

URBANWATERS

FEDERAL PARTNERSHIP

Restoring Urban Waters, Revitalizing Communities

South Platte Watershed (Denver, Colorado)



Co-Leads

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Overall Assessment of the Partnership Since the Beginning

The South Platte River is an invaluable resource for drinking water, recreation, and economic development, both upstream and within Denver. The South Platte River Urban Waters Partnership (SPRUWP) ties together the many uses of the river and seeks to connect citizens to their water source by incorporating on-the-ground projects, education, and research.

Water is such a scarce resource in the region, making forested watersheds and waterways even more valuable. Collaboration allows the partnership to integrate solutions to complex problems. When people understand that their drinking water is tied directly to the health of the South Platte River, it means more to them.

No matter what Colorado community people call home, they all have one thing in common—reliance on clean water. Especially in the semi-arid Western climate, water is one of the most

precious resources. Clean water is vital to the Colorado way of life, from fly-fishing and whitewater rafting to the famous hot springs. People come from across the country to enjoy these activities, and move their businesses and families here for the quality of life, so the economy relies on clean water too.

The Greenway Foundation looked at \$100 million invested in green improvements to the South Platte River and its tributaries. They estimated this investment has facilitated more than \$10 billion in residential and commercial development throughout the Denver metro area. This estimate does not even include the additional dollar value of air and water quality and public health benefits from green infrastructure. That is a very good return on investment.

The SPRUWP strives to protect one of Denver's primary sources of drinking water, while supporting ongoing on-the-ground projects, education, and research, and facilitating a growing population's connection to its urban waterways.

The Rewards of Partnership

Partnership leads to larger impact, amplifying efforts to protect water resources and help communities capture the economic and social benefits from their improvement. The partnership is a place to network, discover and leverage funding opportunities, explore project ideas in greater contexts, and build capacity for larger-scale projects.

Benefits to Partners

- Access to technical resources and expertise
- Expanded and strengthened capabilities through networking and partnership opportunities
- Competitive edge through partnering for funding
- Learning through diverse perspectives on shared issues

The SPRUWP is one of the original seven pilot locations created in 2011. The partnership geographic boundary encompasses a large area of over 6,600 square miles (most of the South Platte River Watershed) and includes the headwaters in the Colorado mountains, the Denver-metro urban and suburban area, and the plains out to Barr Lake and Milton Reservoir. The partnership has met approximately quarterly since inception. Monthly e-newsletters are emailed to the partnership, which includes over 70 organizations and over 220 individuals. The partnership has created maps, a logo, a brochure, a comprehensive website, a mission, a vision, goals, strategies, a workplan, and an organizational structure. Funding has been secured for priority partnership projects as well as member projects.

Members of the Partnership

Federal Government

- U.S. Environmental Protection Agency
- U.S. Forest Service
- Agency for Toxic Substances & Disease Registry
- U.S. Geological Survey
- National Park Service, Rivers, Trails & Conservation Assistance Program
- U.S. Army Corps of Engineers, Omaha District
- Natural Resources Conservation Service
- U.S. Fish and Wildlife Service
- Housing and Urban Development
- Economic Development Administration
- Senator Michael Bennett staff
- Representative Diana Degette staff

State Government

- Colorado Department of Public Health & Environment
- Colorado Department of Transportation
- Colorado Parks and Wildlife
- Colorado State Forest Service
- Colorado Water Conservation Board

Local Government

- Adams County
- Jefferson County
- Denver Health
- Tri-County Health Department
- City of Aurora
- City of Brighton
- City and County of Denver
- City of Englewood
- City of Lakewood
- City of Sheridan

- City of Commerce City
- City of Westminster
- Greenwood Village
- Chatfield Watershed Authority
- Cherry Creek Basin Water Quality Authority/Upper Clear Creek Watershed Association
- Dominion Water and Sanitation District/Sterling Ranch
- Littleton/Englewood Wastewater
- Jefferson Conservation District
- Metro Wastewater Reclamation District
- Urban Drainage and Flood Control District
- Aurora Water
- Denver Water

Non-governmental Organizations (NGOs)

- Audubon Society of Greater Denver
- Bluff Lake Nature Center
- Barr Lake and Milton Reservoir Watershed Association
- Chatfield Area Network for Outreach and Education (CANOE)
- Cherry Creek Stewardship Partners
- Clear Creek Watershed Foundation
- Coalition for the Upper South Platte (CUSP)
- Colorado Foundation for Water Education
- Colorado Watershed Assembly
- Denver Botanic Gardens – Chatfield
- Dinosaur Ridge
- Earth Force
- EcoAgriculture Partners
- Groundwork Denver
- Institute for Environmental Solutions
- National Forest Foundation

