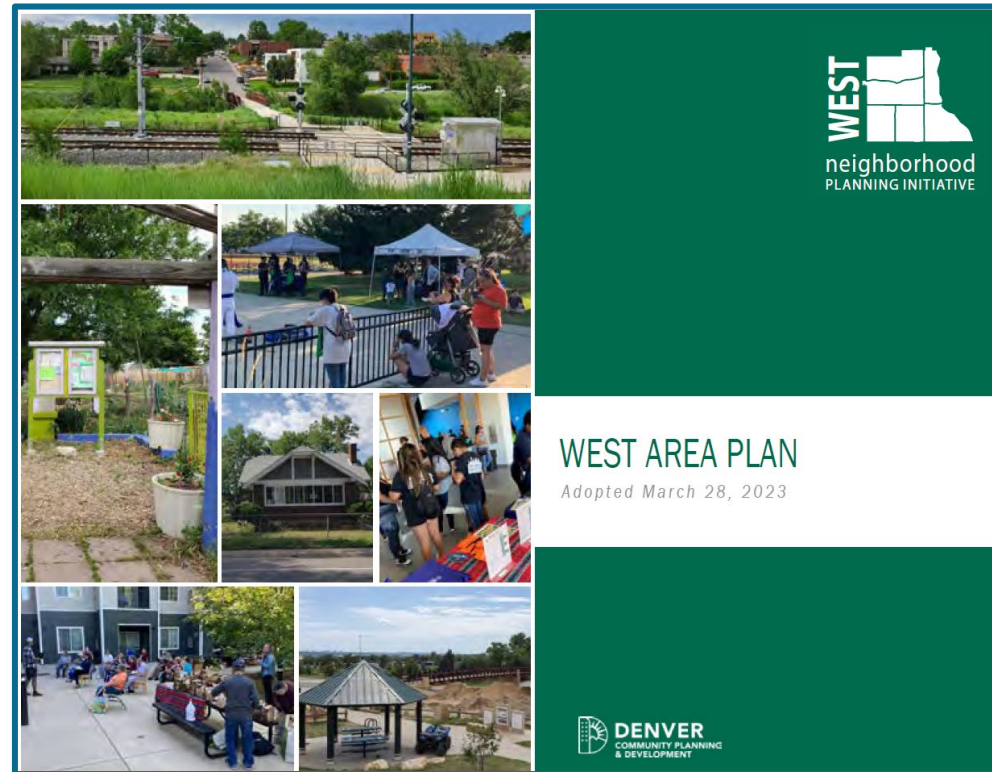
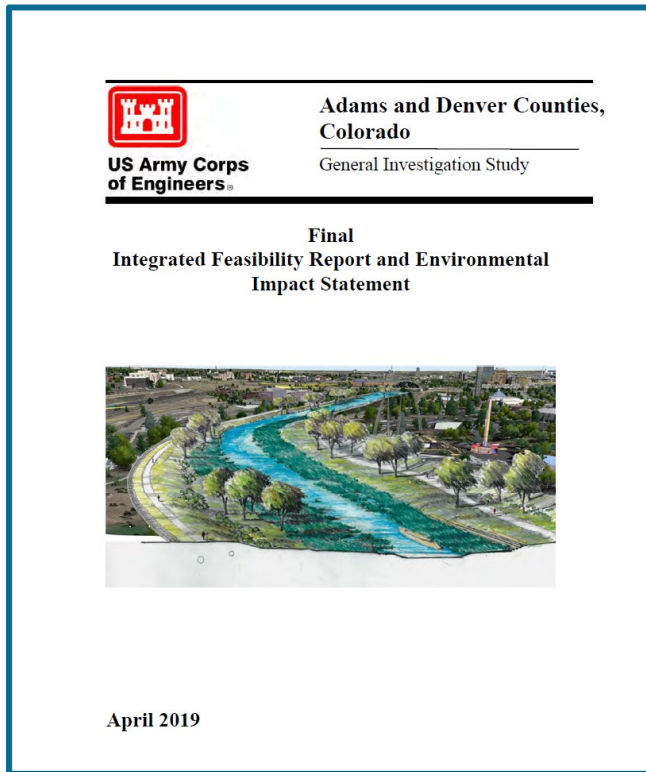
ELEMENT	INDICATOR	METRIC	REACH			
			1	2	3	4
COMMUNITY VALUES	ACCESS TO NATURE	PERCENTAGE OF POPULATION WITH ACCESS TO NATURE	0	0	0	0
		PERCENTAGE OF POPULATION WITH ACCESS TO NATURE	0	0	0	0
		PERCENTAGE OF POPULATION WITH ACCESS TO NATURE	0	0	0	0
	VITALITY	PERCENTAGE OF POPULATION WITH ACCESS TO NATURE	0	0	0	0
		PERCENTAGE OF POPULATION WITH ACCESS TO NATURE	0	0	0	0
		PERCENTAGE OF POPULATION WITH ACCESS TO NATURE	0	0	0	0
HYDROLOGY	RUNOFF PRODUCTION	PERCENTAGE OF POPULATION WITH ACCESS TO NATURE	0	0	0	0
		PERCENTAGE OF POPULATION WITH ACCESS TO NATURE	0	0	0	0
		PERCENTAGE OF POPULATION WITH ACCESS TO NATURE	0	0	0	0
	FLOW REGIME	PERCENTAGE OF POPULATION WITH ACCESS TO NATURE	0	0	0	0
		PERCENTAGE OF POPULATION WITH ACCESS TO NATURE	0	0	0	0
		PERCENTAGE OF POPULATION WITH ACCESS TO NATURE	0	0	0	0
HYDRAULICS	FLOOD/FLUVIAL HAZARDS	PERCENTAGE OF POPULATION WITH ACCESS TO NATURE	0	0	0	0
		PERCENTAGE OF POPULATION WITH ACCESS TO NATURE	0	0	0	0
