

The Denver Story

TRANSFORMATIVE
CULTURALLY AND NATIONALLY SIGNIFICANT
DENVER'S HEART

The South Platte River

A brief history of our waterways in support of:

*U.S. Army Corps of Engineers South Platte River and Tributaries Project,
Adams and Denver Counties, Colorado*

U.S. Army Corps of Engineers Section 1135 Southern Platte Valley Ecosystem Restoration



DENVER
THE MILE HIGH CITY



MHFD
MILE HIGH FLOOD DISTRICT



COLORADO
Colorado Water
Conservation Board
Department of Natural Resources



A RIVER'S HISTORY

The history of the City and County of Denver (Denver) is the modern history of the South Platte River. The City's origins can be traced back to its first mining settlement in 1858 along the river at the current-day site of Grant Frontier Park. Subsequent settlements focused downstream at the confluence of the South Platte River and Cherry Creek, now the site of Confluence Park. From this point forward, the South Platte River was drastically altered and influenced by its human inhabitants and their decisions. For more than 100 years, humans turned their backs to the South Platte River unaware of its significance as a lifeline within Colorado's arid climate, fragile ecosystem, and economy.

A river wild

Historically, flows along the South Platte River were variable, rising in spring pulses from snowmelt in the Rocky Mountains and lowering to almost dry conditions during other times of the year. It is these dredges and deluges of precipitation and runoff that created the pristine functional watershed.

In its natural state, the South Platte River was able to ebb and flow, expanding and contracting with the changing seasons and precipitation. Urbanization reshaped the natural environment, and the South Platte River experienced pressures of a prosperous Denver. The river was channelized and degraded, and the surrounding land developed creating unintended consequences and placing people and property at great risk.

As of 2021, the flood of 1965 remains the biggest and costliest in metro Denver's history costing 21 lives statewide, more than 600 injuries, and destroyed many businesses and thousands of homes. The damage totaled nearly \$4 billion in today's dollars. The Cherry Creek dam and reservoir, constructed by the U.S. Army Corps of Engineers in 1950, was credited with saving hundreds of lives. The South Platte River finally captured attention statewide earning the respect it deserved.

A river controlled

In the flood's aftermath, efforts focused on controlling the river. The U.S. Army Corps of Engineers undertook the construction of Chatfield and Bear Creek dams and reservoirs. The Mile High Flood District was established by the Colorado legislature in 1969. Although these projects made great strides in reducing flood risk, the river could not be tamed and flooding along the river still could occur. Additionally, impoundment of the river and controlled releases have severely impacted the downstream ecosystem, affecting the riparian, wetland, and aquatic habitat.

THE VISION

To make the South Platte River a premier urban corridor, where people and nature thrive in harmony, by reducing flood risk and restoring the natural ecosystem.

By investing in the South Platte River, metro Denver will realize:

- Reduced flood risks to adjacent neighborhoods;
- A flourishing ecosystem with improved riparian, wetland, and aquatic habitats;
- Improved neighborhood connectivity;
- Equitable access to a healthy environment for recreational activities; and
- Increased environmental education opportunities.

NATIONAL SIGNIFICANCE

The South Platte River provides an oasis in an otherwise urbanized landscape for a variety of plants and wildlife. It provides a critical habitat linkage between the Rocky Mountains and Great Plains river systems. In particular, the wetland, riparian, and aquatic habitats are critically important in an arid region that has experienced severe losses and degradation of these habitat types. Wetland, riparian, and aquatic habitats play critical regional, national, and international roles, particularly as part of the Central Flyway, which has seen a 66% decline in waterfowl numbers in the South Platte Region over the last 28 years. This decline is the direct result of the decreased quantity and quality of wetlands. The Central Flyway is one of four major biological flyways in North America where migratory birds generally follow a north-south direction as they migrate between nesting and wintering areas.

The U.S Fish and Wildlife Service's (USFWS) Mountain Prairie region ranks riparian habitats as a critical wildlife resource. **Wetlands and riparian areas represent only about 2 percent of the land area of Colorado, but 80 percent of wildlife species use these habitats.** Colorado has experienced significant habitat losses including over 70 percent for riparian forest and over 50 percent of wetlands statewide with even higher percentages in urban areas. Within the urbanized Denver metropolitan area, wetland habitat is especially rare representing only about 0.7 percent of the land area. Only 5.6 acres of wetlands were identified along a 6.5-mile stretch of the South Platte River through Denver.