- Research, Education & Development for Health, Recreation & Land Agencies (GP RED)
- Rocky Mountain Land Library
- Sand Creek Regional Greenway Partnership
- Sierra Club
- South Platte Enhancement Board
- South Platte Coalition for Urban River Evaluation (SP CURE)
- The Greenway Foundation, Capitol Representatives
- The Park People
- The Nature Conservancy
- Trust for Public Land
- WalkDenver
- Westerly Connection
- Volunteers for Outdoors Colorado

Business

- CH2M
- Earth Economics
- Davey Institute
- Keystone Concepts/Ecosystem Sciences Foundation
- Leonard Rice Engineers
- LLG International LLC
- Plan-It Geo
- REI
- Zeppelin Development

University/College

- Colorado School of Mines
- Colorado State University
- Front Range Community College
- Metro State University One World One Water Center
- University of Colorado at Denver
- University of Denver

Nature of the Partnership – The Process of Collaboration, Collective Impact, and Adaptive Management

The SPRUWP is a collaboration of organizations, working across governmental and disciplinary boundaries. The aim of the partnership is to protect and restore lands and waters in the South Platte River watershed. The partnership emphasizes stewardship and community connection, linking urban areas with forested watersheds and people with nature.

The partnership involves more than 70 groups. Federal and state government, municipalities, NGOs, and private businesses all come together for the benefit of the silent partner, the South Platte River. Local or federal action alone is less suitable to handling the complex challenges surrounding water, resource protection, and connecting people with nature. The partnership's diversity is its strength; there is a role for each individual, community, business, and agency.

The partnership is all about resource efficiency—leveraging human capital and financial resources to accomplish the most possible in terms of river restoration, community education, and improving watershed health.

The partnership utilizes collective impact strategies; early wins; adaptive management for programs, structures, and systems; and impactful outcomes.

The first phase of the SPRUWP (1.0), June 2011 to December 2012, was co-led by the U.S. Environmental Protection Agency (EPA) and the U.S. Forest Service (USFS). The second phase of the SPRUWP (2.0), January 2013 to June 2016, was led with the assistance of a coordinator, an Advisory Committee (USFS, EPA, Colorado State Forest Service (CSFS)), and a multi-stakeholder Leadership Team. The SPRUWP is currently in its third phase (3.0), and is co-led by EPA and USFS in close collaboration with CSFS and with contract facilitation. The SPRUWP will enter its fourth phase in late 2017 with a part-time contract coordinator. The Agency for Toxic Substances and Disease Registry (ATSDR), the U.S. Geological Survey (USGS), and the National Park Service (NPS) have been regular contributors.

The full partnership meets quarterly and sends out monthly e-newsletters. There are additional meetings of the Advisory Committee (EPA, USFS, CSFS), various workgroups (currently water quality and education/outreach), and an occasional federal-only meeting.

Planning for Action

Creation of Short-term, Mid-term, and Long-term Priority Programs and Projects: The SPRUWP has a workplan for 2017.

Approach: The interdisciplinary partnership focuses on common desired outcomes while advancing individual missions. The result? A holistic approach that benefits local water resources, and improves and strengthens the community as a whole.

Focus: Regional Water Quality, Water Protection, and Water Awareness

Mission: The SPRUWP collaborates across jurisdictions and disciplines to engage communities, and to protect and restore the South Platte River from the headwaters to the Denver metropolitan area (Colorado) and watershed.

Goals:

- Collaborate, educate, and engage
- Connect people with water
- Protect and restore through leveraging resources
- Communicate achievements and share technical information



Strategies:

- Develop regional information resources (best management practices; water quality data, public health data related to South Platte River and tributaries)
- Regional messaging for behavioral change
- Advance an interconnected network of ecological and green infrastructure for healthier waterways and for social and economic gains to adjacent communities
- Protect forests that provide drinking water supply

Major Actions Taken Since the Beginning of the Partnership

Signature Projects

South Platte Watershed Natural Capital – From Mountains to Plains Resource Assessment: The South Platte Natural Capital Project is a collaborative watershed-wide green infrastructure assessment led by CSFS. The project was funded with a USFS State and Private Forestry competitive grant. The project directors are CSFS, USFS, and EPA. The purpose of the project is to build on existing studies in the South Platte River corridor and watershed to:

1. Create an assessment that maps and evaluates the regional network of green infrastructure (interconnected network of critical watershed forests, riparian corridors, wetlands, streams, lakes and the river).
2. Prioritize key areas for conservation and restoration based on the economic value of the benefits people obtain from those natural systems ("ecosystem services").
3. Sustain and enhance the sharing of ideas, data, and resources across organizations and landownerships to accomplish common goals.