		PERCENTAGE OF POPULATION WITH ACCESS TO NATURE	0	0	0	0
	FLOW CONVEYANCE	PERCENTAGE OF POPULATION WITH ACCESS TO NATURE	0	0	0	0
		PERCENTAGE OF POPULATION WITH ACCESS TO NATURE	0	0	0	0
		PERCENTAGE OF POPULATION WITH ACCESS TO NATURE	0	0	0	0
GEOMORPHOLOGY	SEDIMENT REGIME	PERCENTAGE OF POPULATION WITH ACCESS TO NATURE	0	0	0	0
		PERCENTAGE OF POPULATION WITH ACCESS TO NATURE	0	0	0	0
		PERCENTAGE OF POPULATION WITH ACCESS TO NATURE	0	0	0	0
	STABILITY	PERCENTAGE OF POPULATION WITH ACCESS TO NATURE	0	0	0	0
		PERCENTAGE OF POPULATION WITH ACCESS TO NATURE	0	0	0	0
		PERCENTAGE OF POPULATION WITH ACCESS TO NATURE	0	0	0	0
VEGETATION	FLOW CONVEYANCE	PERCENTAGE OF POPULATION WITH ACCESS TO NATURE	0	0	0	0
		PERCENTAGE OF POPULATION WITH ACCESS TO NATURE	0	0	0	0
		PERCENTAGE OF POPULATION WITH ACCESS TO NATURE	0	0	0	0
	DYNAMIC STABILITY	PERCENTAGE OF POPULATION WITH ACCESS TO NATURE	0	0	0	0
		PERCENTAGE OF POPULATION WITH ACCESS TO NATURE	0	0	0	0
		PERCENTAGE OF POPULATION WITH ACCESS TO NATURE	0	0	0	0