The positive impacts from the proposed projects to Denver's portion of the South Platte River cascade as the water flows through the Platte River System continuing to the Missouri and Mississippi Rivers, ultimately entering the Gulf of Mexico.

FLOOD DAMAGE & FLOOD RISK REDUCTION- A CLOSER LOOK

Enhancing the environment must be balanced with our regional goal of protecting people and property from flooding by reducing flood risks and flood damages. Projects, such as South Platte River and Tributaries Project, are nationally significant and provide significant, incidental flood risk management.

Flood Damage (n.) - the adverse consequences to people and assets expected (or realized) from their exposure and vulnerability to the flood hazard or a portion of the hazard (that is, one or more possible floods). (USACE Institute for Water Resources)

Flood Risk (n.) - the likelihood and adverse consequences of flooding. Flood risk for assets and people at any location in a floodplain is a function of flood hazard at that location and their exposure and vulnerability to the flood hazard. In areas served by flood hazard reduction infrastructure, the remaining risk is often referred to as "residual risk". (USACE Institute for Water Resources)



The aftermath of the 1965 flood along the South Platte River.

OUR PROGRESS

River Vision Implementation Plan (RVIP)

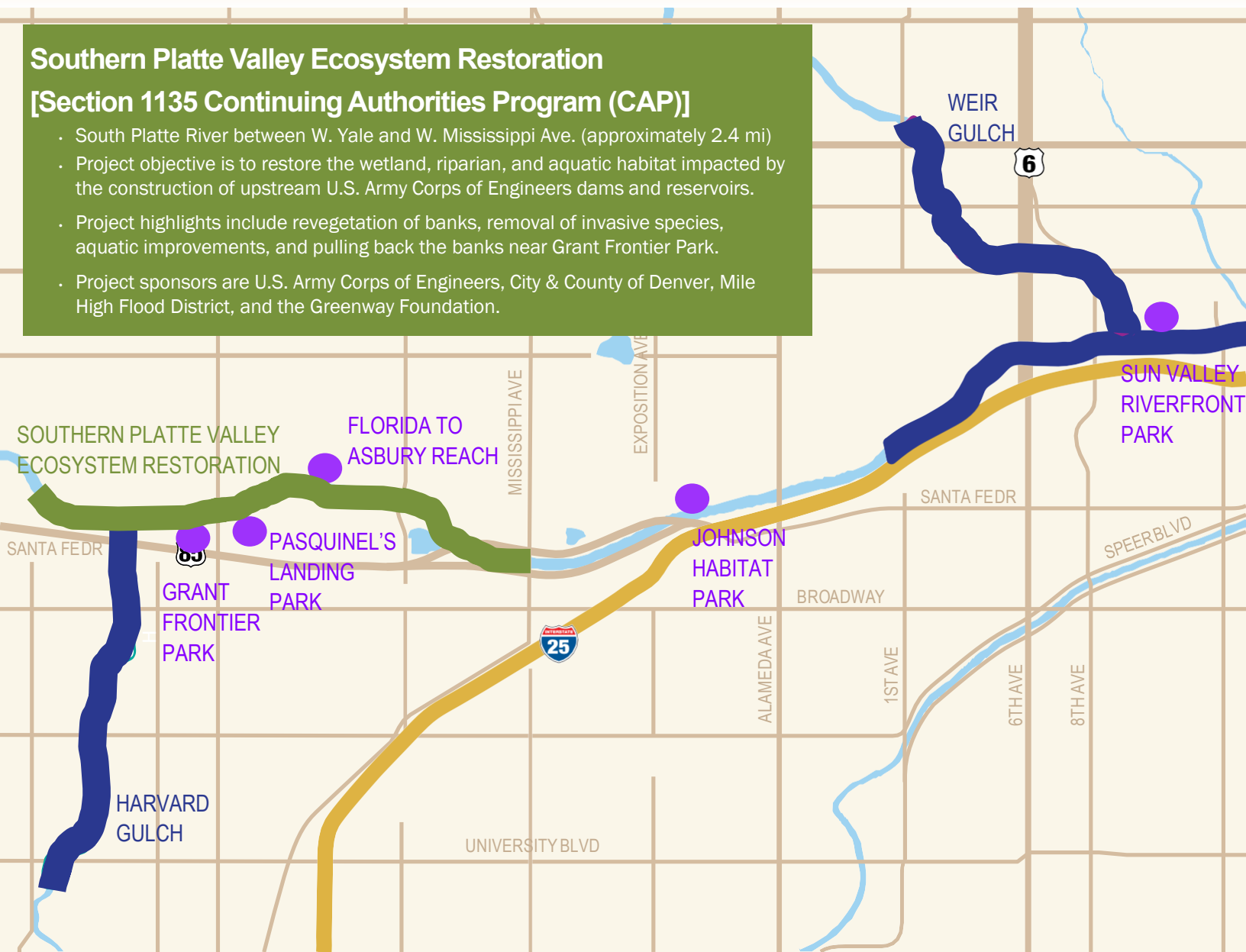
- Three master planning studies – River North Greenway Master Plan (2007), River South Greenway Master Plan (2008) and River Vision Implementation Plan (2010) – were completed
- Core principles:
 - Maximize health and safety of the river corridor
 - Improve ecological function and sustainability of the river corridor
 - Enhance visibility and accessibility of the river corridor
 - Continue environmental and economic transformation of the river corridor
 - Identify and expand resource opportunities and partnerships
- River Vision Phase 1 and 2 have been completed
 - A total of ten project sites (shown as purple dots below)
 - More than \$90M of local investment from 19 funding sources
- Project partners are City & County of Denver, Mile High Flood District, and The Greenway Foundation