<https://www.epa.gov/urbanwaterspartners/south-platte-natural-capital-project>

Water Quality Assessment Tool: A water quality assessment is underway that will present a cross-jurisdictional view of water quality in the Denver metro area. This is being conducted by the SPRUWP Water Quality workgroup, which includes representatives from EPA, USGS, ATSDR, USFS, Denver Water, City and County of Denver, Colorado Department of Public Health and Environment, Metro Wastewater Reclamation District, Littleton/Englewood Wastewater Treatment Plant, Colorado Watershed Assembly, Groundwork Denver, and Jefferson Conservation District. Groundwork Denver is leading the project. The Water Connection/The Greenway Foundation is hosting the tool. The interactive tool went live in January 2016 and has five years of *E. coli* data available for the Denver metro area. Phase II is underway and involves creating a mobile platform and expanding the contaminants from *E. coli* to also include Total Dissolved Solids; Total Suspended Solids; Nutrients; and select pesticides, pharmaceuticals, and personal care products. http://thewaterconnection.org/wq_tool/app/#/storyline

Priority Projects

- **Full-time Coordinator:** Hiring a coordinator was one of three top priorities identified at the first full SPRUWP meeting. Funding from USFS and EPA supported a coordinator from January 2013 to June 2016.
- **Geomapping:** Identified as one of three top priorities at the first full SPRUWP meeting. EPA provided funding through a contract with SAIC to create a publicly-accessible geomapping platform to display partner activities spatially. Webinars, questionnaires, and data gathering activities have been completed. Partners continue to add projects to the map, and additional partnership locations are exploring use of the platform.
<http://geoplatform1.epa.gov/urbanwaters/index.html>
- **Systems Thinking (Mapping):** Identified as one of three top priorities at the first full SPRUWP meeting. Championed by Trust for Public Land and the Jefferson Conservation District. The Colorado Department of Public Health and Environment (CDPHE) and its Environment Water Quality Control Division requested development of a systems network diagram and systems thinking process focused on partnership projects and activities. The Logistics Management Institute and Shadowcliff Associates were contracted by CDPHE to perform the work in 2013. The work was funded with \$25,000 of expiring 604b funding from EPA. Twenty SPRUWP partners participated in the effort. The project provided opportunities for leveraging and identifying partnership priority areas. EPA Region 8's sustainability coordinator provided technical assistance for the project. <https://www.epa.gov/urbanwaterspartners/south-platte-urban-waters-partnership-systems-thinking>
- **Urban Forestry:** CSFS awarded a total of \$100,000 in USFS funds to four projects to restore and protect Denver area waterways, while reconnecting local populations with their water resources in 2012. All of the projects are complete. Projects funded involved the removal of invasive species and planting of native trees in riparian and wetland areas. The four projects in Colorado that received funding were: City and County of Denver Parks and Recreation, Institute for Environmental Solutions, South Suburban Parks and Recreation, and Bluff Lake Nature Center.
- **Green Infrastructure Virtual Tour:** Completed by an EPA intern.
- **Green Infrastructure Case Studies:** Completed first phase. Information incorporated into the Green Infrastructure Virtual Tour.
- **Metro Denver Nature Alliance:** Dana Coelho (USFS) is serving on the leadership team of the Metro Denver Nature Alliance (MDNA), a network of environmental, scientific, and cultural organizations committed to making Denver a "thriving place for both people and nature." Other organizations/individuals are part of the SPRUWP and MDNA. This

partnership evolved out of work with the Trust for Public Land and The Nature Conservancy on the South Platte Natural Capital Project.

- **Denver Urban Field Station:** A new collaborative venture of the USFS Rocky Mountain Region, Rocky Mountain Research Station, CU Denver, City of Denver, USGS, and other partners is looking to establish Denver as a center of excellence for applied urban ecological research. Several SPRUWP partners, including EPA, CSFS, and Denver Water, are also participating. One early project idea is mapping the metro area's environmental stewardship organizations, which will build off the SPRUWP's geomapping and systems mapping efforts and feed into MDNA strategic planning efforts. A stakeholder meeting was held November 9-10, 2016.
- **Denver Climate Smart Cities:** A new collaborative venture led by Trust for Public Land to create climate strategies. Building off the insight gleaned from partners in the discovery phase, they have convened a diverse set of Technical Advisory Team members around the priorities, criteria, and data to develop the GIS-based Decision-Support Tool, and to begin to identify some applications of the tool to help support work in making Denver climate-smart.