DRAFT Schedule for 30% Weir Gulch Design

Proposed schedule (pending continued scoping discussions, initial data collection and assessment)



Building on Existing Plans and Community Values



- Blueprint Denver
- Denver Moves Everyone
- Gameplan



Next Steps for Weir Gulch:

- Finalize engagement strategy in partnership with design team
- Develop stakeholder identification process
- Develop messaging for overall process and initial outreach
- Develop plan and process for addressing public inquiries
- Update website



Comments or Questions?

waterwayresiliency@denvergov.org

[DENVERGOV.ORG/WATERWAYRESILIENCY](https://denvergov.org/waterwayresiliency)



ADDITIONAL PROJECT INFORMATION



EXECUTED AGREEMENT: MAY 8, 2023

1ST OF ITS KIND

- **Denver leads project delivery**
 - **Cost-shared** for “project costs”
 - **Federal (BIL) reimbursement** can be sought as Denver completes discrete segments
- **Significant risk transfer to Denver**
 - Lack of design maturity (FEIS < 5%) = lack of cost certainty
 - Remittance clause



The Revolutionize USACE Civil Works Initiative aims to modernize traditional delivery of the Civil Works program:

- Optimize local participation and provide Non-Federal Sponsor (Denver) more control
- Accelerate delivery
- Provide life-cycle cost savings for Federal government and local sponsor





ECOSYSTEM BENEFITS

Preserve, protect, and enhance the diversity of wildlife and ecological health along the South Platte River:



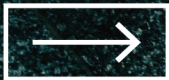
- **Preserve and restore affected ecosystems** directly connected to the city's waterways, tributaries and watersheds
- Restore approximately 160 acres of river edge and wetland habitat, 100 acres of aquatic habitat, and reconnect 190 acres of surrounding habitat, resulting in an **800 percent increase over existing habitat** in the project area
- **Reduce paved areas and improve the tree canopy** to help mitigate urban heat island effects in some of Denver's most underserved communities
- **Improve habitat connections for three species** listed under the Endangered Species Act, twelve state-listed endangered species, and fourteen bird species listed on the National Birds of Conservation Concern list





FLOOD REDUCTION BENEFITS

Enhance resiliency through
flood risk management in each
of the waterways:



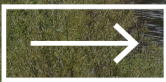
- Ecosystem restoration investments result in **flood risk reduction for structures** along the South Platte River
- Flood risk management reduces **flood risk for hundreds of structures** along Weir Gulch in some of Denver's most vulnerable and underserved communities
- **Voluntary flood risk management for residential and commercial properties** along Harvard Gulch
- Preserve natural and beneficial functions of floodplains
- Implement holistic and resilient water management and land use strategies through interagency and regional collaborations





MOBILITY BENEFITS

Improve the connectivity
of Denver's trail systems
to unite communities with
the places they want to go:



- **Strengthen the South Platte River Trail**, the backbone of Denver's multimodal network.
- Create a **seamless mobility experience** through coordinated public and private investments along the South Platte and Weir Gulch
- **Increase the healthy lifestyle and mobility options** for residents by building new trails, connections, and crossings making it easier and safer to access Denver's growing mobility network.





RECREATION BENEFITS

Create new opportunities for
community access to water
recreation and open space:



- Create connections and enhanced wayfinding signs to **encourage residents to interact with the natural environment**
- **Provide more access for water activities** such as fishing, kayaking, boating, and stand up paddle boarding
- **Increase opportunities for childhood exposure to green spaces**, which has demonstrated mental health benefits and possibly lower risk of psychiatric disorders from adolescence to adulthood



"We would like more trails for walking and running, and places to kayak and paddle board along the South Platte – Community Comment



SOUTH PLATTE RIVER: CARPIO SANGUINETTE / HERON POND PARK



An 80-acre open space park that connects the community to nature and the South Platte River.



SOUTH PLATTE RIVER PARTNERSHIP: RIVER MILE



EXISTING CONDITIONS



USACE Concept

WEIR GULCH: SPR TO 8TH (REACH 1)