SHERIDANBLVD

Southern Platte Valley Ecosystem Restoration

[Section 1135 Continuing Authorities Program (CAP)]

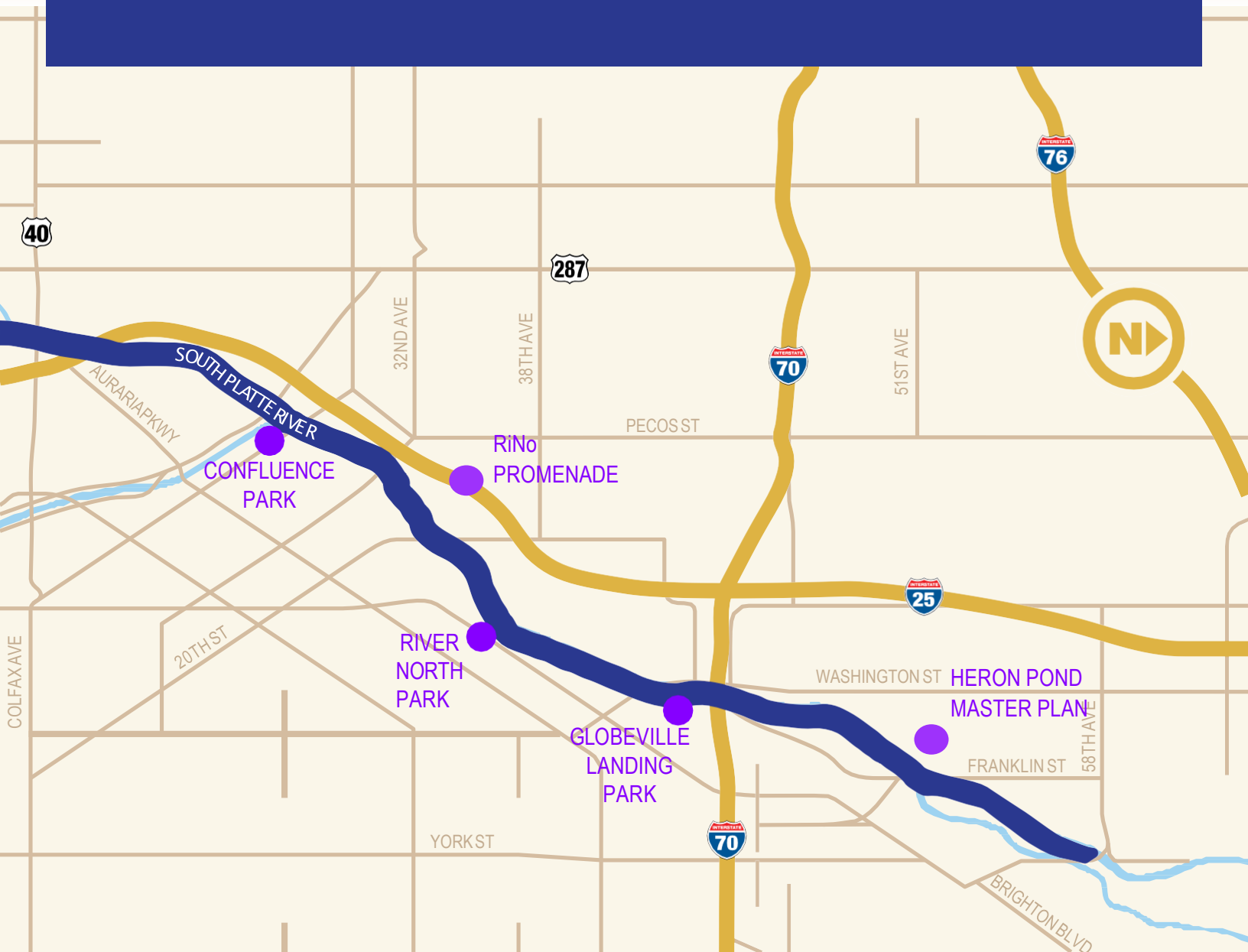
- South Platte River between W. Yale and W. Mississippi Ave. (approximately 2.4 mi)
- Project objective is to restore the wetland, riparian, and aquatic habitat impacted by the construction of upstream U.S. Army Corps of Engineers dams and reservoirs.
- Project highlights include revegetation of banks, removal of invasive species, aquatic improvements, and pulling back the banks near Grant Frontier Park.
- Project sponsors are U.S. Army Corps of Engineers, City & County of Denver, Mile High Flood District, and the Greenway Foundation.