Urban Waters Small Grants

- 2016. Groundwork Denver. Lower Bear Creek: Youth Leadership to Solve the Pollution Problem. Blue team youth engagement around water quality monitoring and an alternate to a TMDL.
- 2016. City and County of Denver. Heron Pond Regional Open Space Master Plan along the South Platte River.
- 2014. Denver Department of Public Works, Wastewater Management in conjunction with Earth Force. Keep It Clean-Neighborhood Environmental Trios (KIC-NET) outdoor classroom. KIC-NET won a National Association of Counties Achievement Award in 2016. Water quality and stormwater education.
- 2014. Groundwork Denver Community Stewardship Network for Lower Bear Creek. Blue team youth engagement around water quality monitoring and creating a watershed plan.
- 2012. Barr Lake and Milton Reservoir Watershed Association. H2Only stormwater messaging campaign. <http://www.barr-milton.org/>
- 2012. Earth Force. Keep It Clean: Neighborhood Trios (KIC-NET) included teacher training workshops and development of an educational toolkit for outdoor classrooms. This work was selected to receive the Colorado Alliance for Environmental Education's 2014 Environmental Education Award for Excellence in the Best New Program category.

<https://www.youtube.com/watch?v=bgnx3BWWnJO>
<http://urbanwaterslearningnetwork.org/resources/watershed-plan-born/>

National Fish and Wildlife Foundation Grants

- 2016. Urban Refuge Partnership with Denver Natural Resources at First Creek. City and County of Denver.
- 2016. Wheat Ridge Greenbelt Restoration and Environmental Education Network. The Institute for Environmental Solutions.
- 2015. Denver Botanic Gardens at Chatfield Riparian Restoration. Denver Botanic Gardens partnered with Audubon Society of Denver, Jefferson County, and others.
- 2015. New Stewards for Conservation at the Rocky Mountain Arsenal National Wildlife Refuge. Groundwork Denver partnered with the U.S. Fish and Wildlife Service, Anythink Library Commerce City, Commerce City Parks and Recreation, Sand Creek Regional Greenway Partnership, and the Boys and Girls Club.
- 2014. Community Greening and Restoration Project. Environmental Learning for Kids partnered with Denver Parks and Recreation, Denver Public Works, and Denver Public Schools.
- 2013. Youth Water Quality Monitoring Investigation-to-Restoration. Bluff Lake Nature Center.

Forestry and Source Water Protection

- Hayman Burn Restoration Partnership. USFS and the National Forest Foundation worked with many partners from 2010 to 2012 to reduce erosion and sediment flows in critical headwater areas burned by the Hayman Fire in 2002.
<https://www.nationalforests.org/who-we-are/our-impact/pike>
- Rocky Mountain Watershed Protection Partnerships. The USFS Rocky Mountain Region has been working with municipal water providers and corporate partners along the Front Range of Colorado to restore and foster the resiliency of forests within key watersheds.
- Source Water Planning. The Coalition for the Upper South Platte is serving as the facilitator for a SWAP planning project for the South Platte River watershed, which is being convened by Denver Water and funded with support from CDPHE.
<http://www.uppERSouthPlatte.org/sourcewater.html>
- Wildfire Readiness and Response Workshop – Is Your Utility Prepared? (2013).

Green Infrastructure

- Sun Valley Green Infrastructure Study
https://www.epa.gov/sites/production/files/2016-08/documents/sunvalley_stormwateroptions_final.pdf
- Green Infrastructure Technical Assistance to assist in development of Ultra-Urban GI guide <https://www.denvergov.org/content/denvergov/en/wastewater-management/stormwater-quality/ultra-urban-green-infrastructure.html>
- U.S. Army Corps of Engineers Studies: Denver Ecosystem Restoration Feasibility Study <https://www.denvergov.org/content/denvergov/en/denver-waterways.html>
- Green Infrastructure Design Assistance for 38th and Blake
https://www.epa.gov/sites/production/files/2015-10/documents/denver_blakestreet_concept_design.pdf
- River North Green Infrastructure Design
- Westerly Creek Green Infrastructure Stream Restoration Design
<https://www.epa.gov/urbanwaterspartners/westerly-creek-environmental-justice-south-platte-watershed>

Brownfields Grants and Support

- Targeted Brownfields Assessment for Sun Valley Eco District, Steam on the Platte, Westerly Creek at Stapleton
- Colorado Brownfields Revolving Loan Fund for Freight in River North, Ruby Hill, and Union Station
- Denver South Platte Brownfields Area-Wide Planning Grant-River Corridor Planning
www.denvergov.org/southplatte
- Denver South Platte RiverPlace Initiative, \$400K Brownfields Assessment Grant
<https://www.denvergov.org/content/denvergov/en/brownfield-redevelopment/south-platte-riverplace-initiative.html>
- Aurora Brownfields Area-Wide Planning Grant for Westerly Creek Village
<https://www.auroragov.org/cs/groups/public/documents/document/014383.pdf>
- Dry Gulch Green Infrastructure Channel Restoration Design

Other Funding and Support

- HUD Choice Neighborhoods Implementation Grant for Sun Valley Eco District.
- USFS and EPA funding for coordinator.
- South Platte River Environmental Education. EPA Environmental Education Grant in 2016 to The Greenway Foundation.