Design: 100%

ROW Acquisitions: Complete

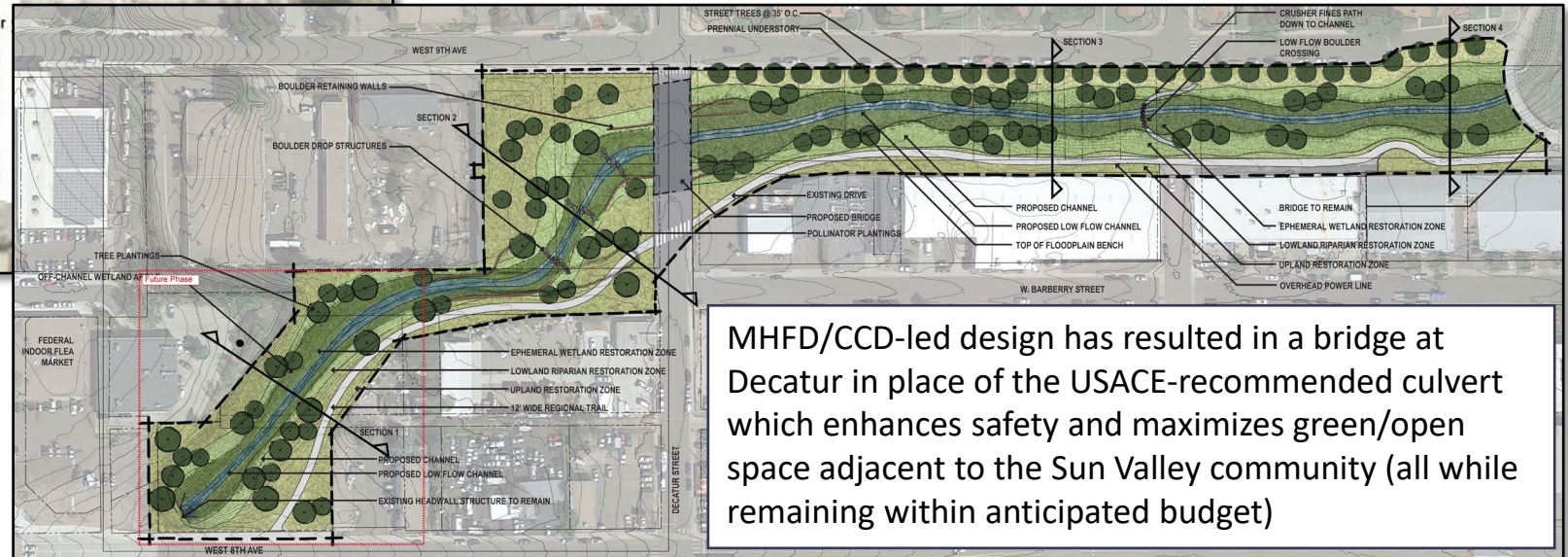
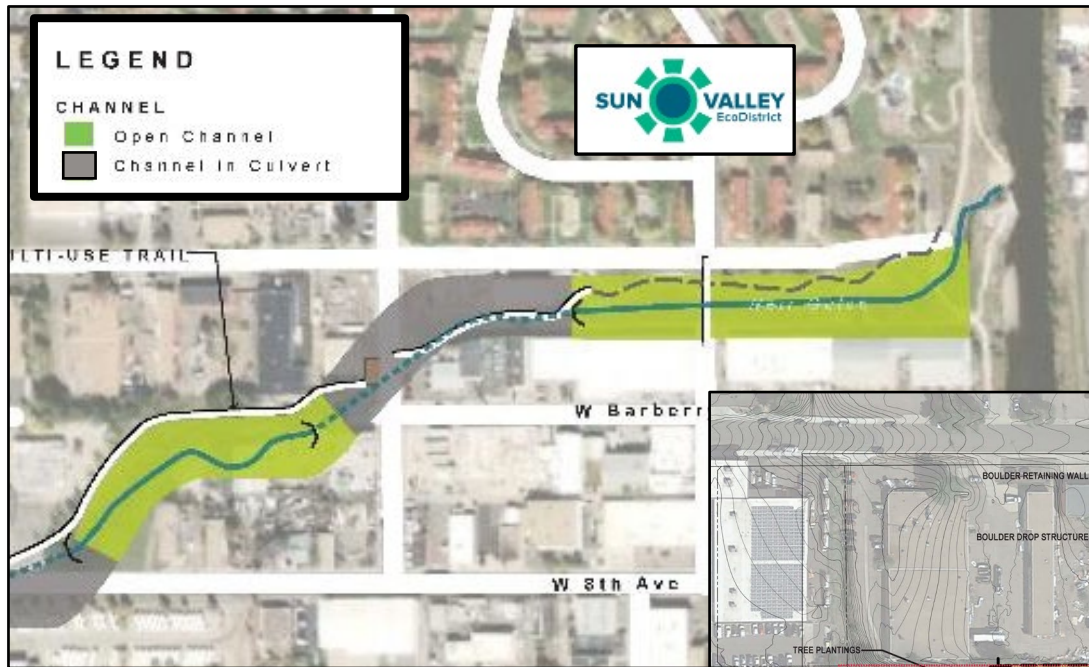
Funding: Fully funded with local funds

Next Steps:

- CLOMR approval
- Initiate construction contracting



Local Design



MHFD/CCD-led design has resulted in a bridge at Decatur in place of the USACE-recommended culvert which enhances safety and maximizes green/open space adjacent to the Sun Valley community (all while remaining within anticipated budget)