South Platte River and Tributaries Project

Adams and Denver Counties, Colorado

- Project study area includes:
 - South Platte River between 6th and 58th (approximately 6.5 mi);
 - Weir Gulch; and
 - Harvard Gulch
- Overall project objectives:
 - Restore riparian and wetland habitat quantity, quality and connectivity for migratory birds in the Central flyway, as well as native plants and animals;
 - Restore aquatic habitat for native species;
 - Reduce flood risks to life, safety, property, and infrastructure; and
 - Improve public recreation opportunities, connectivity, and accessibility.
- Project highlights:
 - Restores 160 acres of riparian and wetland habitat, 100 acres of aquatic habitat, and reconnects 190 acres of surrounding habitat along the South Platte River, resulting in an 800 percent increase over existing habitat in the project area;
 - Reduces flood risk along the South Platte River;
 - Reduces flood risk through channel improvements along Weir Gulch; and
 - Creates voluntary floodproofing opportunities for residents and businesses along Harvard Gulch.
- Project sponsors are USACE, City & County of Denver, Mile High Flood District, and The Greenway Foundation.



FEDERAL FUNDING ASK

The U.S. Army Corps of Engineers Southern Platte Valley Ecosystem Restoration and Adams and Denver Counties, Colorado: General Investigation Study projects are now eligible for federal funding for implementation.

Southern Platte Valley Ecosystem Restoration

The federal funding challenge is that the Southern Platte Valley Ecosystem Restoration project is funded out of the Continuing Authorities Programs (CAP). These are nationwide pots of money, which are authorized at adequate levels, but appropriated at much lower levels. The City and County of Denver and members of the Colorado congressional delegation are working hard to increase appropriations. CAP projects help communities complete much needed, smaller water resources projects in shorter time frames. They are successful, and they are much sought after. This project will allow Denver to move forward with ecosystem restoration of 2.4 miles along South Platte River, enhancing previous investment the City has already made in three locally-funded projects in that reach of the river. The result will be a connected corridor with healthy riparian, wetland, and aquatic habitat vital to wildlife and the region.