- 2015 EPA Environmental Justice Small Grants. Groundwork Denver- Solutions for Climate Resiliency in North Denver Environmental Justice Communities.
- 2015 EPA Environmental Justice Small Grants. Environmental Learning for Kids (ELK)- ELK Youth Naturally-Community Water Connections (ELKYN-CWC).
- U.S. Army Corps of Engineers Studies for Chatfield Reservoir and Bear Creek Reservoir.
- HUD Choice Neighborhood Planning Grant for Denver Housing Authority at Sun Valley.
- Get Outdoors Colorado. In celebration of Earth Day 2013, USFS and Get Outdoors Colorado launched a new website, www.GetOutdoorsColorado.org, to give people thousands of opportunities to explore and experience Colorado.
- Natural Resource Damage Settlement Funding from Lowry Landfill. In 2013, the SPRUWP facilitated a funding announcement and assistance for Lowry Landfill Natural Resource Damages Settlement funding from the State of Colorado. Three projects were funded: Bear Creek water quality, Westerly Creek Greenway, and Bluff Lake Nature Center.
- Survey and Assessment of Critical Urban Wetlands in Denver and Mountain Parks. EPA wetlands grant funding to the Colorado Natural Heritage Program Wetland Program of Colorado State University beginning in 2012.
<http://www.cnhp.colostate.edu/download/documents/2015/Denver%20County%20Report%20FINAL%206252015%20with%20Appendices.pdf>
http://www.cnhp.colostate.edu/download/documents/2015/Denver_Brochure_Final_Draft.pdf
http://www.cnhp.colostate.edu/download/documents/2015/Colorado_Wetland_App_Users_Guide.pdf
- EPA's emergency response program responded to a seep of petroleum products into Sand Creek near its confluence with the South Platte River beginning in November 2011. EPA continues to provide technical support to CDPHE and the responsible party.
- NPS Rivers, Trails, and Conservation Assistance helped the City and County of Denver and the Greenway Foundation to identify and overcome barriers that prevent residents of neighborhoods adjacent to the South Platte River in Denver from accessing the South Platte River Greenway and its many amenities and benefits.
- Rocky Mountain Greenway Trails. The U.S. Department of Transportation awarded \$1.735 million for seven miles of trails along the Rocky Mountain Greenway. The Greenway will connect the Rocky Mountain Arsenal and Rocky Flats National Wildlife Refuges with the Two Ponds Refuge and Rocky Mountain National Park. The Rocky Mountain Greenway is part of the Department of the Interior's America's Great Outdoors Initiative and also the Urban Waters Federal Partnership.

Major Actions Planned in the Future

- Completion of the Natural Capital Resource Assessment and Prioritization Tool. Education and outreach on the tool. Utilize the tool to set priorities for a regional network of green infrastructure utilizing preservation and restoration.
- Completion of Phase II of the Water Quality Assessment Tool. Find a new home for the tool. Create teacher/student tutorial. Education and outreach on the tool.
- Coordination with the Metro Denver Nature Alliance. Engage on a strategic plan and regional map/vision.
- Coordination with Denver Climate Smart Cities.
- Denver Urban Field Station and the Water Resource Center at the National Western Center redevelopment. Co-develop research questions and products.
- A meeting focused on the Sun Valley neighborhood that is adjacent to the South Platte River and is being redeveloped into an Eco District.
- Look for opportunities to collaborate on grant proposals.
- Get a new coordinator on board.
- Continue to promote H2Only messages. Consider how to measure impact. Increase coordination with the Colorado Stormwater Council.
- Continue to cultivate relationships, agreements, and projects with Denver Water, Aurora Water, and other water utilities in the watershed.

Major Challenges in the Future

There is a lot happening in the South Platte watershed. The partnership faces many challenges, including:

- Determining how best to increase communication and coordination and decrease competition and redundancy
- Securing funding for a coordinator
- Ensuring the partnership's ability to accept funding
- Maintaining momentum amidst personnel changes
- Maintaining participation from the federal government
- Ensuring long-term sustainability of the partnership