Adams and Denver Counties, Colorado: General Investigation Study

The U.S. Army Corps of Engineers signed the Chief of Engineer's Report in July 2019, which was followed by authorization in the 2020 Water Resources Development Act (WRDA) bill. Both the U.S. Army Corps of Engineers and members of the Colorado congressional delegation have submitted appropriations requests for Pre-Construction Engineering and Design (PED) funds for fiscal year (FY) 2022. The project has strong Colorado congressional support for funding.

U.S. Army Corps of Engineers estimates the total cost for all three elements of the Denver County General Investigation project will be \$550 million, with \$206 million local match and \$344 million in federal funding needed. Despite the City's strong local commitment, this is a huge undertaking, and Denver cannot complete it without federal assistance.



STRONG LOCAL COMMITMENT

Whether it is partnering with the U.S. Army Corps of Engineers on the South Platte River and Tributaries Project or the Southern Platte Valley ecosystem restoration or implementing a future phase of the River Vision Implementation Plan, continued local investment is essential. Available funding sources include:

- Denver sales tax increase, passed in 2018, to raise money for parks, open space, trails and waterways. Estimates are that this new tax will raise up to \$45 million annually;
- A ballot measure, passed in 2018, which doubles the revenue of Mile High Flood District from \$30 million to \$60 million per year; and
- Local, regional and state sources of funding, which came together previously to build projects in the River Vision Implementation Plan (RVIP),

SPOTLIGHT on DENVERIGHT

Denveright (www.denvergov.org/denveright) is a comprehensive set of plans envisioned to shape Denver into the next twenty years. Included within Denveright is the Comprehensive Plan 2040, which highlights the following goals that align with South Platte River and Tributaries Project:

- Connected, safe and accessible places that are easy to get to, no matter how we want to travel;
- Environmentally resilient in the face of climate change; and
- A healthy and active city with access to the types of amenities and experiences that make Denver uniquely Denver.

“Enhance and Protect the South Platte River”

-Vision Elements, Comprehensive Plan 2040



THE FUTURE

The South Platte River will provide a vital connection to both wildlife and residents, with restored aquatic, riparian, and wetland habitats and a reduction in flood risks. The direct benefits from the projects cascade into a myriad of indirect benefits as well.

PROJECT BENEFITS

Environment

- See 'Ecosystem Restoration – A Closer Look' below
- Restore the natural ecosystem vital for supporting life along the South Platte River.
- Improve habitat connections for:
 - Three species listed under the Endangered Species Act extirpated from this ecosystem;
 - Twelve state-listed Endangered Species; and
 - Fourteen bird species listed on the National Birds of Conservation Concern list.
- Reduce the potential for future listings of additional species through improved habitat conditions.

Flood Reduction

- Removes more than 100 structures from the South Platte River Floodplain;
- Removes more than 350 structures from the Weir Gulch Floodplain; and
- Provides flood risk reduction to over 175 residential and commercial properties in Harvard Gulch.

Recreation

- Improve the connectivity of Denver's trail systems to unite neighborhoods;
- Create connections to encourage residents to interact with the restored environment;
- Increase opportunities for water activities such as fishing, kayaking, boating, and swimming; and
- Increase the health of residents by providing an easily accessible corridor for walking, biking, and jogging.

ECOSYSTEM RESTORATION – A CLOSER LOOK

Ecosystem Restoration (n.) – reestablishing the habitats of an area, in this case aquatic, wetland and riparian habitats in the South Platte River, so that native plants and animals can thrive.



Aquatic Habitat

What is it? Habitat permanently covered with water.

How do we improve it? Rock structures placed in stream can create a wider variety of shallow water, deep pool, slow- and fast-moving water. This diversity creates a healthy ecosystem.

Photo: Crayfish are an important food source in the South Platte River (Dave Crane, USACE, 2007)

Wetland Habitat

What is it? Habitat that is periodically covered in water.

How do we improve it? Create benches above the riverbed that will see periodic water, and replace invasive species with native species. These native species, such as grasses, will be present the majority of the year.

Photo: Example wetland (Rebecca Podkowka, USACE, 2015)



Riparian Habitat

What is it? Habitat above the aquatic habitat, may include wetland habitats.

How do we improve it? Create cottonwood-willow communities along the South Platte River. The U.S. Fish and Wildlife Service's (USFWS) Mountain-Prairie Region ranks riparian habitat, especially cottonwood-willow communities, as a critical wildlife resource.

Photo: Cottonwood & willow habitat (Rebecca Podkowka, USACE, 2015)



PROJECT INDIRECT BENEFITS

Complementary Private and Public Projects

- **National Western Complex (NWC)**
 - A 130-acre site adjacent to the South Platte River, where the National Western Stock Show has operated for over 100 years.
 - Complementary guiding principles include:
 - Engage the River and Nature;
 - Inspire Health and Wellness; and
 - Community and Neighborhood Integration.
- **The River Mile**
 - A 130-acre private development along the South Platte River.
 - Complementary values include:
 - Reclaim the River: Re-imagine and revitalize;
 - Very Denver: active lifestyle, health and wellness, connection to nature;
 - Smart Growth: support the City's environmental initiatives; and
 - Sustainable Community: social, economic, and environmental balance.
- **Sun Valley**
 - Denver Housing Authority's future Ecodistrict at the confluence of Weir Gulch and the South Platte River.
- **Northeast Colorado Farming & Ranching**
 - Projects and related improvements will help lower South Platte River water temperature assisting downstream efforts to eradicate invasive species impacting irrigation.



A STRONG, UNIFIED PARTNERSHIP

City and County of Denver (Denver)

In the 1970s, Denver embarked on the creation of the South Platte Greenway Trail. This began a long and ambitious plan to restore and revitalize the South Platte River. Beginning in 2007 through 2010, three master planning efforts were undertaken—River North Greenway Master Plan, River South Greenway Master Plan and River Vision Implementation Plan. Since then, \$90 million has been spent on 10 ambitious projects along the South Platte River within Denver. The project partners have leveraged 19 unique funding sources in pursuit of construction.

Mile High Flood District

Established by the Colorado legislature in 1969 through the leadership of former State Senator Joe Shoemaker and in response to the 1965 flood, Mile High Flood District has a regional perspective believing that implementing system-wide flood and stormwater improvements offers the highest chance of restoring the environmental ecosystem along the South Platte River.

The Greenway Foundation

The Greenway Foundation is a Denver-based 501(c)(3) nonprofit organization that has led efforts, since 1974, to reclaim the South Platte River and its tributaries to a place of environmental and recreational pride.

Colorado Water Conservation Board (CWCB)

The State of Colorado's CWCB is a funding and technical partner through its Water Supply Reserve Account program and other programs in the South Platte River portion of the project area. CWCB views this as an incredible opportunity to address critical river health issues in the most urbanized area in Colorado.

U.S. Army Corps of Engineers

The U.S. Army Corps of Engineers, Omaha District, our South Platte River and Tributaries Project and Southern Platte Valley Project Partner, oversees 700,000 square miles in the northern Great Plains. The District is executing a total program of over \$1 billion dollars across missions in military construction, environmental remediation, and infrastructure projects, including flood protection, navigation, flood damage control, and ecosystem restoration, among others.



THE SOUTH PLATTE RIVER REQUESTS HELP

The South Platte River sustains a culturally and nationally significant, fragile ecosystem in an arid climate. Transformative projects, like the South Platte River and Tributaries Project, will lead to corridor revitalization.

Local partners have tirelessly committed to improving the South Platte River. Three master plans, ten projects, and an investment of more than \$90 million in Denver alone are evidence of the local passion and love for the South Platte River. A continued partnership with the U.S. Army Corps of Engineers, and projects such as South Platte River and Tributaries Project and the Southern Platte Valley Ecosystem Restoration, allow Denver to accelerate our progress in restoring Colorado's most important river ecosystem. By sustaining this momentum, local and federal partners will realize the ultimate South Platte River transformation ensuring that it will forever remain the heart of Denver.



DENVER
THE MILE HIGH CITY



MHFD
MILE HIGH FLOOD DISTRICT



COLORADO
Colorado Water
Conservation Board
Department of Natural Resources